TEACHER RETIREMENT SYSTEM OF TEXAS MEETING
BOARD OF TRUSTEES

AGENDA

September 13, 2012 – 8:30 a.m.
September 14, 2012 – 9:30 a.m.

TRS East Building, 5th Floor, Boardroom

NOTE: The Board may take up any item posted on the agenda during its meeting on Thursday, September 13, 2012, or the following day beginning at the time and place specified on this agenda.

The open portions of the September 13-14, 2012 Board meetings are being broadcast over the Internet. Access to the Internet broadcast of the Board meeting is provided on TRS' Web site at www.trs.state.tx.us.

1. Call roll of Board members.

2. Consider administrative matters, including the following – David Kelly:

   A. Consider the approval of the July 20, 2012 Board meeting minutes.

   B. Consider excusing Board member absence from the June 7, 2012 Board meeting.

   C. Consider the election of the Board Vice-Chair and Texas Growth Fund Trustee.

   D. Consider consenting to the Board Chair's appointment of committee members, and receive the Board Chair's public announcement of committee chairs.

   E. Consider Board and committee meeting dates for calendar year 2013, including any off-site meeting locations.

3. Recognize and celebrate TRS' 75th anniversary year, including viewing the 75th anniversary video – David Kelly.

4. Receive public comment – David Kelly.

NOTE: *The Board meeting likely will recess after the last item above for committee meetings and resume Thursday afternoon to take up items listed below.*

5. Discuss and consider investment matters, including the following items:

   A. Performance Review: Second Quarter 2012 – Brady O'Connell and Steve Voss, Hewitt EnnisKnupp.

   B. Review Quarterly Portfolio Performance and market update – Britt Harris.

C. Review of capital markets and perspective on the long term – Brady O'Connell and Steve Voss, Hewitt EnnisKnupp.

D. Receive the following presentation: "A Financial Historian's View of Markets" – Edward Chancellor, GMO, LLC.

E. Discuss the duties of Board Investment Advisor, Dr. Keith Brown – Brian Guthrie.

F. Review the report of the Investment Management Committee on its September 13, 2012 meeting, and consider related matters – Committee Chair.

G. Review the report of the Risk Committee on its September 13, 2012 meeting, and consider related matters – Committee Chair.

6. Receive the report of the Policy Committee on its September 13, 2012 meeting, and consider the following related matters – Committee Chair:

   A. Consider proposed changes to the Investment Policy Statement.

   B. Consider proposed changes to the General Authority Resolution (also known as the TRS-477).

7. Receive the report of the Compensation Committee on its September 13, 2012 meeting, and consider adopting a Performance Incentive Pay Plan for performance periods commencing October 1, 2012 and each October 1 thereafter – Committee Chair.

8. Discuss and consider the evaluation, compensation, and duties of the Executive Director – David Kelly.

9. Discuss the evaluation, compensation, and duties of the Chief Investment Officer and provide input to the Executive Director – David Kelly.

NOTE: *The Board meeting likely will recess after the last item above and resume Friday morning to take up items listed below.*

10. Receive an update on the TEAM Program – Amy Morgan and Jay Masci, Provaliant.

11. Consider concurring in the Medical Board's certification regarding a disability retiree under § 824.307 of the Government Code, discontinuing annuity payments, and restoring the individual to membership – Marianne Woods Wiley.

12. Receive the report of the Audit Committee on its September 14, 2012 meeting, and discuss and consider the following related matters – Committee Chair:

   A. Adoption of the Audit Plan for fiscal years 2013-2015.

   B. Amendments to the Internal Audit Charter.

C. Evaluation and compensation of the Chief Audit Executive.

13. Receive the Chief Financial Officer's report under § 825.314(b), Government Code, of expenditures that exceed the amount of operating expenses appropriated from the general revenue fund and are required to perform the fiduciary duties of the Board – Don Green.

14. Receive the Deputy Director's report, including updates on the following: potential future IRS rule changes affecting charter school participation in the TRS pension plan; riders directing the use of appropriated funds; the amendment of pension accounting and financial reporting standards by the Governmental Accounting Standards Board; the Strategic Partnership Network training program; and the calculation of investment cost per member – Ken Welch.

15. Receive the Executive Director's report, including matters related to the following – Brian Guthrie:

    A. Hearings for the upcoming 83rd Regular Legislative Session.

    B. An update on the National Association of State Retirement Administrators conference.

    C. December 2012 agenda overview.

    D. Planned TRS outreach at Texas Retired Teachers Association (TRTA) fall 2012 meetings.

    E. Enterprise Risk Management program.

    F. Retirement plan benefits and operations.

    G. Investment activity and operations.

    H. Health-benefit programs and operations.

    I. Administrative operations and other financial, audit, legal, staff services, and special project matters.

16. Review the report of the General Counsel on pending or contemplated litigation, including updates on the following: the Bank the Bank of America securities class action; the Pfizer securities litigation, other securities litigation; litigation involving allegations of Libor rate manipulations or fiduciary duties related to investments; and litigation involving benefit-program contributions, retirement benefits, health-benefit programs, and open records – Conni Brennan.

17. Consult with the Board's attorney in Executive Session on any item listed above as authorized by Section 551.071 of the Texas Open Meetings Act (Chapter 551 of the Texas Government Code) – David Kelly.

Tab 2 A.

Teacher Retirement System of Texas

Minutes of the Board of Trustees

July 20, 2012

The Board of Trustees of the Teacher Retirement System of Texas met on July 20, 2012, in the boardroom located on the fifth floor of the TRS East Building offices at 1000 Red River Street, Austin, Texas. The following people were present:

Board trustees:

David Kelly, Chair
Todd Barth
Karen Charleston
Charlotte Clifton
Joe Colonnetta
Eric McDonald
Chris Moss
Anita Palmer
Nanette Sissney

TRS executives and staff:

Brian Guthrie, Executive Director
Ken Welch, Deputy Director
Jerry Albright, Deputy Chief Investment Officer
Conni Brennan, General Counsel
Howard Goldman, Director of Communications
Don Green, Chief Financial Officer
T. Britton Harris IV, Chief Investment Officer
Betsey Jones, Director of Health Care Policy and Administration
Dinah Arce, Internal Auditor
Don Ballard, Assistant General Counsel
Ashley Baum, Chief of Staff to the Chief Investment Officer
Sylvia Bell, Director of Investment Operations
Michelle Bertram, Administrative Assistant, Communications
Patricia Cantú, Director – Investment Business Management
Chris Cutler, Director of Network Infrastructure and Support
Edward Esquivel, Assistant Director, Health and Insurance Benefits Department
Dennis Gold, Assistant General Counsel
Dan Junell, Secretary to the Board and Assistant General Counsel
Lynn Lau, Assistant Secretary to the Board and Program Specialist
Rebecca Merrill, Special Advisor to Executive Director and Manager of Special Projects
David Powell, Intern
Sharon Toalson, Assistant to the Chief Investment Officer
David Veal, Incoming Chief of Staff to the Chief Investment Officer
Angela Vogeli, Assistant General Counsel

Tim Wei, Assistant General Counsel
Dale West, Managing Director – External Public Markets
Yimei Zhao, Team Leader for Health Benefit Finance and Special Projects

Outside counsel, consultants, contractors, representatives of associations and organizations, and others:
Ronnie Jung
Steven Huff, Reinhart Boerner Van Deuren, Fiduciary Counsel
Steve Voss, Hewitt EnnisKnupp, Investment Counsel
Brady O'Connell, Hewitt EnnisKnupp, Investment Counsel
Jeff Lambert, State Street
Tim Lee, Texas Retired Teachers Association
Jim Baker, Unite Here
Ann Fickel, Texas Classroom Teachers Association
Ted Melina Raab, Texas American Federation of Teachers
John Greg, Texas State Teachers Association
Pat Del Rio, Aetna

Mr. Kelly called the meeting to order at 10:25 a.m.

1. Call roll of Board members.

Ms. Lau called the roll. All trustees were present.

2. Consider Board approval of the June 7-8, 2012 Board meeting minutes – David Kelly.

On a motion by Ms. Sissney, seconded by Mr. McDonald, the board unanimously approved the June 7-8, 2012 board minutes as presented by staff.

3. Provide opportunity for public comments – David Kelly.

Mr. Tim Lee of Texas Retired Teachers Association (TRTA) expressed his appreciation to Ms. Betsey Jones and her department for the information provided to TRS members regarding changes to the health benefit plans. He highlighted some of the members' concerns relating to the new Medicare Advantage plans and the continuing need to educate members about them. Responding to a question from Mr. Kelly, Mr. Lee stated that staff had been very responsive and proactive during the transition to the new plans.

Mr. Lee commented on the Performance Incentive Pay Plan for the Investment Management Division (IMD). He stated that TRTA understood the need for having an incentive compensation plan and respected the board's decision on the plan, even though TRTA did not always agree with the board on specific plan design features. He stated that he hoped that the board would decide based on the best interest of the fund and members.

Mr. Lee commented on the certification of the TRS-Care fund for the fiscal year (FY) 2013. He recapped that for FY 2013 the legislature had reduced the state contribution rate to 0.5 percent, which, he noted, was below the statutory rate of one percent in general law. He opined that the reduced rate was temporary and should not represent a long-term approach to state

contributions to the TRS-Care fund. He said he believed that the TRS board should certify the estimated amounts needed to pay the state's TRS-Care contributions for both FY 2014 and FY 2015 based on the minimum statutory contribution rate of one percent instead of one percent for FY 2014 and 0.5 percent for FY 2015. Responding to questions from Mr. Kelly and Ms. Sissney, Mr. Guthrie explained that staff based the estimates on instructions state leadership and the Legislative Budget Board (LBB) gave to TRS for preparing the system's Legislative Appropriations Request (LAR) for the next biennium. Those instructions, he said, told TRS to use as a baseline for the 2014-2015 biennium the same rates that were legislated in the general appropriations act for the 2012-2013 biennium. Mr. Guthrie said that he expected the minimum statutory rates for both FY 2014 and FY 2015 ultimately to be approved. Mr. Guthrie further explained that the legislature established the contribution rate for FY 2013 and TRS could not change that now. He said that TRS would ask for additional needed funding for TRS-Care as exceptional items in the LAR. Mr. Lee acknowledged the fact that the state funding is beyond the board's control. He stated that his intention was to draw awareness that the pension plan and TRS-Care plan both function well at a relatively low cost but that the current funding decisions have been moving the plans backward.

Mr. Melina Raab of Texas American Federation of Teachers (AFT) stated that the board should decide the content of the LAR as well as the certifications to the State Comptroller, LBB and Governor's Office. Because the minimum statutory contribution rate for TRS-Care is one percent, he said, the TRS board is under no obligation to set the contribution rate based on the request of the state leadership. He urged the board to request the statutory required rate of one percent in the budget documents submitted for the 2014-2015 biennium.

4. Discuss and consider selecting Board fiduciary counsel, including receiving an overview on the responsibilities of fiduciary counsel and the process used to select the finalist firms, interviewing finalist firms for the position, and considering a resolution selecting fiduciary counsel – David Kelly.

Mr. Guthrie referred the board to the confidential memo from Ms. Brennan laying out the process of selecting the board's fiduciary counsel. He stated that 13 firms responded to the Request for Qualifications (RFQ) and legal staff selected four finalists to be interviewed by the board on this day, including the incumbent, Reinhart Boerner Van Deuren, s.c.

The board interviewed representatives of four law firms, in the following order:

1. Strasburger & Price LLP, represented by Gary Lawson, Gus Fields and Luke Bailey;

2. Cohen Milstein Sellers & Toll PLLC, represented by Suzanne Dugan, Luke Bierman, Steve Toll and Betsy Guarnier;

3. Spencer Crain Cubbage Healy & McNamara PLLC, represented by Riva Johnson; and

4. Reinhart Boerner Van Deuren s.c., represented by Steve Huff and Keith Johnson.

During the interviews, trustees asked the representatives about the following: their firms'

qualifications and experience; their approach in serving as fiduciary counsel, including advising the board and working with staff attorneys; and the individual lawyers who would be working directly with TRS and their availability for the contract term. Mr. Guthrie and Ms. Brennan explained that the proposed contract with the selected firm would have a one-year term with no option to renew because the Office of the Attorney General (OAG) wanted outside counsel contracts to coincide with the biennium. In addition, they explained that TRS could submit a request to the OAG for approval of a new two-year contract for the next biennium (FY 2014-FY 2015) without conducting a new RFQ process. Ms. Brennan noted that the board could authorize staff now to submit the request before the end of FY 2013 or, alternatively, could wait until next spring. If the board waits until next spring, it could consider interviewing again from the pool of candidates responding to the recent RFQ and select the same firm it chooses today or select a new firm at that time for the next biennium. She explained that two proposed resolutions were included for the board's consideration. One would include the selection of a firm for only FY 2013, a one-year term. The alternative resolution would include the selection of a firm for FY 2013 but also authorize staff to request approval from the OAG of a new contract with the same firm for the next biennium, effectively authorizing a three-year term.

After the interviews, trustees commented on the finalists and shared their experience working with Reinhart Boerner Van Deuren (Reinhart), the incumbent, and generally noted their satisfaction with the firm. Some trustees noted that it would have been helpful to see more involvement from the firm during past deliberation of certain matters.

Mr. Colonnetta commented on the experience of the representatives from the Cohen firm. Board members generally agreed to next consider the renewal or selection of fiduciary counsel in February or April 2013 and to give staff direction then on the related process.

On a motion by Mr. Barth, seconded by Mr. Colonnetta, the board unanimously adopted the following resolution to select Reinhart to provide fiduciary-counsel services to TRS with a one-year contract term for FY 2013:

> ***Resolved,*** That the Board of Trustees (the "board") of the Teacher Retirement System of Texas ("TRS") hereby selects the law firm of Reinhart Boerner Van Deuren s.c. to serve as Fiduciary Counsel; and
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> ***Resolved,*** That the board authorizes the Executive Director to negotiate a contract for Fiscal Year 2013, and to obtain approval from the Office of the Attorney General for the engagement of such outside counsel as and when necessary; and, if negotiations are deemed by the Executive Director, in his discretion to be successful, then the Executive Director is hereby authorized to execute such contract, including amendments thereto, with Fiduciary Counsel on such terms and conditions as the Executive Director may deem, in his discretion, to be in the best interest of TRS, and further to execute and deliver all such other documents that the Executive Director may deem necessary or appropriate to effect this resolution as conclusively evidenced by the taking of the action or the execution and delivery of the documents, and to incur, approve, and pay any budgeted expenses or costs associated with such contract and deemed in the discretion of the Executive Director, or his designee, to be reasonably necessary or advisable with respect to such contract.

After a brief recess at 12:50 p.m., the board reconvened at 1:10 p.m.

Mr. Kelly announced that the board would take up agenda item 14.

14. Receive an update on the legislatively-required Pension Benefit Design Study – Rebecca Merrill and Joseph Newton, Gabriel, Roeder, Smith and Co.

Mr. Guthrie referred board members to the charge of the pension benefit design study and the draft executive summary prepared by staff. He stated that the study would be read by state leadership, legislative committees that oversee public pension funds and investments, and members' associations. He emphasized the importance of conducting the study in an objective manner.

Ms. Merrill provided an overview of the groundwork completed since February 2012 that brought the study to the current stage. She recapped the panel discussion held at the February board meeting in which tax counsel Mary Beth Braitman of Ice Miller, Keith Brainard of NASRA, and Joe Newton of GRS discussed national issues relating to defined benefit (DB) and defined contribution (DC) plans and compared TRS to other plans. In April and May, she said, discussion topics included concepts in system design, potential alternative plan structures and changes to the existing DB plan. She noted the town hall meetings with members and the information provided to trustees. At the June board meeting, she recapped, staff presented the relative benefit index, which indicated that TRS had a modest benefit relative to other neighboring and municipal systems. She stated that staff also discussed amortizing the existing unfunded actuarial accrued liability (UAAL) in the event the current plan is closed to new beneficiaries. For this meeting, she noted that TRS investment staff provided updated return figures. She stated that the updated numbers show that a DC plan with benefits comparable to the current TRS DB plan would be 130 percent more expensive for an individual member.

Ms. Merrill laid out a timeline for next steps. She stated that staff continues to refine the language of the executive summary and the full study document and expects to meet the August 31 deadline. Mr. Guthrie noted that staff would meet with members' associations to discuss the findings in the executive summary before delivering it to state leadership. He stated that a preview of the study would be provided to some of the legislative leadership before its release. He said that the board would be provided information on the study before its release in September. Responding to a question from Mr. Moss, Mr. Guthrie laid out the potential legislative activities relating to the outcome of the study. Trustees expressed their opinions on the draft executive summary and appreciation for the effort staff had put into the study and its presentation to the board. Ms. Clifton suggested that staff annotate the study materials to clarify the percentage of TRS members who do not participate in Social Security and to cite other key findings and concepts for reference.

Mr. Kelly announced that the board would take up agenda item 5.

5. Receive an update on the Executive Director's goals and initiatives for FY 2012 – Brian Guthrie.

Mr. Guthrie highlighted the changes to the TRS organizational chart that had occurred since August 31, 2011. Those changes, he said, responded to implementing the TEAM program,

developing the system's workforce, and conducting the legislatively required pension and health benefit studies. He summarized the changes: redirecting Betsey Jones from being director of special projects to being director of healthcare policy and administration; transferring Rebecca Merrill from the Legal Services Department to the Executive Office to oversee special projects and preparation of board agendas and materials; promoting Ken Welch from chief financial officer to deputy director; hiring Don Green to be the new chief financial officer; assigning Marianne Woods Wiley to be the head of the executive steering committee overseeing the activities of the core management team for the TEAM program; and hiring Janet Bray to be the new director of human resources. He stated that the board would evaluate his performance in September and provide their input to him on the chief investment officer's performance.

6. Discuss and consider Board operational matters, including the following – Brian Guthrie:

A. Receive an overview of Board meeting agendas for the September 13-14, 2012 and November 2, 2012 Board meetings.

Mr. Guthrie proposed simplifying the presentation of routine information from staff, including the reports of the chief financial officer and chief benefit officer. He stated that the reports would continue to be presented to the board for questions and further discussion but the details of the reports would not be reiterated by staff at the meeting.

Mr. Guthrie stated that staff was reviewing the option of using a consent agenda for routine board consideration items, such as approval of the minutes and meeting dates.

Mr. Guthrie provided an outline of the September 2012 board and committee meeting agendas.

B. Consider canceling the November 2, 2012 meeting.

After a brief discussion, trustees agreed with Mr. Guthrie that the agenda items on the November agenda could be logistically moved to the December meeting with no difficulty, and therefore the November meeting could be canceled. On a motion by Ms. Clifton, seconded by Mr. Moss, the board voted unanimously to cancel the November 2, 2012 board meeting.

7. Review and consider the role, performance, and engagement of Board Investment Advisor, Dr. Keith Brown – Brian Guthrie.

Mr. Guthrie stated that Dr. Brown's contract to provide investment advisor services had a three-year term with three one-year renewal options. He stated that renewal of the contract was due for board consideration. He described Dr. Brown's history with TRS, the scope of his work and the value of his independent judgment. He noted that the board also had an option to expand his scope of work. Mr. Barth, Mr. McDonald and Mr. Kelly complimented Dr. Brown on his expertise and value as a resource. Mr. Kelly also noted that he appreciated Dr. Brown's candid opinions.

On a motion by Ms. Sissney, seconded by Mr. Barth, the board unanimously adopted the following resolution to extend the contract with Dr. Brown for one year:

Resolved, That the Board of Trustees (the "board") of the Teacher Retirement System of Texas ("TRS") hereby renews and extends the existing contract of Dr. Keith C. Brown to provide investment consulting services and serve as an investment consultant to the board for an additional period of one year commencing September 1, 2012; and

Resolved, That the board authorizes the Executive Director to negotiate and execute any documents now or during the extended term of such contract, including amendments thereto and future renewal options, on such terms and conditions as the Executive Director may deem, in his discretion, to be in the best interest of TRS, and further to take such actions and execute and deliver all such other documents that the Executive Director may deem necessary or appropriate to effect this resolution as conclusively evidenced by the taking of the action or the execution and delivery of the documents, and to incur, approve, and pay any budgeted expenses or costs associated with such contract and deemed in the discretion of the Executive Director, or his designee, to be reasonably necessary or advisable with respect to such contract.

8. Receive the report of the Policy Committee on its July 20, 2012 meeting – Todd Barth.

Mr. Barth, Committee Chair, presented the following report of the Policy Committee:

The Policy Committee met on July 20 in the boardroom. After consideration of the June 2012 committee meeting minutes, the committee received an update on and discussed proposed amendments to the Investment Policy Statement (IPS). At the September meeting the committee will consider whether to recommend that the board adopt the proposed IPS amendments. Then the committee received a presentation on and discussed possible amendments to the performance incentive pay plan.

9. Receive the report of the Investment Management Committee on its July 20, 2012 meeting – Todd Barth.

Mr. Barth, Committee Chair, presented the following report of the Investment Management Committee:

The Investment Management Committee met today. Dale West reviewed the external manager fees that are paid for the externally managed portfolios.

10. Review performance of the custodial, securities lending, and related services provided by State Street Bank and Trust Company and consider authorizing the Executive Director to renew the Custody Agreement and the Securities Lending Agreement between State Street and the retirement system – Sylvia Bell and Scot Leith.

Mr. Leith reviewed State Street's historical relationship with TRS. Ms. Bell provided an overview of the services provided by State Street as TRS' master custodian. Ms. Bell reported that in FY 2011, TRS and State Street had respectively earned about $80 million and $20 million from the securities lending program. In FY 2012, she noted, the revenue was about $86 million for TRS and $30 million for State Street. She stated that staff was seeking the board's approval to renew the contract with State Street for a two-year term. She stated that the recommendation was based on the company's extensive knowledge of and experience in the industry in general and TRS in particular. She noted that State Street had an Austin-based team dedicated to TRS and had developed customized solutions for TRS. Responding to a question from Mr. Kelly, Mr. Leith stated that staff had completed an extensive Request for Proposal (RFP) in 2008 and had reviewed the respondents' relative pricing and terms. Responding to a question from Mr. Barth as to how staff was convinced that the pricing and terms were competitive, Ms. Bell stated that staff completed a review in April 2011 to ensure their competitiveness. She noted that State Street had also allocated about $6 million of its budget for TRS contract services, which provided TRS with flexibility in utilizing resources. Mr. Albright noted that other security lending banks occasionally marketed their services to TRS, which allowed staff to stay abreast of the markets' rates and terms. He stated that he believed that the pricing and terms received from State Street were competitive. He confirmed for Mr. Kelly that staff is obligated to conduct a regular RFP process to ensure that TRS receives the best services. Mr. Albright said that if the current contract were renewed for two years, the next RFP would be issued with regard to contract services commencing after the termination of the two-year renewal.

On a motion by Mr. McDonald, seconded by Mr. Moss, the board unanimously adopted the following resolution to renew the contract with State Street for two years:

> ***Resolved***, That the Board hereby authorizes the Executive Director to extend for two additional years the existing Custody Agreement and the Securities Lending Agreement, each dated as of February 6, 2009 and amended as of April 1, 2011 between the retirement system and State Street Bank and Trust Company (the "agreements"); and
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> ***Resolved***, That the Executive Director and his designees are hereby authorized to negotiate such amendments or modifications relating to the services to be provided by State Street under each of the agreements during the extended term on such terms and conditions as they deem necessary or desirable and in the best interest of the retirement system; and
>
> ***Resolved***, That each of the Executive Director and the Deputy Director, acting individually without the joinder of the other, are hereby authorized to execute and deliver any and all documents and do any and

all things they deem reasonably necessary or desirable and in the best interest of the retirement system to effectuate and carry out the purposes of these resolutions.

11. Discuss and consider a revised premium table and employer health benefit surcharge table for the TRS-Care program to include certain categories of coverage for the TRS-Care Medicare Advantage plans, in addition to those previously adopted by the Board in June 2012 – Betsey Jones.

Ms. Jones stated that after the board adopted the premium table for the Medicare Advantage (MA) plans in June, staff found that some tiers of coverage applicable to dependent children were missing in the exhibits presented then. She clarified that the premium rates adopted in June would stay the same. She said that staff was asking the board at this meeting to add the missing tiers to make the table complete.

On a motion by Mr. Barth, seconded by Ms. Clifton, the board unanimously adopted the following resolution to include additional categories of coverage for the TRS-Care MA plans:

Whereas, Chapter 1575, Insurance Code, authorized the Teacher Retirement System of Texas (TRS), as trustee, to implement and administer the uniform group health benefits program under the Texas Public School Retired Employees Group Benefits Act (TRS-Care), as described in the statute;

Whereas, during its June 2012 meeting, the TRS Board of Trustees ("Board") selected a Medicare Advantage carrier for TRS-Care, to provide coverage in qualified fully-insured Medicare Advantage plans to eligible TRS-Care 2 and TRS-Care 3 participants who have Medicare Parts A and B;

Whereas, also during its June 2012 meeting, the Board adopted a resolution entitled "Resolution Approving Premium Rates, Benefit Designs, and Automatic Enrollment for Medicare Advantage Plans in the TRS-Care Program" and referred to as the June Medicare Advantage Plans Resolution, and authorized thereby, among other things, a set of premium rates for the Medicare Advantage plans for the plan year commencing on January 1, 2013;

Whereas, TRS staff and the TRS health benefits consultant, Gabriel, Roeder, Smith & Company ("GRS"), have recommended additions to the existing set of premium rates for the Medicare Advantage plans for the plan year commencing on January 1, 2013, which additions are highlighted in the complete set of premium rates set out in Exhibit A, attached to this resolution and incorporated herein by reference; and

Whereas, the Board desires to adopt the recommendations of TRS staff and GRS as reflected in the revised set of premium rates presented to the Board; now, therefore, be it

Resolved, That for the plan year commencing on January 1, 2013, the Board hereby adopts and authorizes, in full replacement of the set of premium rates adopted by the Board in June 2012, the set of premium

rates for the TRS-Care Medicare Advantage plans as listed in Exhibit A, to remain in effect thereafter until further action by the Board; and

Resolved, That the Board authorizes the Executive Director or his designees to take any actions that he or his designee in his or their discretion deem to be necessary or advisable to implement the premium rates, as adopted or authorized herein, and except for the set of premium rates expressly revised and replaced by the Board's action today in adopting this resolution, the June Medicare Advantage Plans Resolution remains in full force and effect.

Ms. Jones presented a corresponding addition to the employer health benefit surcharge table. She explained that the table is used to determine the amounts charged employers who hire retirees. She stated that staff recommended that the table be broadened to include the categories left out of the June exhibit.

On a motion by Mr. Moss, seconded by Ms. Sissney, the board unanimously adopted the following resolution to include the complete set of employer health benefit surcharge amounts:

Whereas, Chapter 1575, Texas Insurance Code, authorized the Teacher Retirement System of Texas ("TRS"), as trustee, to implement and administer the uniform group health benefits program under the Texas Public School Retired Employees Group Benefits Act ("TRS-Care"), as described in the statute;

Whereas, Section 1575.204, Insurance Code, requires the employer of a reported retiree to pay a health benefit surcharge based on the difference between the amount the retiree is required to pay monthly for the retiree's and any enrolled dependent's coverage under TRS-Care and the monthly full cost of such coverage for the retiree and any enrolled dependent (the "monthly employer health benefit surcharge amount");

Whereas, during its meeting in June, 2012, the TRS Board of Trustees ("Board") adopted (i) monthly premium rates for the TRS-Care 1 plan, the TRS-Care 2 plan, and the TRS-Care 3 plan, effective September 1, 2012, and (ii) monthly premium rates for the TRS-Care 2 Medicare Advantage plan and the TRS-Care 3 Medicare Advantage plan, effective January 1, 2013;

Whereas, also during its June 2012 meeting, the Board adopted a resolution entitled "Resolution Concerning the Employer Health Benefit Surcharge for TRS-Care" and referred to as the June Employer Health Benefit Surcharge Resolution, and authorized thereby, among other things, (i) monthly employer health benefit surcharge amounts for those participants enrolled in either the TRS-Care 1 plan, the TRS-Care 2 plan or the TRS-Care 3 plan, as set out in Exhibit 1 attached to that resolution, and (ii) monthly employer health benefit surcharge amounts for those participants enrolled in either the TRS-Care 2 Medicare Advantage plan or the TRS-Care 3 Medicare Advantage plan, as set out in Exhibit 2 attached to that resolution;

Whereas, during its meeting in July, 2012, the Board revised the monthly premium rates for the TRS-Care 2 Medicare Advantage plan and the TRS-Care 3 Medicare Advantage plan, effective January 1, 2013;

Whereas, to correspond with the revised monthly premium rates for the TRS-Care 2 Medicare Advantage plan and the TRS-Care 3 Medicare Advantage plan, William J. Hickman, with the TRS health benefits consultant, Gabriel, Roeder and Smith & Company ("GRS"), has calculated additional monthly employer health benefit surcharge amounts for those participants enrolled in either the TRS-Care 2 Medicare Advantage plan or the TRS-Care 3 Medicare Advantage plan, which additions are highlighted in the complete set of surcharge amounts set out in Exhibit 2, attached to this resolution and incorporated herein by reference;

Whereas, TRS staff and GRS have recommended that for the plan year commencing on January 1, 2013, for those participants enrolled in either the TRS-Care 2 Medicare Advantage plan or the TRS-Care 3 Medicare Advantage plan, the Board approve and adopt the monthly employer health benefit surcharge amounts set out in Exhibit 2, attached hereto, such amounts to be paid monthly by the retiree's employer beginning January 1, 2013 and hereafter; and

Whereas, the Board desires to adopt the recommendations of TRS staff and GRS as reflected in the revised set of employer health benefit surcharge amounts presented to the Board; now, therefore, be it

Resolved**,** That the Board hereby adopts and authorizes, in full replacement of the set of employer health benefit surcharge amounts in Exhibit 2 to the June Employer Health Benefit Surcharge Resolution, the set of employer health benefit surcharge amounts for the TRS-Care Medicare Advantage plans set out in Exhibit 2, attached hereto, such amounts to be paid monthly by the retiree's employer beginning January 1, 2013 and hereafter in accordance with applicable law, including related Board rules, until further action by the Board or until superseded by applicable law; and

Resolved**,** That the Executive Director is authorized to take all actions deemed necessary, in accordance with applicable law, to implement the employer health benefit surcharge amounts, as adopted or authorized herein, and except for the set of employer health benefit surcharge amounts expressly revised and replaced by the Board's action today in adopting this resolution, the June Employer Health Benefit Surcharge Resolution remains in full force and effect.

12. Discuss and consider future enrollment opportunities for Express Scripts Medicare plan and for Aetna Medicare Advantage plans – Betsey Jones.

Ms. Jones presented the proposed initial and future enrollment opportunities for the Medicare Advantage (MA) and Medicare Part D plans presented in Exhibits A and B of the proposed resolution. She referred to Exhibit B that addresses members who would not be eligible to enroll during the automatic enrollment on January 1, 2013. She stated that the current proposal

would provide those members an opportunity to enroll when they turned 65. She stated that those members would not be automatically enrolled and would need to take action to enroll in an MA plan. She noted that staff also recommended that the current plan year be extended so that the deductible and out-of-pocket maximums be carried over until the end of December. The new deductible and out-of-pocket maximums, she said, would then start over on January 1 when the new plan begins. For those who must wait until after January 1, 2013 to enroll in an MA plan, she noted, any accumulation towards their deductible or out-of-pocket maximum would roll over to their MA plan. Ms. Jones also noted that for members who opted out when they first become eligible, they will be allowed to re-enroll the following January but will not be given an opportunity to extend their deductible and out-of-pocket maximums.

Ms. Jones referred the board to the proposed opt-out provisions in Exhibit C. Responding to a question from Mr. Moss, Ms. Jones stated that members who do not opt out from an MA plan during the automatic enrollment period may disenroll from it at any time and return to their original TRS-Care plan. She responded to Mr. Kelly that for members who become eligible to enroll in a MA plan in January, TRS would pay a total of under $10 million to allow the roll-over of the deductible and the out-of-pocket maximums. She stated that based on staff's analysis, the price is well worth the savings resulting from the MA plans.

On a motion by Ms. Palmer, seconded by Ms. Charleston, the board unanimously adopted the following resolution to authorize initial and future enrollment opportunities and the opt-out provisions as presented in exhibits A, B, and C attached to the resolution and these minutes:

> **Whereas**, Chapter 1575, Insurance Code, authorized the Teacher Retirement System of Texas (TRS), as trustee, to implement and administer the uniform group health benefits program under the Texas Public School Retired Employees Group Benefits Act (TRS-Care), as described in the statute;
>
> **Whereas**, during its June 2012 meeting, the TRS Board of Trustees ("Board") selected a Medicare Advantage carrier for TRS-Care, to provide coverage beginning on January 1, 2013 in qualified fully-insured Medicare Advantage plans to eligible TRS-Care 2 and TRS-Care 3 participants who have Medicare Parts A and B;
>
> **Whereas**, during its February 2012 meeting, the Board adopted the establishment in TRS-Care of Indirect Employer Group Waiver Plans with a benefit Wrap ("Medicare Prescription plans") to provide coverage beginning on January 1, 2013 for eligible TRS-Care 2 and TRS-Care 3 participants who have either Medicare Part A, Medicare Part B, or both;
>
> **Whereas**, TRS staff has recommended that for plan years commencing on or after January 1, 2013, the Board adopt a set of initial enrollment opportunities, as set out in Exhibit A, attached to this resolution and incorporated herein by reference, in the Medicare Advantage plans and the Medicare Prescription plans for individuals who are enrolled in TRS-Care and who become eligible for such Medicare plans;
>
> **Whereas**, TRS staff has further recommended that for plan years commencing on or after January 1, 2013, the Board adopt a set of

annual enrollment opportunities, as set out in Exhibit B, attached to this resolution and incorporated herein by reference, in the Medicare Advantage plans and the Medicare Prescription plans for individuals who are enrolled in TRS-Care 2 or TRS-Care 3 and are eligible for such Medicare plans;

Whereas, TRS staff has further recommended that for plan years commencing on or after January 1, 2013, the Board adopt a set of opt out provisions concerning the Medicare Advantage plans and the Medicare Prescription plans, as set out in Exhibit C, attached to this resolution and incorporated herein by reference; and

Whereas, the Board desires to adopt the recommendations of TRS staff; now, therefore, be it

Resolved, That for plan years commencing on or after January 1, 2013, the Board hereby adopts and authorizes the set of initial enrollment opportunities, as set out in Exhibit A, in the Medicare Advantage plans and the Medicare Prescription plans for individuals who are enrolled in TRS-Care and who become eligible for such Medicare plans, to remain in effect thereafter until further action by the Board;

Resolved, That for plan years commencing on or after January 1, 2013, the Board hereby adopts and authorizes the set of annual enrollment opportunities, as set out in Exhibit B, in the Medicare Advantage plans and the Medicare Prescription plans for individuals who are enrolled in TRS-Care 2 or TRS-Care 3 and are eligible for such Medicare plans, to remain in effect thereafter until further action by the Board;

Resolved, That for plan years commencing on or after January 1, 2013, the Board hereby adopts and authorizes the set of opt out provisions concerning the Medicare Advantage plans and the Medicare Prescription plans, as set out in Exhibit C, to remain in effect thereafter until further action by the Board; and

Resolved, That the Board authorizes the Executive Director or his designees to take any actions that he or his designee in his or their discretion deem to be necessary or advisable to implement this resolution, including the establishment from year to year of the dates for each such set of annual enrollment opportunities and to otherwise create, implement, and continue the Medicare Advantage plans and the Medicare Prescription plans until further action by the Board.

13. Receive an update on the legislatively-required Retirees Health Benefits Program (TRS-Care) study – Betsey Jones and William Hickman, Gabriel, Roeder, Smith and Co.

Ms. Jones provided an update on the study. She referred trustees to the options that GRS and staff were modeling for the study, which were presented at earlier board meetings. She stated that the goal was to finish the draft study during the following week.

Mr. Kelly announced that the board would take up agenda item 15.

15. Consider the following statutory certifications of estimated state contributions – Don Green:

Prior to presenting each of the following certifications, Mr. Green explained the certification process in response to the concerns expressed by Mr. Tim Lee of TRTA and Mr. Melina Raab of Texas AFT. He stated that the statutorily required certifications are provided to the state leadership as a preview of information during the appropriation process. He explained to Mr. Colonnetta that the 0.5 percent for TRS-Care was the rate set by the legislature in the appropriations act for the 2012-2013 biennium. Ms. Brennan noted that the legislature amended the contribution rate to be 0.5 percent for FY 2013, which became the applicable legal rate for that year. Mr. Green noted that the 0.5 percent rate would expire at the end of the FY 2013.

Mr. Green stated that the certification to the Legislative Budget Board (LBB) reflected TRS-Care contribution rates of one percent for FY 2014 and 0.5 percent for FY 2015, as requested by the Governor's Office and the LBB. The certification also described the exceptional items for TRS-Care that would be included in TRS LAR for the 2014-2015 biennium. Those exceptional items, he explained, totaled $234 million, which would make up the amount needed to reach the one percent contribution rate for FY 2015 and provide supplemental funding for TRS-Care. Responding to a question from Mr. Colonnetta as to how staff handled similar requests in the past, Mr. Welch stated that staff had used the same approach by including exceptional items to make up the gap. Mr. Green explained for Ms. Sissney that the amount of $234 million in the exceptional items comprised the other half of a percent—$123 million, plus the $110 million possible shortfall in the FY 2015 budget of TRS-Care if the enrollment in the MA plans fell below 60 percent. Mr. Guthrie confirmed for Mr. Kelly that the projection of 60 percent enrollment was the most conservative one based on available data.

Concerning the certification to the State Comptroller of Public Accounts of the estimate of state contributions to the pension trust fund for FY 2014 and FY 2015, Mr. Green noted that the LAR would request contribution rates of 6.9 percent for FY 2014 and 7.4 percent for FY 2015.

A. Consider certifying to the State Comptroller of Public Accounts the estimated amount of state contributions to be received by the retired school employees group health benefit fund for the fiscal year ending August 31, 2013.

At its meeting on July 20, 2012, the Board of Trustees of the Teacher Retirement System, on a motion by Mr. McDonald, seconded by Mr. Moss, voted to certify $133,675,493 as the estimated amount of state contributions to be received by the retired school employees group insurance fund for the 2013 fiscal year under the appropriations authorized by Chapter 1575 of the Insurance Code, the Texas Public School Retired Employees Group Benefits Act. This is the amount authorized in the General Appropriations Act (House Bill 1, 82nd Legislature, Regular Session). These contributions are based on 0.5 percent of the salary of each active public school employee for fiscal year 2013. Based on adjustments between the estimated fiscal year 2012 appropriations authorized in the General Appropriations Act and the most current estimates for the 2012 state contributions, the following are the projected amounts that are affected by Rider 18.

Estimated fiscal year 2012 excess of state's actual statutory obligations for retiree insurance contributions re-appropriated to TRS-Care for deposit in the Texas Public School Retired Employees Group Insurance Trust Fund: $ 20,298,835

Estimated fiscal year 2012 excess of state's actual statutory obligations for retirement contributions re-appropriated to TRS-Care for deposit in the Texas Public School Retired Employees Group Insurance Trust Fund: $ 76,261,001

Per Rider 18 – Contingency Appropriation: Funding for the Texas Public School Retired Employees Group Insurance Program (Art. III-29, 2012-13 GAA), all estimated General Revenue appropriations made to A.1.1, TRS – Public Education Retirement and A.1.2, TRS – Higher Education Retirement for fiscal year 2012 in excess of the state's actual statutory obligations for retirement and retiree insurance contributions are hereby reappropriated to A.2.1, Retiree Health – Statutory Funds, for deposit to the Texas Public School Retired Employees Group Insurance Trust Fund.

This estimate of state contributions is required by Section 1575.209 of the Insurance Code.

B. Consider certifying to the Legislative Budget Board and the Office of the Governor the estimate of state contributions to be received by the retired school employees group health benefit fund for fiscal years 2014 and 2015.

At its meeting on July 20, 2012, the Board of Trustees of the Teacher Retirement System, on a motion by Mr. Barth, seconded by Ms. Sissney, voted to certify the following estimated amounts as necessary to pay the state's contributions to the retired school employees group insurance fund for the 2014–2015 biennium:

Fiscal Year 2013 Final Settlement	$ (10,115,407)
Fiscal Year 2014	$ 247,120,173
Fiscal Year 2015	$ 123,560,086

These estimates are required by Section 1575.208 of the Insurance Code, and are based on the assumption that the minimum statutory contribution rate of 1.0 percent will apply to fiscal year 2014 and the rate of 0.5 percent for fiscal year 2015.

Based on the Legislative Appropriations Request (LAR) budget instructions allowing for the submission of exceptional items, a contribution rate of 1.0% is requested for fiscal year 2015. In addition, supplemental funding in the amount of $110,529,739 is being requested to ensure solvency for the biennium. If approved, the estimated amount of the exceptional items request for fiscal year 2015 would be:

Fiscal Year 2015	$234,089,825

C. Consider certifying to the State Comptroller of Public Accounts the estimate of state contributions to the Pension Trust Fund for fiscal years 2014 and 2015.

At its meeting on July 20, 2012, the Board of Trustees of the Teacher Retirement System, in compliance with Texas Government Code, Section 825.404 (b), on a motion by Mr. Moss, seconded by Ms. Clifton, voted to certify the following estimated amounts as necessary to pay the state's contributions from General Revenue to the retirement system for the 2014–2015 biennium based on the appropriated contribution rate of 6.4% of the aggregate annual compensation of all members of the Teacher Retirement System to be:

Fiscal Year 2013 Final Settlement	$ (82,617,992)
Fiscal Year 2014	$ 1,486,803,606
Fiscal Year 2015	$ 1,490,397,650

These amounts are net of estimated funds to be received by the System for contributions based on compensation above the statutory minimum, other educational and general income, federal/private funding sources, and first ninety day new member contributions.

Based on the Legislative Appropriations Request (LAR) budget instructions allowing for the submission of exceptional items, a contribution rate of 6.9% is requested for fiscal year 2014 and a rate of 7.4% is requested for fiscal year 2015. If approved, the estimated amount of the exceptional items request for state contributions to the retirement system for the 2014–2015 biennium would be:

Fiscal Year 2014	$ 116,156,532
Fiscal Year 2015	$ 232,874,633

16. Receive an update on the development of the Legislative Appropriations Request for the 2014-2015 Biennium – Don Green.

Mr. Green provided an update on the Legislative Appropriations Request (LAR) and presented the policy letter from the LBB and the Governor's office. He reiterated the baseline and the additional exceptional items requests for the 2014-2015 biennium (next biennium). He noted that $25 million as well as the authority to transfer into the next biennium any unexpended funding from 2012-2013 biennium would be requested for the TEAM program. He concluded that the grand total funding requested for the next biennium would be about $4.3 billion. Responding to a question from Ms. Sissney, Mr. Guthrie stated that the contribution rates of 6.9 percent for FY 2014 and 7.4 percent for FY 2015 were based on the recommendation from the actuary, who recommended incrementally increasing the rate by half a percent each fiscal year to reach the annual required contribution (ARC) rate. Responding to a question from Ms. Palmer, Mr. Welch confirmed that the TEAM program was closely tracking its approved budget and he would provide more detail later at this meeting. Mr. McDonald asked how staff set the assumption of 60 percent participation rate in the MA and Medicare Part D plans in determining the supplemental funding needed for TRS-Care. Mr. Guthrie stated that the rate modeled the actual participation rate of the MA plans at the Employees Retirement System of Texas (ERS). He noted that ERS did not promote the MA plans aggressively, so any effort TRS would give to

promote the plans to members should significantly increase the participation rate.

17. Consider authorizing the Executive Director to purchase directors' and officers' and fiduciary liability insurance for fiscal year 2013 through the State Office of Risk Management – Ken Welch.

Mr. Welch presented the memo from Jay LeBlanc outlining the specifics of the directors' and officers and fiduciary liability insurance for FY 2013 through the State Office of Risk Management. Responding to a question from Mr. Colonnetta relating to sovereign immunity, Ms. Brennan stated that the main advantage of the insurance for trustees was to cover defense costs. She explained that to the extent a defense required legal services other than those the attorney general would provide, TRS would follow any requirements for hiring outside counsel imposed by the insurance company or the attorney general, as applicable.

On a motion by Ms. Sissney, seconded by Ms. Clifton, the board unanimously adopted the following resolution to authorize the executive director to purchase directors' and officers' and fiduciary liability insurance for FY 2013:

> ***Resolved***, That, pursuant to Texas Government Code Section 825.112, the Executive Director or his designee is authorized to purchase directors and officers insurance coverage, including fiduciary liability and employment practices liability insurance with coverage limits of up to $25 million under each policy for fiscal year 2013, at a cost to be determined by the Executive Director, and to negotiate and agree to such terms and conditions of coverage as the Executive Director or his designee may deem in his or her discretion to be in the best interest of TRS, and to execute and deliver any authorizations to bind coverage and such other documents, applications, contracts, agreements, certificates, or affidavits as may be necessary or desirable in connection with acquiring such insurance.

18. Consider a resolution authorizing the Executive Director to amend the actuarial valuation and pension consulting services contract with Gabriel, Roeder, Smith and Company to extend the contract term by one year – Ken Welch.

Mr. Welch recapped that the board and staff gave GRS a highly favorable evaluation at the June meeting. He recommended the current TRS contract be renewed for one more year. Therefore, to avoid problems that changing the actuary during legislative sessions might pose, he said, staff recommended that the contract be reviewed on a biennial cycle with a contract term of four years, as now allowed by statute. On a motion by Mr. Moss, seconded by Ms. Clifton, the board unanimously adopted the following resolution to amend the pension actuarial services contract with GRS:

> ***Resolved*****,** That the Board of Trustees of the Teacher Retirement System of Texas (the "Board"), pursuant to Section 825.206 of the Texas Government Code, hereby authorizes the Executive Director or the Deputy Director of the Teacher Retirement System of Texas ("TRS") to negotiate, with the assistance and advice of legal counsel, a contract amendment with Gabriel, Roeder, Smith & Company ("GRS") to provide pension consulting and actuarial services to TRS

and the Board for an additional one year term; and, if negotiations are deemed in his or her discretion to be successful, then the Executive Director or the Deputy Director is hereby authorized to execute a contract amendment on such terms and conditions as such officer may deem, in his or her discretion, to be in the best interest of TRS, and further to execute and deliver all such other documents that such officer may deem necessary or appropriate to effect this resolution, as conclusively evidenced by the taking of the action or the execution and delivery of the documents, and to incur, approve and pay any budgeted expenses or costs reasonably necessary or advisable with respect to such contract amendment.

19. Receive a communications update, including the following items – Howard Goldman:

A. TRS' 75th anniversary.

Mr. Goldman provided an update on the celebration of TRS' 75th anniversary in September. He highlighted the following initiatives: employee barbeque lunch; friends of TRS dinner; official anniversary program; TRS 75th anniversary video; and cyber history museum.

B. Agency graphic design project.

Mr. Goldman presented the new logos for TRS, TRS-Care and TRS-ActiveCare.

20. Review the report of the Chief Benefit Officer, and consider related matters – Marianne Woods Wiley:

A. Approve members qualified for retirement.

In Ms. Woods Wiley's absence, Mr. Welch presented to the board a summary of initial benefit payments received by members and beneficiaries during the period from March 1, 2012 through May 31, 2012 (period).

On a motion by Ms. Sissney, seconded by Ms. Clifton, the board unanimously approved the list of members and beneficiaries who qualified for retirement, disability, DROP, PLSO, survivor, or death benefits initiated during the period.

B. Approve minutes of Medical Board meetings.

Mr. Welch presented the minutes of the March 13, 2012 Medical Board meeting. On a motion by Ms. Palmer, seconded by Mr. McDonald, the board approved the minutes of the Medical Board meeting as presented, thereby ratifying the actions of the Medical Board reflected in those minutes.

21. Review the reports of the Chief Financial Officer – Don Green:

A. Report under § 825.314(b), Government Code, of expenditures that exceed the amount of operating expenses appropriated from the general revenue fund and are required to perform the fiduciary duties of the Board.

Pursuant to section 825.314(b) of the Government Code, Mr. Green presented a report of the expenditures paid during the month of May 2012 that were required to perform the fiduciary duties of the board. He reported the pension trust fund disbursed a total of approximately $5.4 million during the month of May and about $57.8 million for the fiscal year as of the end of May, approximately $3 million lower than the disbursement during the same time last year. Mr. Welch noted that in FY 2011 the fund disbursed incentive compensation earned over a three-year period, which significantly increased the disbursement last year.

B. Financial reports on TRS programs.

Mr. Green reported on the finances of TRS programs for the three quarters ending May 31, 2012. He reported that 28 percent of the total budget remained for the fourth quarter of the fiscal year, with 30 percent of the budgeted amount for salaries and wages remaining. He responded to Mr. Kelly that the variance between the budgeted amount and the actual amount for salaries and wages was attributable to turnovers, vacant positions, and a conservative scheme of merit increases and promotions. Mr. Green and Mr. Guthrie confirmed for Ms. Palmer that TRS employees are considered state employees and are therefore covered under the Employees Retirement System health benefits program. He explained that TRS does not receive state general revenue to pay its share of employee health benefits as the employer but must pay it with amounts from the pension trust fund as approved under the operating budget. He further explained that the state would cover 100 percent of full-time state employee's health insurance premium and 50 percent of the premium for the full-time employee's eligible dependents, and the employer and employee would each pay half of the rest of 50 percent. Responding to a question from Ms. Palmer as to whether the same arrangement could be set up for public school employees, Mr. Guthrie provided historical background on TRS-ActiveCare. He explained that the legislature made a policy decision to provide state funding for TRS-Active at a fixed amount, which had not been increased since 2003. As a result, he said, the increased costs of benefits since then had been and would be borne by active public school employees. Mr. Green added that the legislature would have to amend the law to change that policy decision.

22. Review and discuss the Deputy Director's report, including an update on the TEAM Program and an update on the amendment of pension accounting and financial reporting standards by the Governmental Accounting Standards Board – Ken Welch.

Mr. Welch provided an update on the TEAM program. He stated that the data management contractor had started working for the program. He stated that staff was currently working on the contract for independent project assessment. He stated that overall the program was on schedule, but the budget was tracking slightly higher than projected. He said that staff would continue to monitor the costs to ensure that it tracked the budgeted amount.

Mr. Welch provided an update on the Governmental Accounting Standards Board (GASB) statements 67 and 68. He stated that the final statements would be available on August 1. He highlighted the key issues that would affect TRS. A change in reporting pension liability, he explained, would require net pension liability (NPL) to be reported on the employer's balance sheet. The NPL, he said, would be the total pension liability minus the currently available resources to extinguish that liability, *i.e.*, the plan's net position. He stated that the total pension liability would be based on the blended discount rate, which would be determined by applying the assumed rate of return on assets for payments expected to be covered by projected assets. He explained that once the fund reached the unfunded portion of its liability, the discount rate applied. He stated that reporting NPL would impact plans that are not fully funded because it would increase their unfunded liability. Mr. Welch also highlighted the change relating to the requirement to allocate each employer their share of the liability. He stated that staff continued to study all the changes. Trustees and staff discussed planning for the changes.

23. Review and discuss the Executive Director's report on the following matters – Brian Guthrie:

A. Discuss the process for conducting the Executive Director's annual performance evaluation and providing input to the Executive Director on the Chief Investment Officer's performance evaluation.

B. Retirement plan benefits and operations.

C. Investment activity and operations.

D. Health-benefit programs and operations.

E. Administrative operations, including financial, audit, legal, staff services, and special projects.

Mr. Guthrie provided an update on the TRTA fall conventions. He contemplated staff's continued efforts in attending those conventions for member outreach. He stated that the Report Card Tour would be presented via webcasting and staff would provide more detail on that in September.

Mr. Guthrie reported that staff had received a few media inquiries relating to the London Interbank Offered Rate (LIBOR) administered by the British Bankers Association. He stated that staff was currently reviewing the related lawsuits filed and would discuss them further in September.

Per Ms. Charleston's request, Mr. Guthrie said, a tour of the Red River facility would be arranged for trustees in the near future.

Mr. Guthrie presented the new TRS value brochure *A Great Value for All Texans*, as well as staff's letter in response to Representative McClendon's questions relating to the implementation of the MA plans. He also presented a preliminary agenda for the National Council on Teacher Retirement (NCTR) conference in October. He stated that he and Mr. Welch would attend the NCTR meeting. He encouraged trustees to attend the national conference.

Mr. Guthrie stated that TRS' Investment Management Division (IMD) had developed a cross-training program for IMD staff via the new strategic partnerships with KKR and Apollo. Mr. Albright provided the background and detail of the program. Under the program, Mr. Albright said, selected IMD staff would relocate to the city where the office of one of the partners is located and receive training there for up to three months. He stated that the goal was for the staff to bring back their experience to share with the IMD and use the experience to advance returns of the trust in the long run and enhance the partnership capabilities between TRS and the firm. He provided the detail of the specific assignments. Responding to a question from Mr. Barth relating to funding the expenses, Mr. Guthrie stated that TRS would be reimbursed under the contract by the partner, which would provide TRS direct control through contract terms. Mr. Albright noted that the maximum cap on the allowance would be $100,000 per year and the vendors could not spend more than the cap. Mr. Guthrie also noted that arrangements would be made with assigned staff members to ensure that they would continue to work for TRS after the assignment.

The meeting adjourned at 4:05 p.m.

Agenda item #11 - Exhibit A attached to the resolution approving additions to the premium rates for Medicare Advantage Plans initially approved in June 2012 for TRS-Care

Exhibit A

Effective January 1, 2013

TRS-Care Monthly Premium Rates

Participants Enrolled in Medicare Advantage

	TRS-Care 2			TRS-Care 3		
	<20 YOS	20-29 YOS	30+ YOS	<20 YOS	20-29 YOS	30+ YOS
Retiree or Surviving Spouse						
With Medicare Advantage	$65	$55	$45	$95	$85	$75
Retiree and Spouse						
Both with Medicare Advantage	$160	$145	$130	$245	$225	$205
Retiree with Medicare Advantage/Spouse with A&B	$175	$160	$145	$260	$240	$220
Retiree with Medicare Advantage/Spouse with B Only*	$260	$240	$220	$385	$360	$335
Retiree with Medicare Advantage/Spouse not eligible for Medicare	$305	$285	$265	$450	$425	$400
Retiree with A&B/Spouse with Medicare Advantage	$175	$160	$145	$260	$240	$220
Retiree with B Only*/Spouse with Medicare Advantage	$260	$245	$230	$395	$370	$345
Retiree not eligible for Medicare/Spouse with Medicare Advantage	$305	$290	$275	$460	$435	$410
Retiree or Surviving Spouse & Child(ren)**						
Retiree or Surviving Spouse with Medicare Advantage/Child not eligible for Medicare	$127	$117	$107	$177	$167	$157
Retiree or Surviving Spouse with Medicare Advantage/Child with Medicare Advantage	$112	$102	$92	$162	$152	$142
Retiree or Surviving Spouse with A&B/Child with Medicare Advantage	$127	$117	$107	$177	$167	$157
Retiree or Surviving Spouse with Part B of Medicare Only*/Child with Medicare Advantage	$212	$202	$192	$312	$297	$282
Retiree or Surviving Spouse not eligible for Medicare/Child with Medicare Advantage	$257	$247	$237	$377	$362	$347
Retiree, Spouse & Child(ren), where children are not enrolled in a Medicare Advantage Plan						
Retiree and Spouse with Medicare Advantage	$222	$207	$192	$327	$307	$287
Retiree with Medicare Advantage/Spouse with A&B	$237	$222	$207	$342	$322	$302
Retiree with Medicare Advantage/Spouse with B Only*	$322	$302	$282	$467	$442	$417
Retiree with Medicare Advantage/Spouse not eligible for Medicare	$367	$347	$327	$532	$507	$482
Retiree with A&B/Spouse with Medicare Advantage	$237	$222	$207	$342	$322	$302
Retiree with B Only*/Spouse with Medicare Advantage	$322	$307	$292	$477	$452	$427
Retiree not eligible for Medicare/Spouse with Medicare Advantage	$367	$352	$337	$542	$517	$492
Retiree, Spouse & Child(ren), where children are enrolled in a Medicare Advantage Plan**						
Retiree, Spouse and Child(ren) with Medicare Advantage	$207	$192	$177	$312	$292	$272
Retiree and Child with Medicare Advantage/Spouse with A&B	$222	$207	$192	$327	$307	$287
Retiree and Child with Medicare Advantage/Spouse with B Only*	$307	$287	$267	$452	$427	$402
Retiree and Child with Medicare Advantage/Spouse not eligible for Medicare	$352	$332	$312	$517	$492	$467
Retiree with A&B/Spouse and Child with Medicare Advantage	$222	$207	$192	$327	$307	$287
Retiree with A&B/Spouse with A&B/Child with Medicare Advantage	$237	$222	$207	$342	$322	$302
Retiree with A&B/Spouse with B Only*/Child with Medicare Advantage	$322	$302	$282	$467	$442	$417
Retiree with A&B/Spouse not eligible for Medicare/Child with Medicare Advantage	$367	$347	$327	$532	$507	$482
Retiree with B Only*/Spouse and Child with Medicare Advantage	$307	$292	$277	$462	$437	$412
Retiree with B Only*/Spouse with A&B/Child with Medicare Advantage	$322	$307	$292	$477	$452	$427
Retiree with B Only*/Spouse with B Only*/Child with Medicare Advantage	$407	$387	$367	$602	$572	$542
Retiree with B Only*/Spouse not eligible for Medicare/Child with Medicare Advantage	$452	$432	$412	$667	$637	$607
Retiree not eligible for Medicare/Spouse and Child with Medicare Advantage	$352	$337	$322	$527	$502	$477
Retiree not eligible for Medicare/Spouse with A&B/Child with Medicare Advantage	$367	$352	$337	$542	$517	$492
Retiree not eligible for Medicare/Spouse with B Only/Child with Medicare Advantage	$452	$432	$412	$667	$637	$607
Retiree and Spouse not eligible for Medicare/Child with Medicare Advantage	$497	$477	$457	$732	$702	$672
Surviving Children Only						
Surviving Children Only with Medicare Advantage	$47	$47	$47	$67	$67	$67

* "Part B of Medicare Only" means the individual is not covered by Medicare Part A and is eligible to purchase Medicare Part B.

** Rates are shown for one dependent child enrolled in a Medicare Advantage plan. For families with two or more dependent children enrolled in a Medicare Advantage plan, there will be an additional $15 per month reduction in premium for the second and subsequent children enrolled in a Medicare Advantage plan; however, in no case shall premium be less than $0.

Agenda item #11 - Exhibit 2 attached to the resolution concerning additions to the employer health benefit surcharges initially approved in June 2012 for TRS-Care

Exhibit 2

Effective January 1, 2013

TRS-Care Monthly Employer Surcharge Amounts

Return to Work with Participants Enrolled in Medicare Advantage

	TRS-Care 2 Advantage			TRS-Care 3 Advantage		
	<20 YOS	20-29 YOS	30+ YOS	<20 YOS	20-29 YOS	30+ YOS
Retiree						
With Medicare Advantage	$216	$233	$250	$262	$279	$296
Retiree and Spouse						
Both with Medicare Advantage	$386	$412	$437	$425	$460	$494
Retiree with Medicare Advantage/Spouse with A&B	$401	$427	$452	$440	$475	$509
Retiree with Medicare Advantage/Spouse with B Only*	$363	$398	$432	$293	$336	$378
Retiree with Medicare Advantage/Spouse not eligible for Medicare	$521	$555	$589	$490	$532	$575
Retiree with A&B/Spouse with Medicare Advantage	$401	$427	$452	$440	$475	$509
Retiree with B Only*/Spouse with Medicare Advantage	$478	$504	$529	$613	$655	$698
Retiree not eligible for Medicare/Spouse with Medicare Advantage	$957	$983	$1,008	$998	$1,040	$1,083
Retiree & Child(ren)**						
Retiree with Medicare Advantage/Child not eligible for Medicare	$224	$242	$259	$274	$291	$308
Retiree with Medicare Advantage/Child with Medicare Advantage	$209	$227	$244	$259	$276	$293
Retiree with A&B/Child with Medicare Advantage	$224	$242	$259	$274	$291	$308
Retiree with Part B of Medicare Only*/Child with Medicare Advantage	$299	$316	$334	$445	$470	$496
Retiree not eligible for Medicare/Child with Medicare Advantage	$780	$798	$815	$832	$857	$883
Retiree, Spouse & Child(ren), where children are not enrolled in a Medicare Advantage Plan						
Retiree and Spouse with Medicare Advantage	$394	$420	$446	$437	$471	$506
Retiree with Medicare Advantage/Spouse with A&B	$409	$435	$461	$452	$486	$521
Retiree with Medicare Advantage/Spouse with B Only*	$372	$406	$440	$305	$347	$390
Retiree with Medicare Advantage/Spouse not eligible for Medicare	$529	$563	$598	$501	$544	$587
Retiree with A&B/Spouse with Medicare Advantage	$409	$435	$461	$452	$486	$521
Retiree with B Only*/Spouse with Medicare Advantage	$486	$512	$538	$623	$666	$709
Retiree not eligible for Medicare/Spouse with Medicare Advantage	$965	$991	$1,017	$1,009	$1,052	$1,095
Retiree, Spouse & Child(ren), where children are enrolled in a Medicare Advantage Plan**						
Retiree, Spouse and Child(ren) with Medicare Advantage	$379	$405	$431	$422	$456	$491
Retiree and Child with Medicare Advantage/Spouse with A&B	$394	$420	$446	$437	$471	$506
Retiree and Child with Medicare Advantage/Spouse with B Only*	$357	$391	$425	$290	$332	$375
Retiree and Child with Medicare Advantage/Spouse not eligible for Medicare	$514	$548	$583	$486	$529	$572
Retiree with A&B/Spouse and Child with Medicare Advantage	$394	$420	$446	$437	$471	$506
Retiree with A&B/Spouse with A&B/Child with Medicare Advantage	$409	$435	$461	$452	$486	$521
Retiree with A&B/Spouse with B Only*/Child with Medicare Advantage	$372	$406	$440	$305	$347	$390
Retiree with A&B/Spouse not eligible for Medicare/Child with Medicare Advantage	$529	$563	$598	$501	$544	$587
Retiree with B Only*/Spouse and Child with Medicare Advantage	$471	$497	$523	$608	$651	$694
Retiree with B Only*/Spouse with A&B/Child with Medicare Advantage	$486	$512	$538	$623	$666	$709
Retiree with B Only*/Spouse with B Only*/Child with Medicare Advantage	$447	$481	$515	$476	$527	$578
Retiree with B Only*/Spouse not eligible for Medicare/Child with Medicare Advantage	$604	$638	$672	$672	$724	$775
Retiree not eligible for Medicare/Spouse and Child with Medicare Advantage	$950	$976	$1,002	$994	$1,037	$1,080
Retiree not eligible for Medicare/Spouse with A&B/Child with Medicare Advantage	$965	$991	$1,017	$1,009	$1,052	$1,095
Retiree not eligible for Medicare/Spouse with B Only/Child with Medicare Advantage	$926	$960	$994	$861	$912	$963
Retiree and Spouse not eligible for Medicare/Child with Medicare Advantage	$1,085	$1,119	$1,154	$1,060	$1,111	$1,162

* "Part B of Medicare Only" means the individual is not covered by Medicare Part A and is eligible to purchase Medicare Part B.

** Rates are shown for one dependent child enrolled in a Medicare Advantage plan. For families with two or more dependent children enrolled in a Medicare Advantage plan, there will be an additional $15 per month reduction in premium for the second and subsequent children enrolled in a Medicare Advantage plan; however, in no case shall premium be less than $0.

Agenda item #12 - Exhibit A attached to the resolution establishing enrollment opportunities and opt out provisions for the Medicare Advantage Plans and Medicare Prescription Plans in TRS-Care

Exhibit A

Initial Enrollment Opportunities in the TRS-Care Medicare Advantage Plans and the TRS-Care Medicare Prescription Plans for Individuals who are Enrolled in TRS-Care and are Eligible for such Medicare Plans

On or after January 1, 2013, an individual who is enrolled in TRS-Care and who initially becomes eligible for a TRS-Care Medicare Advantage plan or a TRS-Care Medicare Prescription plan may choose to enroll in such Medicare plan or plans according to the following enrollment provisions, in a manner and by a deadline deemed to be necessary or advisable by the Executive Director or his designees in his or their discretion:

- For individuals who become enrolled in Medicare Parts A and/or B and who have an Age 65 Additional Enrollment Opportunity under Section 1575.161(b), Insurance Code and TRS-Care Rule 41.2(a):

  - An individual who is enrolled in TRS-Care 1, TRS-Care 2, or TRS-Care 3 and who is enrolled in Medicare Parts A and B at the time of his Age 65 Additional Enrollment Opportunity may choose to remain in his current coverage or may choose enrollment in one of the following combinations of coverage: (1) either the TRS-Care 2 medical plan or the TRS-Care 2 Medicare Advantage plan in combination with either the TRS-Care 2 drug plan or the TRS-Care 2 Medicare Prescription plan; or (2) either the TRS-Care 3 medical plan or the TRS-Care 3 Medicare Advantage plan in combination with either the TRS-Care 3 drug plan or the TRS-Care 3 Medicare Prescription plan.

  - An individual who is enrolled in TRS-Care 1, TRS-Care 2, or TRS-Care 3 and who is enrolled in Medicare Part A but is not enrolled in Medicare Part B at the time of his Age 65 Additional Enrollment Opportunity may choose to remain in his current coverage or may choose enrollment in one of the following combinations of coverage: (1) the TRS-Care 2 medical plan in combination with either the TRS-Care 2 drug plan or the TRS-Care 2 Medicare Prescription plan; or (2) the TRS-Care 3 medical plan in combination with either the TRS-Care 3 drug plan or the TRS-Care 3 Medicare Prescription plan.

  - An individual who is enrolled in TRS-Care 1 and who is not enrolled in Medicare Part A but who is enrolled in Medicare Part B at the time of his Age 65 Additional Enrollment Opportunity may choose to remain in his current coverage or may choose enrollment in the TRS-Care 2 medical plan in combination with either the TRS-Care 2 drug plan or the TRS-Care 2 Medicare Prescription plan.

  - An individual who is enrolled in TRS-Care 2 and who is not enrolled in Medicare Part A but who is enrolled in Medicare Part B at the time of his Age 65 Additional Enrollment Opportunity may choose to remain in his current coverage or may choose enrollment in one of the following combinations of coverage: (1) the TRS-Care 2 medical plan in combination with the TRS-Care 2 Medicare Prescription plan;

or (2) the TRS-Care 3 medical plan in combination with either the TRS-Care 3 drug plan or the TRS-Care 3 Medicare Prescription plan.

- An individual who is enrolled in TRS-Care 3 and who is not enrolled in Medicare Part A but who is enrolled in Medicare Part B at the time of his Age 65 Additional Enrollment Opportunity may choose to remain in his current coverage or may choose enrollment in the TRS-Care 3 medical plan in combination with the TRS-Care 3 Medicare Prescription plan.

- Notwithstanding anything to the contrary, a dependent may only choose available plans within the same TRS-Care tier (*i.e.*, TRS-Care 1, TRS-Care 2, or TRS-Care 3) in which the retiree or surviving spouse is enrolled.

➢ For individuals who become enrolled in Medicare Parts A and/or B and who do not have an Age 65 Additional Enrollment Opportunity under Section 1575.161(b), Insurance Code and TRS-Care Rule 41.2(a) at the time of receipt of notice from the federal government of his enrollment in Medicare Parts A and/or B:

- An individual who is enrolled in TRS-Care 2 and who becomes enrolled in Medicare Parts A and B may choose to remain in his current coverage or may choose enrollment in one of the following combinations of coverage: either the TRS-Care 2 medical plan or the TRS-Care 2 Medicare Advantage plan in combination with either the TRS-Care 2 drug plan or the TRS-Care 2 Medicare Prescription plan.

- An individual who is enrolled in TRS-Care 3 and who becomes enrolled in Medicare Parts A and B may choose to remain in his current coverage or may choose enrollment in one of the following combinations of coverage: either the TRS-Care 3 medical plan or the TRS-Care 3 Medicare Advantage plan in combination with either the TRS-Care 3 drug plan or the TRS-Care 3 Medicare Prescription plan.

- An individual who is enrolled in TRS-Care 2 and who becomes enrolled in either Medicare Part A or Medicare Part B, but not both, will remain in his TRS-Care 2 medical plan but may choose to either remain in his current TRS-Care 2 drug plan or may choose to enroll in the TRS-Care 2 Medicare Prescription plan.

- An individual who is enrolled in TRS-Care 3 and who becomes enrolled in either Medicare Part A or Medicare Part B, but not both, will remain in his TRS-Care 3 medical plan but may choose to either remain in his current TRS-Care 3 drug plan or may choose to enroll in the TRS-Care 3 Medicare Prescription plan.

- Notwithstanding anything to the contrary, a dependent may only choose available plans within the same TRS-Care tier (*i.e.*, TRS-Care 1, TRS-Care 2, or TRS-Care 3) in which the retiree or surviving spouse is enrolled.

Agenda item #12 - Exhibit B attached to the resolution establishing enrollment opportunities and opt out provisions for the Medicare Advantage Plans and Medicare Prescription Plans in TRS-Care

Exhibit B

Annual Enrollment Opportunities in the TRS-Care Medicare Advantage Plans
and the TRS-Care Medicare Prescription Plans for Individuals
who are Enrolled in TRS-Care 2 or TRS-Care 3
and are Eligible for such Medicare Plans

On or after January 1, 2013, during an annual enrollment opportunity established by the Executive Director or his designees in his or their discretion, an individual (1) who is enrolled (i) in the TRS-Care 2 medical plan and/or the TRS-Care 2 drug plan or (ii) in the TRS-Care 3 medical plan and/or the TRS-Care 3 drug plan, and (2) who is eligible for but not enrolled in a TRS-Care Medicare Advantage plan or a TRS-Care Medicare Prescription plan, may choose to enroll in such Medicare plan or plans according to the following enrollment provisions, in a manner deemed to be necessary or advisable by the Executive Director or his designees in his or their discretion:

- An individual who is enrolled in the TRS-Care 2 medical plan and who is enrolled in Medicare Parts A and B may choose to enroll in the TRS-Care 2 Medicare Advantage plan.

- An individual who is enrolled in the TRS-Care 2 drug plan and who is enrolled in Medicare Part A and/or Medicare Part B may choose to enroll in the TRS-Care 2 Medicare Prescription plan.

- An individual who is enrolled in the TRS-Care 3 medical plan and who is enrolled in Medicare Parts A and B may choose to enroll in the TRS-Care 3 Medicare Advantage plan.

- An individual who is enrolled in the TRS-Care 3 drug plan and who is enrolled in Medicare Part A and/or Medicare Part B may choose to enroll in the TRS-Care 3 Medicare Prescription plan.

- Notwithstanding anything to the contrary, a dependent may only choose available plans within the same TRS-Care tier (*i.e.*, TRS-Care 1, TRS-Care 2, or TRS-Care 3) in which the retiree or surviving spouse is enrolled.

Agenda item #12 - Exhibit C attached to the resolution establishing enrollment opportunities and opt out provisions for the Medicare Advantage Plans and Medicare Prescription Plans in TRS-Care

Exhibit C

Opt Out Provisions

An individual may opt out of a TRS-Care Medicare Advantage plan or a TRS-Care Medicare Prescription plan at any time by giving TRS notice in a manner deemed to be necessary or advisable by the Executive Director or his designees in his or their discretion.

- Disenrollment from the TRS-Care 2 Medicare Advantage plan will be effective at the end of the last day of the month in which such notice is received by TRS. Disenrollment from the TRS-Care 2 Medicare Advantage plan will result in enrollment in the TRS-Care 2 medical plan, which will be effective on the first day of the month following the date the same above-referenced notice is received by TRS.

- Disenrollment from the TRS-Care 2 Medicare Prescription plan will be effective at the end of the last day of the month in which such notice is received by TRS. Disenrollment from the TRS-Care 2 Medicare Prescription plan will result in enrollment in the TRS-Care 2 drug plan, which will be effective on the first day of the month following the date the same above-referenced notice is received by TRS.

- Disenrollment from the TRS-Care 3 Medicare Advantage plan will be effective at the end of the last day of the month in which such notice is received by TRS. Disenrollment from the TRS-Care 3 Medicare Advantage plan will result in enrollment in the TRS-Care 3 medical plan, which will be effective on the first day of the month following the date the same above-referenced notice is received by TRS.

- Disenrollment from the TRS-Care 3 Medicare Prescription plan will be effective at the end of the last day of the month in which such notice is received by TRS. Disenrollment from the TRS-Care 3 Medicare Prescription plan will result in enrollment in the TRS-Care 3 drug plan, which will be effective on the first day of the month following the date the same above-referenced notice is received by TRS.

Tab 2 B.

August 30, 2012

MEMORANDUM

TO: Board of Trustees

FROM: Brian Guthrie

SUBJECT: Consideration of Board Members' Absence from June 7, 2012. Board Meeting.

Board member absences may be excused by majority vote of the Board. Charlotte Clifton was unable to attend the Board meeting on June 7, 2012.

mn

Tab 2 E.

Board of Trustees

RESOLUTION SETTING MEETING DATES
September 13-14, 2012

RESOLVED, That the Board of Trustees of the Teacher Retirement System of Texas adopts the following meeting schedule for calendar year 2013, with each approved meeting to be held in Austin unless another location is selected:

January 18, 2013

February 20 – 22, 2013

April 18 – 19, 2013 (quarterly meeting)

June 13 – 14, 2013 (quarterly meeting)

July 26, 2013

September 12 – 13, 2013 (quarterly meeting)

October 18, 2013

December 12 – 13, 2013 (quarterly meeting)

Tab 5 A.

Performance Review: Second Quarter 2012

Teacher Retirement System of Texas

September 2012

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Summary

- TRS underperforms in a “risk off” quarter where safety assets rallied and risky assets like equities declined.

- Concerns about global economic growth and continued uncertainty over the European sovereign debt crisis fed the decline in risky assets.
  - Equity markets remained in positive territory year-to-date owing to the very strong first quarter.

- TRS Total Fund lost 0.41% during the second quarter and underperformed its benchmark
  - Despite positive relative numbers during the first half of 2012, the trailing one-year return lagged the benchmark.

- Major sources of underperformance during the second quarter included:
  - Underweight to US Treasuries, which were up 10.6% during the quarter
  - Underperformance in Large Cap equities
  - Overweight to Commodities and Emerging Markets, which both struggled

- Investments that contributed positively to results included:
  - Outperformance in Small Cap equity
  - Relative outperformance from both Hedge Fund portfolios as well as Other Absolute Return
  - Strong absolute and relative performance from Real Assets and REITs

1. Market Summary – Second Quarter 2012

	Second Quarter	YTD	One Year	Three Years	Five Years	Ten Years
Global Equity:						
MSCI USA Standard	-3.0%	9.4%	5.1%	16.5%	0.4%	5.5%
MSCI USA Small Cap	-4.1	8.9	-2.1	20.0	1.8	8.1
MSCI EAFE + Canada Index	-7.2	2.4	-14.1	6.2	-5.7	5.6
MSCI Emerging Markets Index	-8.9	3.9	-16.0	9.8	-0.1	14.1
HFRI Fund of Funds Composite Index	-2.2	1.1	-4.4	2.2	-2.0	3.2
State Street Private Equity Index (qtr lagged)	6.6	9.3	7.3	16.5	4.9	10.8
Global Equity Policy Benchmark	-3.1	6.3	-5.2	13.1	--	--
Stable Value:						
Barclays Capital Long Treasury Index	10.6%	4.2%	32.3%	13.6%	12.1%	8.9%
HFRI Fund of Funds Conservative Index	-1.4	1.1	-2.8	2.4	-1.9	2.7
3 Month LIBOR + 2%	0.6	1.2	2.5	2.4	3.4	4.3
90 Day US Treasury Bill	0.0	0.0	0.1	0.1	1.0	1.9
Stable Value Policy Benchmark	7.3	3.3	24.0	10.5	--	--
Real Return:						
Barclays Capital US Treasury TIPS Index	3.2%	4.0%	11.7%	9.6%	8.4%	7.2%
NCREIF ODCE (qtr lagged)	2.6	5.3	13.6	3.2	--	--
Goldman Sachs Commodities Index	-12.4	-7.2	-10.7	2.1	-5.5	3.4
MSCI US REIT	3.8	14.9	13.2	33.1	2.0	10.0
Real Return Policy Benchmark	2.9	6.0	11.6	10.2	--	--
TRS Policy Benchmark	0.0	5.9	4.1	12.5	2.4	6.6

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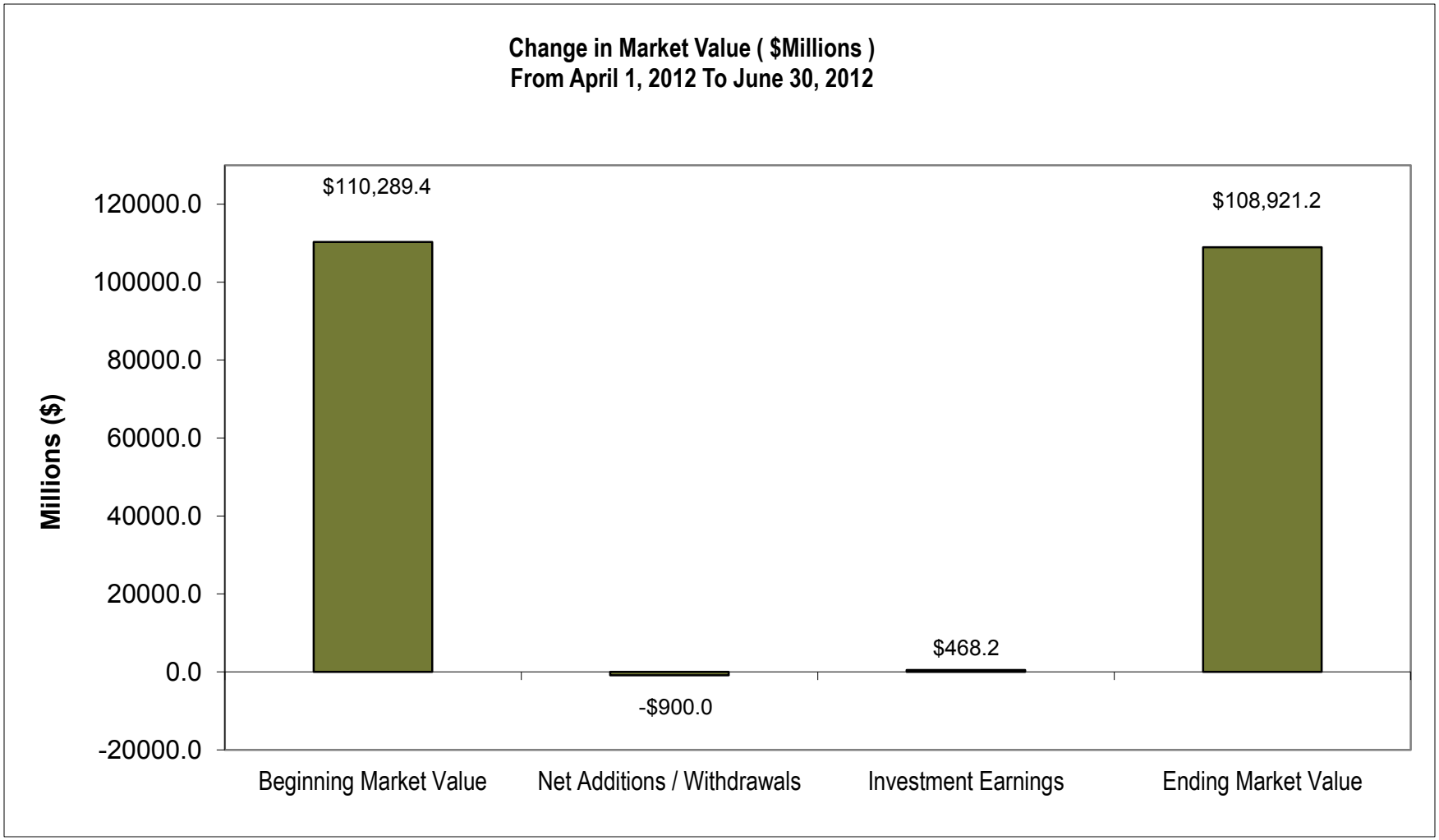
2. Market Value Change



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3. Asset Allocation Detail

	Market Value ($ in millions) as of 6/30/2012		Policy Target	Relative Allocation to Policy Target	Ranges
	($)	(%)			
Total Fund	**108,921**	**100%**	**100%**	**--**	**--**
U.S. Large	$22,459	20.6%	18%	+2.6%	13-23%
U.S. Small	$1,224	1.1%	2%	-0.9%	0-7%
Non-U.S. Developed	$15,961	14.7%	15%	-0.3%	10-20%
Emerging Markets	$11,366	10.4%	10%	+0.4%	5-15%
Directional Hedge Funds	$5,406	5.0%	5%	0.0%	0-10%
Private Equity	$12,943	11.9%	12%	-0.1%	7-17%
Global Equity	**$69,359**	**63.7%**	**62%**	**+1.7%**	**55-69%**
Long Treasuries	$12,176	11.2%	13%	-1.8%	0-20%
Stable Value Hedge Funds	$3,862	3.5%	4%	-0.5%	0-10%
Absolute Return (including OAR)	$1,145	1.1%	0%	+1.1%	0-20%
Cash	$1,513	1.4%	1%	+0.4%	0-5%
Stable Value	**$18,696**	**17.2%**	**18%**	**-0.8%**	**13-23%**
TIPS	$5,181	4.8%	5%	+0.2%	0-10%
Real Assets	$12,712	11.7%	13%	-1.3%	5-20%
REITS	$2,262	2.1%	2%	+0.1%	0-5%
Commodities	$711	0.7%	0%	+0.7%	0-5%
Real Return	**$20,866**	**19.2%**	**20%**	**-0.8%**	**15-25%**

Note: Actual allocations above are based upon Account Level information

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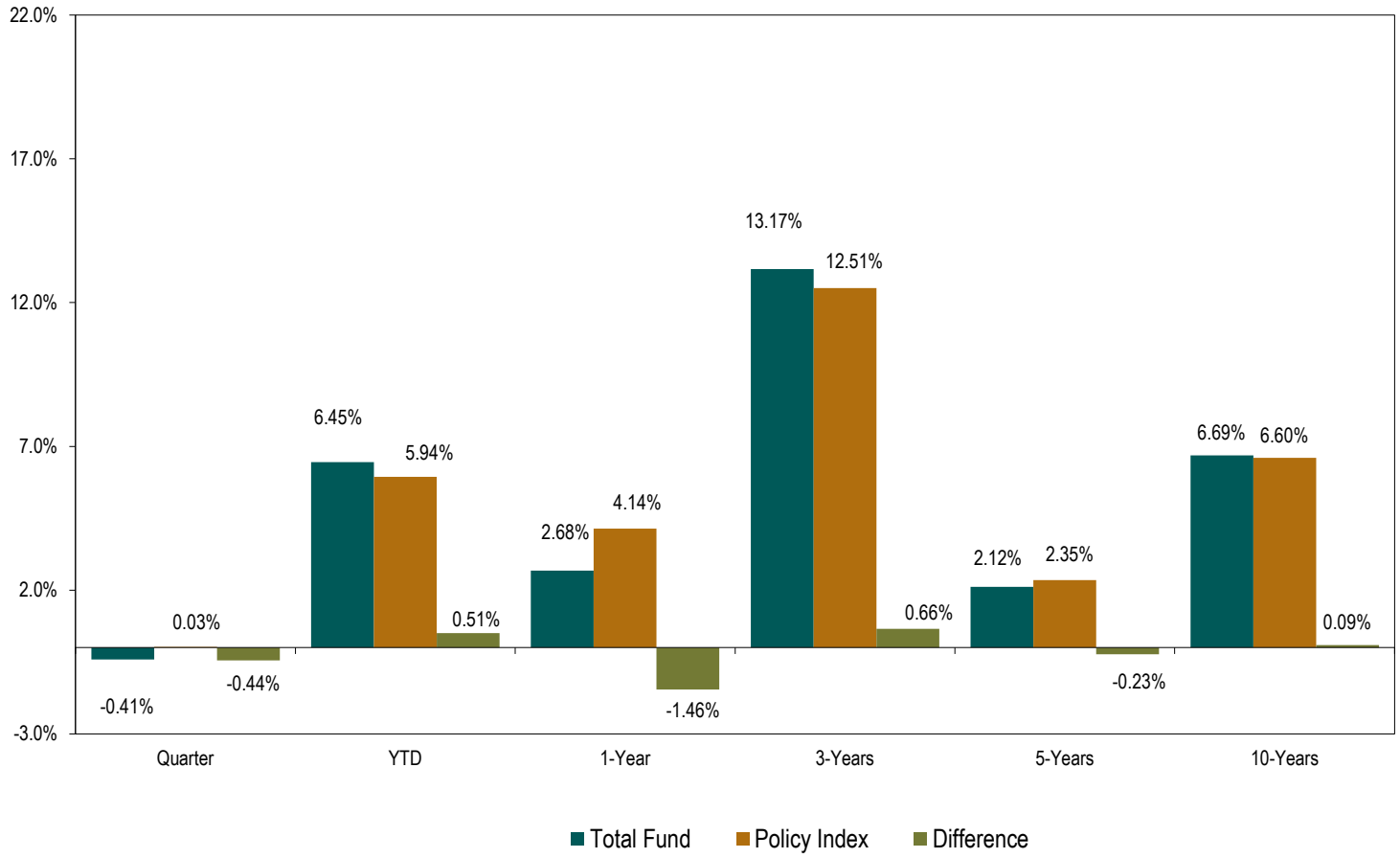
4. Total TRS Performance Ending 6/30/2012

Investment Results
As of 6/30/2012



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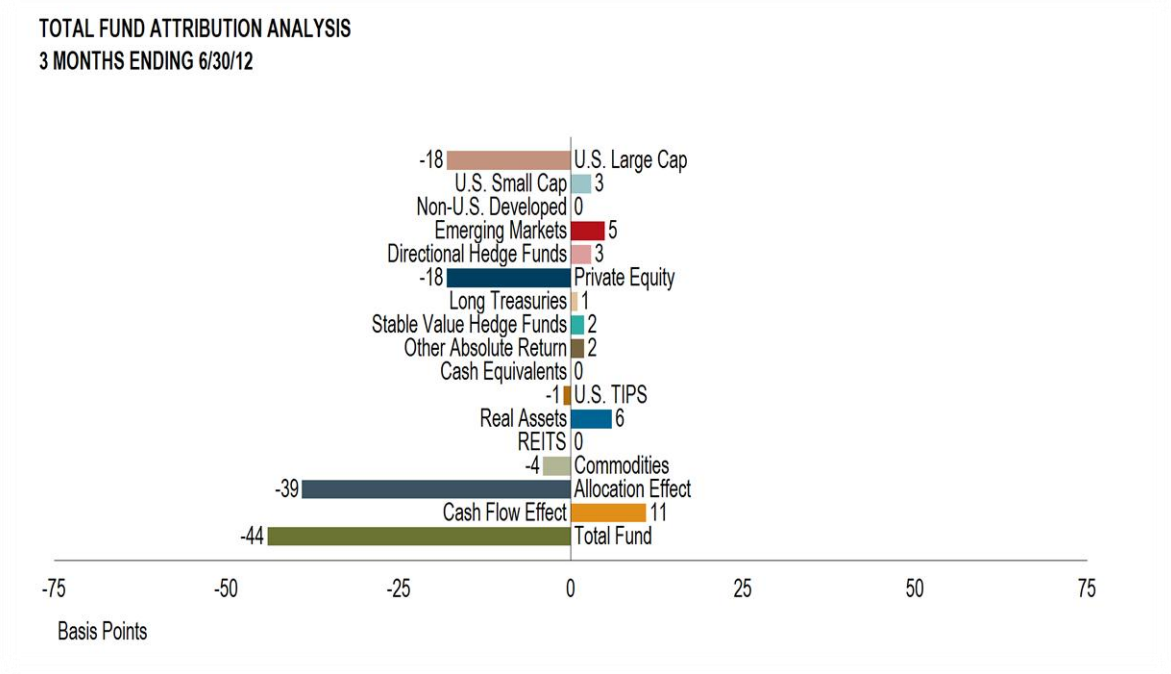
5. Total Fund Attribution - Quarter Ending 6/30/2012



Asset Class	Allocation Effect (in bps)
U.S. Large Cap	-2
U.S. Small Cap	3
Non-U.S. Developed	0
Emerging Markets	-10
Directional Hedge Funds	0
Private Equity	-1
Long Treasuries	-18
Stable Value Hedge Funds	0
Cash Equivalents	1
Other Absolute Return	0
U.S. TIPS	3
Real Assets	-6
REITS	0
Commodities	-9
Total Allocation Effect	**-39**

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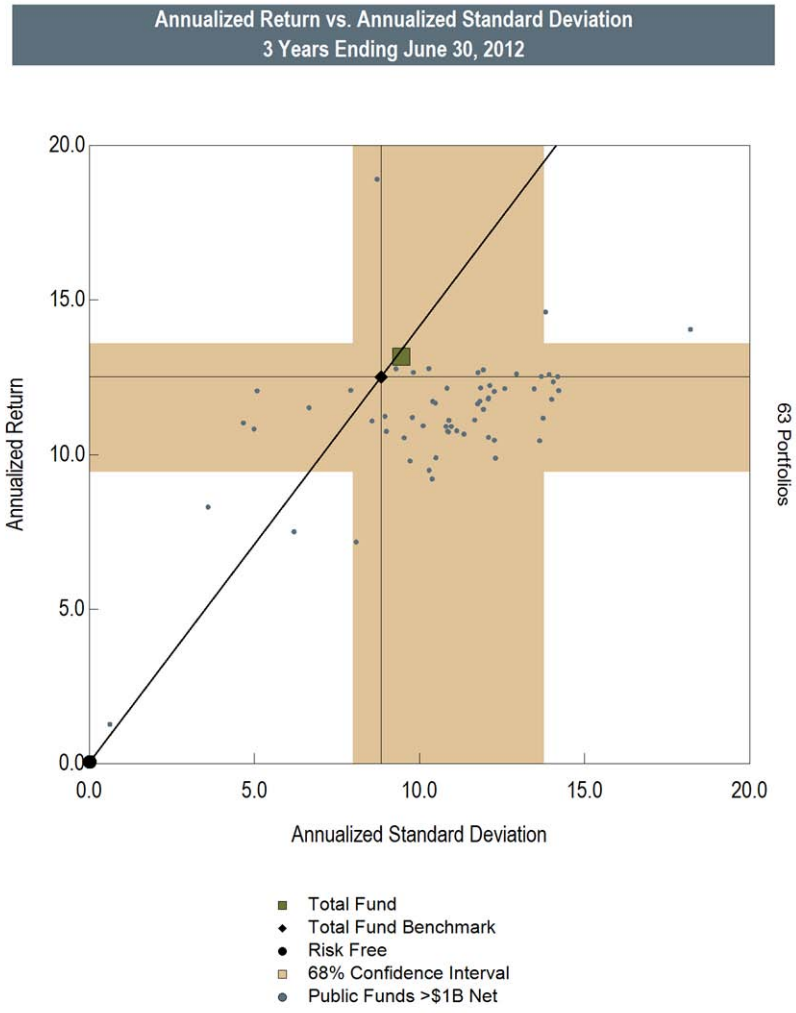
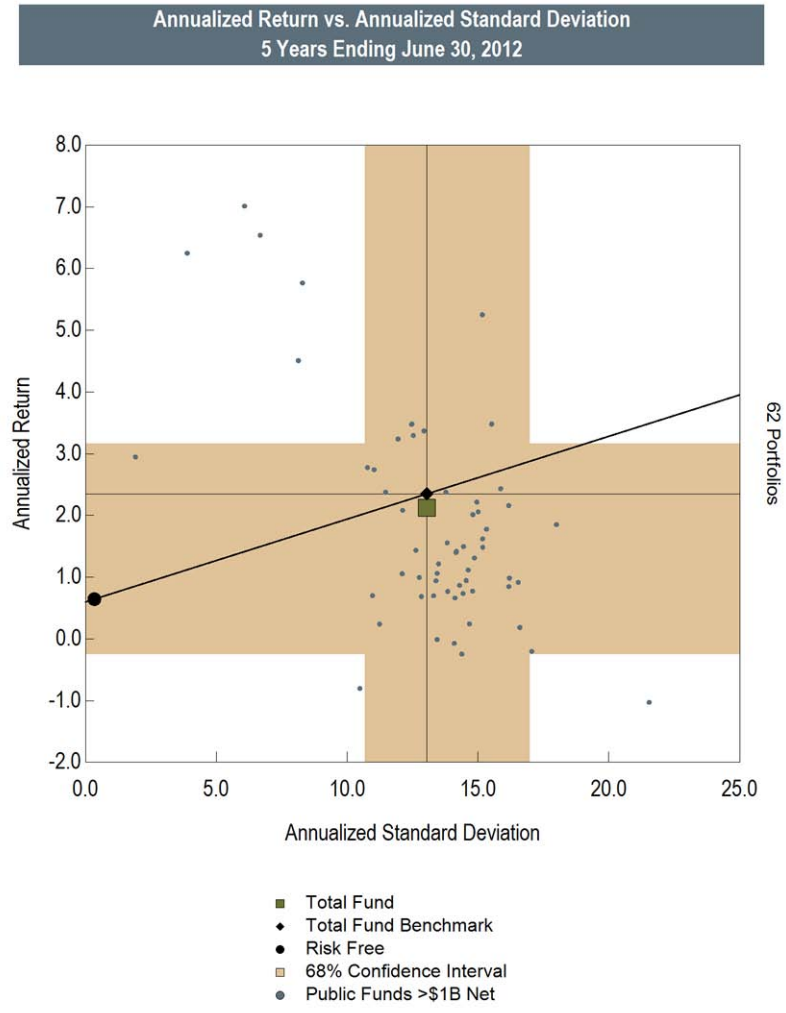
6. Risk Profile





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7. Global Equity: Performance Summary Ending 6/30/2012

	Second Quarter	YTD	One Year	Three Years
Total Global Equity	**-3.6%**	**6.4%**	**-5.5%**	**12.4%**
Global Equity Benchmark	-3.1	6.3	-5.2	13.1
Difference	*-0.5*	*+0.1*	*-0.3*	*-0.7*
Total U.S.	**-3.9%**	**9.6%**	**2.2%**	**16.3%**
U.S. Benchmark	*-3.1*	*9.4*	3.4	16.7
Difference	*-0.8*	*+0.2*	*-1.2*	*-0.4*
U.S. Large Cap	-4.0%	9.3%	3.6%	16.0%
Large Cap Benchmark	-3.0	9.4	5.1	16.1
Difference	*-1.0*	*-0.1*	*-1.5*	*-0.1*
U.S. Small Cap	-1.3%	16.5%	4.8%	21.2%
Small Cap Benchmark	-4.1	8.9	-2.1	19.2
Difference	*+2.8*	*+7.6*	*+6.9*	*+2.0*
Non-U.S. Equity	**-7.7%**	**3.0%**	**-14.7%**	**7.9%**
Non-U.S. Benchmark	*-7.9*	*3.1*	*-14.8*	*7.8*
Difference	*+0.2*	*-0.1*	*+0.1*	*+0.1*
Non-U.S. Developed	-7.2%	2.3%	-13.1%	6.7%
MSCI EAFE + Canada	-7.2	2.4	-14.1	6.2
Difference	*0.0*	*-0.1*	*+1.0*	*+0.5*
Emerging Markets	-8.4%	4.4%	-15.9%	9.9%
MSCI Emerging Markets	-8.9	3.9	-16.0	9.8
Difference	*+0.5*	*+0.5*	*+0.1*	*+0.1*

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7. Global Equity (cont'd): Performance Summary Ending 6/30/2012

	Second Quarter	YTD	One Year	Three Years
Directional Hedge Funds	**-1.6%**	**1.7%**	**--**	**--**
HFRI Fund of Funds Composite Index	-2.2	1.1	--	--
Difference	+0.6	+0.6	--	--
Public Equity	**-5.6%**	**5.5%**	**-8.0%**	**11.1%**
Public Equity Benchmark	*-5.4*	*5.5*	*-7.7*	*11.4*
Difference	*-0.2*	*0.0*	*-0.3*	*-0.3*
Private Equity	**5.2%**	**9.8%**	**7.1%**	**18.5%**
Private Equity Benchmark	6.6	9.3	7.3	20.8
Difference	*-1.4*	*+0.5*	*-0.2*	*-2.3*

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8. Stable Value: Performance Summary Ending 6/30/2012

	Second Quarter	YTD	One Year	Three Years
Total Stable Value	**6.8%**	**4.5%**	**19.0%**	**14.2%**
Total Stable Value Benchmark	7.3	3.3	24.0	10.5
Difference	*-0.5*	*+1.2*	*-5.0*	*+3.7*
Long Treasuries	**10.7%**	**4.4%**	**33.1%**	**14.3%**
Treasury Benchmark	10.6	4.2	32.3	13.6
Difference	*+0.1*	*+0.2*	*+0.8*	*+0.7*
Stable Value Hedge Funds	**-0.7%**	**-0.4%**	**-2.6%**	**3.6%**
Hedge Funds Benchmark	-1.4	1.1	1.7	2.1
Difference	*+0.7*	*-1.5*	*-4.3*	*+1.5*
Other Absolute Return	**1.6%**	**11.9%**	**4.2%**	**16.8%**
Other Absolute Return Benchmark	0.6	1.2	2.5	2.4
Difference	*+1.0*	*+10.7*	*+1.7*	*+14.4*
Cash Equivalents	**-0.1%**	**0.2**	**0.4%**	**-0.7%**
Cash Benchmark	0.0	0.0	0.1	0.1
Difference	*-0.1*	*+0.2*	*+0.3*	*-0.8*

Note: Performance of Cash Equivalents is shown net of fees paid to TRS Strategic Partners

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9. Real Return: Performance Summary Ending 6/30/2012

	Second Quarter	YTD	One Year	Three Year
Total Real Return	**2.5%**	**6.5%**	**10.3%**	**11.7%**
Real Return Benchmark	*2.9*	*6.0*	*11.6*	*10.2*
Difference	*-0.4*	*+0.5*	*-1.3*	*+1.5*
TIPS	**3.1%**	**3.9%**	**11.4%**	**10.0%**
U.S. TIPS Benchmark	3.2	4.0	11.7	10.0
Difference	*-0.1*	*-0.1*	*-0.3*	*0.0*
Real Assets	**3.2%**	**7.5%**	**11.5%**	**6.7%**
Real Asset Benchmark	2.6	5.3	13.6	4.4
Difference	*+0.6*	*+2.2*	*-2.1*	*+2.3*
REITS	**3.8%**	**15.0%**	**13.3%**	**31.9%**
REITS Benchmark	3.8	14.9	13.2	32.6
Difference	*0.0*	*+0.1*	*+0.1*	*-0.7*
Commodities	**-16.7%**	**-11.7%**	**-19.6%**	**1.0%**
Commodities Benchmark	-12.4	-7.2	-10.7	2.1
Difference	*-4.3*	*-4.5*	*-8.9*	*-1.1*

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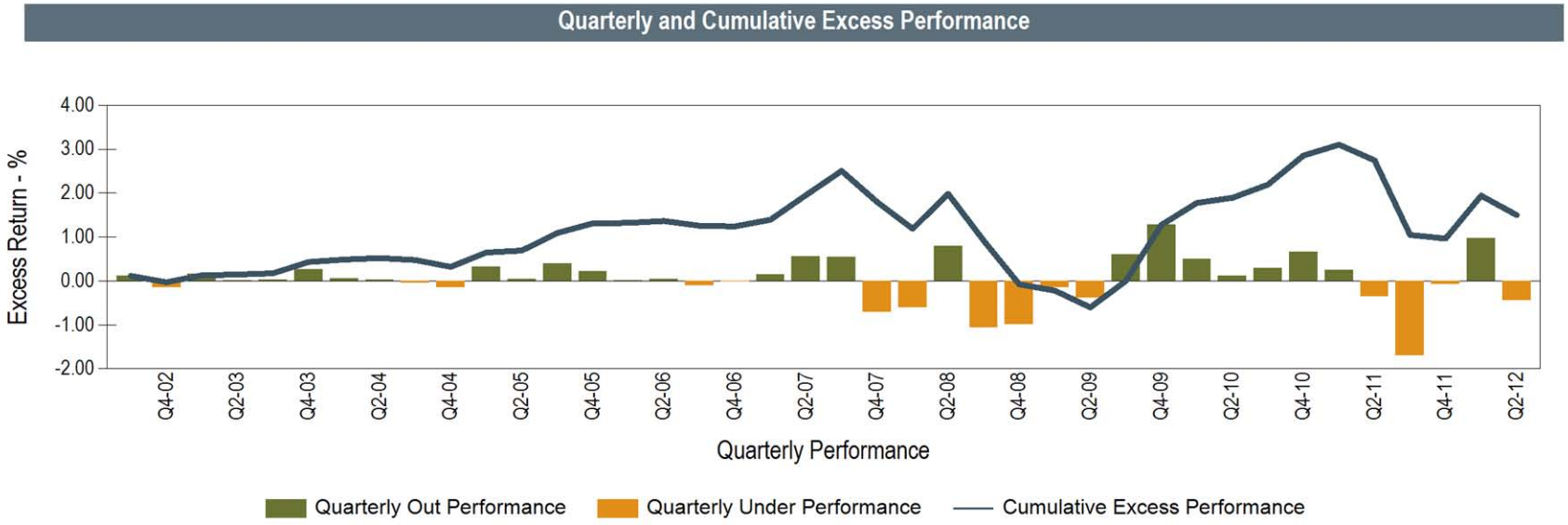
Appendix – Supplemental Reporting

Historical Excess Performance

Quarterly and Cumulative Excess Performance

Total Fund vs. Total Fund Benchmark



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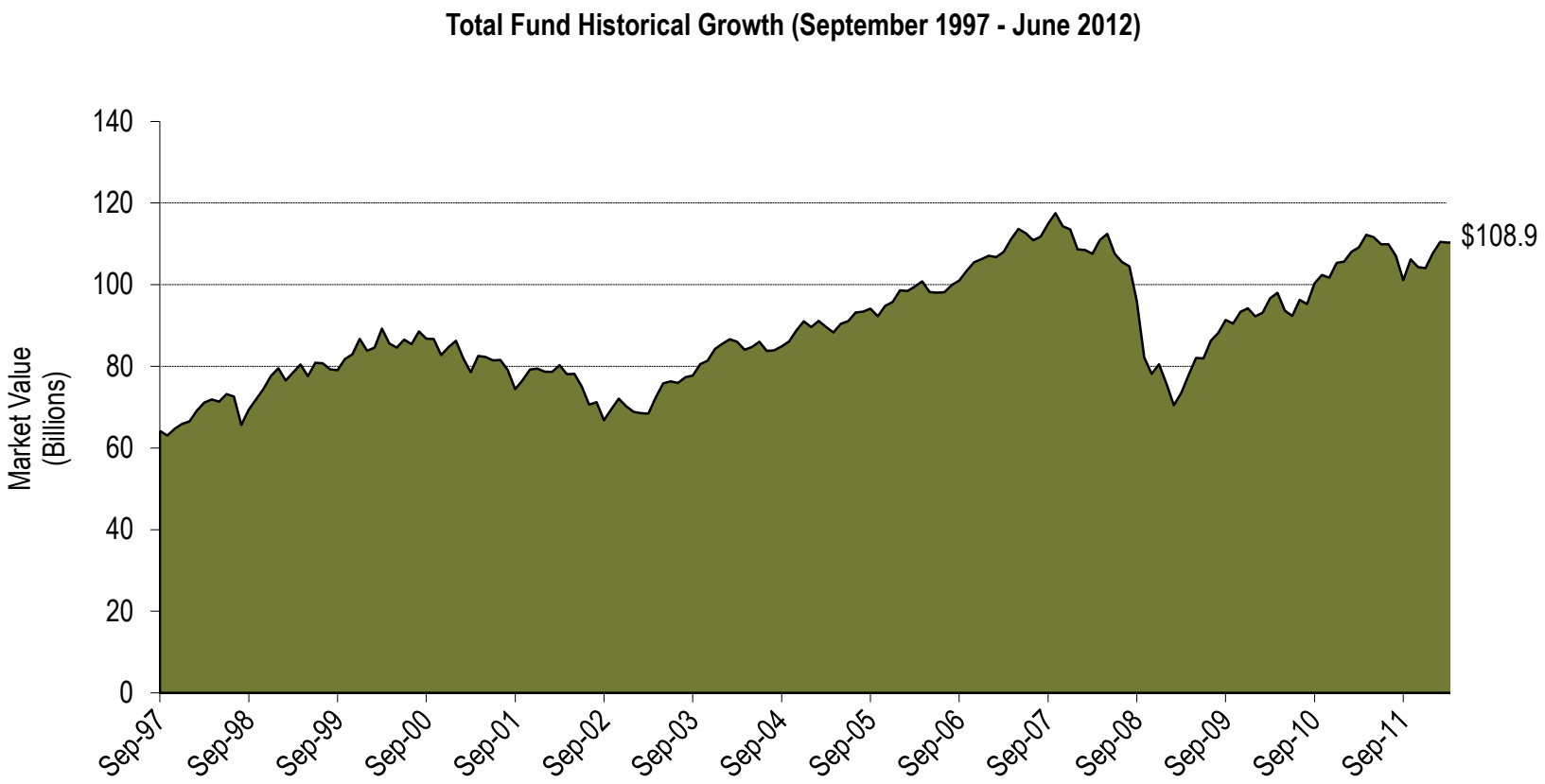
TRS Asset Growth



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External Manager Program: Public Equity Performance as of 6/30/2012

	Allocation ($ in billions)	Second Quarter	YTD	One Year	Three Years
EP Total Global Equity	**$25.9**	**-5.7%**	**6.1%**	**-7.6%**	**11.7%**
EP Global Equity Benchmark	--	-5.5	5.5	-7.7	11.7
Difference	--	*-0.2*	*+0.6*	*+0.1*	*0.0*
EP Total U.S. Large Cap	$7.1	-4.2%	9.3%	3.3%	16.6%
EP Large Cap Benchmark	--	-3.0	9.4	5.1	16.4
Difference	--	*-1.2*	*-0.1*	*-1.8*	*+0.2*
EP Total U.S. Small Cap	$1.7	-2.8%	12.4%	0.1%	--
EP Small Cap Benchmark	--	-4.1	8.9	-2.1	--
Difference	--	*+1.3*	*+3.5*	*+2.2*	--
EP Total U.S.	**$8.8**	**-4.0%**	**9.8%**	**3.0%**	**16.7%**
EP U.S. Benchmark	--	-3.2	9.3	4.2	16.3
Difference	--	*-0.8*	*+0.5*	*-1.2*	*+0.5*
EP Total Non-U.S. Developed	$4.1	-9.0%	0.7%	-14.6%	5.3%
MSCI EAFE + Canada Index	--	-7.2	2.4	-14.1	6.2
Difference	--	*-1.8*	*-1.7*	*-0.5*	*-0.9*
EP Total Emerging Markets	$6.1	-8.3%	5.3%	-15.3%	10.5%
MSCI Emerging Markets Index	--	-8.9	3.9	-16.0	9.8
Difference	--	*+0.6*	*+1.4*	*+0.7*	*+0.7*
EP Total Non-U.S.	**$10.2**	**-8.6%**	**3.4%**	**-14.9%**	**8.3%**
EP Non-U.S. Benchmark	--	*-8.2*	*3.3*	*-15.1*	*10.5*
Difference	--	*-0.4*	*+0.1*	*+0.2*	*-2.2*

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External Manager Program: Public Equity Performance as of 6/30/2012 (cont'd)

	Allocation ($ in billions)	Second Quarter	YTD	One Year	Three Years
EP Total World Equity	**$3.6**	**-5.2%**	**7.8%**	**-5.2%**	**--**
EP World Equity Benchmark	--	-5.6	5.7	-6.5	--
Difference	--	*+0.4*	*+2.1*	*+1.3*	--
EP Total Directional Hedge Funds	**$3.3**	**-1.1%**	**2.2%**	**--**	**--**
HFRI Fund of Funds Composite Index	--	-2.2	1.1	--	--
Difference	--	*+1.1*	*+1.1*	--	--

Strategic Partnership Program: Performance Summary Ending 6/30/2012

	Allocation ($ in billions)	Second Quarter	YTD	One Year	Three Years
Strategic Partnership Program (SPN)	**$5.4**	**-2.2%**	**6.5%**	**1.9%**	**13.7%**
SPN Benchmark	--	-1.5	6.0	3.9	13.1
Difference	--	*-0.7*	*+0.5*	*-2.0*	*+0.6*
Blackrock	**$1.2**	**-2.7%**	**5.7%**	**1.6%**	**13.0%**
J.P. Morgan	**$1.2**	**-3.0%**	**6.8%**	**0.5%**	**13.9%**
Neuberger Berman	**$1.2**	**-2.4%**	**6.0%**	**0.7%**	**13.6%**
Morgan Stanley	**$1.2**	**-1.2%**	**7.5%**	**4.8%**	**14.2%**
Barclays Capital	**$0.5**	**-1.3%**	**6.2%**	**2.4%**	**--**

- During the quarter the Program underperformed its benchmark by 0.7 percentage points
- Over the trailing three-year period, the Program exceeded its benchmark by 0.6 percentage points
  - J.P. Morgan, Neuberger Berman and Morgan Stanley outperformed the SPN benchmark
  - BlackRock lagged the SPN benchmark by 0.1 percentage point

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Benchmarks

- **Total Fund Performance Benchmark** – 18% MSCI US Standard, 2% MSCI US Small Cap, 10% MSCI Emerging Markets, 15% MSCI EAFE plus Canada, 5% HFRI FoF Composite Index, 12% State Street Private Equity (1 qtr lagged), 13% BC Long Term Treasury, 4% HFRI FoF Conservative Index, 1% Citigroup 3 Mo T-Bill, 5% BC US TIPS, 2% MSCI US REIT Index, 13% NCREIF ODCE (1 qtr lagged)

- **Global Equity Benchmark**– 24% MSCI EAFE plus Canada, 29% MSCI US Standard, 3% MSCI US Small Cap,16% MSCI Emerging markets index, 8% HFRI FoF Composite Index, and 19% State Street Private Equity (1 qtr lagged)
- US Large Cap Benchmark - MSCI US Standard Index
- US Small Cap Benchmark - MSCI US Small Cap Index
- Emerging Markets Benchmark – MSCI Emerging Markets
- Non-US Developed Benchmark– MSCI EAFE plus Canada
- Directional Hedge Funds – HFRI Fund of Funds (FoF) Composite Index
- Private Equity Benchmark - State Street Private Equity (1 qtr lagged)

- **Stable Value Benchmark** – 22% HFRI FoF Conservative Index, 72% BC Long Term Treasury, and 6% Citigroup 3 mo T-Bill.
- US Treasuries Benchmark – Barclays Capital (BC) Long Term Treasury
- Stable Value Hedge Funds – HFRI Fund of Funds (FoF) Conservative Index
- Other Absolute Return Benchmark - 3 Mo LIBOR + 2%
- Cash Benchmark - Citigroup 3 Mo T-Bill

- **Real Return Benchmark** – 25% BC US TIPS, 65% NCREIF ODCE, and 10% MSCI US REIT Index
- US TIPS Benchmark - BC US TIPS Index
- Real Assets Benchmark –NCREIF ODCE (1qtr lagged)
- REITS Benchmark – MSCI US REIT Index
- Commodities Benchmark - Goldman Sachs Commodity Index

Note: Returns and market values (based on account level) reported are provided by State Street. Net additions/withdrawals are reported on a gross (adjusted for expenses) total fund level as provided by State Street. All rates of return for time periods greater than one year are annualized. The excess returns shown in this presentation may differ from State Street statements due entirely to rounding. These differences are generally within a few basis points and are not material.

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Description of Performance Attribution

- A measure of the source of the deviation of a fund's performance from that of its policy benchmark. Each bar on the attribution graph represents the contribution made by the asset class to the total difference in performance. A positive value for a component indicates a positive contribution to the aggregate relative performance. A negative value indicates a detrimental impact. The magnitude of each component's contribution is a function of (1) the performance of the component relative to its benchmark, and (2) the weight (*beginning of period)* of the component in the aggregate.
- The individual Asset Class effect, also called Selection Effect, is calculated as

  Actual Weight of Asset Class x (Actual Asset Class Return – Asset Class Benchmark Return)
- The bar labeled Allocation Effect illustrates the effect that a Total Fund's asset allocation has on its relative performance. Allocation Effect calculation = (Asset Class Benchmark Return –Total Benchmark Return) x (Actual Weight of Asset Class – Target Policy Weight of Asset Class).
- The bar labeled Cash Flow Effect describes the impact of asset movements on the Total Fund results.

  Cash Flow Effect calculation = (Total Fund Actual Return – Total Fund Policy Return) – Current Selection Effect – Current Allocation Effect
- The bar labeled Benchmark Effect results from the weighted average return of the asset classes' benchmarks being different from the Total Funds' policy benchmark return. Benchmark Effect calculation = Total Fund Policy Return – (Asset Class Benchmark Return x Target Policy Weight of Asset Class)
- Cumulative Effect

  Cumulative Effect calculation = Current Effect $_t$ *(1+Cumulative Total Fund Actual Return $_{t-1}$) +

  Cumulative Effect $_{t-1}$*(1+Total Fund Benchmark Return $_t$)

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Tab 5 B.

Market Review

Britt Harris
Chief Investment Officer
September 2012

Agenda

- Recent Trust Performance
- Historical Trust Performance
- Evaluation of Current Conditions
- Appendix

TRS

Recent Trust Performance

Investment Results

Plans > $10 Billion (40 Funds)

Period Ending June 30, 2012

Results	1 Qtr	YTD	3 Qtrs	1 Yr	2 Yrs	3 Yrs
Percentile	15	17	50	17	10	10
TRS Return	-0.38%	6.51%	10.57%	2.80%	12.12%	13.29%
Median Return	-1.46%	5.86%	10.57%	1.15%	11.20%	11.92%
Value Added/Lost	1.08%	0.65%	0.00%	1.65%	0.92%	1.37%

*** Top 20% over all time periods except 3 Quarters**

Analysis of Past 12 Months	TRS Trust		Market Returns					
Quarter	Return	Rank	US Equity	Non-US Equity	Private Equity	Fixed Income	Real Estate	Hedge Funds
Sep-11	-7.0%	20	-15.6%	-20.4%	2.1%	17.1%	-0.8%	-2.2%
Dec-11	3.8%	75	12.0%	3.9%	-4.5%	1.9%	4.0%	0.3%
Mar-12	6.9%	67	12.9%	11.9%	4.3%	-3.0%	5.2%	1.6%
Jun-12	-0.4%	15	-3.7%	-7.9%	5.2%	8.0%	2.3%	0.1%
Total Year	2.8%	17	2.6%	-13.8%	7.1%	25.0%	12.2%	-1.2%

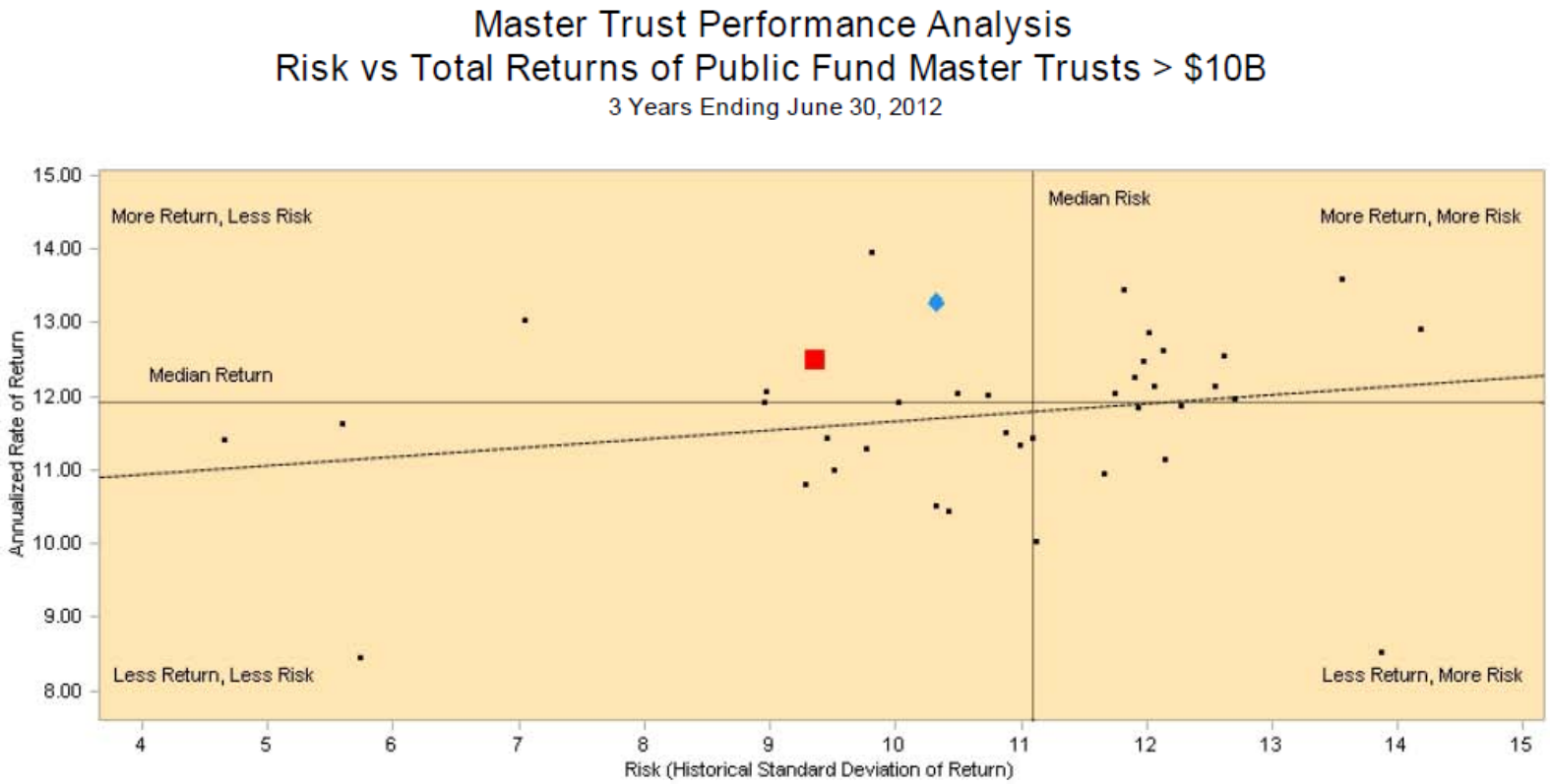
*** Outperform during normal and down markets**

*** Underperform when US Equity has a significant increase and outperforms Emerging Markets**

TRS

Source: Wilshire TUCS ™

Recent Trust Performance



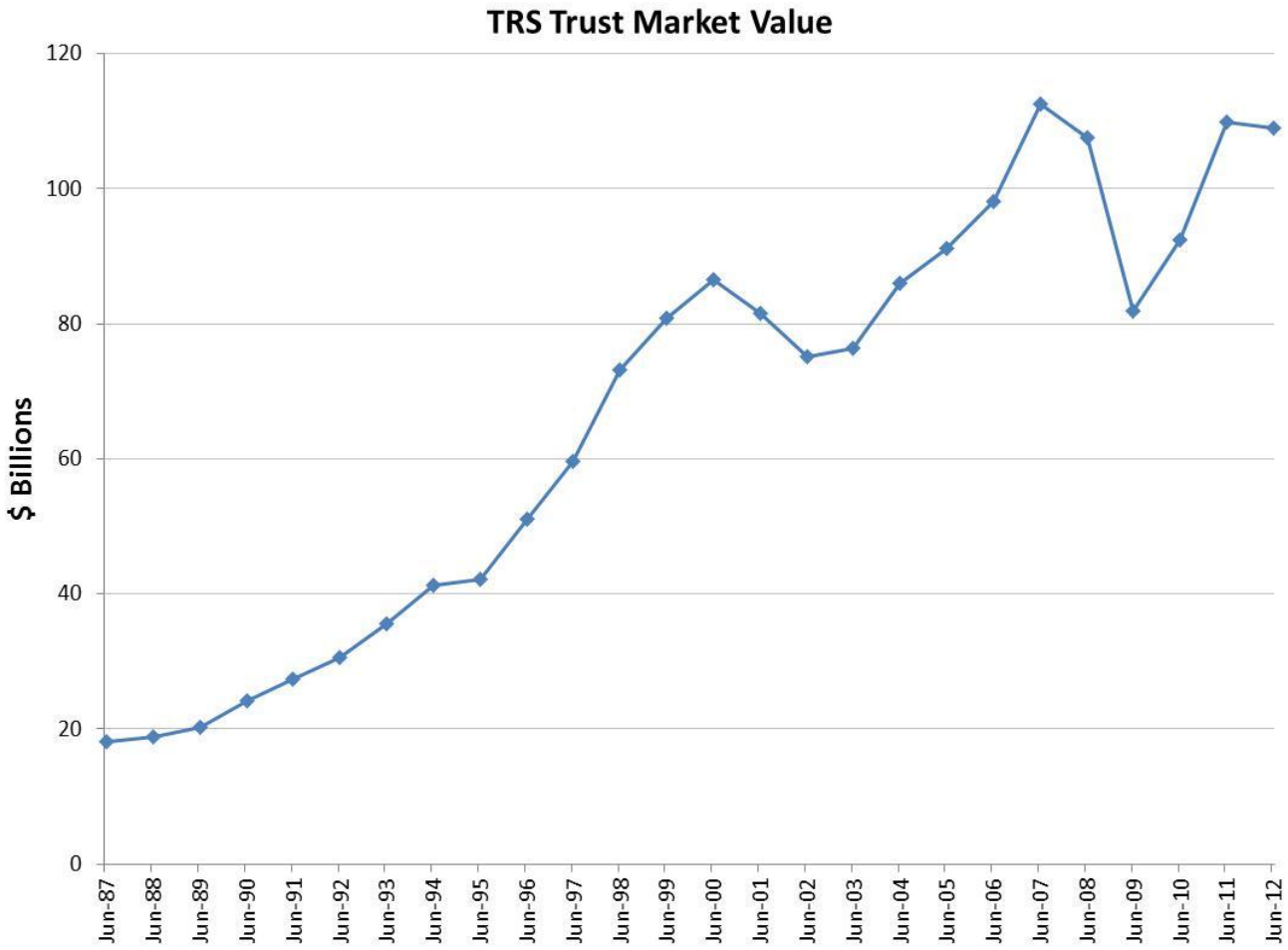
Alpha: 10.46
Beta: 0.12
R-Squared: 0.05

	Risk Value	Risk Rank	Return Value	Return Rank
Total Fund	10.32	69	13.29	10
Total Fund Benchmark	9.35	83	12.51	22
Median	11.09		11.92	

Source: Wilshire TUCS ™

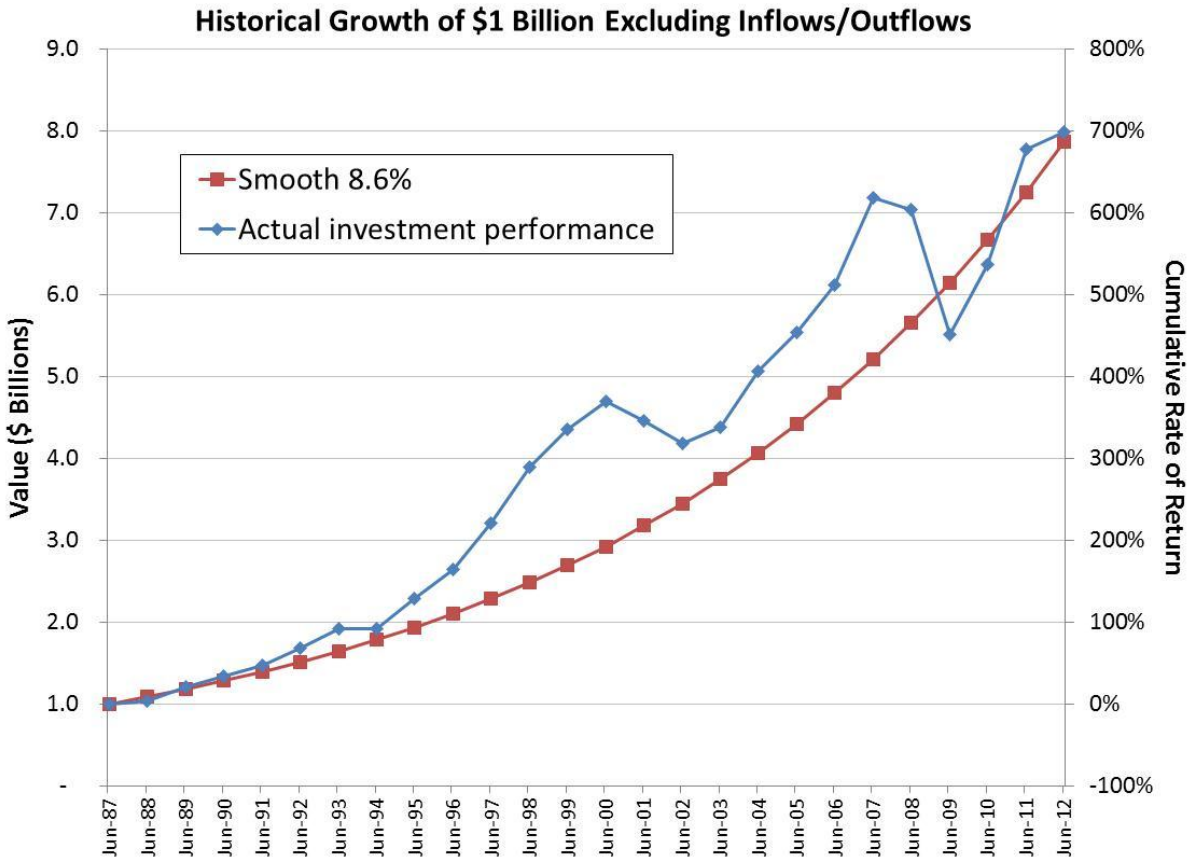
Historical Trust Performance

- What was the value of the TRS Pension Trust 25 years ago?



Historical Trust Performance

- How much growth has an 8.6% return achieved when compounded over 25 years?



TRS

Historical Trust Performance

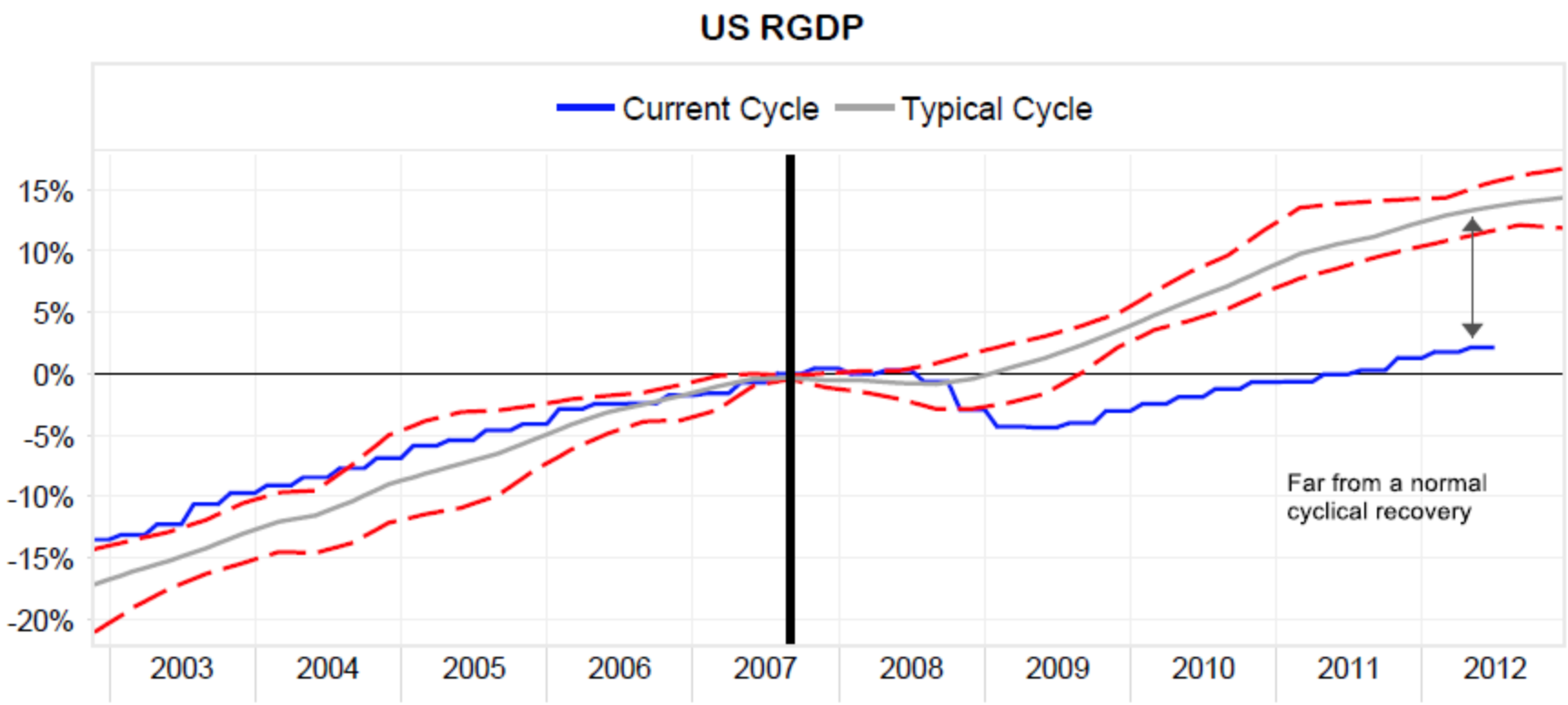
- In effective societies, returns tend to make sense "eventually"

Investment Performance From 2H87 to 1H12				
Asset Class	Value of $1000 Invested	Cumulative Return	Annualized Return	Risk Premium vs. Cash
Private Equity	$22,679	2167.9%	13.3%	9.4%
S&P 500	$7,901	690.1%	8.6%	4.7%
US Investment Grade Credit	$6,571	557.1%	7.8%	3.9%
Real Estate	$5,948	494.8%	7.4%	3.5%
10 Year US Treasuries	$5,697	469.7%	7.2%	3.3%
Cash	$2,594	159.4%	3.9%	--

Source: Bloomberg, Thomson Reuters

Evaluation of Current Conditions

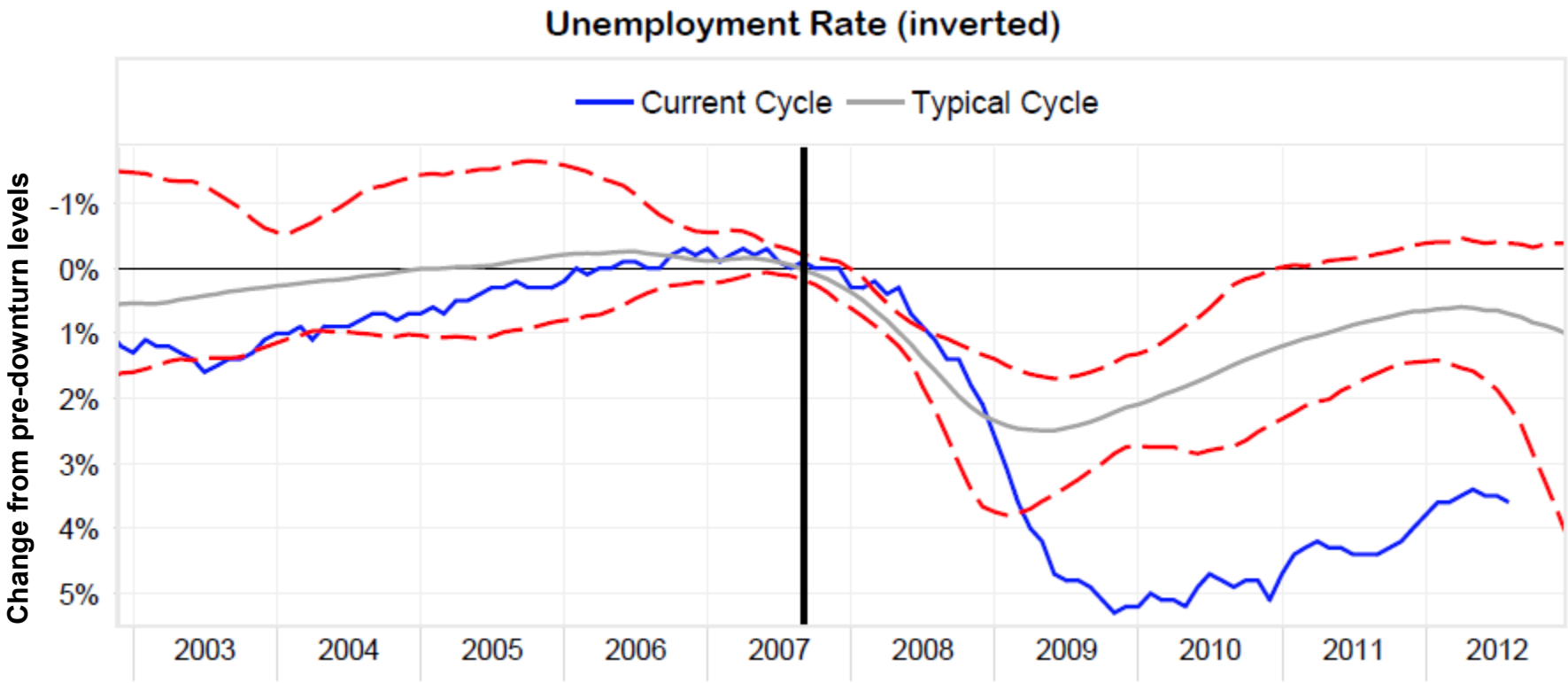
- Anemic growth, but positive



Source: Bridgewater Associates

Evaluation of Current Conditions

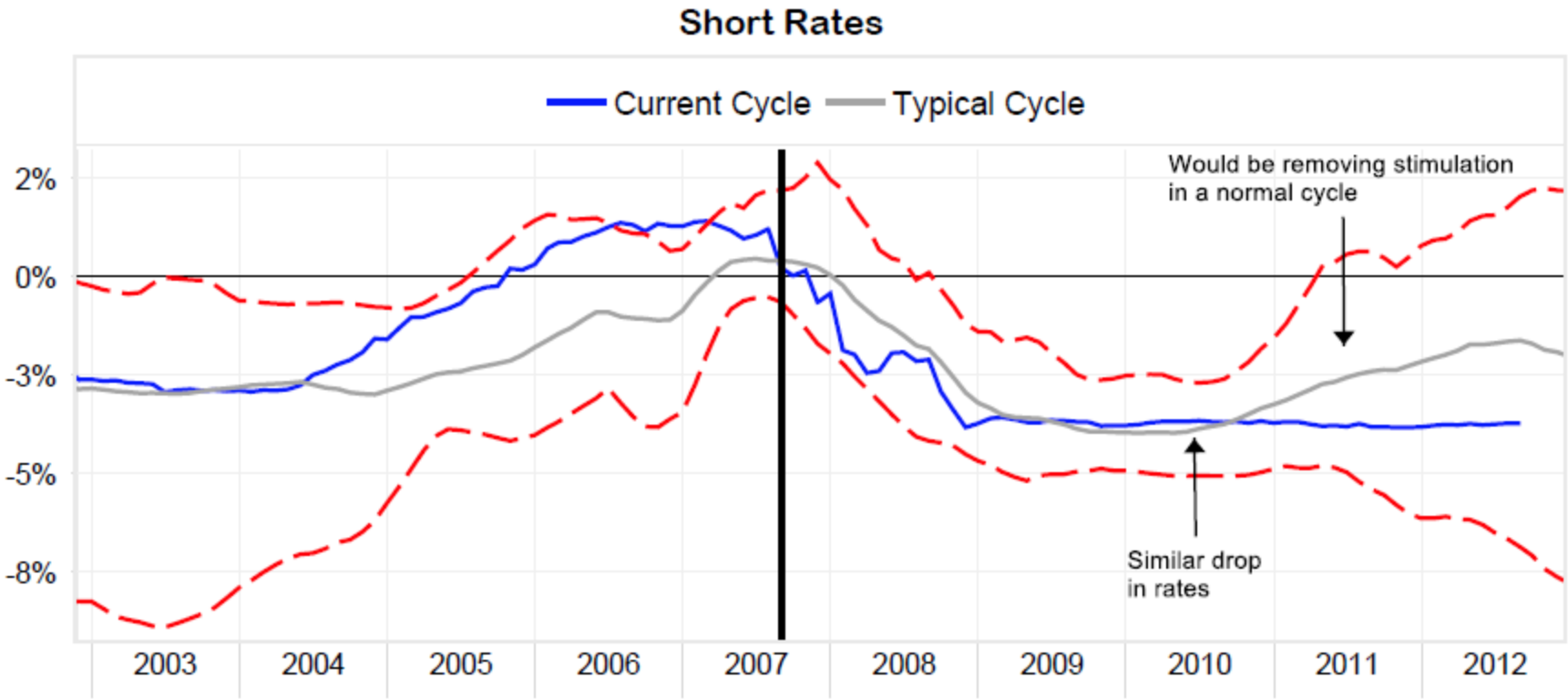
- Significant unemployment



Source: Bridgewater Associates

Evaluation of Current Conditions

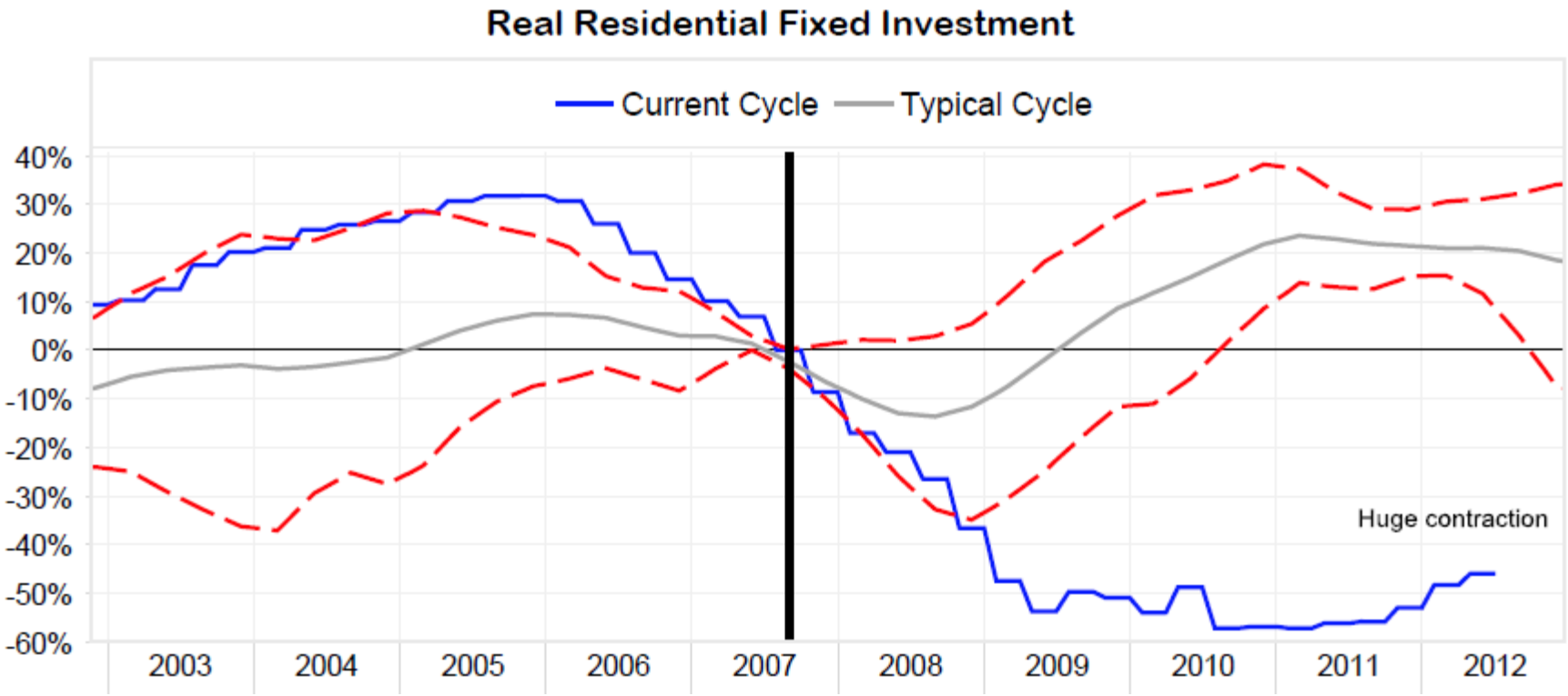
- Very low rates, for longer



Source: Bridgewater Associates

Evaluation of Current Conditions

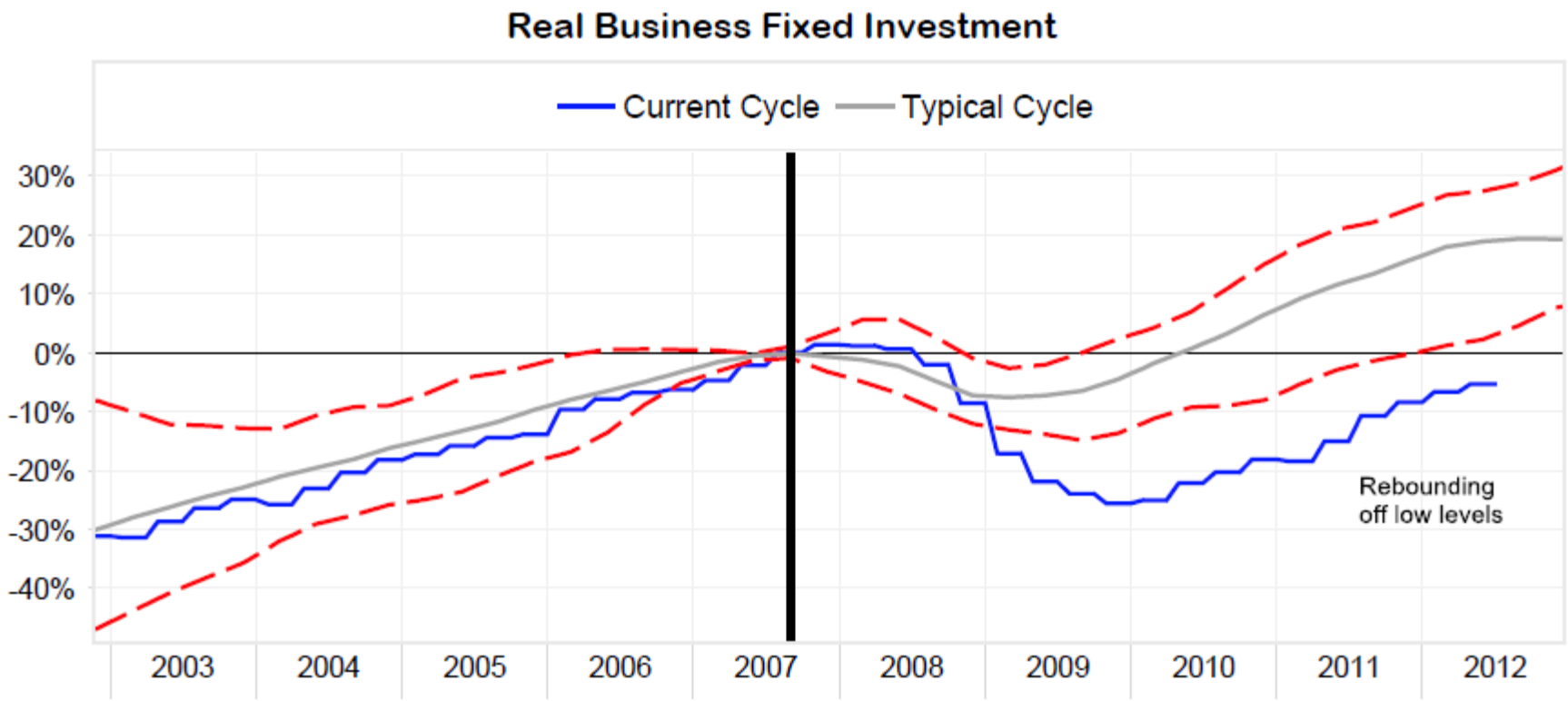
- Very weak residential spending



Source: Bridgewater Associates

Evaluation of Current Conditions

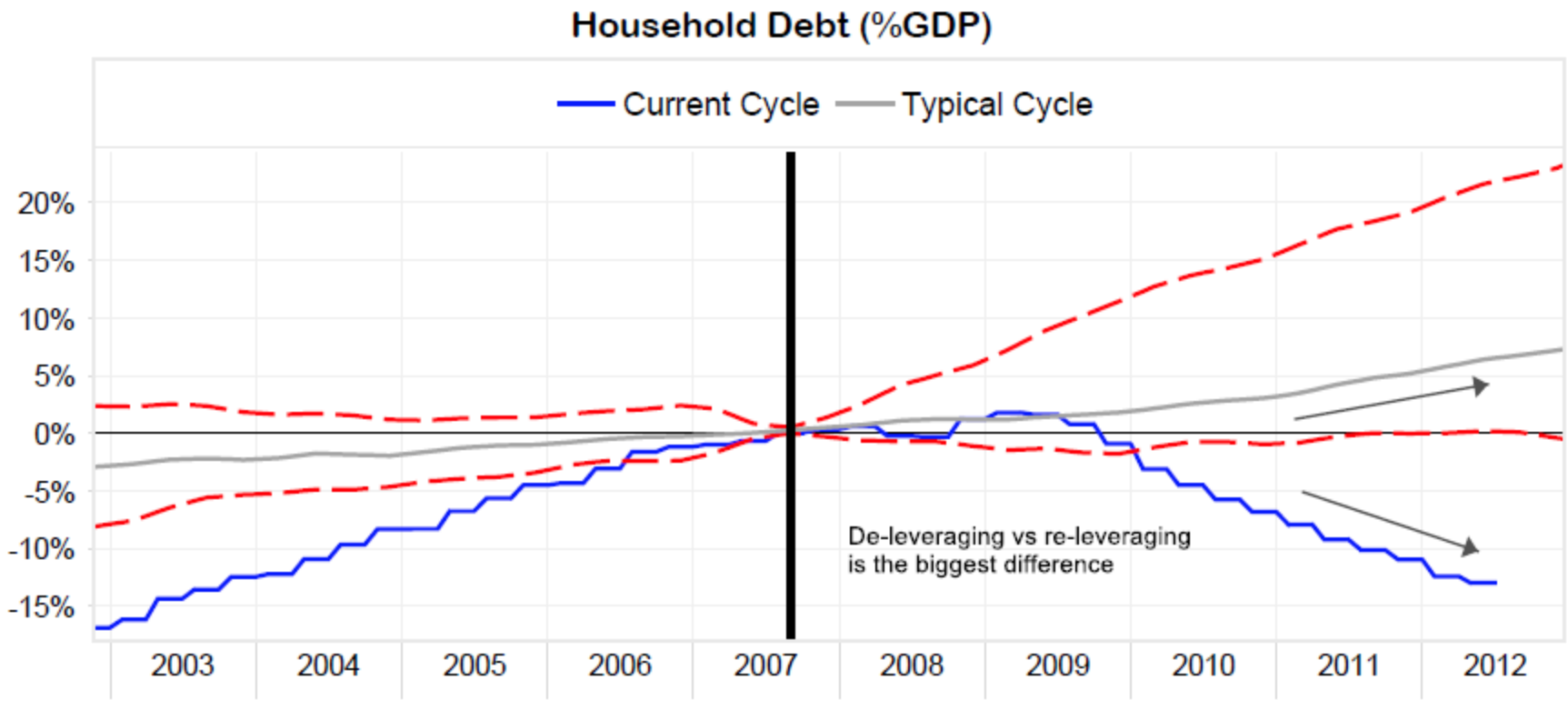
- Very weak corporate spending



Source: Bridgewater Associates

Evaluation of Current Conditions

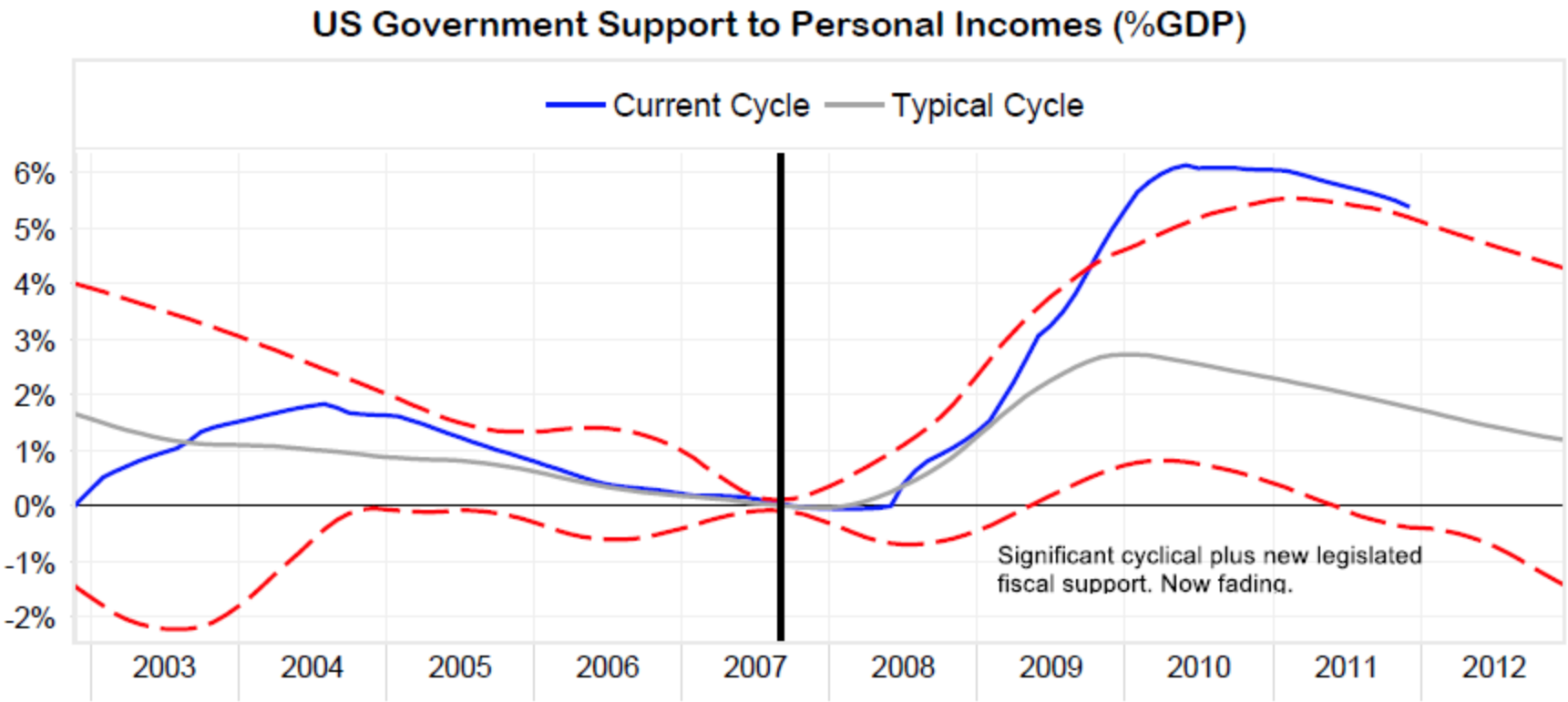
- Everyone is paying down debt



Source: Bridgewater Associates

Evaluation of Current Conditions

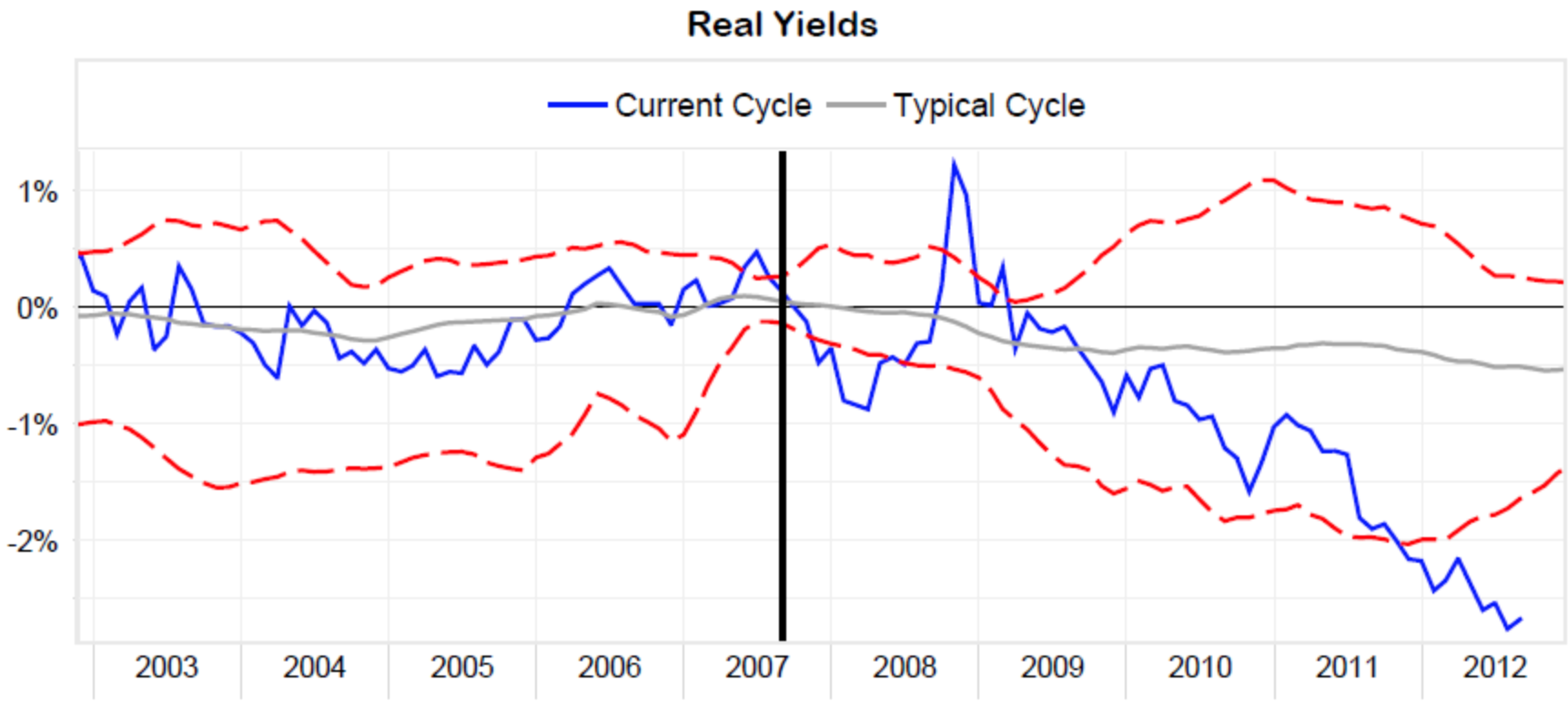
- Well, almost everyone



Source: Bridgewater Associates

Evaluation of Current Conditions

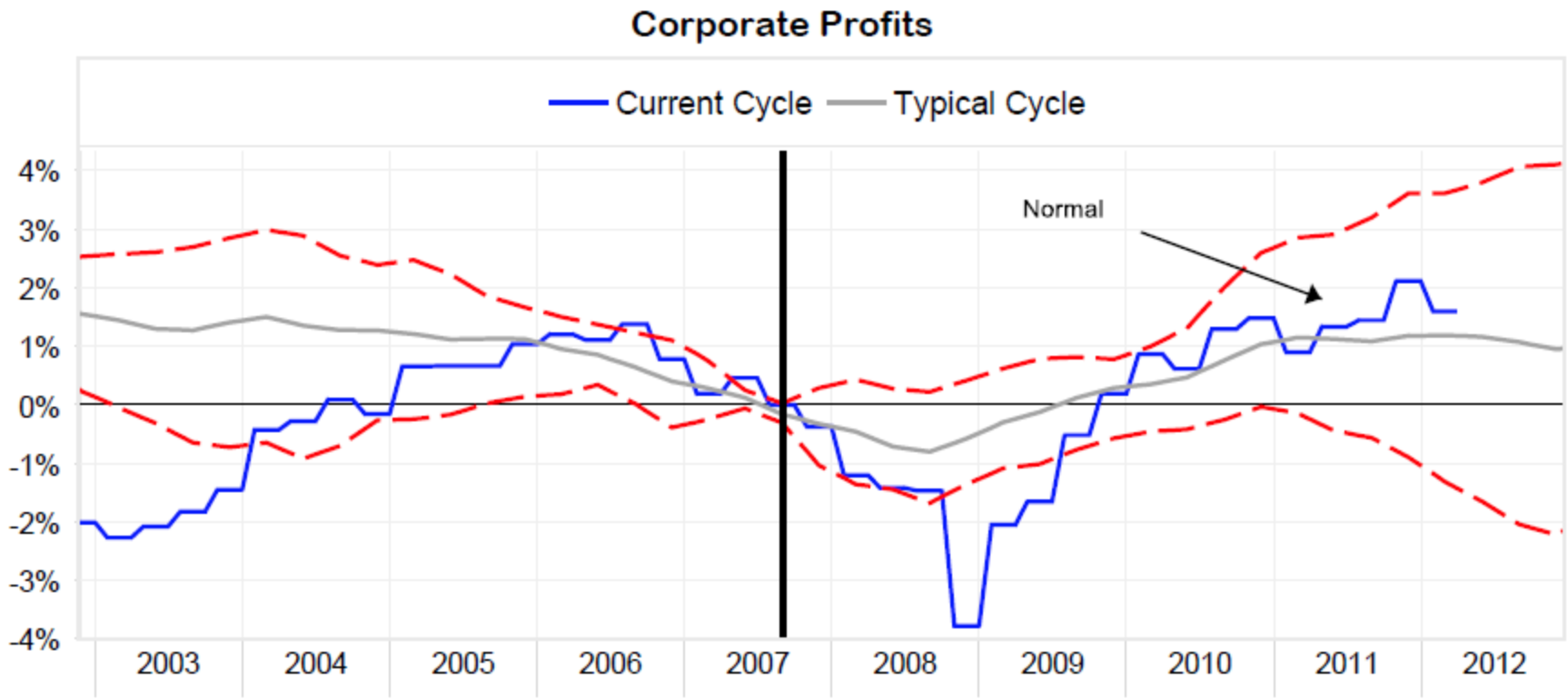
- Interest rates and inflation way down



Source: Bridgewater Associates

Evaluation of Current Conditions

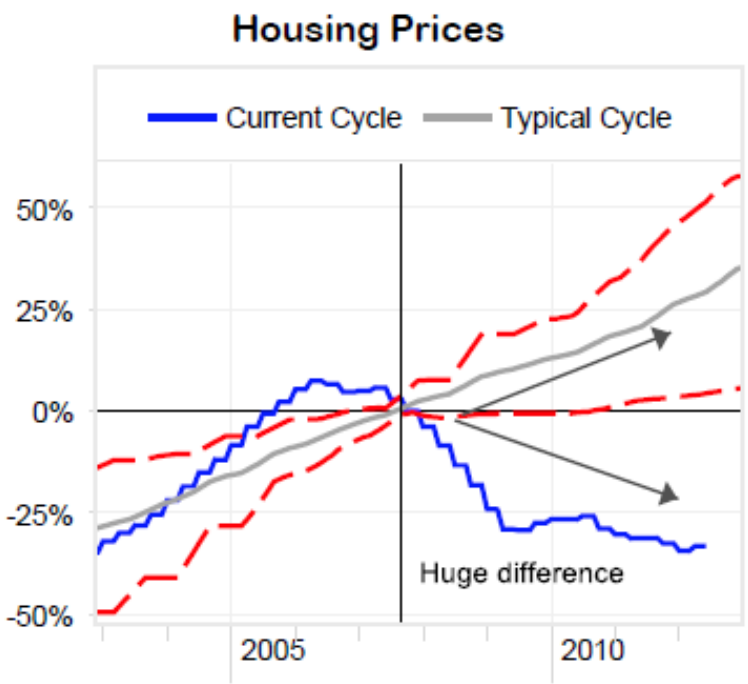
- But corporate profits are normal

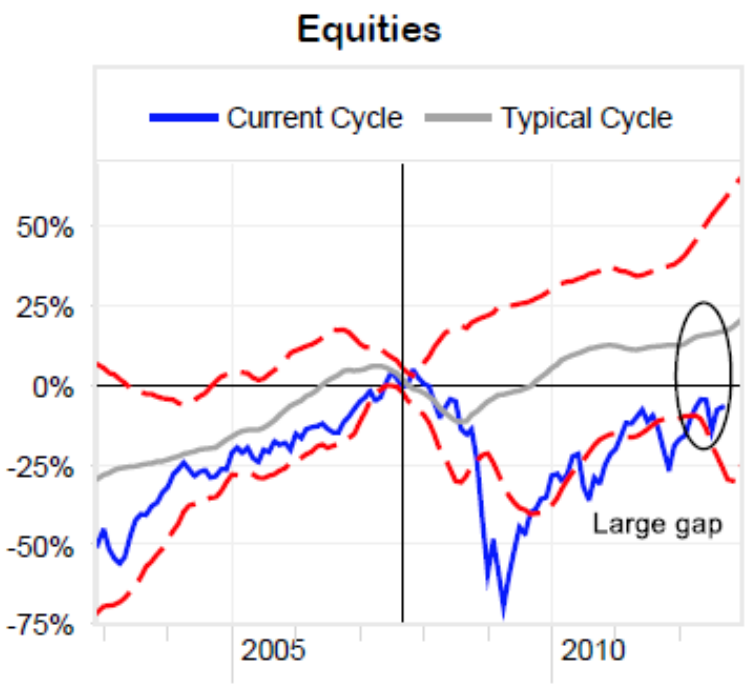


Source: Bridgewater Associates

Evaluation of Current Conditions

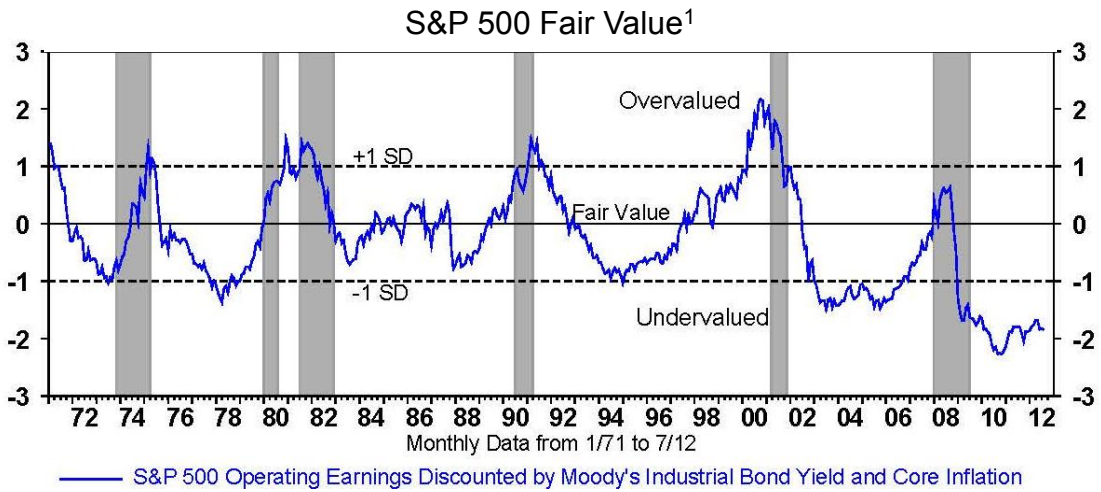
- Home ownership and the stock market





Source: Bridgewater Associates

Equity Risk Premium and Bond Yields



[1]*Source: Federal Reserve Bank, Standard & Poor's, Moody's Investors, and Omega Advisors, Inc.*
[2]*Source: Bloomberg*

S&P 500 Price/Earnings and Forward Returns

From December 1961 to June 2011

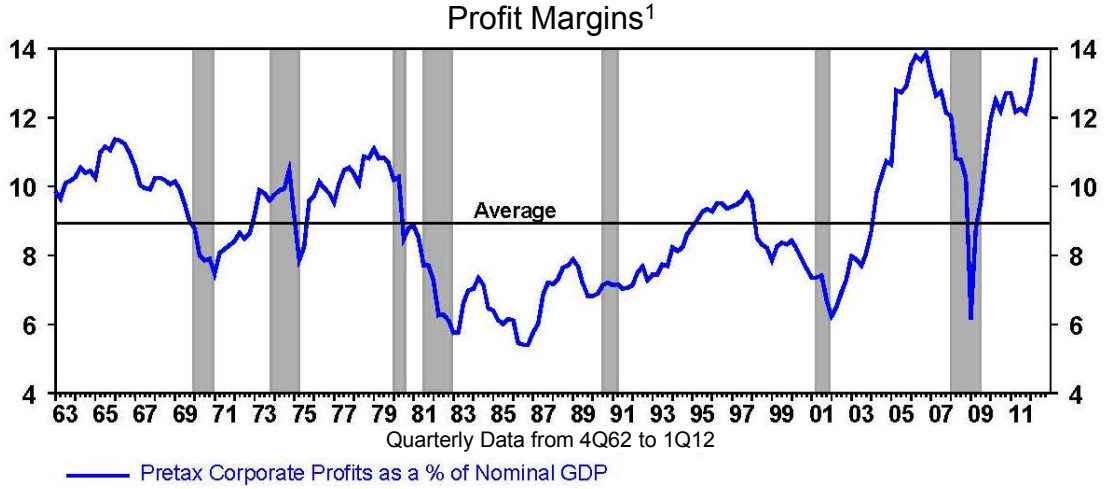
S&P 500	Subsequent Annualized Total Return		
Forward P/E	1-Year	3-Year	5-Year
Above 22X	-6.4%	-2.8%	0.3%
20 to 22	-0.3	4.8	2.2
18 to 20	-1.0	7.1	4.6
16 to 18	9.3	6.6	6.1
14 to 16	15.0	10.7	9.7
12 to 14	14.7	16.2	15.0
10 to 12	15.2	14.7	13.6
Below 10X	16.3	15.0	15.8

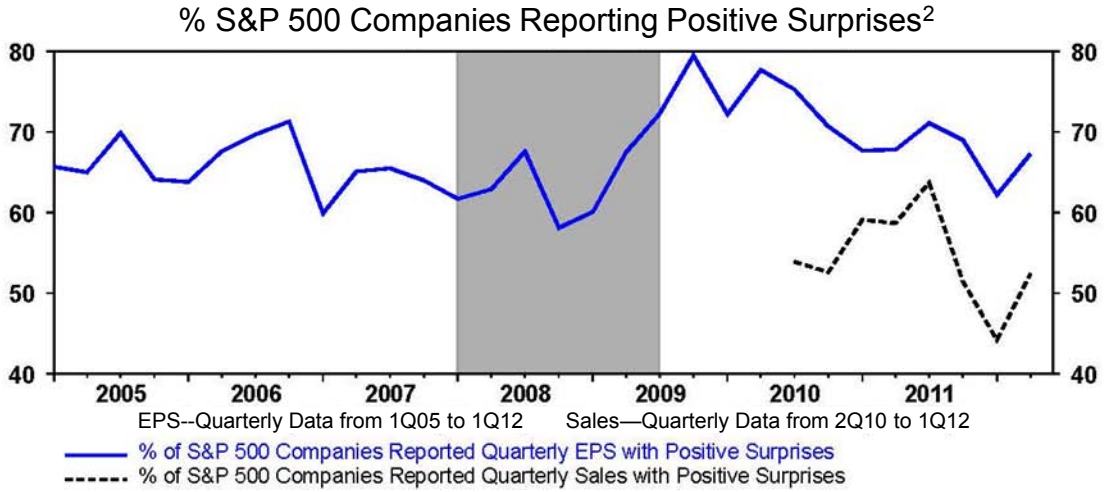
Note: S&P 500 P/E on forward 12-month operating earnings and subsequent dividend reinvested returns.

TRS

Source: Standard & Poor's, Thomson Reuters, and Omega Advisors, Inc.

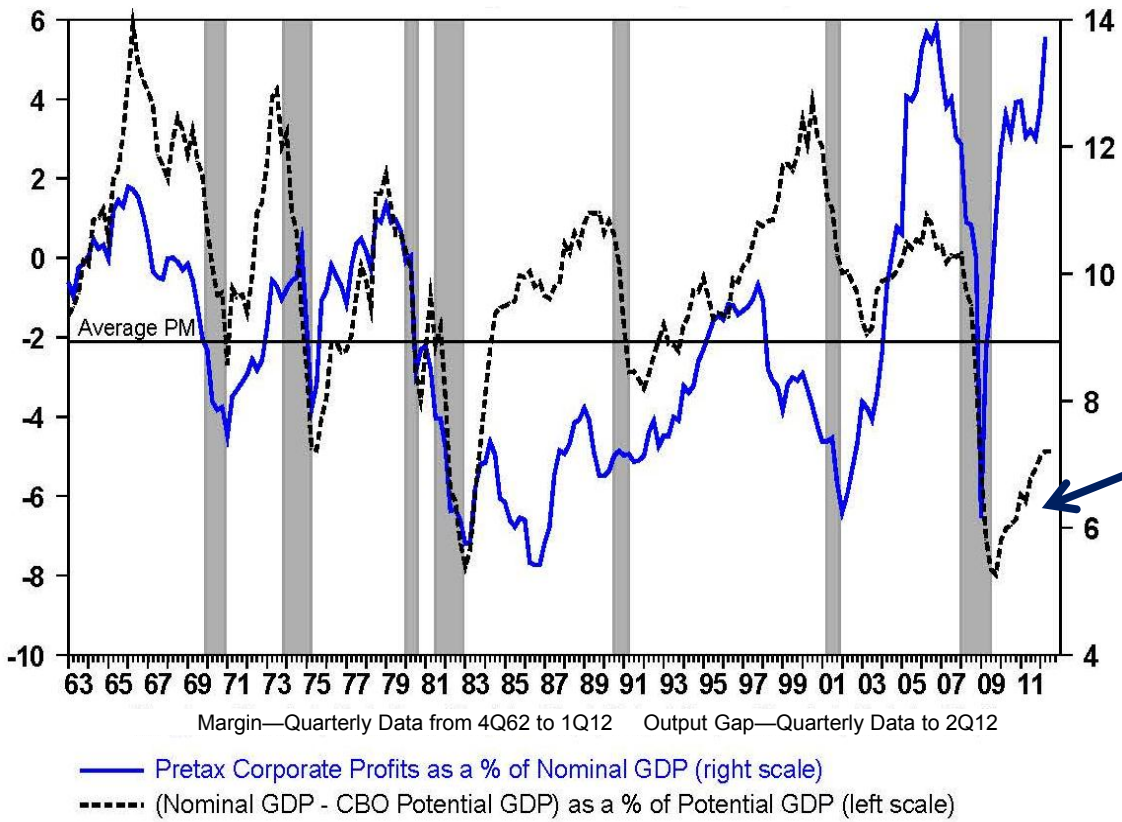
Profit Margin





[1]*Source: Bureau of Economic Analysis and Omega Advisors, Inc.*
[2]*Source: Bloomberg and Omega Advisors, Inc.*

Profit Margin and Output Gap

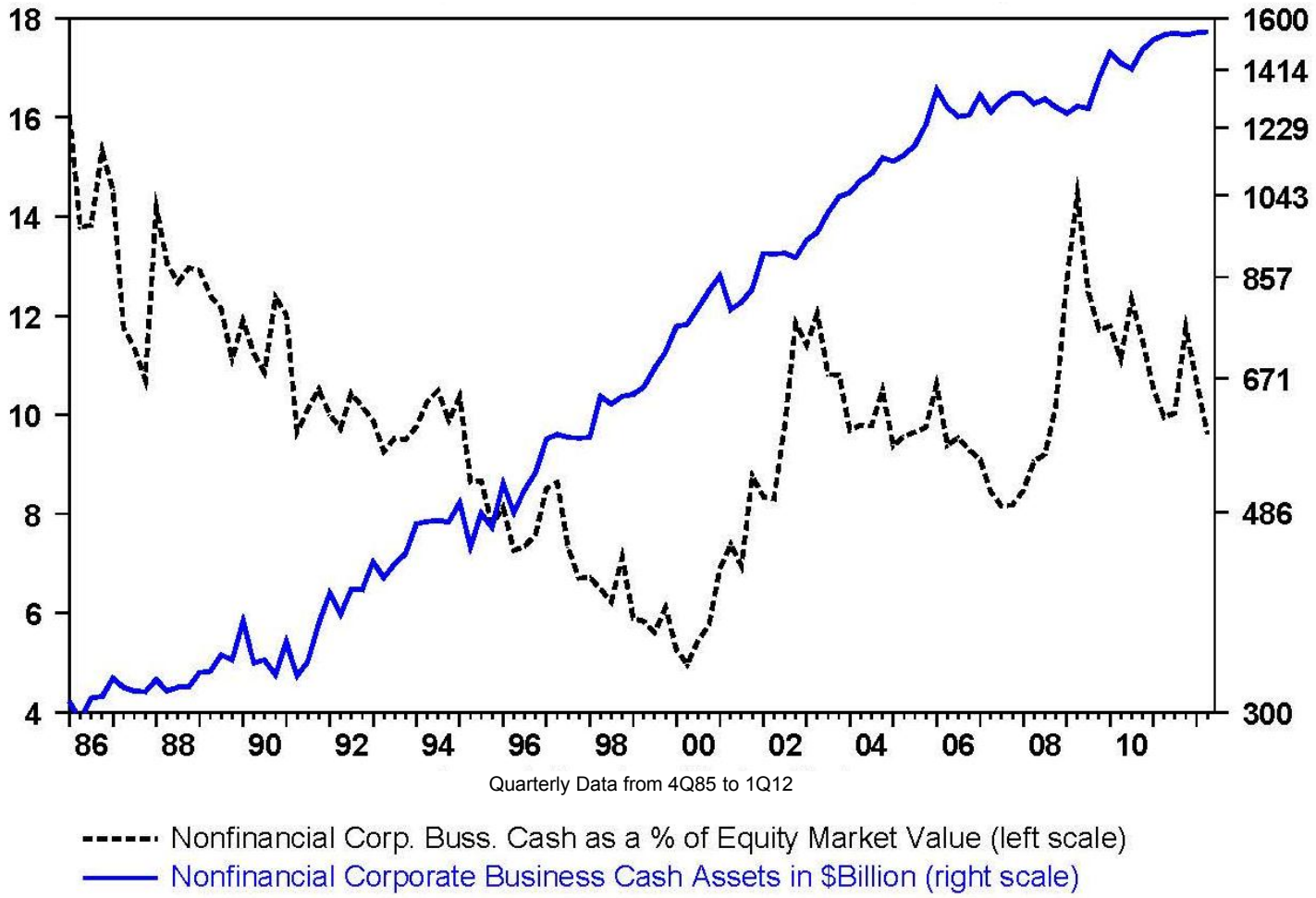


Nominal GDP < Potential GDP

- Positive for future margins (will prevent erosion)

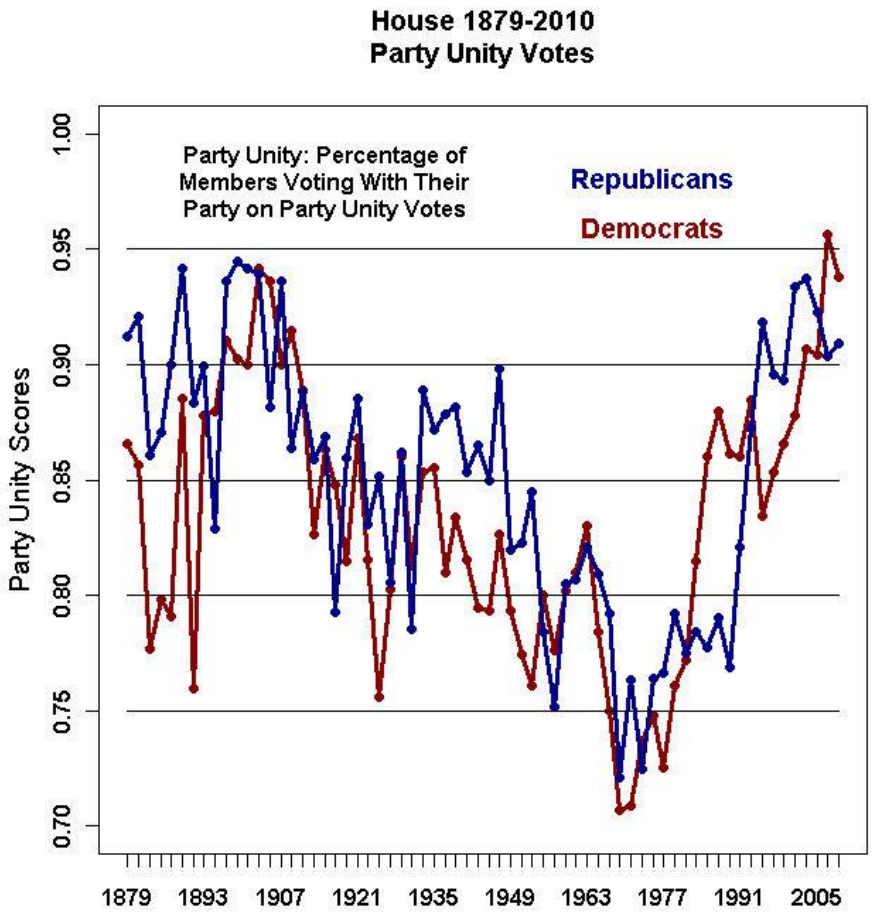
Source: Bureau of Economic Analysis, Congressional Budget Office, and Omega Advisors, Inc.

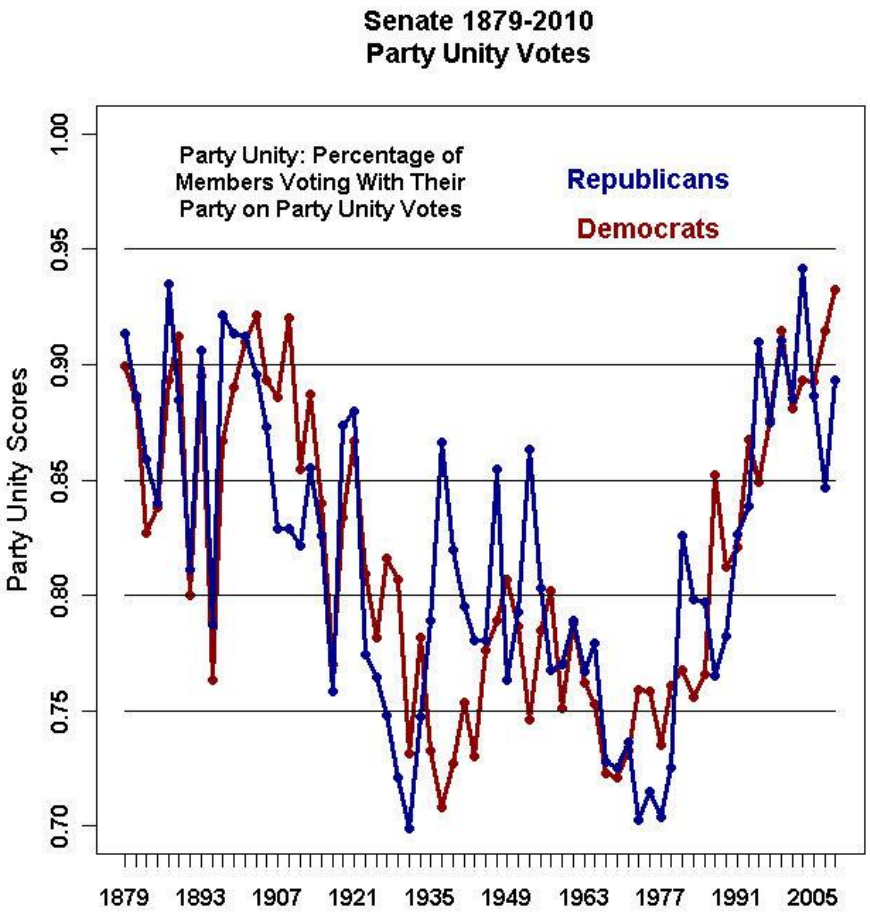
US Corporate Balance Sheet Liquidity



Source: Federal Reserve Flow of Funds Accounts and Omega Advisors, Inc.

Political Polarization





Source: "Polarized America: The Dance of Ideology and Unequal Riches," (1996) by Nolan McCarty, Keith T. Poole and Howard Rosenthal, available at www.voteview.com.

Income Tax Rates

	Pre-Bush Rate	Current Law		Obama Budget	Romney Plan[1]
	2000	2011-2012	2013	2013	2013
Top Taxable Income Rate (excluding Medicare/healthcare tax)	39.6%	35.0%	39.6%	39.6%	28.0%
Top Dividend Rate	39.6	15.0	43.4[2]	43.4[2]	15.0[3]
Top Capital Gains Rate	20.0	15.0	23.8[2]	30.0[4]	15.0[3]
Estate Tax Rate	55%	35%	55%	55%	0
Estate Exemption	$675,000	$5 million	$1 million	$1 million	NA

[1]Proposes to offset the reduction in tax rates with unspecified limits on deductions.
[2]Includes the recently enacted healthcare tax of 3.8%.
[3]Couples with annual income below $200,000 will pay no taxes on capital gains and qualified dividends.
[4]Includes Buffett tax.

TRS

Source: ISI and Omega Advisors, Inc.

Fiscal Cliff

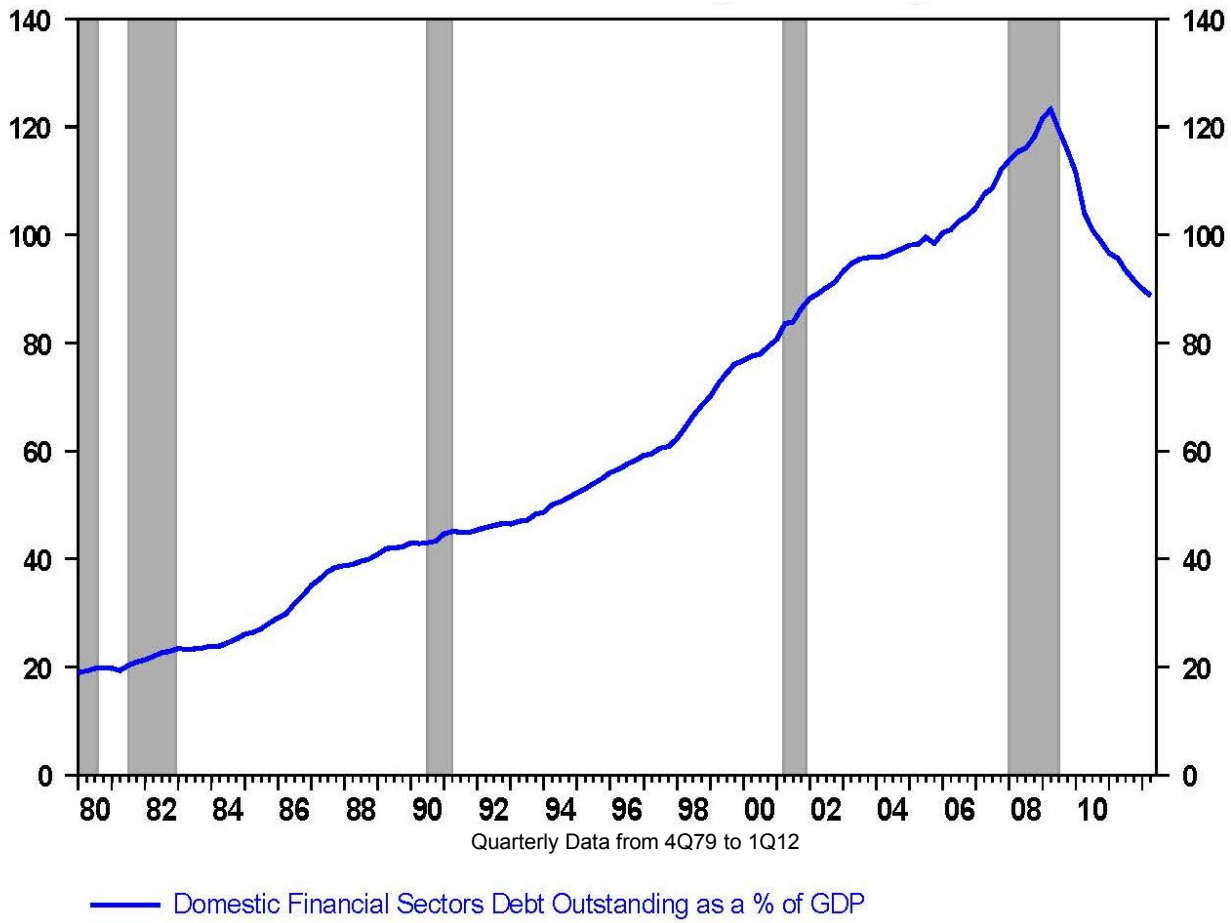
Projects Effect or Expire in 2013	2013 Current Law ($ billions)	2012 GS Assumption[1]	Current Situation
Payroll Tax Cut	-120	-120	Neither party in Congress has proposed extension.
Jobless Benefits	-40	-12	Neither party nor the President has proposed extension. Continued phase-down of benefits appears more likely.
Affordable Care Act (ACA)	-46	-46	The Supreme Court upheld the ACA on June 28.
2001/2003 Tax Cut (Upper Income)	-83	0	The White House has said that the President will veto a permanent or even a one-year extension. The House is likely to pass a one-year extension.
2001/2003 Tax Cut (Low/Middle Income)	-196	0	President Obama has called for extension. The House will vote on a one-year extension. It is unclear whether the Senate will consider an extension.
Spending Cuts ("Sequestration")	-90	-15	The House passed legislation to replace the sequester in 2013 with other cuts spread over next 10 years. The Senate has not taken action. The President's Budget proposes replacing the sequester as part of a broader package of budgetary savings.
Total Fiscal Effect, New Spending Cuts & Expiring	**-576**	**-193**	
Total Fiscal Effect as % of GDP	**-3.6%**	**-1.2%**	

[1]Goldman Sachs US economic forecast assumes expiration of payroll tax cut, bonus depreciation of $84 billion with little effect on activity, extension of 2001/2003 tax cuts and delay of sequester through 2013, and continued phase-down of jobless benefits.

TRS

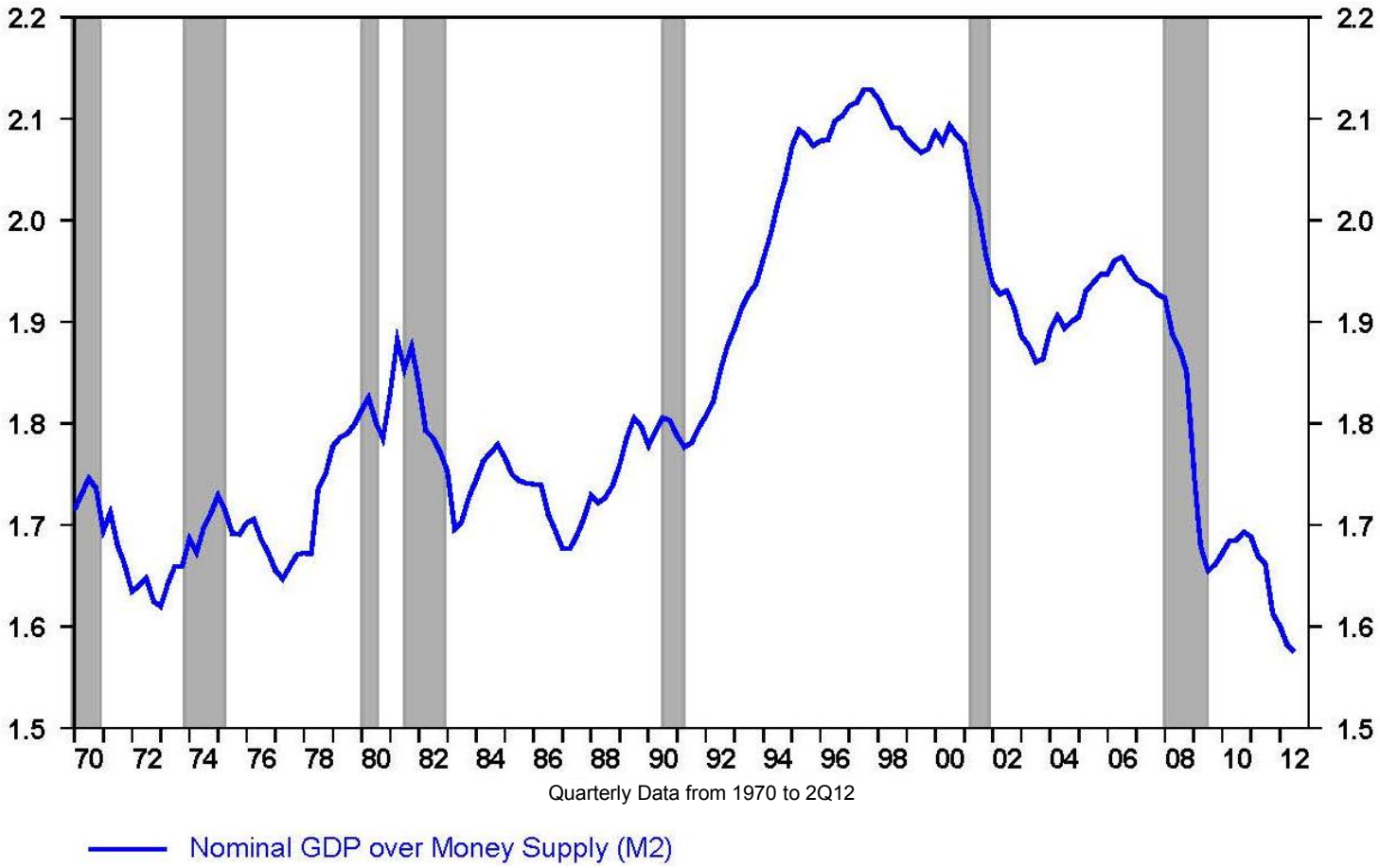
Source: Congressional Budget Office, Office of Management and Budget, GS Global ECS Research, and Omega Advisors, Inc.

Financial Sector Leverage Declining



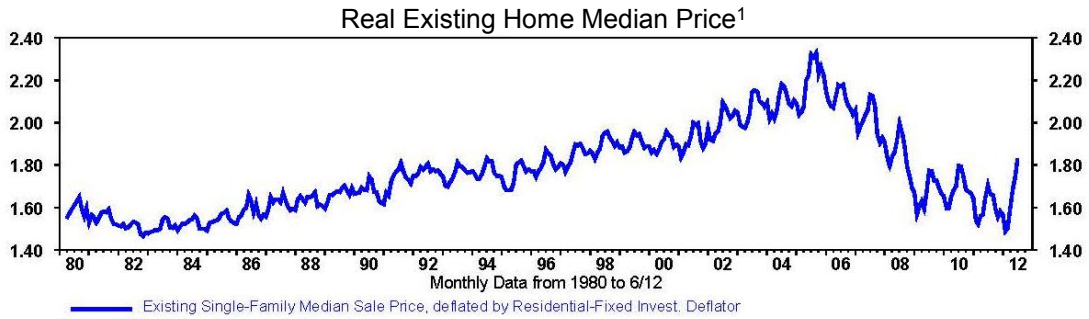
Source: Federal Reserve Flow of Funds Accounts, Bureau of Economic Analysis, and Omega Advisors, Inc.

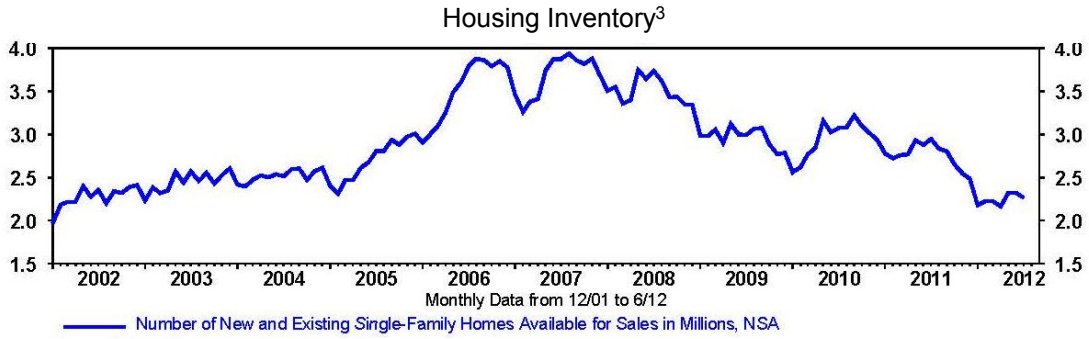
Velocity of Money



Source: Federal Reserve Bank, Bureau of Economic Analysis, and Omega Advisors, Inc.

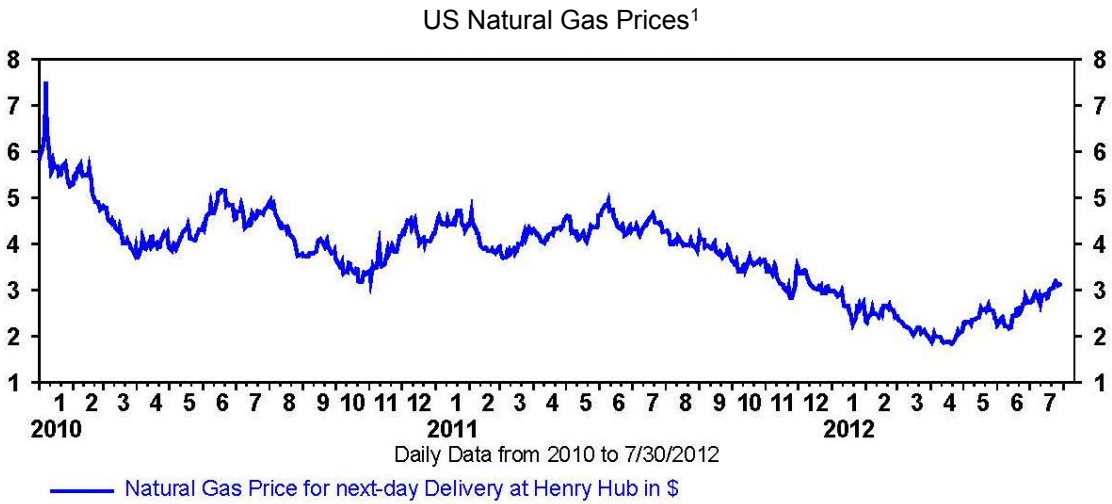
Housing

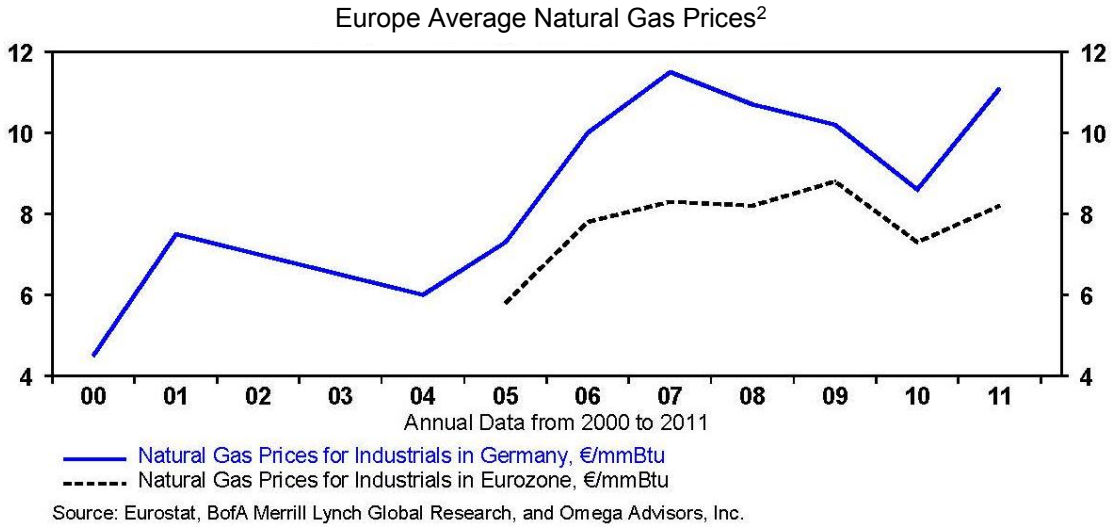




[1]Source: National Association of Realtors, Bureau of Economic Analysis, and Omega Advisors, Inc.
[2]Source: National Association of Home Builders, Bloomberg, and Omega Advisors, Inc.
[3]Source: National Association of Realtors and Omega Advisors, Inc.

Natural Gas Prices





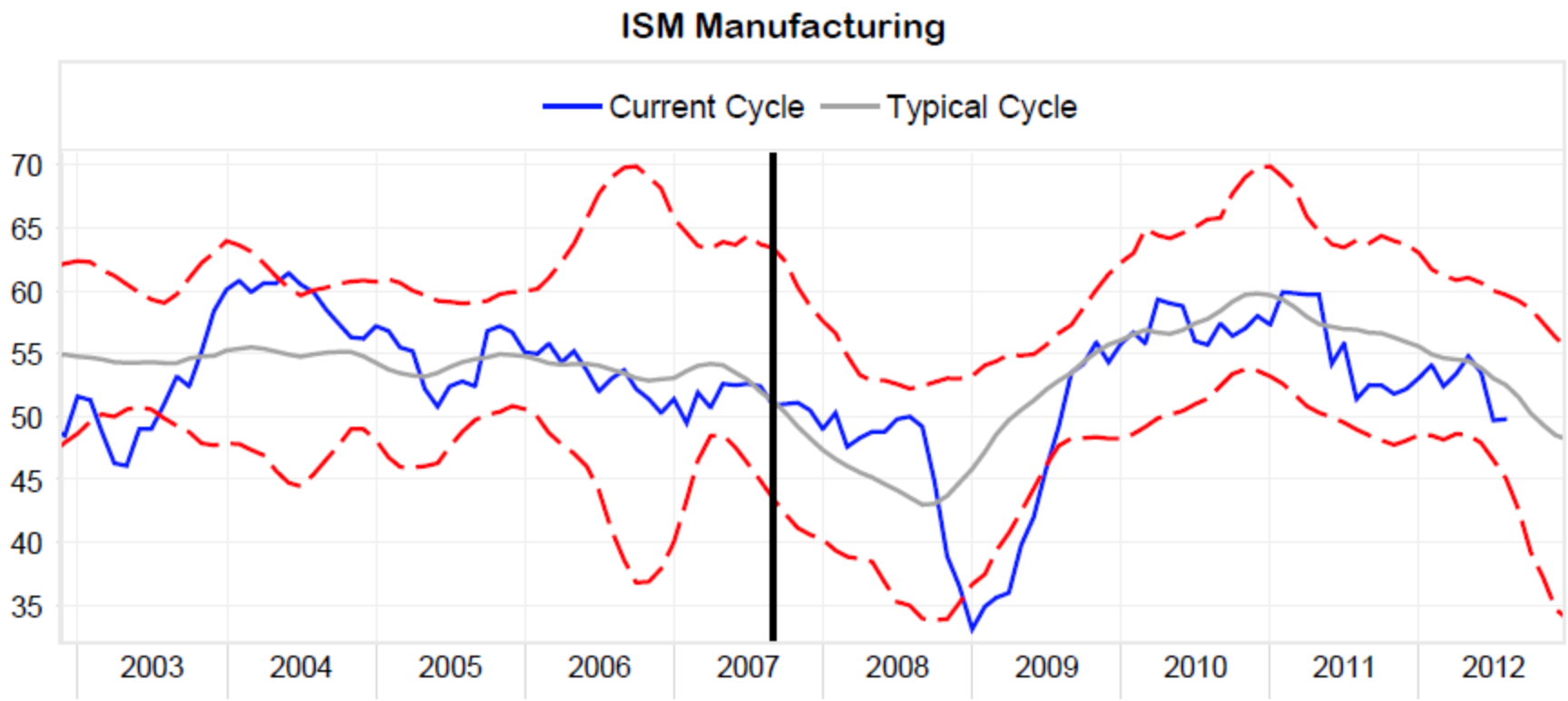
[1]Source: Bloomberg and Omega Advisors, Inc
[2]Source: Eurostat, BofA Merrill Lynch Global Research, and Omega Advisors, Inc.

Natural Gas Prices for Manufacturing

Country	$/mBTU in 2012
Japan	$16
Korea	$15
Germany	$12
US	$4
Canada	$3

Source: ISI and Omega Advisors, Inc.

Will We Have A Manufacturing Renaissance?

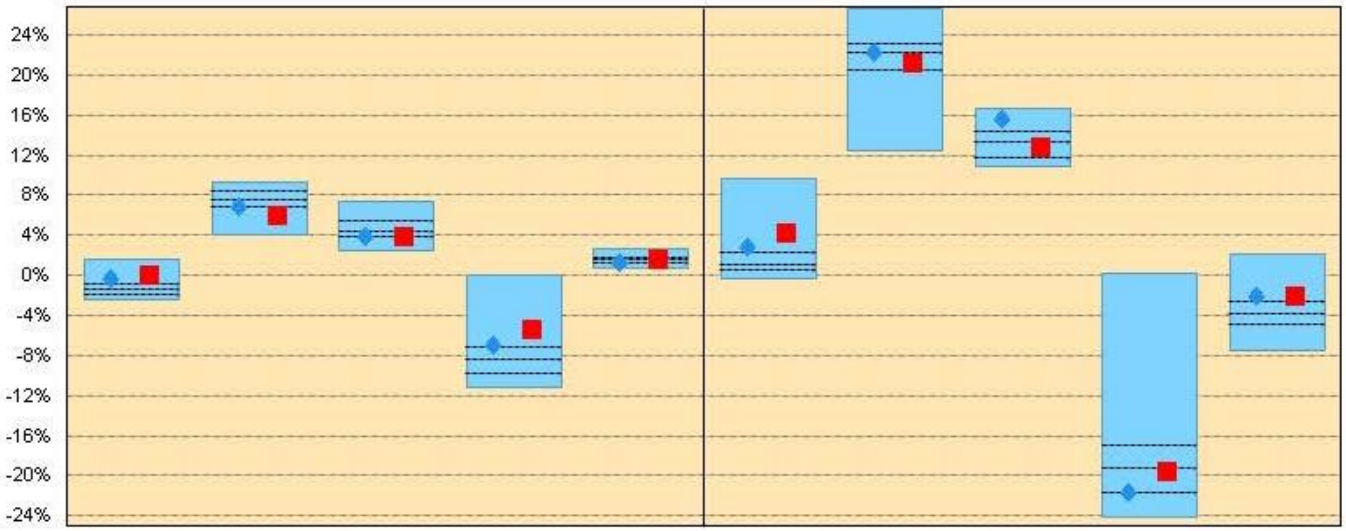


Source: Bridgewater Associates

Appendix

Appendix

Master Trust Performance Analysis
Performance Comparison
Total Returns of Public Fund Master Trusts > $10 Billion
Consecutive Time Periods: June 30, 2012

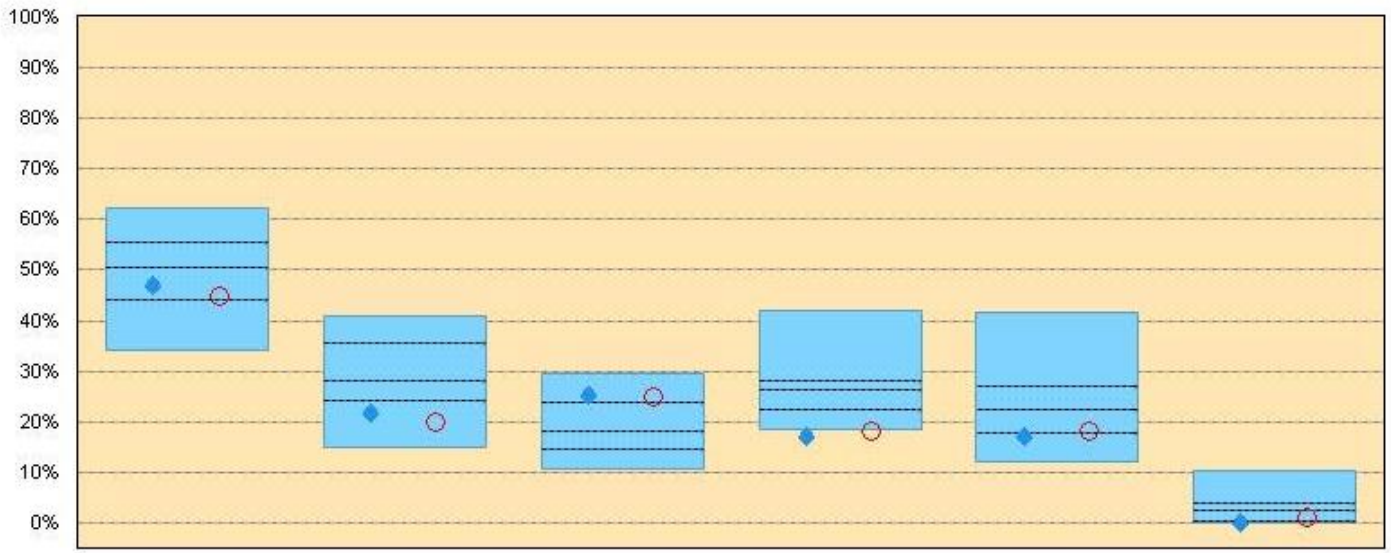


	Quarter Ending					Year Ending				
Percentile Rankings	**Jun. 12**	**Mar. 12**	**Dec. 11**	**Sep. 11**	**Jun. 11**	**Jun. 12**	**Jun. 11**	**Jun. 10**	**Jun. 09**	**Jun. 08**
5th	1.59	9.21	7.29	0.10	2.67	9.60	26.62	16.65	0.21	2.15
25th	-0.83	8.40	5.49	-7.13	1.84	2.26	23.10	14.30	-16.99	-2.59
50th	-1.46	7.50	4.35	-8.39	1.62	1.15	22.18	13.37	-19.30	-3.84
75th	-1.83	6.89	3.81	-9.74	1.23	0.58	20.57	11.75	-21.75	-4.85
95th	-2.46	4.06	2.50	-11.22	0.80	-0.38	12.45	10.84	-24.11	-7.48
No. of Observations	40	43	43	42	45	39	44	45	44	45
♦Total Fund	-0.38 (15)	6.92 (67)	3.81 (75)	-7.02 (20)	1.33 (68)	2.80 (17)	22.29 (47)	15.66 (7)	-21.75 (75)	-2.04 (19)
■Total Fund Benchmark	0.03 (8)	5.91 (89)	3.86 (70)	-5.35 (10)	1.66 (43)	4.14 (5)	21.20 (61)	12.84 (63)	-19.49 (56)	-2.02 (17)

Source: : Wilshire TUCS ™

Appendix

Master Trust Performance Analysis
Asset Allocation of Public Fund Master Trusts > 10 Billion
As of June 30, 2012



Percentile Rankings	Total Equity	US Equity	Non-US Equity	Total Fixed	US Fixed	Non-US Fixed
5th	62.11	41.06	29.61	42.15	41.64	10.15
25th	55.68	35.58	23.96	28.13	26.90	4.04
50th	50.53	27.98	18.28	26.15	22.52	2.49
75th	44.27	24.21	14.73	22.30	17.94	0.51
95th	34.24	14.99	10.51	18.33	12.06	0.00
♦Total Fund	46.83 (65)	21.74 (85)	25.09 (19)	16.99 (99)	17.03 (85)	-0.04 (100)
○Total Fund Policy Allocation	45.00 (71)	20.00 (88)	25.00 (19)	18.00 (96)	18.00 (71)	0.00 (100)

Source: : Wilshire TUCS ™

Tab 5 C.

TRS Diamond Jubilee: 75 Years of Investing

Review of Capital Markets and Perspective on The Long Term

Hewitt ennisknupp

An Aon Company

Looking Back Over 75 Years

- We do not have records on investment results going back to the inception of TRS in 1937, but looking at the returns from broad asset classes may helpful.

- TRS began during the Great Depression, a period broadly categorized as a significant and sustained economic slowdown as well as a very high level of unemployment.
  - Our current circumstances, often referred to as the Great Recession, is generally viewed as the toughest economic times since the 1930s.

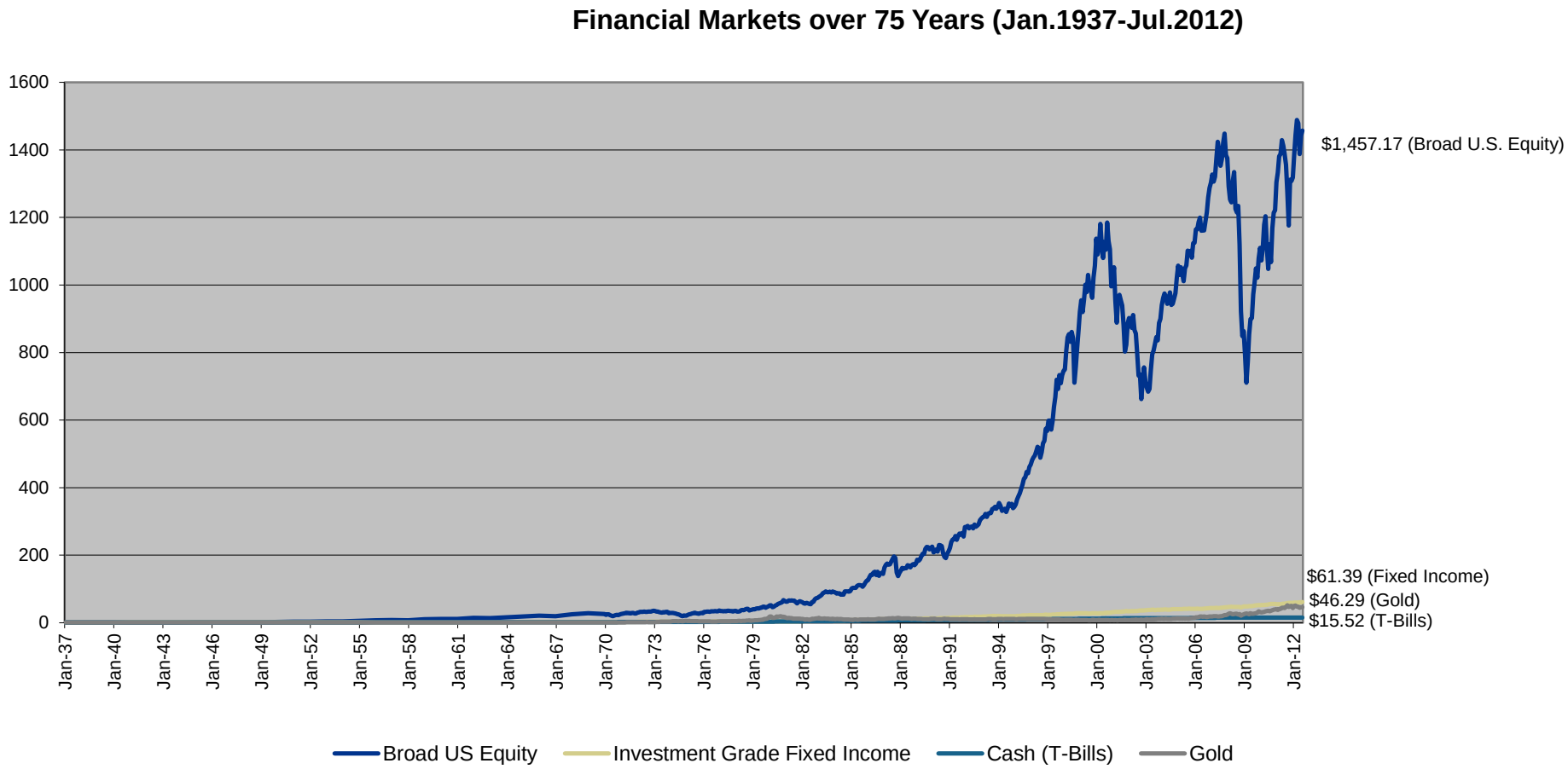
- Evaluating investments results during this very long time horizon can be helpful, particularly in light of the discussion surrounding long term return on asset assumptions.
  - Despite being book-ended by the two most significant periods of economic contraction in the last century, capital markets have performed relatively well.

Economic Comparison: 1937 vs. 2012

	1937	2012
Yield on 10-year US Treasury	2.1%	1.5%
US GDP Growth	5.1%	2.2%
US inflation	1.5%	2.3%
US Unemployment	14.3%	8.3%

- Economic growth, as measured by change in Gross Domestic Product, was favorable in 1937 and represented a significant recovery from earlier in the '30s.
  - Growth would turn negative again, however, in 1938
- Unemployment was significantly higher in 1937
  - Both periods can be characterized by uncertainty about economic and geo-political issues.
- How did the major asset classes perform in a period of time starting with the Great Depression and ending with the Great Recession?

Growth of $1 in Stocks, Bonds, Gold and Bills



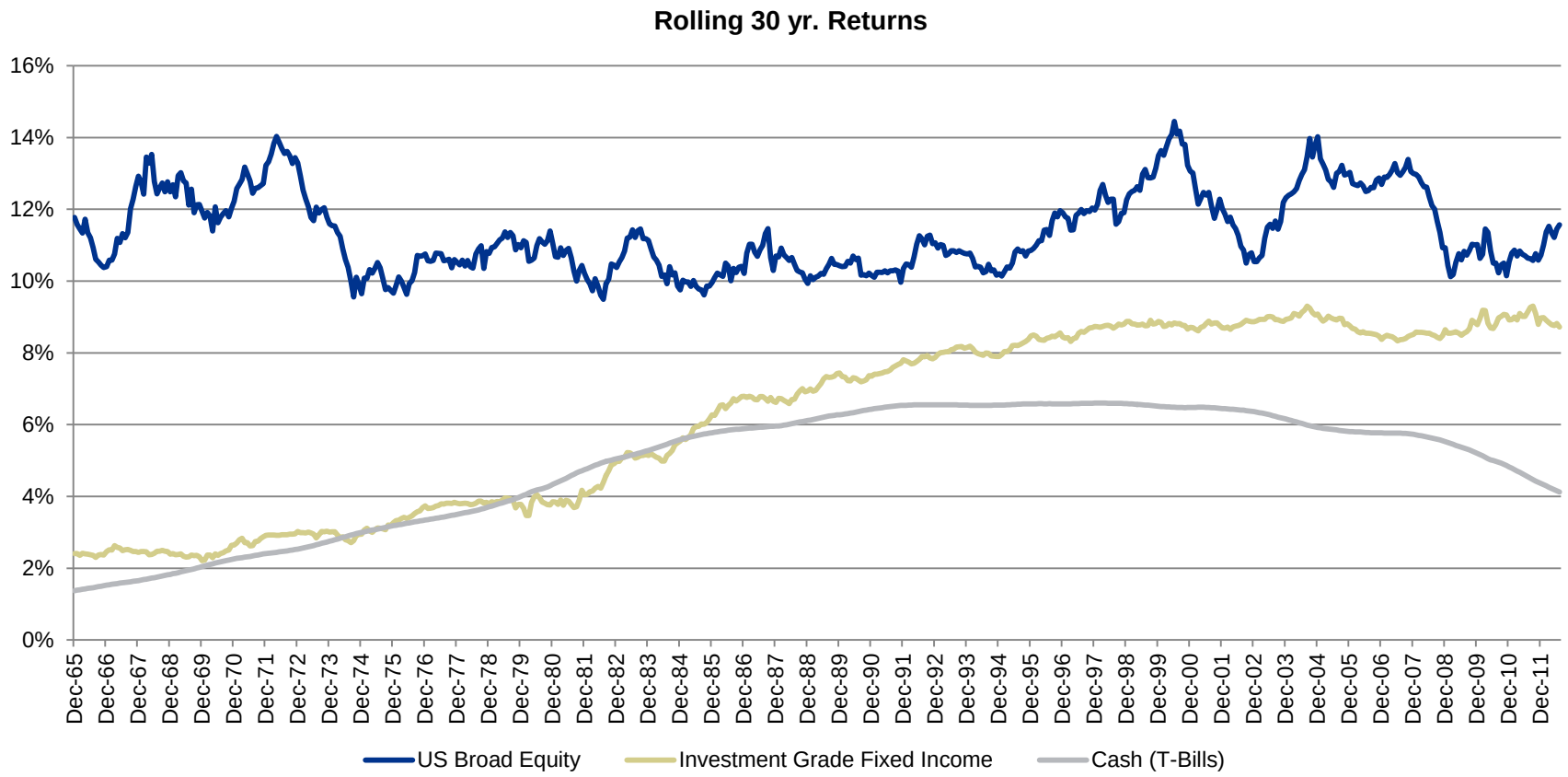
- Since the birth of TRS, equities have handily outperformed US government bonds, gold and Treasury bills. The graph above shows how $1 invested in 1937 would have grown into 2012.

TRS: A Quarter Century At a Time

Historical Performance	Stocks	Bonds
1937-1962	11.2%	2.4%
1962-1987	10.1%	7.3%
1987-2012	9.5%	7.2%

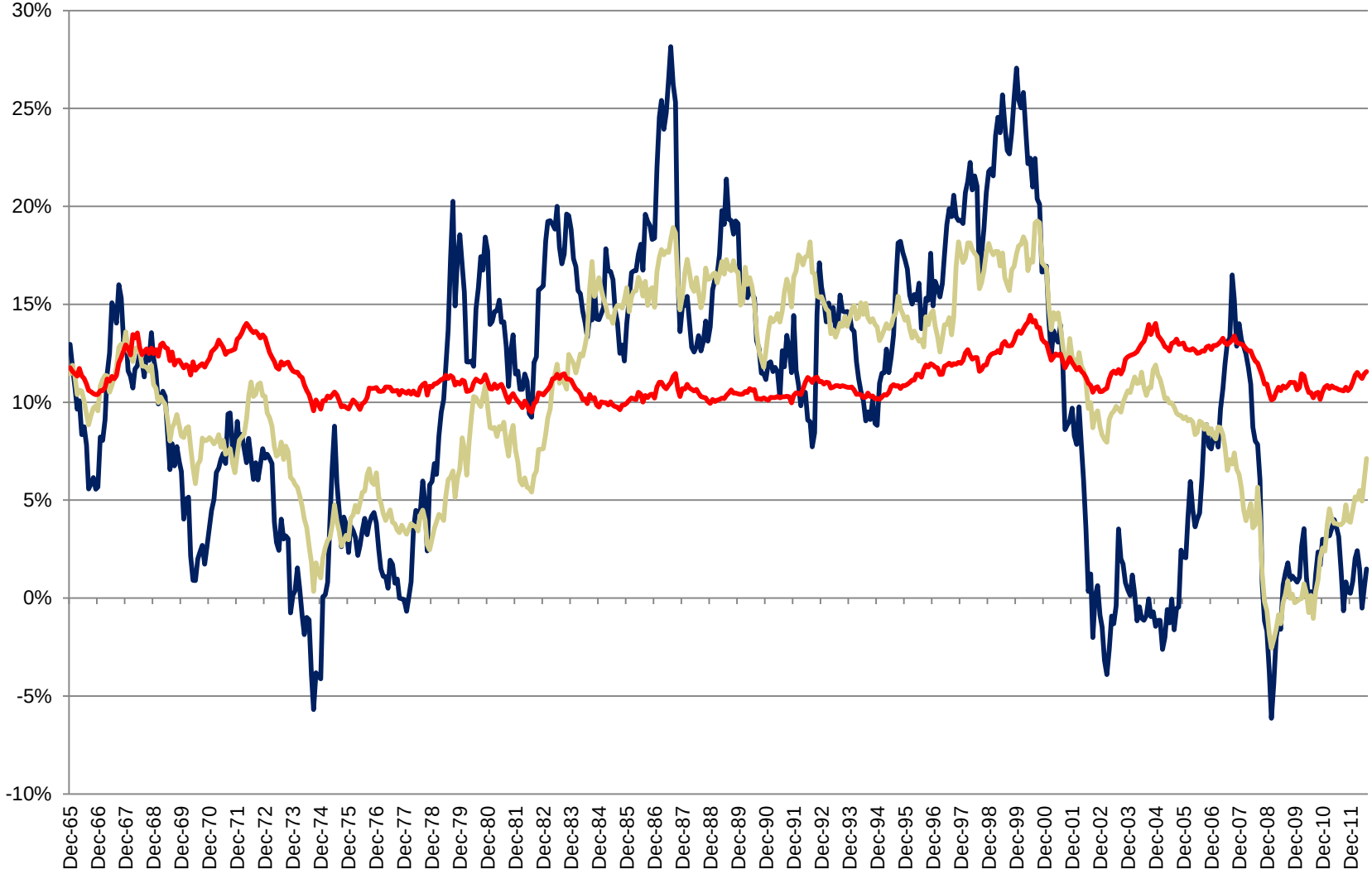
- If 75 years is an unrealistically long period of time, a quarter century is more reasonable.
- Looking at the first three quarter centuries of TRS, both stocks and bonds have performed well over the 25 year periods in question.

Stocks, Bonds and Bills: Rolling 30 Year Returns



- Shifting the focus from the growth of $1 to rolling rates of return, equities still dominate bonds and cash over long periods of time. This chart, however, masks some significant ups and downs.

Which Asset Seems More Attractive?



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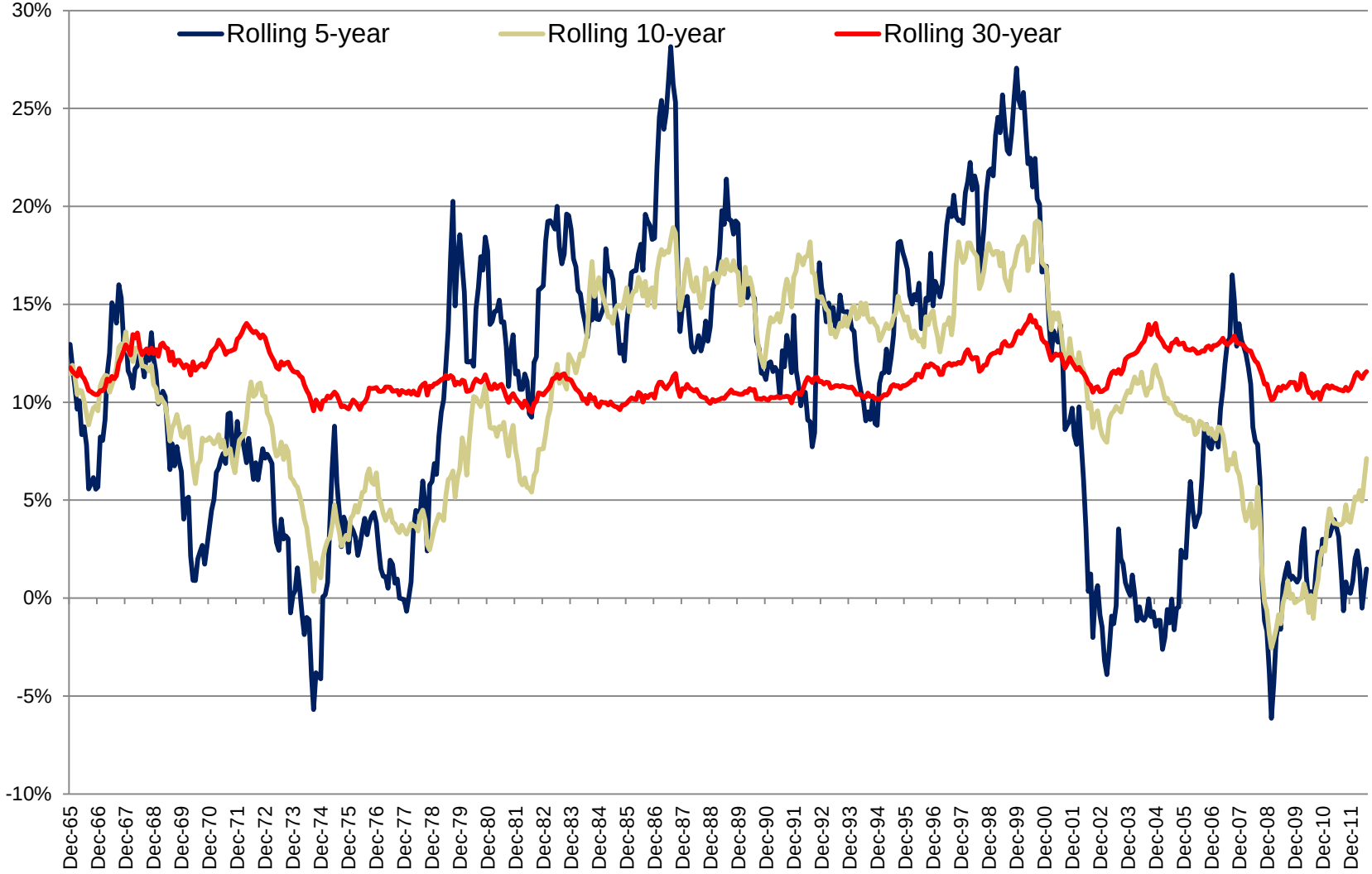
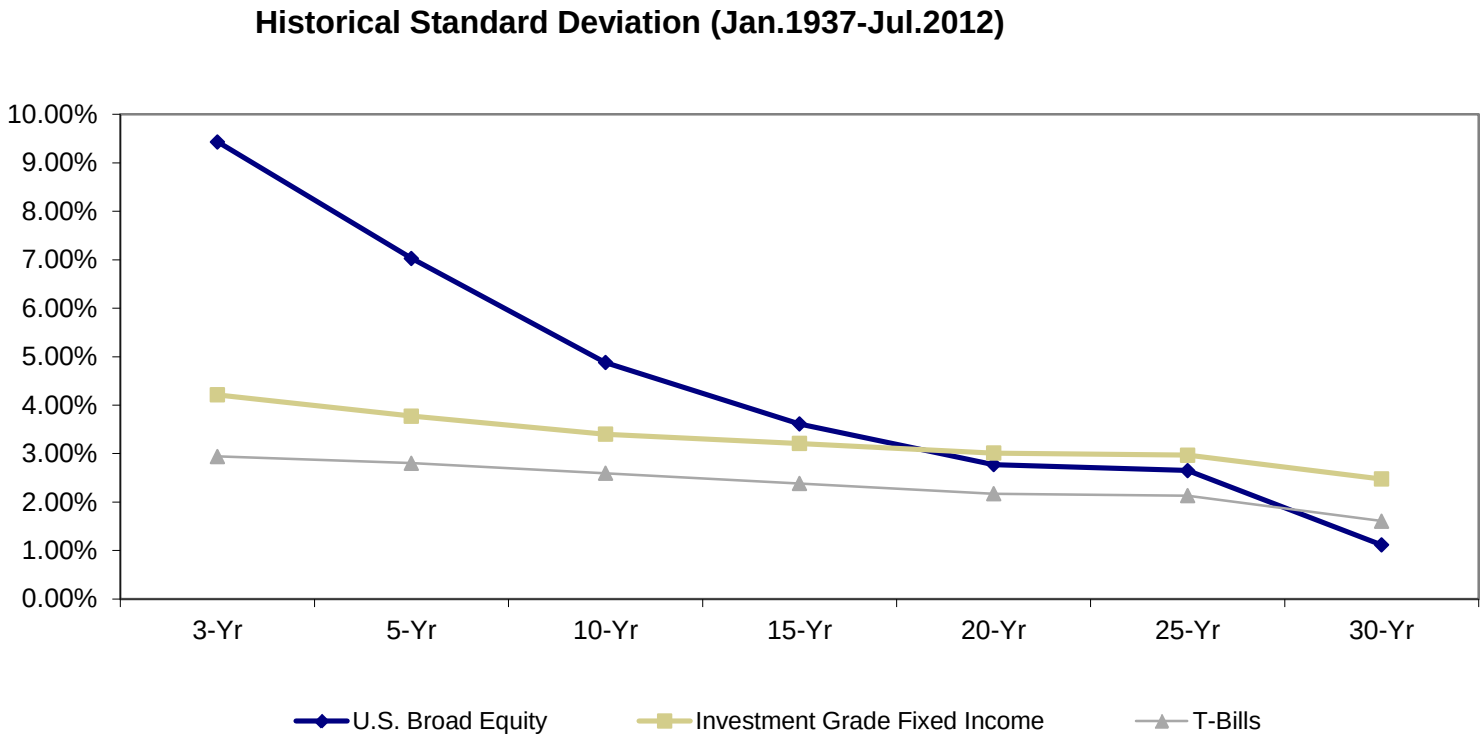
Trick Question!



Volatility Declines as Time Horizon Lengthens



- As we lengthen the time period over which we calculate the average standard deviation of returns (a conventional measure of risk), equities look less volatile.

The Bumpy Ride From Equities: 13 Bear Markets

Peak	Trough	Time to Trough	Recovery	Time to Recover	Change at Worst Point	Change over 6 month Period following Trough
August 1929	June 1932	2 years, 9 months	December 1944	**15 years, 3 months**	**-83.5%**	50.7%
May 1946	May 1947	11 months	December 1949	3 years, 6 months	-23.9%	8.1%
July 1957	December 1957	4 months	July 1958	11 months	-15.1%	16.4%
January 1962	June 1962	4 months	April 1963	1 year, 3 months	-23.1%	16.8%
January 1966	September 1966	7 months	March 1967	1 year, 1 month	-15.4%	22.3%
November 1968	June 1970	1 year, 6 months	December 1971	3 years	-33.5%	29.3%
December 1972	September 1974	1 year, 8 months	December 1976	3 years, 11 months	-46.3%	36.0%
November 1980	July 1982	1 year, 7 months	October 1982	1 year, 10 months	-18.7%	40.7%
August 1987	November 1987	2 months	April 1989	1 year, 7 months	-29.8%	17.4%
May 1990	October 1990	4 months	February 1991	8 months	-16.8%	28.8%
August 2000	September 2002	2 years	March 2006	5 years, 6 months	-44.1%	4.5%
October 2007	February 2009	1 year, 3 months	April 2011	**3 years, 5 months**	**-51.0%**	41.8%
April 2011	September 2011	4 months	March 2012	10 months	-17.7%	13.5%
Average		**1 year, 1 month**		**3 years, 3 months**	**-32.2%**	**25.1%**
Average without Depression**		**10 months**		**2 years**	**-26.5%**	**24.6%**

- Despite strong long-term results, the U.S. stock market experienced a “bear market” about 1 out of every 6 years.
  - These significant declines are usually followed by sharp rebounds.

**** Depression is defined as "Time to Recover" greater than 5 Years**

A Bull For Every Bear, +1

Start	End**	Length of Bull Market in Years	Cumulative Return	Annualized Return	6-Month Avg After Peak
July-32	February-37	4.7	393%	41%	-9.2%
April-38	April-40	2.1	64%	27%	-7.4%
April-42	May-46	4.1	227%	34%	-18.9%
June-49	December-61	12.6	753%	19%	-16.2%
July-62	January-66	3.6	90%	20%	-7.9%
October-66	November-68	2.2	63%	25%	-4.2%
July-70	December-72	2.5	80%	26%	-14.9%
October-74	November-80	6.2	254%	23%	-1.6%
August-82	August-87	5.1	259%	28%	-17.3%
December-87	May-90	2.5	67%	23%	-11.1%
November-90	June-98	7.8	349%	21%	6.9%
September-98	August-00	2.0	67%	29%	-19.6%
October-02	October-07	5.1	119%	17%	-9.8%
March-09	June-12	3.4	105%	24%	N/A
Average		**4.6**		**25%**	**-10.1%**

**** A bull market is considered ended if the next trough is more than 15% off from the prior peak.**

- Significant bull markets are also common, but have the benefit of lasting longer than the bear markets.

Stocks vs. Bonds vs. Time

Percentage of Time U.S. Stocks outperformed U.S. Bonds				
	Rolling 5-year	Rolling 10-year	Rolling 20-year	Rolling 30-year
Historical Periods	74.1%	84.4%	99.7%	100.0%

- The table above looks at U.S. stocks vs. U.S. bonds over various time horizons and reports the percentage of time stocks beat bonds.
- U.S. stocks beat bonds in every 30 year time horizon.
- If our time horizon is shorter, say 5 years, bonds beat stocks 1 out of every 4 periods.

The Challenge of the Long Term Focus

- If stocks are such clear winners over very long periods of time, why is there controversy over investing in “risky” assets?

- Is the 30 year time horizon unrealistically long?

- How should the Board of Trustees think about the time horizon for investing?
  - Interest from stakeholders (beneficiaries, legislature, taxpayers) that is shorter term
  - Terms on the Board that do not match most definitions of long term
  - Public scrutiny when investment results are weakest

- What is reasonable to expect going forward?

Investing for The Next 25 Years

- HEK's best estimate of the long-term nominal return of the TRS portfolio based on the current allocation is 8.3%.
- As you can see below, this long term return can deviate significantly from more intermediate term expectations that are impacted more by valuation and current market conditions.

Asset Class	GMO 7-Year Return[1]	HEK 30 Year Return
US Large Cap	2.2%	7.5%
US Small Cap	0.5	8.0
Non-US Developed	6.4	8.9
Emerging Mkt. Equity	7.9	10.5
Hedge Funds	--	6.2
Private Equity	--	9.7
US Treasuries	--	3.2
Cash	1.8	2.7
Real Assets	--	7.3
TIPS	1.0	2.9
TRS Total Plan	**--**	**8.3%**

[1] Based on March, 2012 GMO expected real returns with 2.5% inflation assumption added back to get nominal expectations.

Focusing On Long Term

- What time horizon should the Board have?
  - The ideal time horizon should be 27 years or more, a time horizon which matches the duration of TRS liabilities
  - Practically speaking that may be too long. *Consider at least* 10 years, as TRS has many private market investments with lives that are expected to be longer than 10 years
  - Balance desire for long-term returns with fiduciary duty to monitor short term results; accept that underperformance is common for the very best managers during shorter periods
  - Asset allocation, investment policy, actuarial assumptions are all set for the long term

- It is a challenge for most Boards, indeed most people, to truly accept this time horizon

Challenges to Long Term Focus

- Superior decision making, and the ability to achieve a long term horizon, depends on avoiding short-comings that many individuals make when presented with investment decisions.
  - Traditional economics assumes that individuals are rational decision makers
  - Behavioral finance acknowledges flaws that are less than rational

- Some of the more common flaws, or behavioral biases, include:
  - **Herding** – an urge to conform behavior to a certain group
    - Contributes to bubbles
  - **Loss Aversion** – desire to avoid losses or adverse outcomes
    - We avoid selling “losers”, hoping they will rebound
  - **Confirmation** – investors seek out information that confirms pre-conceived notions
    - Find data to support our belief in future direction of market
  - **Anchoring** – decisions strongly linked to recent information or available data
    - Managers/asset classes with best recent performance will do well in future
  - **Overconfidence** – excessive confidence in beliefs even in light of new information
    - Not enough time spent on why we could be wrong

Overcoming These Challenges

- Biases in investment decision making can be difficult to overcome because they are hard wired in our decision-making process.

- What can the Board do to maintain the long term perspective and avoid behavioral pitfalls?
  - Acknowledge these common biases, try to avoid them
  - Invite diverse opinions; challenge accepted wisdom
  - Focus on process rather than results
  - Adopt a long-term policy that endures long after your term
  - Avoid the “herd”; exploit the bursting of bubbles (TRS tactical credit investments in ‘08/09)
  - Be wary of “this time it is different”
  - Emphasize long term performance

Tab 5 D.

GMO

North America | Europe | Asia-Pacific

Teacher Retirement System of Texas Board Presentation

September 13, 2012

Edward Chancellor
Brian Huggon

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Presenters

Edward Chancellor Mr. Chancellor is a member of GMO's asset allocation team and focuses on capital market research. He has worked as a financial commentator and consultant and has written for the Wall Street Journal, New York Times, Financial Times, and Institutional Investor, among others. He is the recipient of the 2007 George Polk Award for financial journalism. Mr. Chancellor is the author of several books including Crunch Time for Credit (2005) and Devil Take the Hindmost: A History of Financial Speculation (1999), a New York Times Notable Book of the Year. Prior to joining GMO in 2008, he worked as deputy U.S. editor for Breakingviews.com in New York and for Lazard Brothers. Mr. Chancellor earned his B.A. in History from Cambridge University, and his Master of Philosophy in Modern History from Oxford University.

Brian Huggon Mr. Huggon is engaged in GMO's institutional client relationship management effort. Previously at GMO, he was a member of the shareholder services group. Prior to joining GMO in 2003, he worked at State Street Corporation, most recently as a client service representative. Mr. Huggon earned his B.A. in Criminal Justice and Psychology from Westfield State College.

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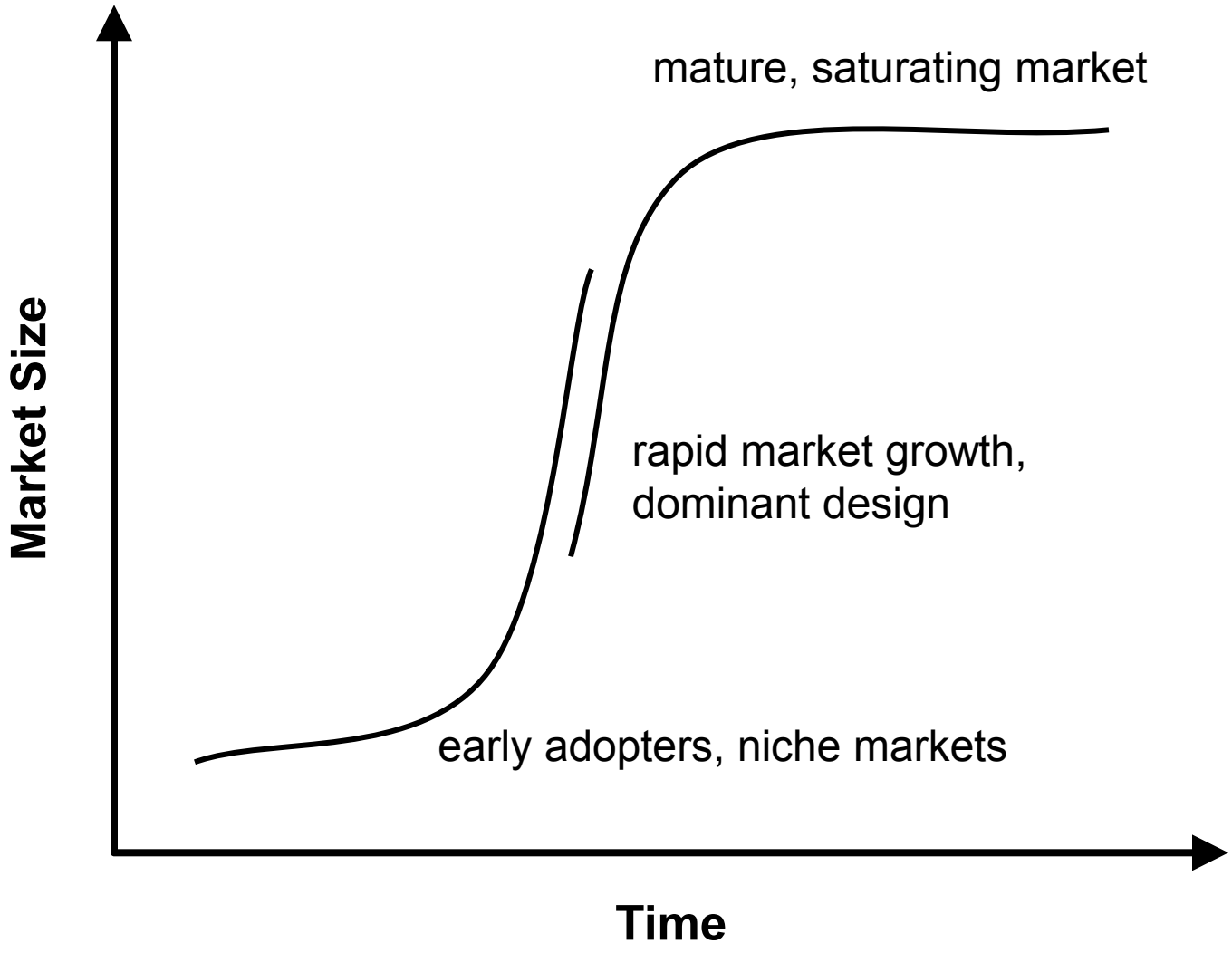
Part One:

The Characteristics of Past Speculative Manias

The Growth Story: Internet's S-Curve



Source: James M. Utterback (1996)

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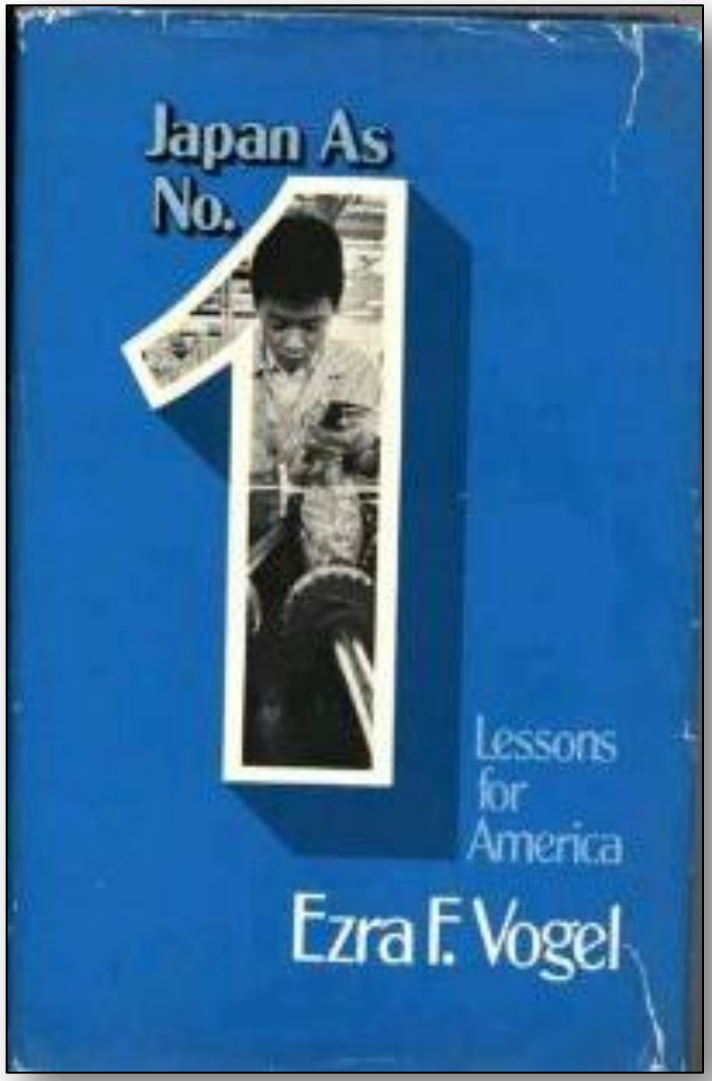
The Story: World Economic Primacy



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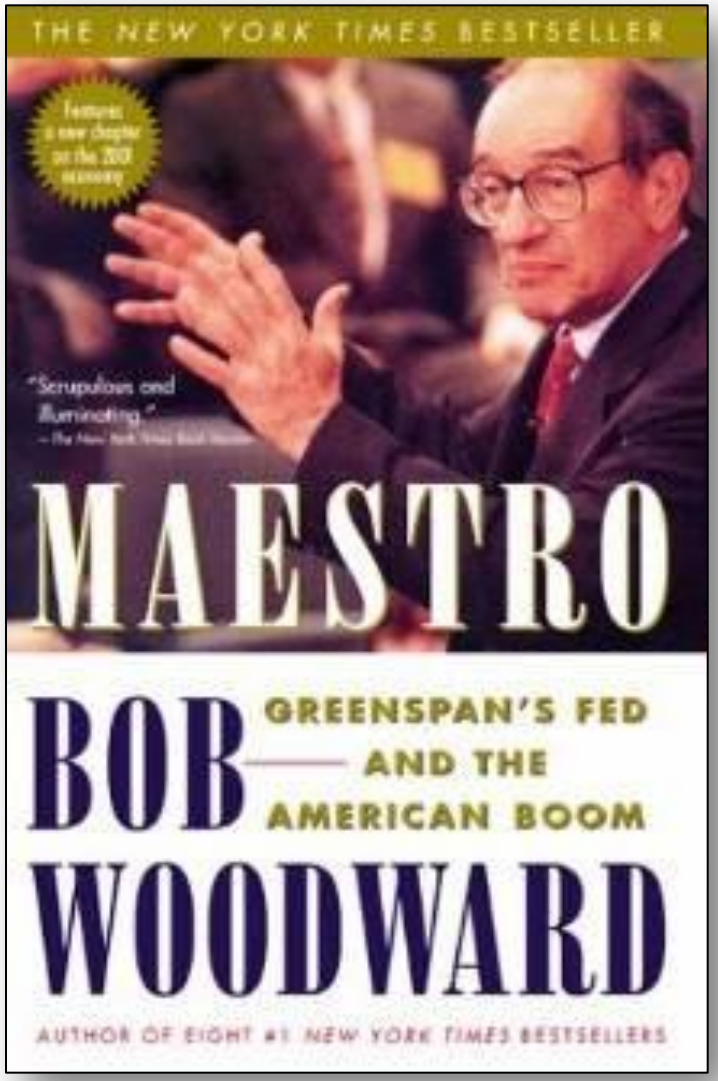
Moral Hazard: Overconfidence in the Authorities



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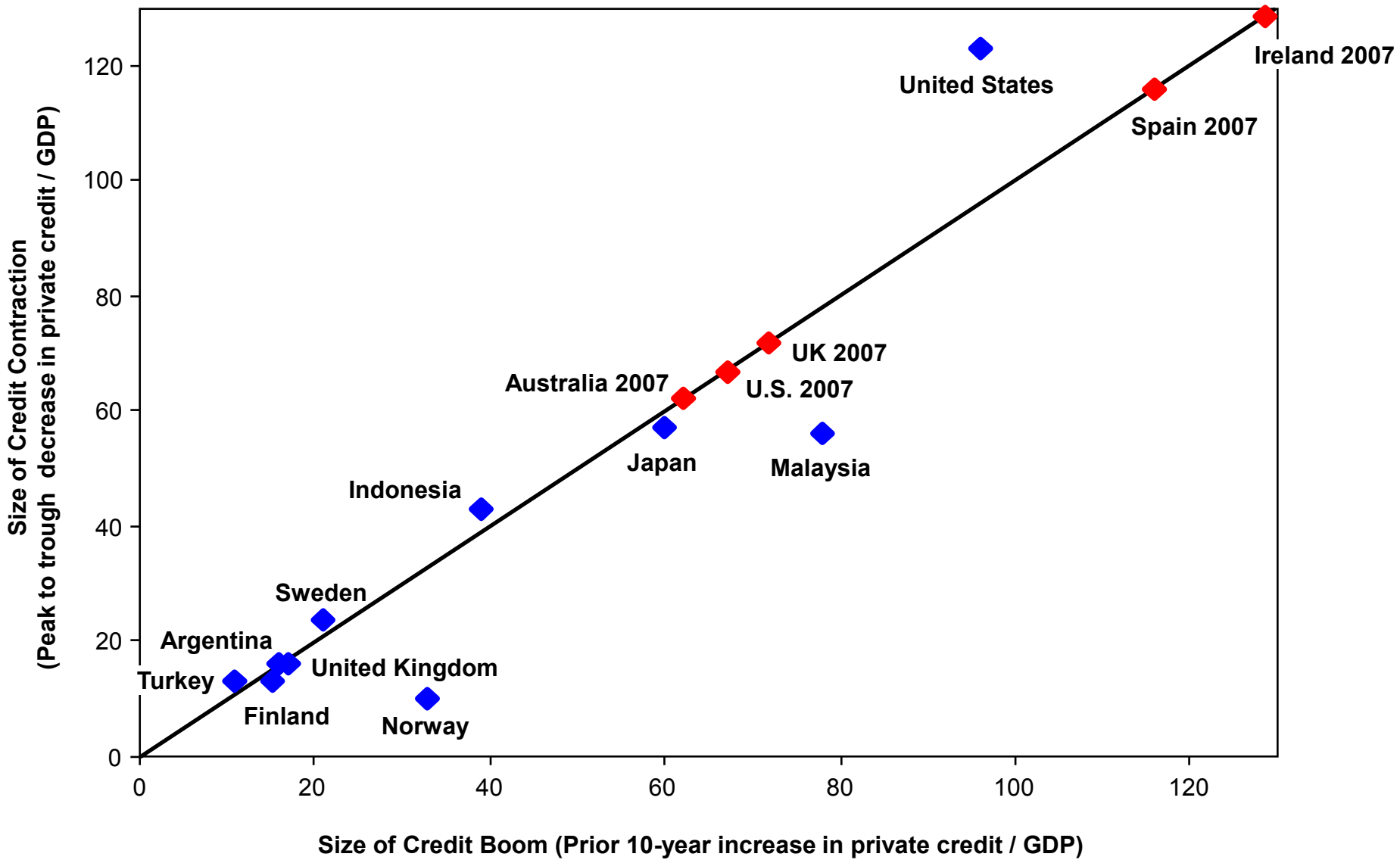
Credit Growth: Most Financial Crises Are 'Credit Booms Gone Wrong'



Source: Datastream, Bank of Japan, Historical Statistics of the U.S.

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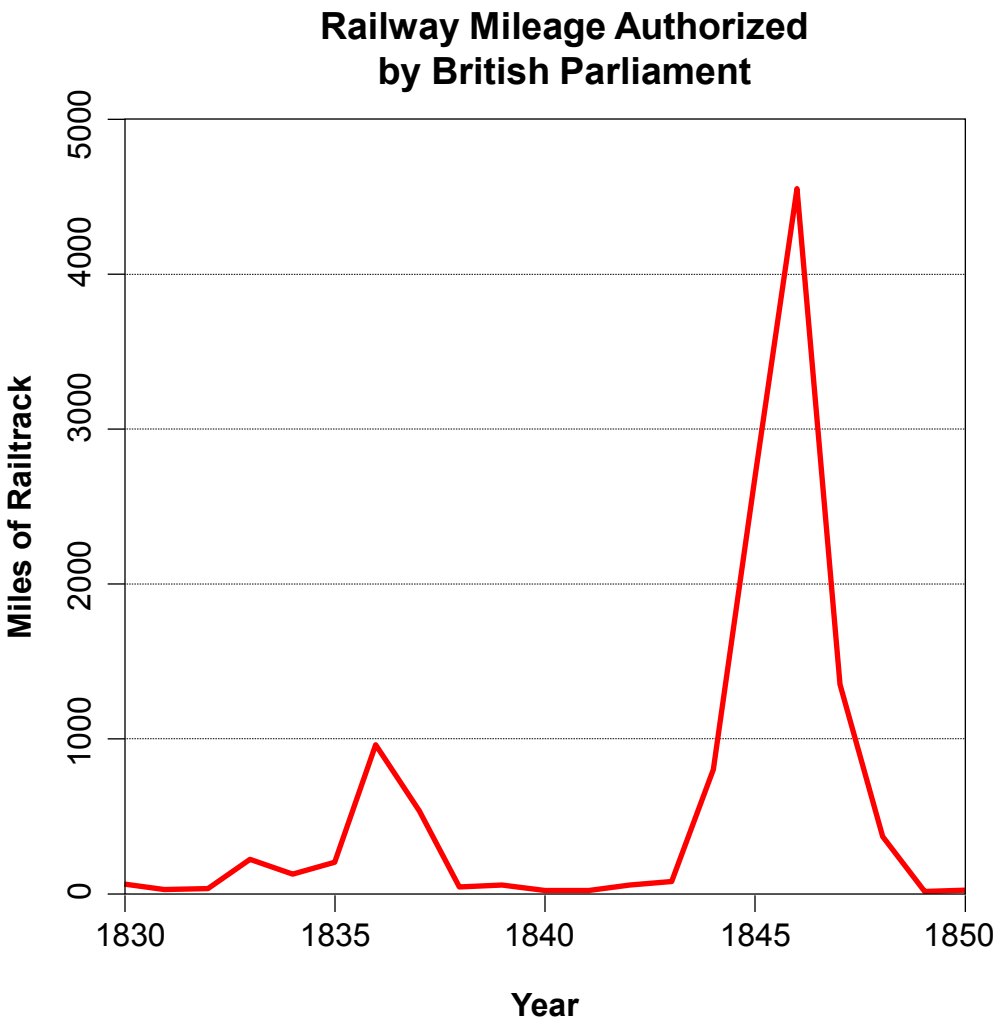
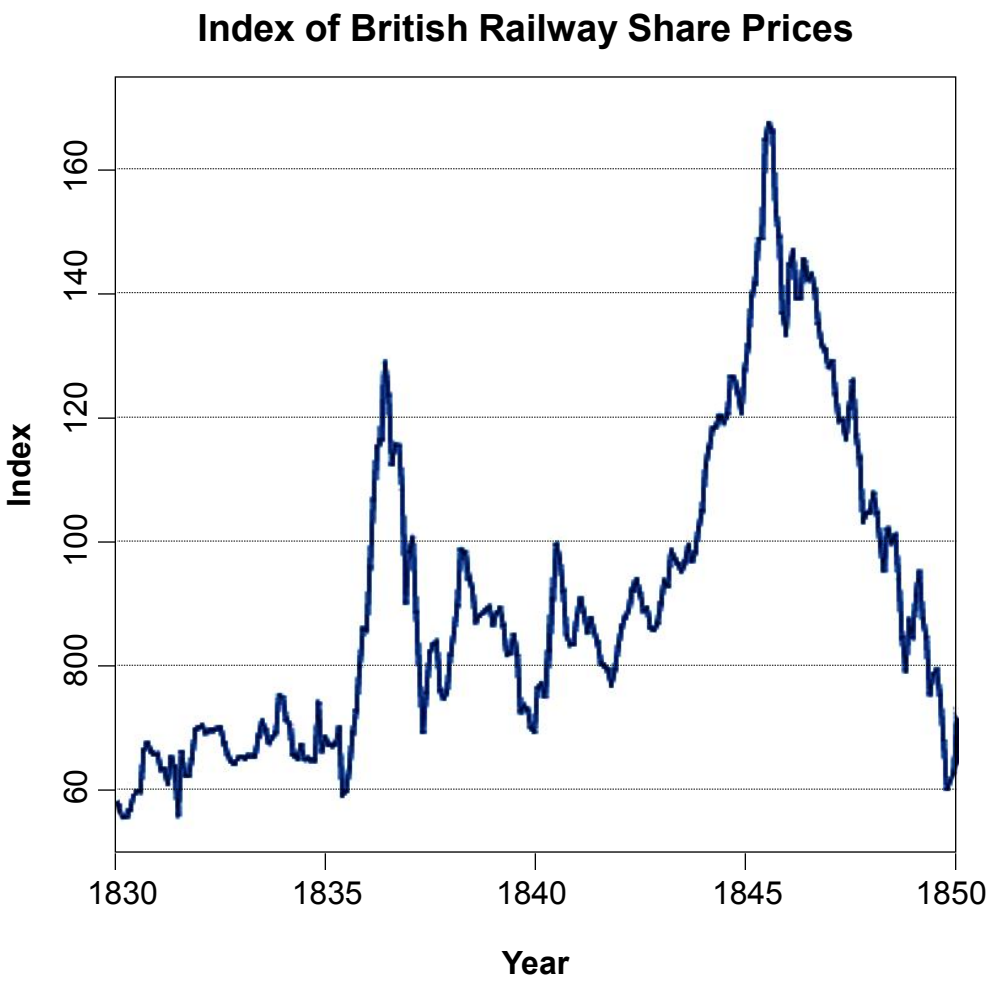
Investment Boom: The British Railway Mania of 1840s





Source: Andrew Odlyzko (2010)

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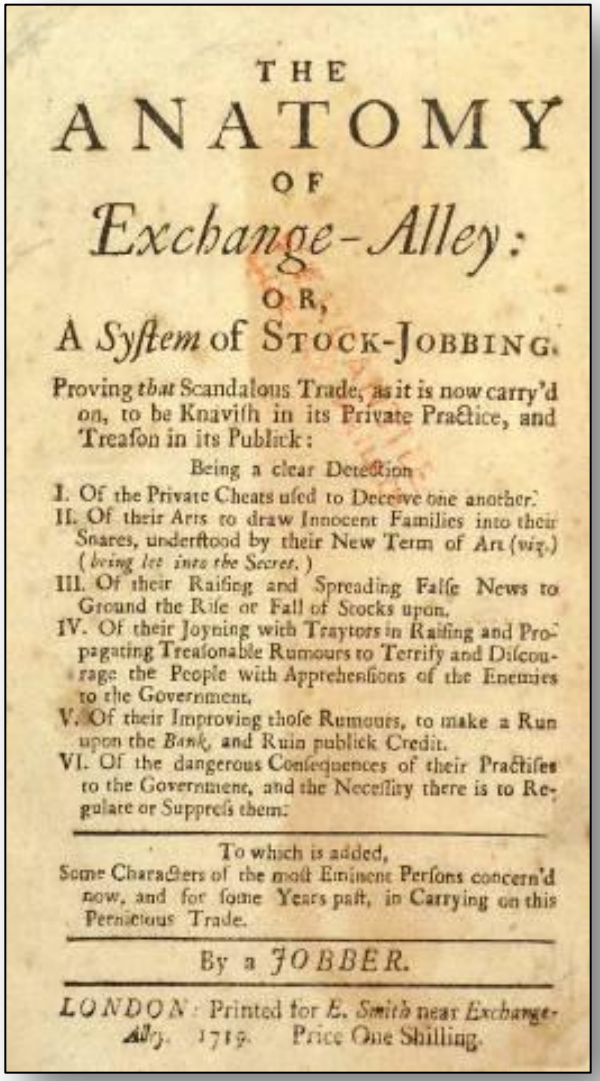
Agency Issues: Don't Trust Your Broker



THE
ANATOMY
OF
Exchange-Alley:
OR,
A *Syſtem* of STOCK-JOBBING.

Proving *that* Scandalous Trade, as it is now carry'd on, to be Knaviſh in its Private Practice, and Treaſon in its Publick:

Being a clear Detection

I. Of the Private Cheats uſed to Deceive one another.
II. Of their Arts to draw Innocent Families into their Snares, underſtood by their New Term of Art (*viz.*) (*being let into the Secret.*)
III. Of their Raiſing and Spreading Falſe News to Ground the Riſe or Fall of Stocks upon.
IV. Of their Joyning with Traytors in Raiſing and Propagating Treaſonable Rumours to Terrify and Diſcourage the People with Apprehenſions of the Enemies to the Government.
V. Of their Improving thoſe Rumours, to make a Run upon the *Bank*, and Ruin publick Credit.
VI. Of the dangerous Conſequences of their Practiſes to the Government, and the Neceſſity there is to Regulate or Suppreſs them.

To which is added,
Some Characters of the moſt Eminent Perſons concern'd now, and for ſome Years paſt, in Carrying on this Pernicious Trade.

By a *JOBBER.*

LONDON: Printed for *E. Smith* near *Exchange-Ally*. 1719. Price One Shilling.

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Speculative Mania: The Madness of Crowds

Het Groote Tafereel der Dwaasheid (1720)

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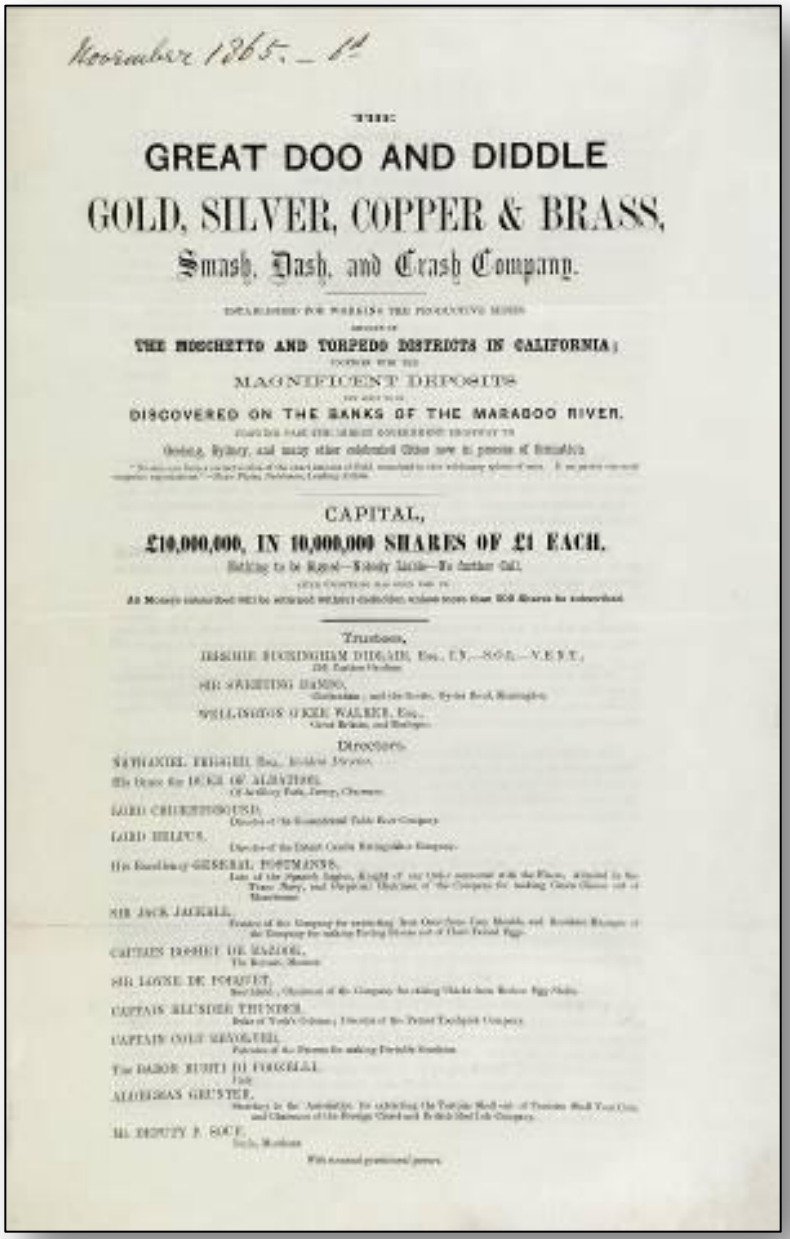
Frauds: Galbraith's Bezzle



November 1865. – 1d

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Smash, Dash, and Crash Company.

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Directors.

NATHANIEL FRIGGIT, Esq.,

His Grace the DUKE OF ALBATROSS,

LORD CHUKTUNGUND,

LORD HELPUS,

His Excellency GENERAL POSTMENUS,

SIR JACK JACKALL,

CAPTAIN DOSHET DE MAZIOSE,

SIR LOUNE DE POSQUET,

CAPTAIN REUSDER THUNDER,

CAPTAIN COLT REVOLVER,

The BARON RUSHI DI FORGERAL,

ALDERMAN GRUSTER,

M. DEPUTY P. SOCE,

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Ponzi Finance: Minsky's Financial Instability Hypothesis

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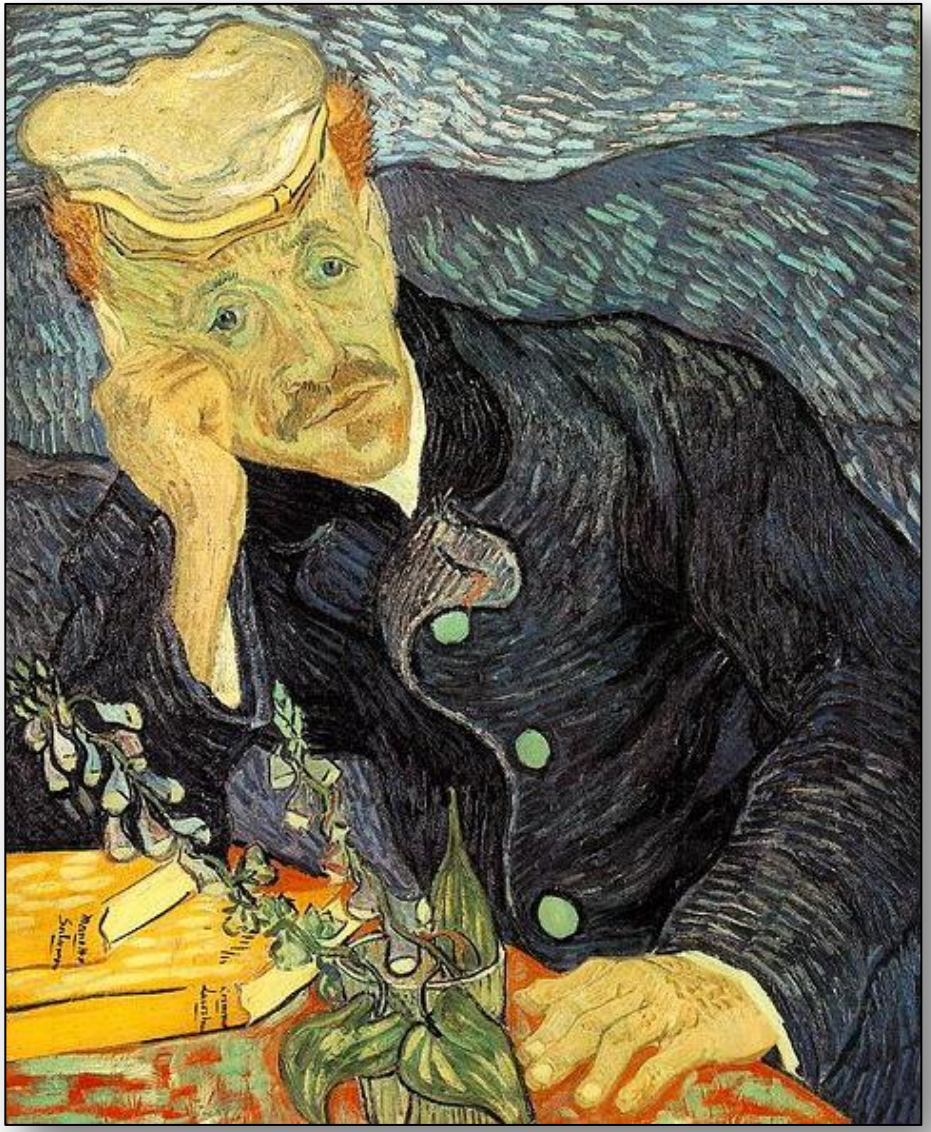
The House Money Effect: Conspicuous Consumption



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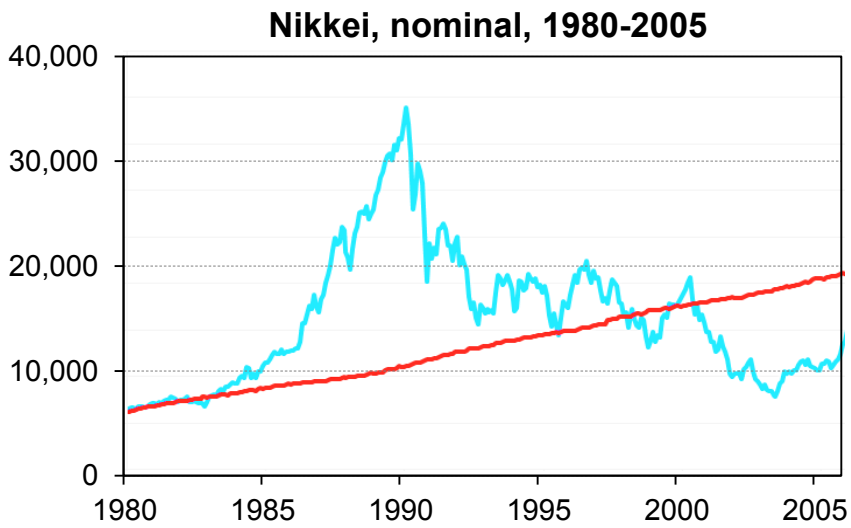
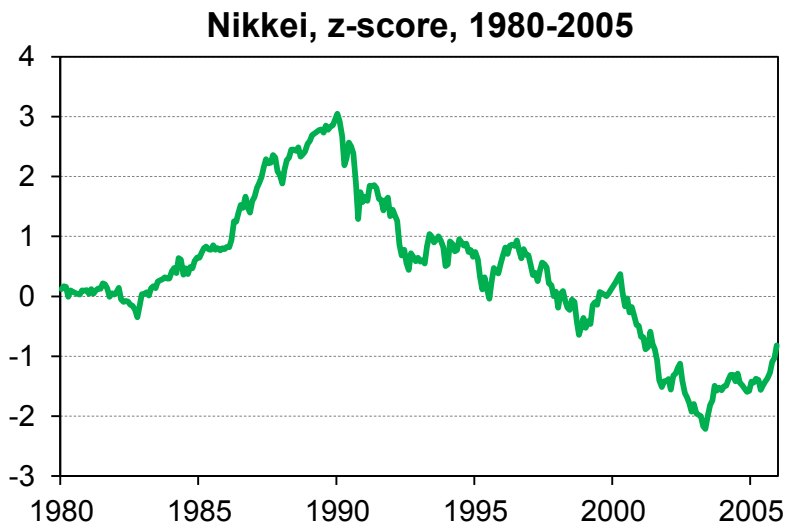
The Japanese Stock Bubble of Late 1980s

year of peak	1989	
height of peak	3.0 s.e.	(38915.87)
bottom of trough	-2.2 s.e.	(7863.29)
time from trend to peak	86	months
time from 1 s.e. to peak	46	months
time from 2 s.e. to peak	24	months
time from peak to trough	160	months
time above trend	151	months
time above 1 s.e.	72	months
real trend growth rate	3.7%	
size of s.e.	51%	
overvaluation at peak	248%	
fall from peak to trough	-80%	
real fall from peak to trough	-81%	
trend robustness	9/10	





Source: Nikkei, GMO

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Part Two:

A Quantitative Historical View of Asset Price Bubbles

Bubbles Are More Common than You Think

330 bubbles studied, in 10,000 years

	property	commodity	equity index	equity sector	total
years of data studied	769	3,768	3,268	2,379	10,184
number of series studied	20	35	50	39	144
number of bubbles identified	26	123	109	72	330

The typical asset has a bubble every 31 years on average

	property	commodity	equity index	equity sector	total
average years per bubble	30	31	30	34	31

Within commodities:

	precious metals	industrial metals	miscellaneous	agriculturals
average years per bubble	42	37	38	25

Source: Global Financial Data, GMO

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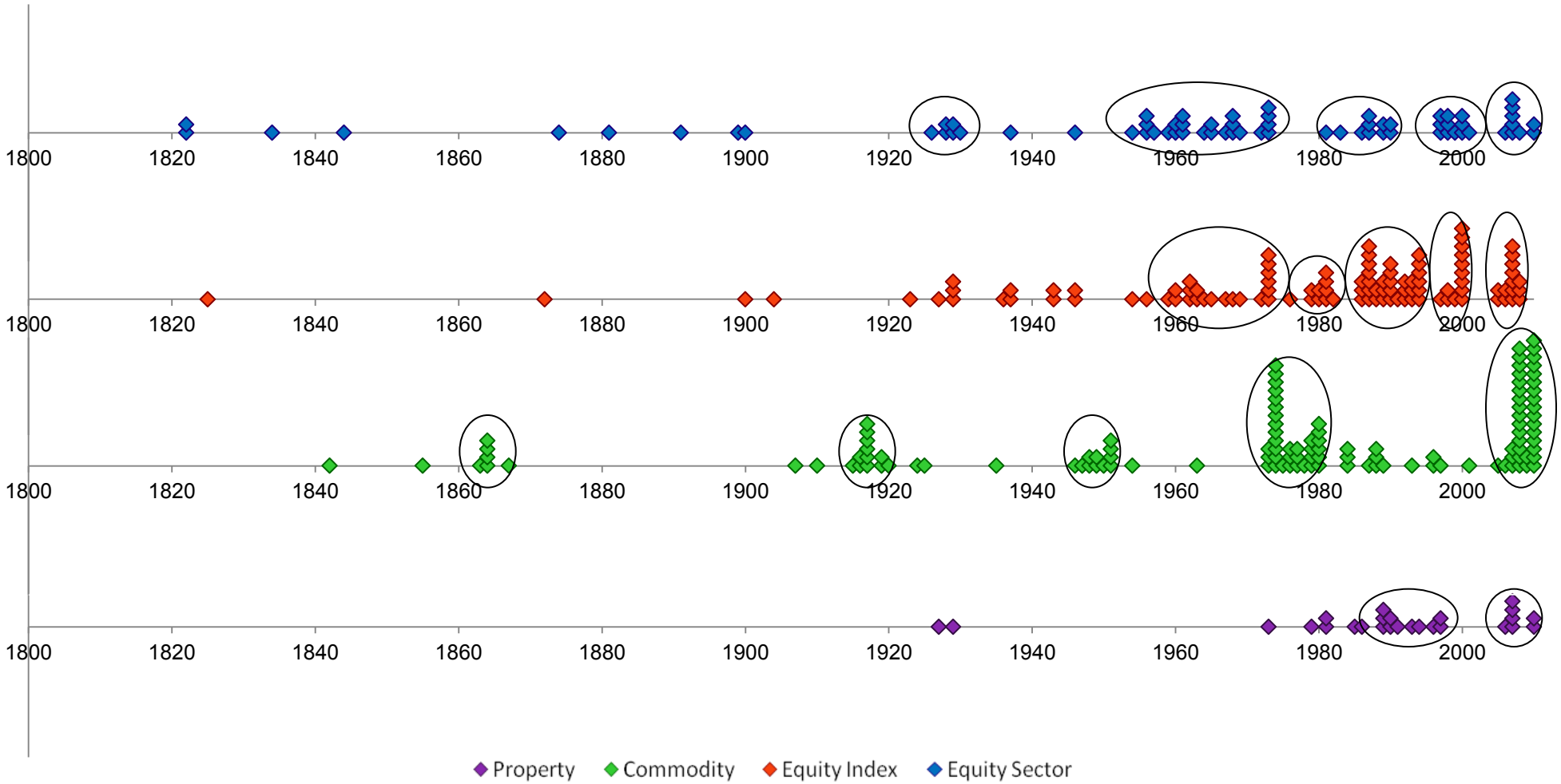
Bubbles Come In Clusters

Timeline of bubbles studied



Marks indicate when the peak of the bubble was reached.

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Source: GMO

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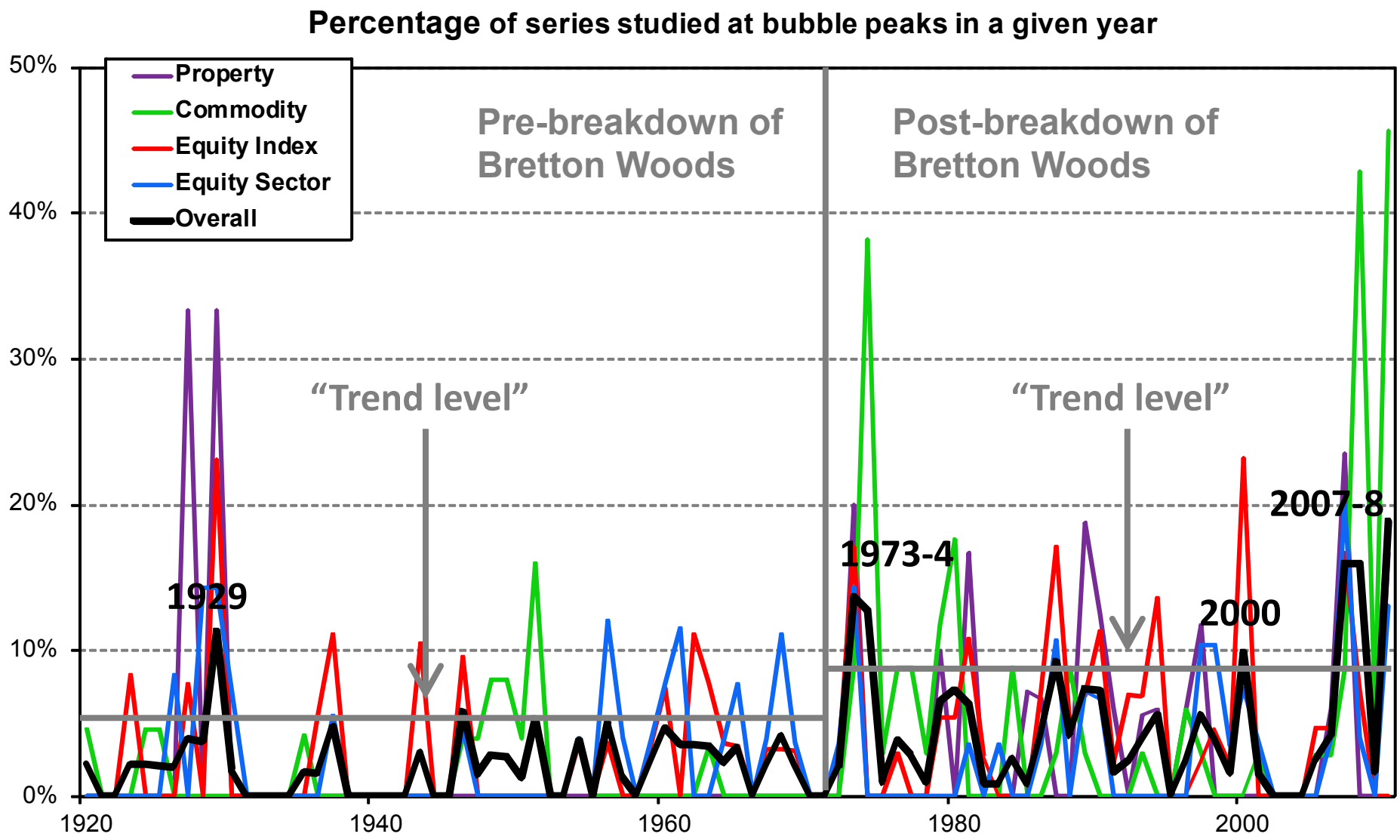
A New Era of Bubbles

Measuring froth across global markets



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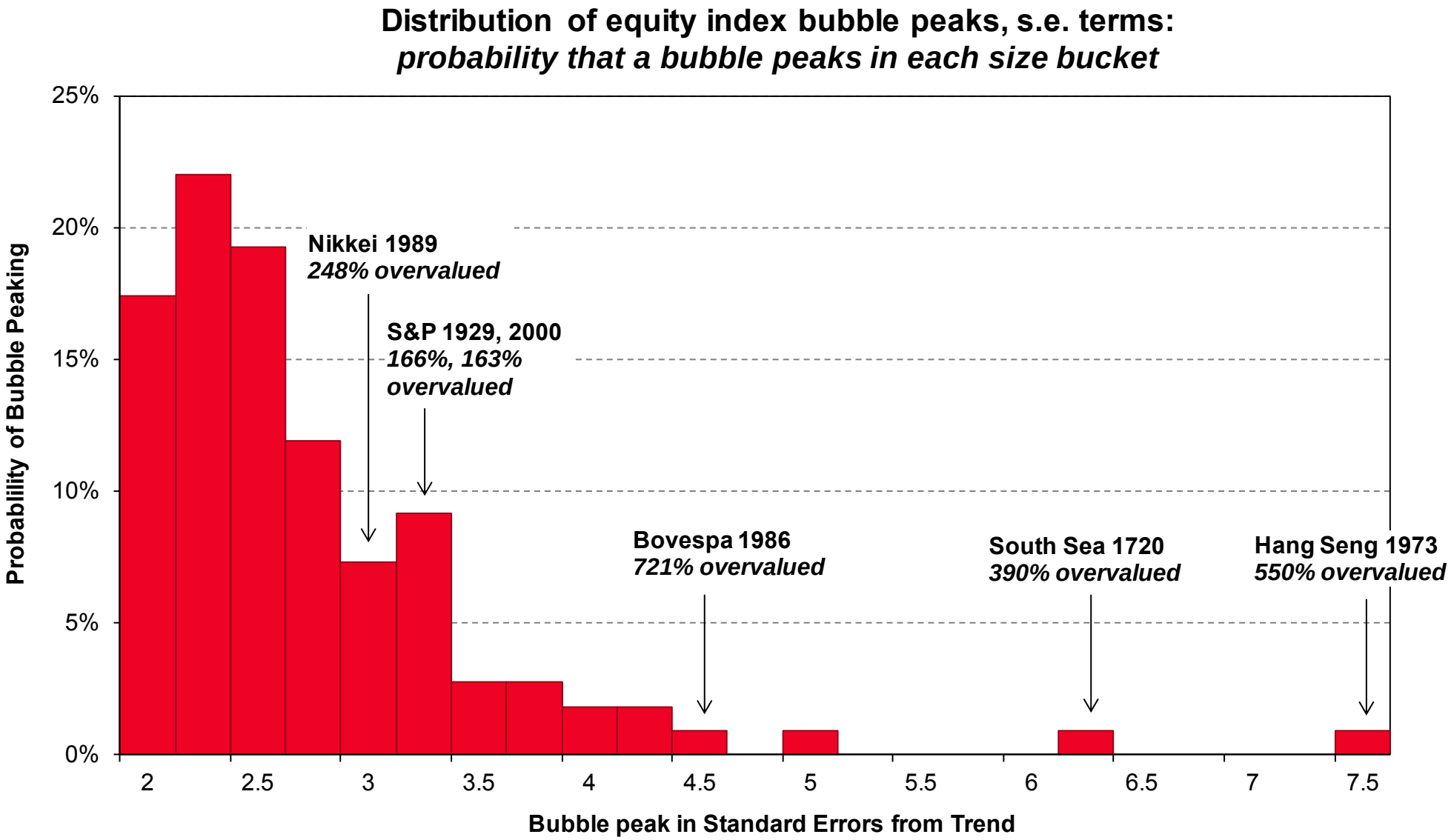
Stock Markets Continue Rising after Entering Bubble Territory



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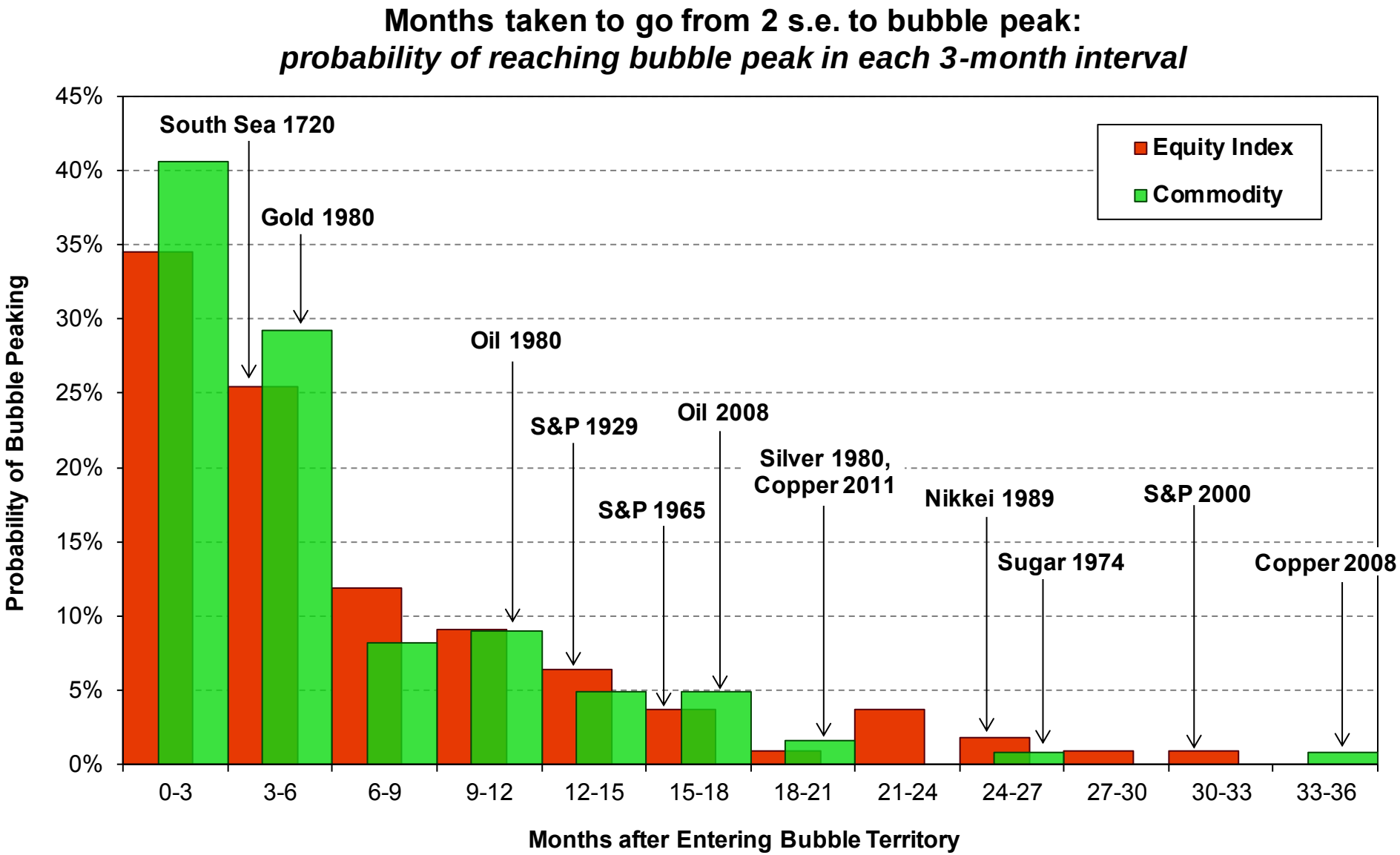
Commodity Bubbles Peak Faster than Equity Bubbles



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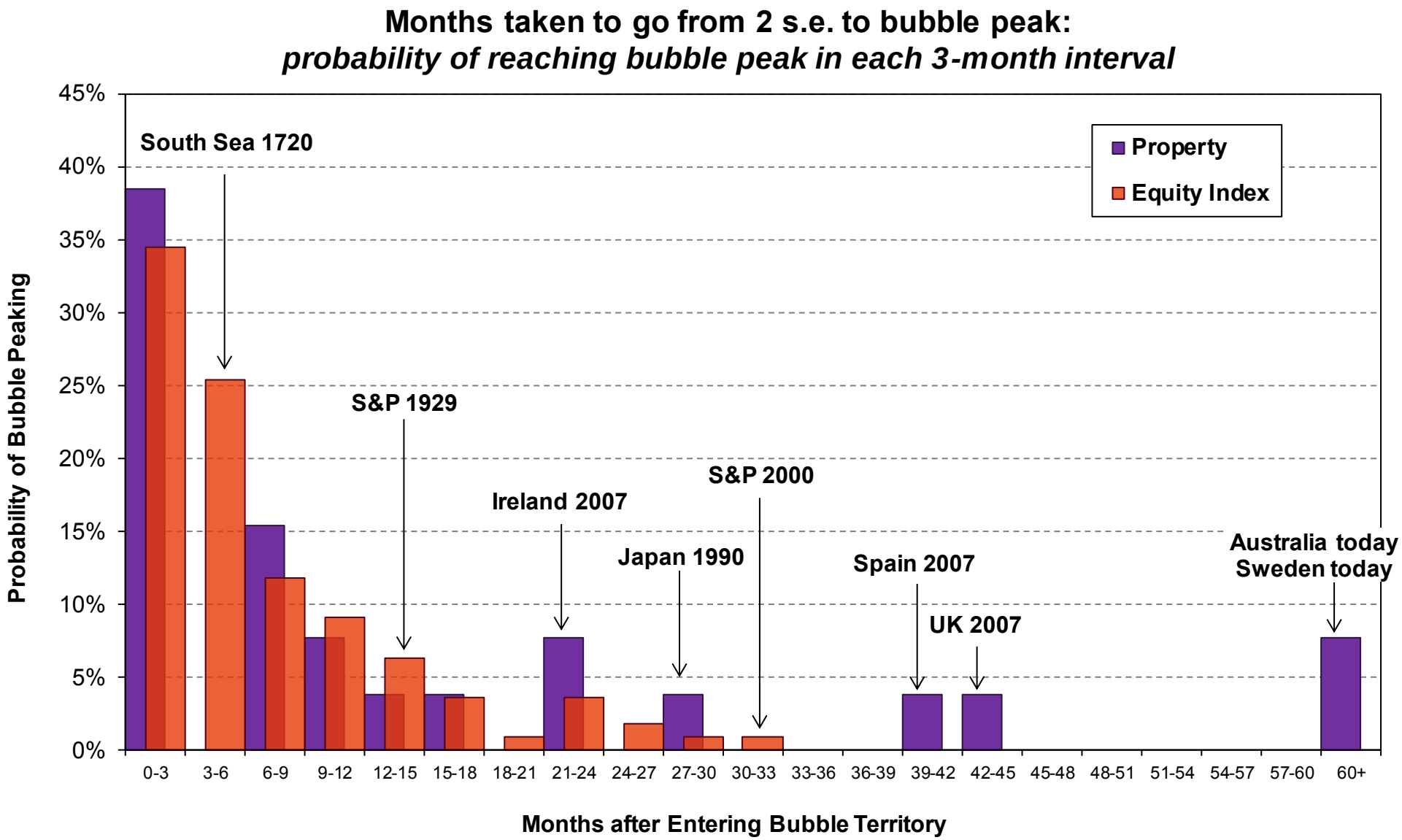
Property Bubbles can Be Incredibly Slow



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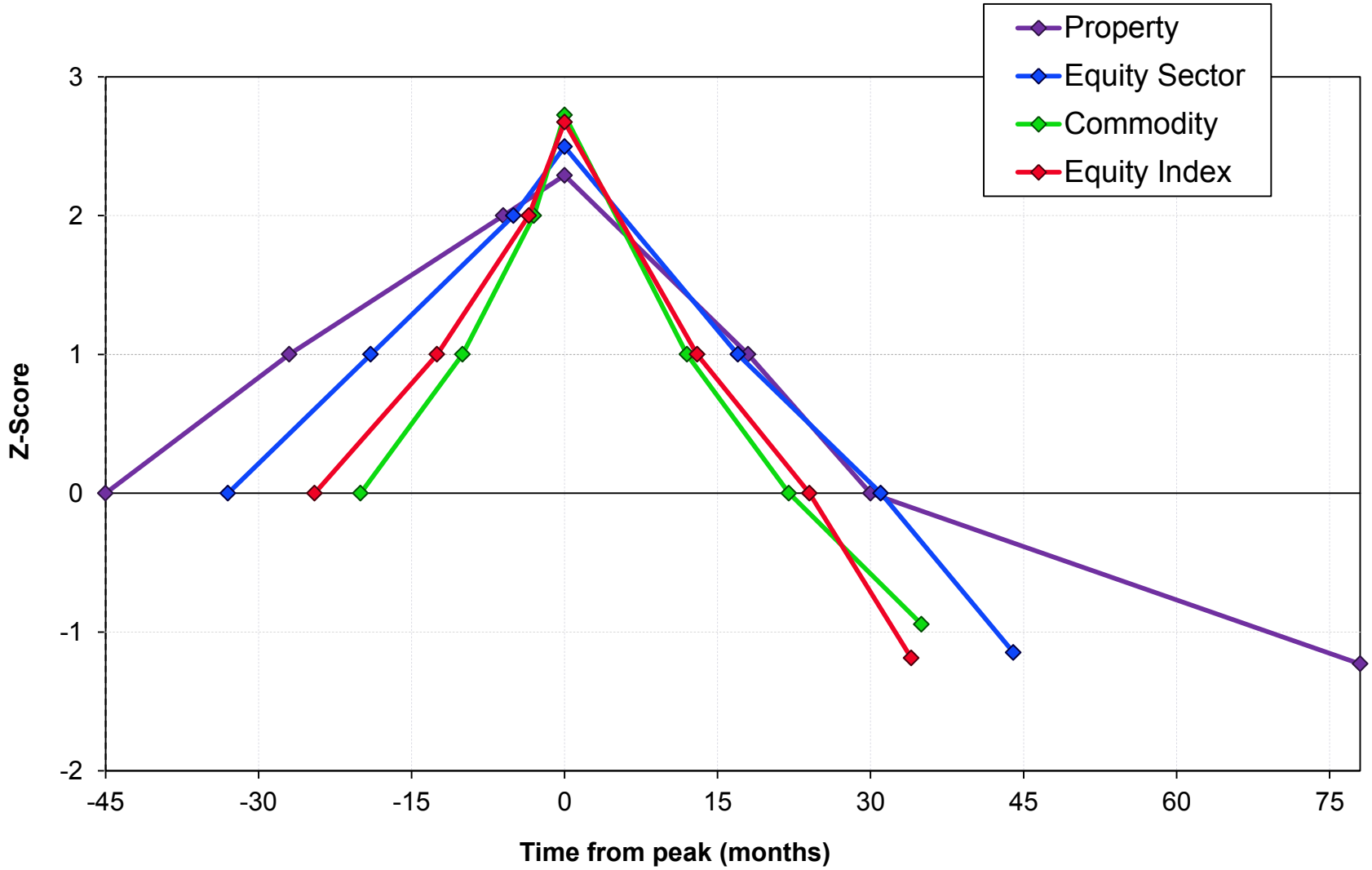
"Markets can Remain Irrational Longer than You can Remain Solvent"*

Median bubbles across asset classes



*Attributed to J.M. Keynes

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Career Risk

Limits to arbitrage:
Bubbles are difficult to bet against because both their length and height are unknowable.

Career risk:
"Finally it is the long-term investor, he who most promotes the public interest, who will in practice come in for most criticism, wherever investment funds are managed by committees or boards or banks. For it is in the essence of his behavior that he should be eccentric, unconventional and rash in the eyes of average opinion. If he is successful, that will only confirm the general belief in his rashness; and if in the short run he is unsuccessful, which is very likely, he will not receive much mercy. Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally."

"There is nothing so dangerous as the pursuit of a rational investment policy in an irrational world."

—J.M. Keynes

Tracking error:
"When the rest of the world is mad, we must imitate them in some measure."

—Banker John Martin (1720)

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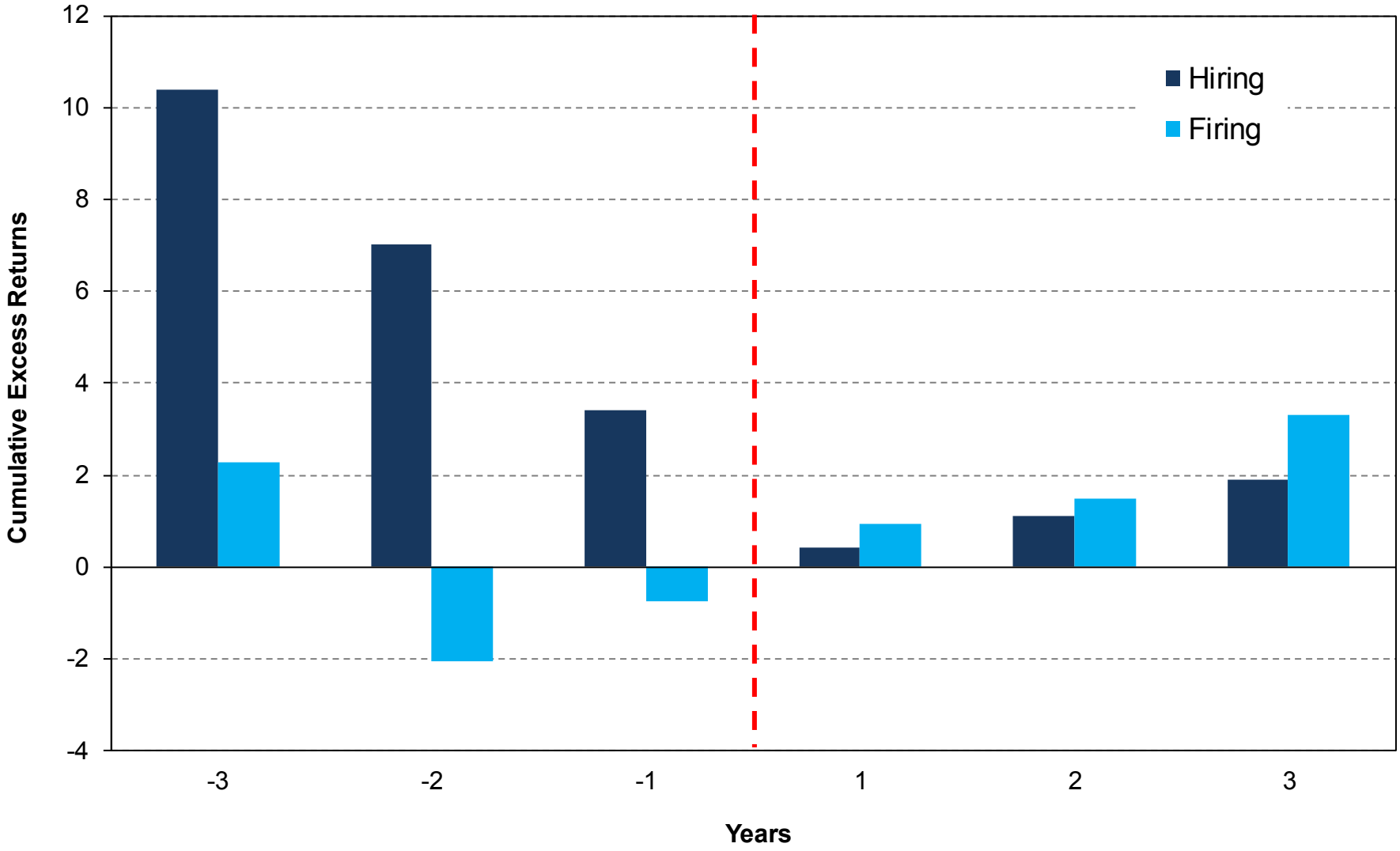
Investor Performance Before and After Firing



Source: Goyal and Wahal

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Part Three:

Some *(Possible)* Contemporary Bubbles

The China Dream

1. Uncritical acceptance of growth story
2. Overblown belief in the authorities and moral hazard
3. Rapid credit growth
4. Ponzi finance
5. Luxury
6. Fraud
7. Investment boom
8. Overtrading
9. Excess capacity
10. Bubbling valuations

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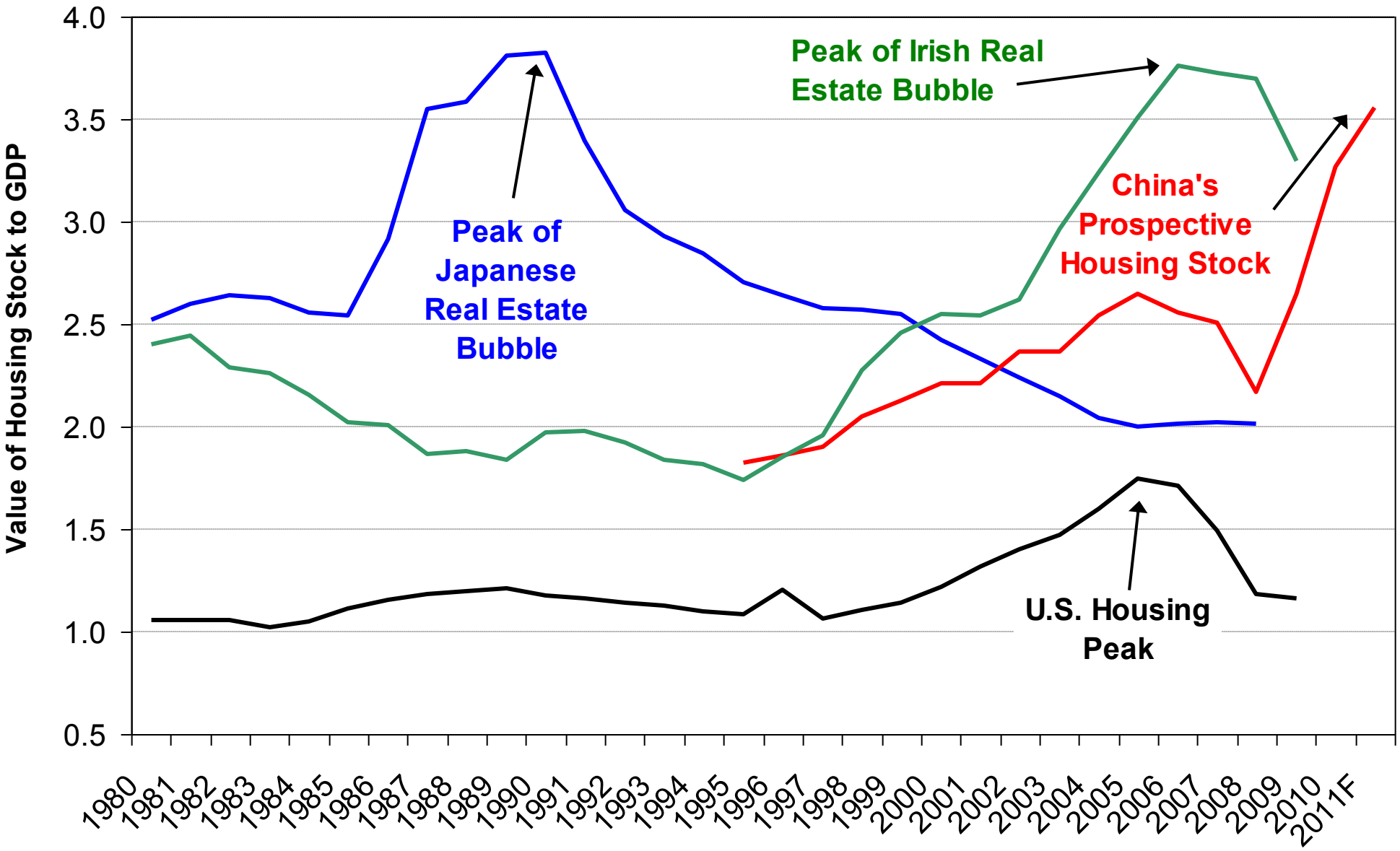
A Tale of Four Housing Bubbles



Source: HSBC

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The Mother of All Paradigm Shifts

	z-score*	Probability**
Iron Ore	4.9	1 in 2,200,000
Coal	4.1	1 in 48,000
Copper	3.9	1 in 17,000
Corn	3.8	1 in 14,000
Silver	3.7	1 in 9,300
Sorghum	3.5	1 in 4,300
Palladium	3.4	1 in 3,000
Rubber	3.3	1 in 2,100
Flaxseed	3.3	1 in 2,100
Palm Oil	3.2	1 in 1,500
Soybeans	3.1	1 in 1,000
Coconut Oil	3.0	1 in 740
Nickel	2.7	1 in 290
Gold	2.6	1 in 210
Oil	2.5	1 in 160
Sugar	2.5	1 in 160
Platinum	2.4	1 in 120
Lead	2.4	1 in 120
Wheat	2.4	1 in 120
Coffee	2.3	1 in 85
Diammonium Phosphate	2.1	1 in 56
Jute	2.1	1 in 56
Cotton	2.0	1 in 44
Uranium	1.9	1 in 35
Tin	1.9	1 in 35
Zinc	1.9	1 in 35
Potash	1.9	1 in 35
Wool	1.7	1 in 22
Aluminum	1.4	1 in 12
Lard	0.9	1 in 5
Pepper	0.5	1 in 3
Natural Gas	0.2	1 in 2
Plywood	-0.1	1 in 2
Beef	-0.1	1 in 2
Cocoa	-0.1	1 in 2
Tobacco	-3.3	1 in 2000

Arbitrary Bubble Cut-off***

* z-score: difference between current price and long-term trend, expressed in standard deviations

** Probability: implied probability under assumption of normal distribution of valuations

*** Probability of being an original trend

Source: GMO
As of 2/28/11

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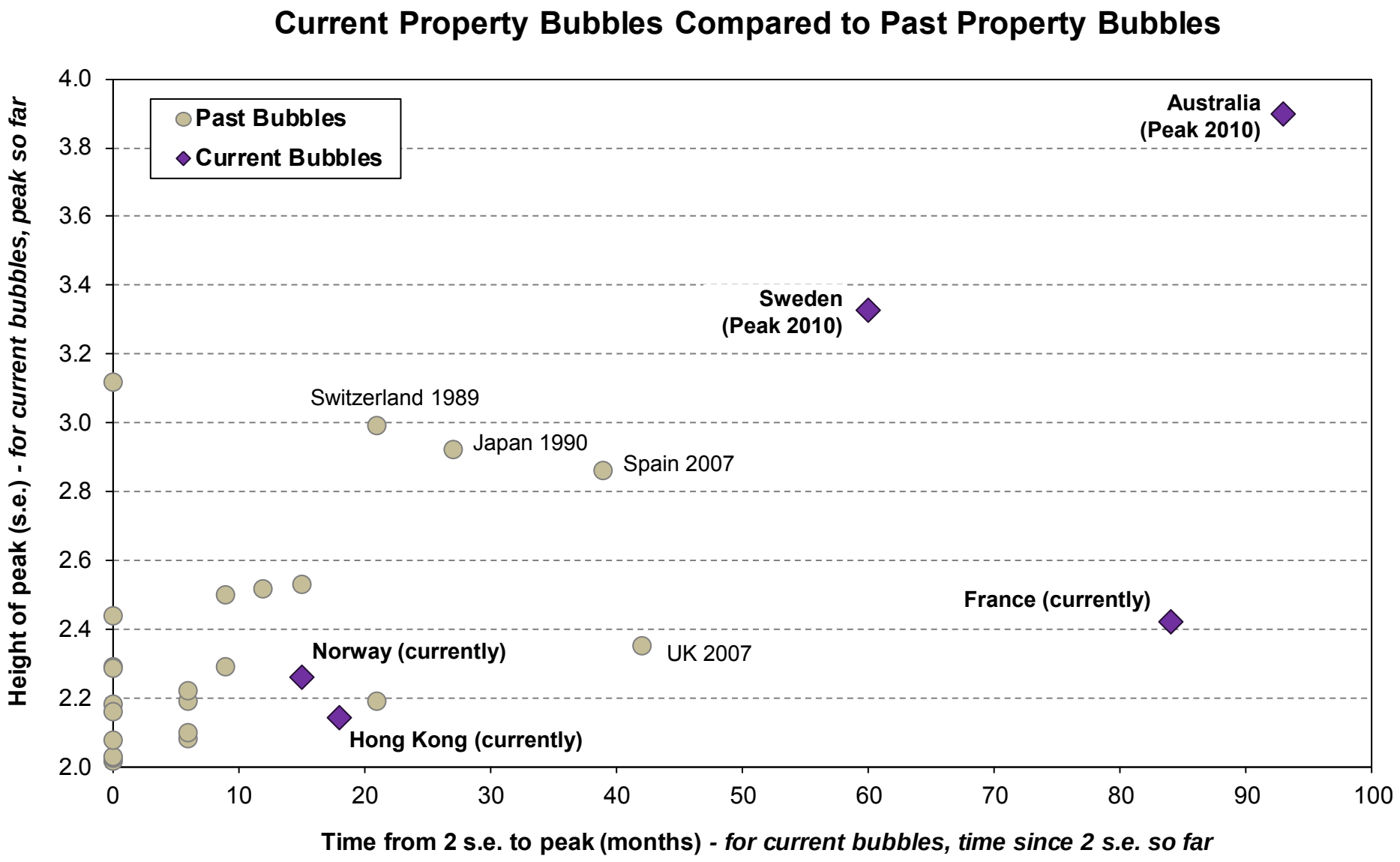
The Last Shoes to Drop?



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Source: GMO

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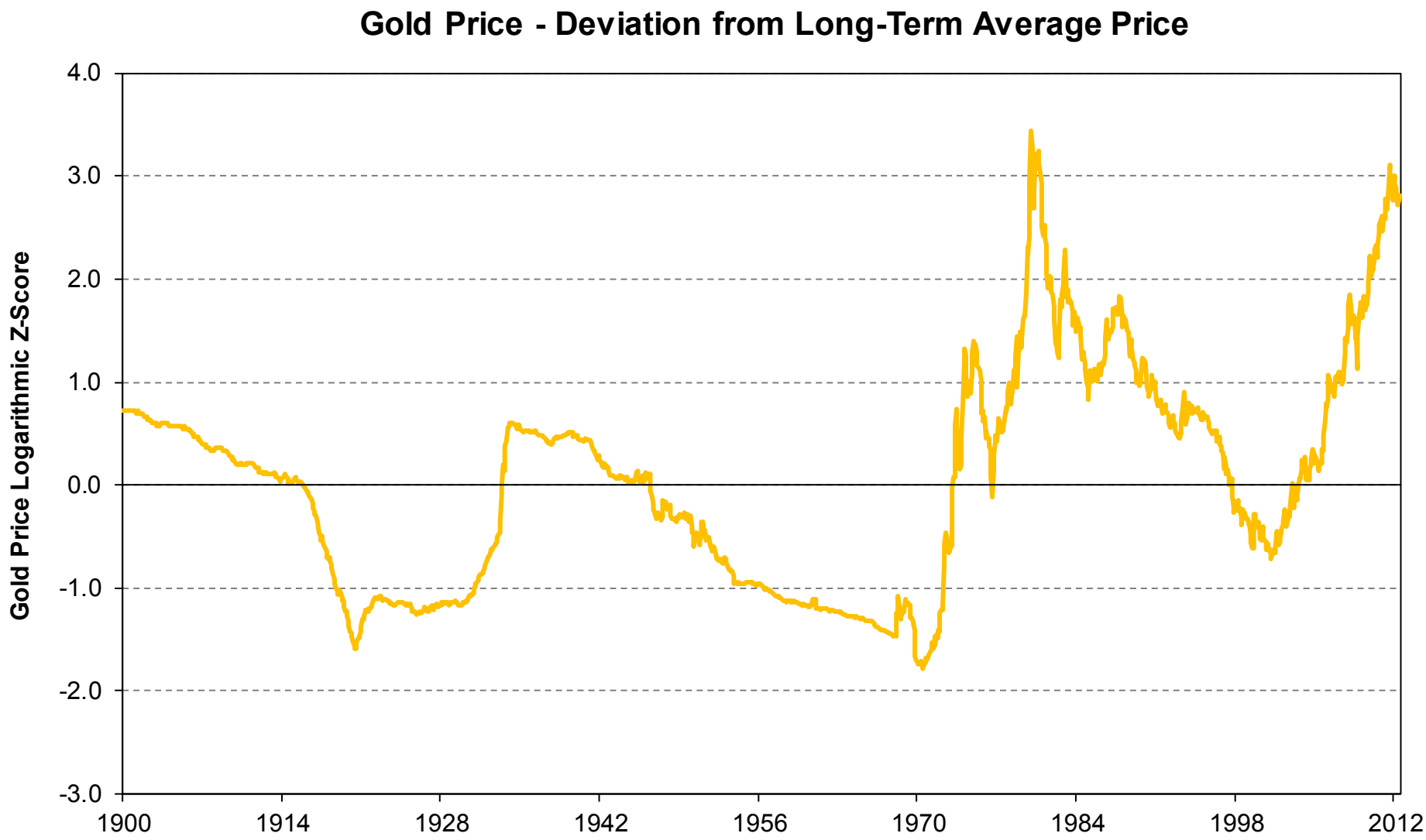
The Great Gold Bubble?



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Tab 6 A.

Investment Policy Modifications History

Brian Guthrie
Jase Auby
September 2012

Investment Policy Statement Modifications History

- The Investment Policy Statement was substantially re-written during a series of Board meetings in 2007

- Since 2007, modifications have been proposed to the Policy Committee each year
  - In addition, each year Hewitt EnnisKnupp and Dr. Keith Brown have written memoranda analyzing the proposed modifications

- This presentation summarizes the modifications made by category and also attaches a list of the most significant modifications made each year
  - The attached list will be updated and maintained in the future as additional modifications are proposed and implemented

TRS

Investment Policy Statement Modification Types

- Investment Policy Statement modifications are typically in one of the following categories:
  - Asset Allocation
    - Including transition to accommodate ramp-up of External Private Markets
  - Delegated Authority
  - 2007 Statutory Changes
    - Derivatives
    - External Managers
    - Hedge Funds
  - Benchmark
  - Board Reporting
  - Other

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Asset Allocation

Asset Class	Adoption Date					
	2007	2008	2009	2010	2011	2012
US Large Cap	30%	20%	8%	20%	18%	18%
US Small Cap	5%	5%	5%	5%	2%	2%
World Equity	--	15%	33%	--	--	--
Non-US Developed	15%	8%		15%	15%	15%
Emerging Markets	5%	5%	6%	10%	10%	10%
Directional HF	--	--	--	--	5%	5%
Private Equity	5%	7%	8%	10%	12%	12%
Long UST	10%	12%	15%	15%	13%	13%
Stable Value HF	4%	--	--	--	4%	4%
Intermediate UST	5%	3%	--	--	--	--
Absolute Return	--	4%	4%	4%	0%	0%
Cash	1%	1%	1%	1%	1%	1%
Global Inflation Linked	10%	5%	--	--	--	--
US TIPS	--	5%	8%	8%	5%	5%
Real Assets	5%	6%	8%	8%	13%	15%
Commodities	3%	2%	2%	2%	0%	0%
REITS	2%	2%	2%	2%	2%	--
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

- New Asset Allocation established (2007)
- Portfolio transition process introduced and modified (ramp-up of Private Equity and Real Assets) (2007-2012)
- Credit added to Absolute Return (2008)
- Use of World Equity Benchmark (combination of USLC, Non-US Developed and EM benchmarks) (2008, 2009, 2010)
- Removal of Global Inflation Linked bonds (2009)
- Addition of Directional Hedge Funds (2011)
- Removal of REITS (2012)

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Delegated Authority

% of Trust	2006	2007	2008	2009	2010	2011	2012
Internal							
Public Equities	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Fixed Income	(1)	(1)	(1)	(1)	(1)	(1)	(1)
External Long Only							
First Investment	NA	1%	0.5%	0.5%	0.5%	0.5%	0.5%
Follow On	NA	NA	1%	1%	1%	1%	1%
Re-Balancing (2)	NA	NA	0.6%	0.6%	0.6%	0.6%	0.6%
Hedge Funds							
First Investment	Board List (3)	(1)	0.25%	0.5%	0.5%	0.5%	0.5%
Follow On	NA	NA	1% (4)	1%	1%	1%	1%
Re-Balancing (2)	NA	NA	0.08%	0.08%	0.08%	0.18%	0.18%
Private Equity							
First Investment	$150 mmm	0.5%	0.25%	0.5%	0.5%	0.5%	0.5%
Follow On	1.5x First Allocation	1%	1% (4)	1%	1%	1%	1%
Re-Balancing (2)	NA	NA	NA	NA	0.20%	0.24%	0.24%
Real Assets							
First Investment	Board List (5)	0.5%	0.25%	0.5%	0.5%	0.5%	0.5%
Follow On	$150 mm	1%	1% (4)	1%	1%	1%	1%
Re-Balancing (2)	NA	NA	NA	NA	0.16%	0.26%	0.30%
Emerging Manager	$100 mm (PE)	(6)	(6)	$1.3 bn	$1.65 bn	$1.65 bn	$1.65 bn

(1) Do not have per investment limits and are instead managed according to overall asset allocation and risk parameters
(2) Re-balancing for each portfolio is 2% of the portfolio per month. Percentages in the table are presented as a % of total Trust. For example, External Public Long Only can be up to 30% of the Trust. Accordingly, 2% of 30% is 0.6% per month.
(3) Board approved the list of managers and there was a maximum limit of 0.5% to any one manager
(4) 2008 policy also had limits on second investments of 0.5%
(5) Board approved the list of managers and there was a maximum limit of 0.75% to any one manager
(6) Same as for non-emerging manager portfolios

General Restrictions

- Manager limitations of 3% per investment center
- Manager limitations of 6% of total TRS portfolio
- Advisor must agree with Investment Division recommendation
- All Policy limits (risk/allocation) apply
- IIC Approval required on all external investments
- Board notification required on all external investments

TRS

Delegated Authority

- Excerpt from September 2008 presentation by the Investment Division to the Board

Investment Division Authority: EnnisKnupp Survey Findings

- The survey showed that the majority of the peers selected by the Board use a system of delegation very similar to what TRS currently employs
- **Investment Authority:** Delegation from the Board to Staff the authority to hire and fire investment managers

Fund	Assets	Authority
CalPERS	$237b	Yes
CalSTRS	$170b	Yes
NY Common	$155b	No
Florida SBA	$163b	Yes
NY City	$127b	unavailable
NY State Teachers	$103b	No
Wisconsin Investment Board	$94b	Yes
Ohio PERS	$70b	Yes
New Jersey Division of Investment	$82b	Yes
Texas ERS	$27b	No
UTIMCO	$23b	Yes

Delegates Authority to Staff	Comments on Level of Authority
CalSTRS	CIO retains full authority
CalPERS	Staff has full authority
New Jersey	Policy only referenced alts. Staff granted full authority.
UTIMCO	Staff operates with limits similar to TRS
Florida SBA	Staff has full authority; however, Board recently intervened.
Ohio PERS	Staff has full authority; reports out to Board once search is concluded
Wisconsin Investment Board	Staff has full authority

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Delegated Authority

- Delegation of external Investment Authority to the Investment Division established (2007)
  - Delegate rebalancing authority to External Public Markets (2008)
  - Increase External Private Markets authority to be the same as External Public Markets authority (2009)
  - Delegate rebalancing authority to External Private Markets (2010)
  - Consolidate redundant descriptions of all delegated external manager authority to one place (Appendix B) and provide example calculations (2011)
  - Increase wait time from three months to six months for follow-on investments (2012)
  - Clarify Special Investment Opportunity authority (add the Chairman of the Board, only one investment allowed prior to Board re-authorization) (2012)

- IIC Established (2008)
  - Create Deputy CIO position (2008) and extend Deputy CIO authority to match CIO authority in certain instances (2010)
  - Add process to add and remove IIC members (2010)
  - Add Executive Director to the IIC (2011)

TRS

2007 Statutory Changes: Derivatives

- Derivatives authorized by the Legislature in 2007
  - Derivatives and overlay policy and guidelines established (2007)
  - Removal of notional cap and increase tenor limits (2008)
  - Allow short-dated currency forwards to be transacted without an ISDA agreement (2010)
  - Allow derivatives to reference physical commodities if cash settled (2010)
  - Clarify that derivatives overlay authority applies to individual portfolios as well as total fund (2011)
  - Adjust currency derivatives limits (limits do not apply to hedging activities and hedging an investment to align with its benchmark) (2011)
  - Statutory sunset date extended from 2012 to 2019 (2011)
  - Derivative tenor limits removed (2012)
  - Add centrally cleared derivatives (2012)

TRS

2007 Statutory Changes: External Managers and Hedge Funds

- External managers allocation up to 30% of the Trust authorized by the Legislature in 2007
  - External Public Markets policy and guidelines established (2007)
  - Statutory sunset date extended from 2012 to 2019 (2011)

- Hedge Funds limited to 5% by the Legislature in 2007
  - Add detailed Hedge Fund definition (2008)
  - Add 5% Directional Hedge Funds (2011)
  - Statutory sunset date extended from 2012 to 2019 (2011)

TRS

Benchmark

- Combine certain US Large Cap, Non-US Developed and Emerging Markets portfolios into one benchmark (MSCI All-Country World) (2008, 2009)
- Remove transition benchmark but continue to provide for allocation flexibility given ongoing Real Assets transition (2010)
- Decompose 33% MSCI All-Country World benchmark into its components – US Large Cap, Non-US Developed and Emerging Markets (2010)
    - As a result of the decomposition, there were two USLC benchmarks – remove one and keep the other (2010)
- Changed public equity benchmarks from Russell to MSCI (2009)
- Changed private equity benchmark from Russell to State Street Private Equity Index (2009)
- Changed Global TIPS benchmark to US TIPS (2009)
- Changed all Real Assets benchmarks to NCREIF ODCE (2009)

TRS

Board Reporting

- Redesigned Board reporting to reflect new structure with a focus on increased transparency (2007)
  - Investment performance, policy compliance, asset allocation, External Private, External Public, derivatives, risk limits, liquidity, operations
- Add the monthly and quarterly Transparency Reports process (2009)
- Add additional External Private Markets reporting (2009)
- Add policy, questionnaire and reporting on use of placement agents (2009)
- Add reporting on staffing (2010)

TRS

Other

- Risk policy established with risk parameters and reporting requirements (2007)
  - Updated the tracking error budget (2008, 2009)
- F/X Policy established with Policy Hedge Ratios set at 0% (2008)
- Liquidity Policy introduced and authorized External Funding Authority (2008)
- Global Best Ideas portfolio established benchmarked to MSCI All Country World (2008)
- Permitted use of REITS and MLPs within Real Assets (2008)
- Introduced Sudan and Iran restrictions (2008) and delegated authority to approve exceptions to the Iran restricted list to the IIC (2011)
- Emerging Managers added to the Policy (2009) with clarifications in 2010 and 2012
- Add Placement Agents policy and questionnaire (2009)
- TRS 477 first attached (2009) and updated (2010, 2011, 2012)
- Allow the IMD to appoint advisors for the External Public, Hedge Fund, Private Equity and Real Assets portfolios with approval of the Board (2010)
- Policy Bands
  - Allow temporary expansion of Policy Bands from +/-5% to +/-10% (2010)
  - Increase Public Equity Policy Band from +/-5% to +/-7% (2011)
- Convert External Private Markets into the Real Assets and Private Equity areas (2012)

TRS

Appendix

- Excerpts from past presentations to the Policy Committee as adjusted to reflect the form finally adopted

Memorandum

Teacher Retirement System of Texas

To: Board of Trustees

From: Brian Guthrie
Jase Auby

Date: September 13, 2012

Re: History of the Investment Policy Statement

Listed below are excerpts from presentations from the Investment Division to the Policy Committee of the Board. Each excerpt highlights changes to the Investment Policy Statement that were presented at time of proposal as amended to reflect the final version adopted by the Policy Committee. In the future, we will revise and keep this memorandum up to date each time the Investment Policy Statement is modified.

2012

Changes that will be highlighted to the Committee are in **blue**.

1. **Improve document readability.**
    a. Add an Executive Summary [Article 1].
    b. Standardize section labeling [Various].
    c. Consolidate redundant language [Various].
    d. Move Placement Agents Addendum [Article 12].
2. **Remove Real Assets Portfolio transition process** [Section 1.6]. Now that the Real Assets portfolio transition is complete, the transition process language is no longer required.
3. **Clarify that the list of Public Markets Authorized Investments is for both internal and external portfolios** [Section 2.2]. The list of Authorized Investments for the Internal Public Markets portfolios is also used by the External Public Markets portfolios. This clarification re-labels the list of Authorized Investments to make this clear.
4. **Adjust document to reflect restructuring of External Private Markets** [Article 3]. The External Private Markets investment area has now been divided into the Private Equity and Real Assets investment areas.
5. **Remove derivatives tenor limits** [Section 8.6].
6. **Add centrally cleared derivatives** [Section 8.8]. Dodd-Frank has mandated the certain OTC derivatives be centrally cleared.
7. **Increase follow-on investment waiting period from three months to six months** [Appendix B]. Increase the waiting period and clarify the existing language describing the authority limits.

8. **Attach revised Authority Resolution (TRS 477)** [Appendix E].
9. **Clarify Special Investment Opportunity authority** [Appendix B]. Clarify the process for determining whether or not an investment can be made in a Special Investment Opportunity.

2011

Changes that were highlighted to the Committee are in **blue**.

1. **Use of New Hedge Fund Authority.** [Section 1.6, p. 6]. Add a 5% allocation to Directional Hedge Funds benchmarked to HFRI Fund of Funds Composite and change Stable Value Hedge Funds benchmark to HFRI Fund of Funds Conservative.
2. **Increase Private Equity.** [Section 1.6, p. 6]. Increase Private Equity from 10% to 12% and fund the allocation from US Large Cap. In addition, widen the "bands" for Global Equity to +/-7% to accommodate the increase in Private Equity size.
3. **Adjust Currency Derivatives Limits.** [Section 7.3, p. 21]. Clarify that the currency derivatives notional limit restrictions apply only to active currency tilts of the portfolio and do not apply as part of the Policy Hedge Ratio passive hedging regime or to uses of currency derivatives to align an investment to its benchmark.
4. **Add Executive Director IIC Authority.** [Section 1.3, p. 4]. Add the Executive Director as a non-voting observer of the IIC with the power to veto any investment if the Executive Director deems a veto to be in TRS' best interest.
5. **Clarify Opportunities List Reporting to the Board.** [Section 1.7, p. 7]. Conform description of investment opportunities reporting to the Board to match the new Transparency Report method of reporting in which the Board is provided with upcoming IIC agendas and proposed transaction tear sheets.
6. **Clarify Public Equity Limit.** [Section 2.3, p. 11]. Clarify 20% limit on holding equity of a public company.
7. **Delegate Iran Authority to the Investment Division.** [Section 2.3, p. 11]. Delegate the Board's authority to provide exceptions to the Iran scrutinized list to the IIC.
8. **Clarify Emerging Managers Use of Prudence Letters.** [Section 2.7, p. 14]. Modify prudence letter requirement to reflect the use of sub-managers within the Emerging Managers program.
9. **Clarify Derivatives Overlay Authority.** [Section 7.1, p. 21]. Clarify that derivatives overlay portfolios can be implemented in connection with individual portfolios or investments in addition to the Total Trust level.
10. **Clarify Role of Legal Counsel.** [Section 9.7, p. 27]. Add clarification to the role of Legal Counsel.
11. **Include Health Insurance Programs.** [Article 10, p. 28]. Make clear that the Policy governs the TRS health insurance programs in addition to the pension trust fund.
12. **Incorporate 2011 Statute Changes.** [Various]. Increase the sunset date of the External Managers and Derivatives Authority to 2019 (from 2012) and increase Hedge Fund limit from 5% to 10%.
13. **Clarify IIC Approval Authority.** [Appendix B]. Clarify calculation of IIC Approval Authority and move all approval authority language to Appendix B.

2010

Changes that were highlighted to the Committee are in **blue**.

1. **Operation of the Internal Investment Committee [Section 1.3c].** Clarification to allow for addition/removal of IIC members
2. **Anticipate Statute Changes [Various Sections]**. Allow (1) sunset provision references to September 1, 2012, (2) 5% limit on Hedge Funds and (3) 30% limit on external management to be automatically revised if the Texas Legislature changes the Government Code.
3. **Policy Benchmark [Section 1.6]**
   a. Remove the Transition Benchmark from Policy and adopt the Long Term Benchmark with flexibility to accommodate the ongoing Real Assets transition.
   b. Decompose the 33% allocation to the World Equity benchmark into its three component parts – US Large Cap (14%), Non-US Developed (15%) and Emerging Markets (4%).
   c. Change the current standalone US Large Cap benchmark to be the same as the US Large Cap component of World Equity.
   d. Clarify label of Inflation Linked Bonds.
   e. Allow for Policy Bands to be temporarily expanded from +/-5% to +/-10%.
   f. Add Bloomberg Tickers.
4. **Derivatives Referencing Commodities [Various Sections].** Allow derivatives to reference physical commodities if cash settled.
5. **Board Reporting [Section 1.7g].**
   a. Revise the description of derivatives reporting to match the reporting currently provided to the Board.
   b. Add additional reporting on staffing of key employees.
6. **Conform Language [Section 2.4].** Conform language concerning 30% limit on external management to match the similar language in Section 2.8(b).
7. **IMD Advisors [Sections 2.7c, 3.3].** Allow the Investment Management Division the authority to appoint its advisors to the External Public Markets and Private Markets portfolios with approval of the Board.
8. **Execution Authority [Sections 2.7d, 3.4, Appendix F].** Update document execution authorities.
9. **Rebalancing Authority [Section 3.4].** Grant to External Private Markets the same rebalancing authority already granted to External Public Markets in Section 2.7h.
10. **Deputy CIO Authority [Various Sections].** In certain instances, allow the Deputy CIO similar authority to the CIO.
11. **Exchange-Traded Swap Agreements [Section 7.2].** In anticipation of a move to exchange trading, allow exchange-traded swap agreements in addition to over-the-counter swap agreements.
12. **Short Dated Currency Forwards [Section 8.4].** Allow currency forwards to be transacted without an ISDA Master Agreement.
13. **Special Investment Authority [Appendix B].** Clarify what is meant by "ratify" in the Special Investment Opportunity authority.
14. **Emerging Managers [Appendix D].**
    a. Change definition of emerging managers to have assets under management of $2 billion.
    b. Remove restriction on number of Fund of Funds mandates.
15. **Placement Agents [Placement Agent Addendum]**

a. Change reporting period to semi-annually.
b. Clarify the meaning of "registered" when applied to Placement Agents.

2009

A presentation to the Policy Committee together with changes made in session resulted in the following significant changes to the Policy Statement:

1. **Strategic Asset Allocation [Section 1.6].** The Asset Liability Study conducted by Ennis Knupp and internal staff affirmed TRS' long-term asset allocation. The changes shown in the IPS reflect minor improvements to the implementation of that same long-term strategy. The Investment Division continues to research a regime-based approach dynamic asset allocation. Results of this work will be presented to the Board in the October meeting.
   a. *Global Equity*– We created a permanent allocation to a global mandate benchmarked to the MSCI All-Country World Index and filled by our current Internal Public Markets portfolio and new global external managers. The Global Equity benchmark we are proposing is identical to the mix of US Large Cap, US Small Cap, Emerging markets and International Developed markets, and Private Equity assets we have currently. These asset classes will continue to be bound with a maximum and minimum dollar allocation and downside risk limits.
   b. *Stable Value*– We reduced the minimum allocation of US Treasuries to 0% from 10% and increased the maximum allocation on Absolute Return to 20% from 15%. This will allow us to continue to opportunistically invest in the dislocated credit strategies we have discussed with the Board.
   c. *Real Return*– We combined the Real Estate and Other Real Asset long-term allocation of 10% and 5% into one 15% allocation to Real Assets all benchmarked to NCREIF ODCE. This will allow the Real Asset team more flexibility to allocate asset across all opportunities they oversee. Additionally, we have changed the inflation linked allocation from Global to US; reducing the currency risk the global allocation introduced. Additionally, US Tips provide improved liquidity to the Fund at reduced transaction costs.
2. **Year 3 Transition Policy [Appendix C – since removed]**. We proposed a year 3 transition benchmark that mirrors the changes we made to the long-term asset allocation above and moved us closer to our long-term benchmark allocation to the private market assets. Overall, the transition to our new strategic asset allocation is 80% complete. The majority of the remaining transition is focused in our allocation to Real Assets as this represented the largest shift from our prior strategic asset allocation.
3. **Emerging Manager Program [New Article 6]**. TRS reinforces our commitment to small and emerging managers by embedding the Emerging Manager program in the IPS. The extensive achievements the Fund has made in its Private Equity emerging manager program, including being named the Public Plan of the Year by Opal Financial Group will be augmented by new strategies in the Real Asset and public equity markets. Additionally, Stuart Bernstein, chief of staff to the CIO, has been named to lead the Emerging Manager program across the Fund.
4. **Tracking Error [Appendix A].** We updated the tracking error appendix of the IPS to mirror our actual management of the Fund's active risk budget. Namely, other than IPMs Global Best Idea's portfolio, all internally managed portfolios (Treasuries, Tips and all equities portfolios overseen by SRRM held in transition for external managers) need no targeted or neutral tracking error as they are run passively. Additionally, the work we have done over the last year certifying and hiring external US managers highlights the need for higher tracking error neutral targets than

first anticipated. For instance, the US small cap program will focus on engaging activist managers given the risk adjusted returns of core small cap managers compared to the passive alternatives such as swaps or lendable exchange traded funds. Total Fund's active risk will continue to be bounded by a tracking error and downside risk limit.

5. **Investment Staff Approval Authority [Appendix B].** We updated Appendix B to standardize staff approval authority across the division and added clarifying language regarding the calculation of the limits. Total potential exposure to any one manager organization will continue to be limited to 6% across the Total Fund.
6. **Placement Agents**. The board added a placement agent policy and questionnaire to the investment policy.

2008

A presentation to the Policy Committee together with changes made in session resulted in the following significant changes to the Policy Statement:

1. **Decision Structure and Delegation to Investment Division.**
   a. Internal Investment Committee (IIC) and Transparency. IIC established and comprised of senior management. Purpose determined, prudent processes established, communication/ transparency developed. Deputy CIO position established.
   b. Delegation of Investment Authory. Appendix C added to IPS to specify staff authority and concentration limits, with an exception for Special Investment Opportunities.
2. **Modifications to Strategic Allocation**
   a. Credit Strategies to Absolute Return Category, Place 4% allocation to hedge funds into a broader category (Absolute Return) with various non-hedge fund credit investments.
   b. Creation of a Value Added Real Estate benchmark.
3. **Transition Benchmark -** Second year transition benchmark introduced and changes to mirror modification to Strategic Allocation.
4. **F/X (Currency) Policy**. Proposal to implement an F/X policy with policy hedge ratios initially set to 0%.
5. **Liquidity Policy** introduced and authorized External Funding Authority.
6. **Modifications to Tracking Error Limits.**
7. **Global Best Ideas.** Consolidation of current internal equity portfolios.
8. **Changes to the Board Reporting section 1.7.**
9. **Real Assets.** Permitted use of REITs and MLPs.
10. **Changes to Derivatives Policy**. Removal of notional cap (20%) and increase of tenor limit.
11. **Sudan/Iran**. Introduced policy language.
12. **Leverage**. All discussion moved to a central location, all uses remain in accordance with the Fund's asset allocation and risk parameters

2007

During 2007, the IMD presented a new Investment Policy Statement to implement changes the Board and Investment Division had discussed during prior meetings, including the Board's education sessions in Fredericksburg:

1. **New Legal Investment Authority.** 2007 Legislature authorizes derivatives and 30% delegation to external managers and limits hedge funds to 5% of the portfolio**.**
2. **New Asset Allocation.** Introduced a new asset allocation strategy, policy ranges and benchmarks.
3. **Special Consultant**. Investment Training and Consulting Institute (Barbara Davison) advised TRS and the board about new policy provisions for derivatives and delegation to external managers.
4. **Functional Areas.** Reorganized the document to reflect new functional roles within the investment organization (i.e., internally managed portfolio, externally managed portfolio, private markets portfolio, overlay portfolio, derivatives, and risk management/oversight).
5. **Derivatives Policy.** Added a new section to the policy addressing uses and authority for derivatives to implement new legal authority in statutes. Investment Training and Consulting Institute advised TRS about the policy.
6. **Risk Management and Reporting.** Introduced detailed risk parameters and reporting requirements.
7. **External Management.** Introduced operating guidelines for the newly created externally managed portfolio to implement new legal delegation authority in statutes. Investment Division received discretion to allocate up to 1% of the TRS fund to a single external manager, and up to 30% of the TRS fund to external managers.
8. **Investment Authority for Private Investments.** Set forth new guidelines that give staff greater authority to approve private equity, real estate, external manager, and hedge fund investments. Investment Division received authority to invest up to 0.5% of the TRS fund in new private equity and real estate opportunities, and up to 1.0% in follow-on opportunities. Larger investments required Board authorization. Staff had authority to invest up to 5% of the TRS fund in hedge funds.
9. **External Advisors and Consultants.** The IPS delegates authority to engage external advisors and consultants to the investment staff "subject to the approval of the board."
10. **Advisor Concurrence Requirement Modified.** If the staff and the consultant do not agree, a private investment opportunity can be presented to the Private Markets Committee and the Board. Before this change, non-concurrence vetoed a proposed investment. The policy also permitted advisors' work product to address only the prudence of an investment, as opposed to recommending it.
11. **Glossary.** Created a separate glossary document to clarify numerous terms within the document.

Proposed Modifications to Investment Policy

Jase Auby
Chief Risk Officer
September 2012

Agenda

- The Investment Management Division ("IMD") is today proposing modifications to the Investment Policy Statement ("IPS") to the Policy Committee

- This presentation highlights the key modifications and provides a full list of the recommended modifications
  - Compared to recent years, this year's amendment process has resulted in a relatively small number of recommended modifications
  - Since the July presentation on interim progress to the Policy Committee, three new modifications have been added to the initial list of six

- Additional items enclosed for your review and reference are:
  1. Memorandum from Hewitt EnnisKnupp
  2. Memorandum from Dr. Keith Brown
  3. Revised IPS (marked copy)
  4. Revised IPS (clean copy)
  5. Board Resolution to amend the IPS

TRS

Proposed Modifications

- The IMD proposes nine modifications to the IPS
- Five of the modifications are **highlighted** and presented with further discussion herein

Modification Number	Description
1	Improve document readability a. Add an Executive Summary b. Standardize section labeling c. Consolidate redundant language d. Move Placement Agents Addendum
2	**Remove Real Assets Portfolio transition process**
3	Clarify that the list of Public Markets Authorized Investments is for both internal and external portfolios
4	Adjust document to reflect restructuring of External Private Markets
5	**Remove derivatives tenor limits**
6 *	**Add centrally cleared derivatives**
7	**Increase follow-on investment waiting period from three months to six months**
8 *	Attach revised Authority Resolution (TRS 477)
9 *	**Clarify Special Investment Opportunity authority**

* Modifications six, eight and nine are newly added since the July 2012 interim report to the Policy Committee

TRS

Modification 2

Remove Real Assets Portfolio Transition Process

Background Information

- The Real Assets funding transition process is now complete as the Real Assets portfolio is expected to be fully funded at 15% in 2013

Proposal

- This proposal removes two Real Assets transition items that are no longer required:
  1. The process that progressively raises the real assets portfolio allocation as it becomes fully funded
     - This process works by automatically lowering the TIPS, Commodities and REITs allocations as Real Assets funds up to 15%
  2. The temporary passive REITs allocation which the transition process has now lowered to a 0% allocation

Reviewed by:

☑ HEK	☑ Audit
☑ Keith Brown	☑ Legal

TRS

Modification 5

Remove Derivatives Tenor Limits

Background Information

- The 5 year tenor limit on over-the-counter (OTC) derivatives was written into the IPS in 2008 at inception of the Trust's use of OTC derivatives
  - Tenor limits are atypical in most investment policies
  - The five year tenor limit was initially implemented to appropriately reflect that the pending implementation was in its early stages and unproven at TRS
  - At that time, neither IMD's risk management function nor the Board's Risk Management Committee were fully formed
- The IMD's risk controls and other management processes have since progressed beyond the need for a simple tenor limit
  - The usage of derivatives has now been successfully implemented at TRS for four years and the IMD has exhibited sound and prudent risk management and monitoring
  - Risk for derivatives is managed systematically as a part of the overall risk management process for the Trust
  - Use of derivatives is regularly reported to the Risk Committee of the Board
  - Trust derivatives were the subject of an internal audit in 2010 and an independent fiduciary review in 2011 and no significant weaknesses were identified

Reviewed by:

☑ HEK ☑ Audit
☑ Keith Brown ☑ Legal

TRS

Modification 5 (continued)

Remove Derivatives Tenor Limits

Background Information (continued)

- The IMD needs the ability to access the most liquid portion of the OTC derivatives markets, which can extend beyond the current five-year tenor limit

Proposal

- Remove derivatives tenor limits

TRS

Modification 6

Add Centrally Cleared Derivatives

Background Information

- The Trust currently uses two types of derivatives contracts:
  1. OTC contracts between TRS and a counterparty executed using International Swaps and Derivatives Association ("ISDA") documentation and
  2. Exchange-traded contracts executed using agreements with futures commission merchants who engage futures exchanges on the Trust's behalf
- The Dodd-Frank Wall Street Reform and Consumer Protection Act mandates that certain types of OTC contracts be centrally cleared using a central counterparty (a "CCP")
  - As a result, the covered OTC derivatives will be executed using newly created clearing systems that are similar to the existing futures exchange systems
- The IMD supports the Dodd-Frank central clearing mandate and anticipates that it will:
  - Reduce counterparty risk
  - Increase liquidity
  - Increase transparency

Proposal

- Add centrally cleared derivatives

Reviewed by:

☑ HEK	☑ Audit
☑ Keith Brown	☑ Legal

TRS

Modification 7

Increase Follow-on Investment Waiting Period from Three Months to Six Months

Background Information

- The IMD is restricted to 0.5% invested in an initial investment and 1.0% for each follow-on investment

Proposal

- Increase the existing waiting period between investments from three months to six months
- Clarify the language that specifies that any investments occurring within six months after a prior investment must be considered to be part of that prior investment

Example

- If an initial investment was 0.2% and two months later a follow-on investment is 0.4%, then the initial test would need to be recalculated and the resulting 0.6% would exceed the 0.5% threshold
- The IMD would either need to obtain Board approval for the 0.4% follow-on investment or would need to make a follow-on investment of 0.3% or less

Reviewed by:

☑ HEK ☑ Audit
☑ Keith Brown ☑ Legal

TRS

Modification 9

Clarify Special Investment Opportunity Authority

Background Information

- The Trust may invest up to $1 billion in a "Special Investment Opportunity" without consideration by the Board if a rapid response to the opportunity is required and it is not practicable to present the opportunity for consideration by the Board
- The CIO and the Executive Director will consult with the Chairman of the Investment Committee to determine whether or not it is practicable to present to the Board
- At a subsequent Board meeting, the Board will then re-authorize the Special Investment Opportunity authority

Proposal

- In addition to the Chairman of the Investment Committee, also consult the Chairman of the Board to determine whether or not it is practicable to present to the Board
- Require that only one investment (and not multiple investments) can be made prior to the reauthorization by the Board of the Special Investment Opportunity authority

Reviewed by:

☑ HEK	☑ Audit
☑ Keith Brown	☑ Legal

TRS

Full List of Modifications

1. **Improve document readability.**
    a. Add an Executive Summary [Article 1].
    b. Standardize section labeling [Various].
    c. Consolidate redundant language [Various].
    d. Move Placement Agents Addendum [Article 12].
2. **Remove Real Assets Portfolio transition process** [Section 1.6]. Now that the Real Assets portfolio transition is complete, the transition process language is no longer required.
3. **Clarify that the list of Public Markets Authorized Investments is for both internal and external portfolios** [Section 2.2]. The list of Authorized Investments for the internal public markets portfolios is also used by the external public markets portfolios. This clarification relabels the list of Authorized Investments to make this clear.
4. **Adjust document to reflect restructuring of External Private Markets** [Article 3]. The External Private Markets investment center has now become the Private Equity and Real Assets investment centers.
5. **Remove derivatives tenor limits** [Section 8.6].
6. **Add centrally cleared derivatives** [Section 8.8]. Dodd-Frank has mandated the certain OTC derivatives be centrally cleared.
7. **Increase follow-on investment waiting period from three months to six months** [Appendix B]. Increase the waiting period and clarify the existing language describing the authority limits.
8. **Attach revised Authority Resolution (TRS 477)** [Appendix E].
9. **Clarify Special Investment Opportunity authority** [Appendix B]. Clarify the process for determining whether or not an investment can be made in a Special Investment Opportunity.

Reviewed by:

☑ HEK	☑ Audit
☑ Keith Brown	☑ Legal

TRS

Hewitt ennisknupp
An Aon Company

Memo

To:	**Board of Trustees and Policy Committee, Teacher Retirement System of Texas**
Cc:	Brian Guthrie, Britt Harris, Jase Auby
From:	Brady O'Connell, Steve Voss
Date:	August 14, 2012
Re:	Review of TRS Investment Policy

Comments

We recommend the Board of Trustees adopt the suggested revisions presented to the Policy Committee on September 13th as part of the annual review of the TRS investment policy. As you are aware, the review was comprehensive in scope and involved the Board and Policy Committee earlier than in similar reviews in the past.

We have had complete and full access to IMD professionals, including Jase Auby, and have been involved as various proposed changes and enhancements to policy were being contemplated. Our involvement in the process provides us an excellent vantage point from which to form our views and opinions and ultimately advise the Board.

Process Overview

While it is formally reviewed once a year, the review of the Investment Policy Statement (IPS) is really something that goes on informally throughout the year. During recent years, the IMD led the process of reviewing the document, working with advisors, audit, legal, and others to identify suggested changes and put those forth to the Board for consideration. The review this year was slightly different in that the Board was more actively involved in the process. The following events have occurred during the year as part of the process:

- February: Britt Harris leads a review of Board Decision Making touching on asset allocation, delegation, legislative authority, the transition plan and other issues
- April: Jase Auby reviews IMD Process Approval and Authority. HEK presents an overview of the importance of investment policy
- June/July: HEK conducts background calls with Trustees

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- July: Jase Auby introduces proposed changes to IPS at Policy Committee
- September: Final changes to be submitted to the Board; opinions from advisors provided; Board to review and consider for approval.

Key Elements of Policy

In our April presentation, we observed that the TRS investment policy includes all critical elements of an effective investment policy statement, and is thorough in those aspects of policy we believe are most important: asset allocation and rebalancing, benchmarks, risk management, monitoring and reporting, and governance/delegation.

These elements of policy are critical because they speak to some of the key risks faced by boards in setting policy. As we stated earlier this year, the major risks inherent in setting investment policy fall in the following categories:

- **Delegation**: inadequate reporting or oversight; roles not properly understood or delegated; and the wrong people at the wrong level making investment decisions
- **Asset Allocation**: failure to meet long term return target; and asset allocation that is outside the allowable ranges set forth in policy
- **Derivative/Risk Management**: inappropriate or unintended derivative usage; too much or too little risk taken through derivative usage

The IPS, including the proposed revisions, continues to contain all critical elements and in our opinion should be considered a best in class example of a comprehensive investment policy statement. While a comprehensive policy is desired, it can be somewhat intimidating to readers not accustomed to such documents. The addition of an executive summary does a good job of highlighting the major issues in policy in a more concise manner.

Specific Changes

Below we provide a summary of our view on the significant changes being proposed (as well as changes that are new since July). We do not formally comment on changes that are mostly administrative or clerical in nature but we are supportive of modifications that improve readability. ***We support all of the changes that have been proposed and recommend the Board adopt the investment policy statement as presented.***

2. **Remove Real Assets portfolio transition language**. Given the Real Asset portfolio has reached its target funding level set years ago (as private market assets were increased over time to meet the higher target), the language related to how assets are to be invested during the ramping up period is no longer necessary. Publicly traded real estate investment trusts (REITs), which had been used as a proxy for private market real estate, are removed as an asset class (but will remain eligible as an investment on a more tactical basis).

4. **Adjust to reflect restructuring of External Private Markets**. IPS is modified to reflect the splitting of Private Equity and Real Assets from the broader Private Markets which included both. This change was driven by the change in the IMD structure that follows the departure of Steve LeBlanc, who oversaw the combined Private Markets group. This is a minor change, but it does illustrate how organizational changes can impact the IPS.

5. **Remove derivatives tenor limit**. While at first blush, this may seem like a significant reduction in the controls in place for derivative usage, we are comfortable with this change for several reasons. First, based on a review of the policies of peer pension funds, including caps on the tenor or maturity of swap contracts is *not* common or best practice. Second, the cap of 5 years that is in current policy may prevent TRS from transacting in the most liquid part of the credit default swap market (so it may actually increase risk as currently written). Third, we do not think the tenor cap will actually have any risk mitigation impact. Fourth, counterparty risk is one of the key risks of the over-the-counter swap market and this is addressed well in Article 8 of the IPS (section 8.8).

6. **Add centrally cleared derivatives** [New since July]. This modification is interesting because it reflects the evolving regulatory landscape. In the wake of the financial crisis, there has been a move to add more transparency to the over-the-counter (OTC) derivatives market (basically agreements between two parties that can be hard to track and aggregate). Financial reform legislation requires some of the OTC derivatives to be centrally cleared, with a clearinghouse serving as a middleman of sorts allowing for easier transparency and aggregation of positions and also assisting in counterparty risk management (clearing houses typically reduce counterparty risk by guaranteeing the position of each party to a transaction). The proposed modification clarifies that if a swap is centrally cleared then an ISDA (which governs OTC transactions) is not needed, but clearing agreements are.

7. **Increase follow on waiting period**. Delegation of the authority to hire and fire managers is a key element policy that has certain limits placed around that authority. One such limit is the amount that can be committed to investments without explicit Board approval. That limit is currently 0.5% for an initial investment and 1.0% for "follow on" or incremental investments. This change increases the time period allowed between the initial allocation and the incremental or follow on investments from 3 months to 6 months. This change is meant to prevent follow-on investments too soon after initial investments that may appear to be circumventing the restriction on the 0.5% initial investment. Any follow-on allocation within 6 months of an initial allocation would need to be brought to the Board for approval if it resulted in the combined amount exceeding the 0.5% initial threshold.

8. **Attach revised Authority Resolution (TRS 477)** [New since July]. A clerical change (or potential change if the resolution is adopted in September), but since we have not commented on it previously we do here. The appendix will be updated to include the most recent Authority Resolution. This appendix is an important articulation of the Board's delegation authority to various members of the TRS executive and investment team. Earlier in this memorandum we mentioned that the lack of clear delegation can be a risk in investment policy. The inclusion of this resolution makes it clear what authority the Board has granted and to whom it has been granted so we think this is a helpful part of the IPS.

Summary

Broadly speaking, we think the TRS Investment Policy Statement is comprehensive and effective. It is reviewed on an annual basis and modifications are necessary to reflect changes in investment strategy, the structure of TRS and the IMD, regulatory changes, legislative changes, and even more mundane things like administrative changes. Given the critical nature of the IPS in dictating the future direction of the investment portfolio, we think the high level of attention this document receives is warranted.

This policy review has involved more direct Board participation earlier in the review process. It still involved the Board's advisors and various groups within TRS (IMD, legal, audit, etc.) but we heard directly from the Board on areas of concern to you. The Board has raised questions and comments regarding various aspects of reporting–one area of the policy that is not changing. While we think Section 1.7 of the policy lists all the necessary items that are or should be of concern to the Board, we recognize this may not be provided in the format or frequency that is desired. Rather than changing the policy to address this, we recommend the Board work with advisors and the IMD to modify current reporting practices as we do think that between the monthly transparency reports,

reports from advisors, and regular Board meeting materials, the elements articulated in 1.7 are covered. We also note that the July 2012 Transparency Report has been changed to include private market transactions by vintage year, a direct result of questions raised by the Board at the July meeting.

We recommend the Board adopt the changes proposed in the IPS. Relative to some of the more significant changes we have seen to investment policy, such as the 2008 annual review, these changes are all relatively modest and represent incremental as opposed to sea change.

DEPARTMENT OF FINANCE
THE UNIVERSITY OF TEXAS AT AUSTIN

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MEMORANDUM

To: Board of Trustees
The Teacher Retirement System (TRS) of Texas

From: Keith C. Brown
Advisor to the TRS Board

Re: Proposed Changes to the TRS Investment Policy Statement

Date: August 15, 2012

I have reviewed the several changes to the Investment Policy Statement (IPS) that have been proposed recently by the Investment Management Division (IMD). *Overall, I endorse these modifications and recommend their adoption.*

In what follows below, I have only included discussion on the four (of eight) proposed changes that have been deemed by the IMD staff to be the most consequential. (Note: For the sake of clarity, the headers for the various entries are those used in the notes accompanying the IMD's "Proposed Modifications to Investment Policy" presentation to the Board of July 31, 2012.)

- *Remove Real Assets Portfolio Transition Process (Modification #2)*

The primary effect of this modification is to remove from the IPS all language dealing with the process of "ramping up" the Real Assets portion of the overall portfolio to its target allocation of 15%. As the IMD staff expects to reach this target sometime in 2013, they have deemed the transition process to be complete for the purposes of benchmarking investment performance to the long-term target weight. Consequently, this adjustment to the IPS is appropriate to make at this time since it is not expected that the policy will be revised again for at least a year.

One immediate implication of this change is that the explicit listing for REIT investments (as part of the Real Return asset group) has also been removed. Of course, the IMD can still invest in REIT securities as a tactical position within the Real Assets allocation

"budget", but such an investment will now contribute to the overall tracking error for the Fund to the extent that REITs are not perfectly correlated with the NCREIF ODCE benchmark. The IMD can also invest in REITs in the Global Equity asset group since those securities appear in some of the MSCI equity benchmarks.

- *Remove Derivatives Tenor Limits (Modification #5)*

As currently written, the IPS imposes two restrictions on the use of over-the-counter (OTC) derivative contracts with respect to their maturities (i.e., "tenors"): (i) OTC interest rate swaps may not have tenors exceeding 30 years, or shorter based on market liquidity; and (ii) the tenor of all other OTC derivatives may not exceed five years. This proposal would remove any mention of tenor limits from the IPS.

At first glance, this modification would seem to be removing a potentially important mechanism for controlling the risk exposure associated with using derivatives in managing the TRS portfolio. However, I do not think that this is the case. In fact, my view is that tenor limits on derivatives are an increasingly outmoded and reasonably ineffective price risk control device that are superseded at TRS by the other "macro" risk controls on the entire portfolio, such as the tracking error restrictions. Tenor limits also may help control liquidity risk if longer-dated derivatives contracts are not as widely traded as shorter-dated contracts, but this is a fairly indirect approach as well.

This change would nominally grant more flexibility to the IMD staff, but I don't think that it represents a diminution of institutional control for the Board. Further, since the IPS does not contain tenor limits on securities in the physical portfolio, the removal of tenor restrictions on derivatives cannot be used as a back door way to violate those limits (e.g., if the longest-term bond you can only hold is, say, five years, you could couple a five-year security with a longer-term swap contract in order to convert it into the equivalent of a ten-year bond for price exposure purposes). So, this change would not create a mismatch in the IPS with respect to the intentions of how the physical and synthetic (i.e., derivative-adjusted) parts of the portfolio should be managed.

On the other hand, the continued presence of tenor limits at the current level (i.e., five years) does restrict the implementation of certain investment strategies, such as those related to tactical asset allocation investing. While the needs of the IMD could probably be accommodated by simply lengthening the tenor limits already in place—as was suggested in an earlier version of this proposal—that sort of "quick fix" is probably not the best way to manage the policy design process if there is not a compelling reason to have a restriction of this nature in the first place.

Ultimately, then, I think that while this change will give staff more operational flexibility, it should just allow them to implement what they can invest in any way, but in a more cost-effective manner. However, I do think that monitoring staff's on-going derivative useage could become a somewhat more involved function for the Risk Committee. Assuming the proposed change is adopted, it might be beneficial to re-

examine the form and content of the derivatives reporting that the Board receives in the light of this adjustment and make some modifications or enhancements as necessary.

- *Add Centrally Cleared Derivatives (Modification #6)*

As part of the new Dodd-Frank reform measures, certain OTC derivatives contracts that previously operated under ISDA agreements between two counterparties will now be subject to a centralized clearing procedure. This proposal simply modifies the IPS to include language that recognizes this fact.

More than anything, this amendment does little more than acknowledge that, going forward, some OTC derivatives will be settled more like exchange-traded contracts. Arguably, this should enhance the safety of holding and trading these positions by reducing counterparty risk (at least to the extent that the central counterparty's risk of default is lower than that of the contract end users). It may also promote more price transparency in the marketplace, but this may depend on the extent to which the terms of the affected contracts become standardized.

- *Increase Follow-On Investment Waiting Period From Three Months to Six Months (Modification #7)*

This modification increases the waiting period between an initial investment with an external manager and follow-on investments with the same manager from three to six months. It also makes clear that any additional investment occurring within six months of the original will be considered to be part of the original for commitment limit purposes.

This change, which I understand to have been requested by the Board, clearly enhances the set of restrictions under which the IMD staff operates. However, given that the Board can approve special situations as it deems prudent, it is not clear that the additional constraint imposed by this adjustment will have a material impact on the investment operations.

Lastly, I have also reviewed the new IPS language associated with each of the remaining four proposed modifications. Most all of these changes can be viewed as being either procedural or clarifying in nature. The only one that is somewhat different in this regard is Modification #1, which was aimed at improving the presentation style and "readability" of the IPS document. A useful addition to the front-end of the document is the new Executive Summary, which nicely captures the essence of the entire policy. However, the admonishment listed at the top of this preamble bears repeating: "*This Executive Summary is not intended to replace, and must be read in conjunction with, the Investment Policy Statement. In the event of a conflict between the Executive Summary and the Investment Policy Statement, the Investment Policy Statement shall govern*."

Blue numbered boxes herein correspond to the proposed changes as numbered in the accompanying presentation

INVESTMENT POLICY STATEMENT

(Adopted September ~~15~~[ ], ~~2011~~ 2012 to be effective October 1, ~~2011~~2012)

TABLE OF CONTENTS

#1a

EXECUTIVE SUMMARY 4

ARTICLE 1 – TOTAL FUND AND PORTFOLIO DESIGN ..... ~~3~~9

1.1. Introduction ..... ~~3~~9

1.2. Purpose and Design ..... ~~3~~9

1.3. Roles of Board, Staff, and Advisors ..... ~~3~~9

1.4. Total Fund Objectives ..... ~~4~~10

1.5. Total Fund Investment Standard ..... ~~4~~10

1.6. Total Fund Asset Mix and Benchmarks ..... ~~5~~11

1.7. Total Fund Measurement and Reporting Criteria ..... ~~7~~13

1.8. Total Fund Portfolio Implementation And Design ..... ~~8~~14

ARTICLE 2 – PUBLIC MARKETS PORTFOLIOS ..... ~~9~~15

2.1. Public Markets Portfolios Objectives ..... ~~9~~15

#1b

2.2. Public Markets Portfolios Authorized Investments ~~for Public Markets Portfolios~~ ..... ~~9~~15

2.3. Internal Public Markets Portfolios Restrictions ..... ~~11~~16

2.4. External Public Markets Portfolio ..... ~~11~~17

2.5. External Public Markets Portfolio Objectives ..... ~~11~~17

2.6. Hedge Fund Defined ..... ~~12~~17

2.7. External Public Markets Portfolio Authorization ~~Authorized Investments for External Public Markets Portfolio~~ ~~14~~19

2.8. External Public Markets Portfolio Restrictions ..... ~~15~~20

2.9. External Public Markets Portfolio Conflicts of Interest ..... ~~15~~20

ARTICLE 3 – PRIVATE MARKETS PORTFOLIOS ..... ~~16~~21

3.1. Private Markets ~~Component~~ Portfolios ..... ~~16~~21

3.2. Private Markets Portfolios Authorization ~~Portfolio Guidelines~~ ..... ~~16~~21

3.3. Private Markets Investment Process ..... ~~16~~21

3.4. Private Markets Authorization of Investments ~~for Private Markets Portfolios~~ ..... ~~17~~21

3.5. Private Markets Portfolio Restrictions 1722

ARTICLE 4 – PRIVATE EQUITY PORTFOLIO ..... ~~17~~23

4.1. Private Equity Portfolio Objectives ..... ~~17~~23

4.2. Authorized Investments for Private Equity Portfolio Authorized Investments 1723
4.3. Private Equity Portfolio Restrictions 1823
ARTICLE 5 – REAL ASSETS PORTFOLIO 1823
5.1 Real Assets Portfolio Objectives 1823
5.2 Real Assets Portfolio Authorized Investments for Real Assets Portfolio 1823
#1c
5.3 Real Assets Investment Authority 19
5.4 Real Assets Diversification 19
5.53 Real Assets Portfolio Restrictions 1924
ARTICLE 6 – EMERGING MANAGERS PROGRAM 2024
ARTICLE 7 – OVERLAY PORTFOLIOS 2025
7.1. Overlay Portfolios Objectives 2025
7.2. Overlay Portfolios Authorized Investments for Overlay Portfolios 2025
7.3. Overlay Portfolios Restrictions 2025
ARTICLE 8 – AUTHORIZED USES OF DERIVATIVES 2126
8.1. Derivatives Objective and Investment Standard Applicable to Derivatives 2126
8.2. Scope of Derivatives Policy Scope 2126
8.3. Uses of Derivatives Use By External Managers and Commingled Funds (Hedge Funds) 2126
8.4. Derivatives Definition of Derivatives; Authorization 2227
8.5. Permitted Derivatives Applications Permitted 2227
8.6. Derivatives Applications Not Permitted 2227
8.7. Derivatives Documentation and Controls 2328
8.8. Derivatives Limitations Applicable to Derivatives 2328
8.9. Derivatives Risk Management and Compliance 2428
ARTICLE 9 – RISK MANAGEMENT AND OVERSIGHT 2429
9.1. Market Risk Management 2429
9.2. Foreign-Exchange Risk Management Policy 2530
9.3. Credit Risk Management 2530
9.4. Liquidity Risk Management 2631
9.5. Operations Risk Management 2631
9.6. Settlement Risk Management 2631
9.7. Legal Risk Management 2631
9.8. Risk Management Compliance Cure Periods and Remedies 2732
9.9. Permitted Uses of Leverage 2732
ARTICLE 10 – HEALTH INSURANCE PROGRAM PORTFOLIO 2732
10.1. Health Insurance Program Portfolio Objective 2732
10.2. Health Insurance Program Portfolio Authorized Investments 2732
#1d
ADDENDUMARTICLE 11 – POLITICAL CONTRIBUTIONS; IMPROPER INFLUENCE; PLACEMENT AGENTS AND FINDERS 3433
11.1. Scope 33

11.2. Purpose 33
11.3. Philosophy 33
11.4. Required Disclosures 33
11.5. Contractual Representations, Warranties and Covenants 33
11.6. Prohibitions 34
11.7. Definitions 34
APPENDICES 35
~~APPENDIX~~ A. Tracking Error Neutral (in Annualized Basis Points) ..... ~~28~~35
~~APPENDIX~~ B. IIC Approval Authority and Manager Organization Allocation Limits ..... ~~29~~36
~~APPENDIX~~ C. Emerging Managers ..... ~~30~~37
~~APPENDIX~~ D. Policy Hedge Ratios ..... ~~31~~38
~~APPENDIX~~ E. Authority Resolution (TRS 477) ..... ~~32~~39
F. Political Contributions; Improper Influence; Placement Agents and Finders Questionnaire 2840

#1d ~~**ADDENDUM – POLITICAL CONTRIBUTIONS; IMPROPER INFLUENCE; PLACEMENT AGENTS AND FINDERS ..... 34**~~

~~**INVESTMENT POLICY STATEMENT**~~
~~(Adopted September 15, 2011 to be effective October 1, 2011)~~

#1a

EXECUTIVE SUMMARY

This Executive Summary is not intended to replace, and must be read in conjunction with, the Investment Policy Statement. In the event of a conflict between the Executive Summary and the Investment Policy Statement, the Investment Policy Statement shall govern.

Total Fund and Portfolio Design

The Investment Policy Statement provides a formal plan for investing pension trust fund and health insurance program assets. The policy defines the roles and responsibilities of the Investment Division and other parties within that plan.

The Internal Investment Committee is established and assigned the authority to review and approve investments. The IIC's authority is limited by the size of the investments it can approve without also obtaining approval from the Board. The limitations are 0.5% for initial allocations, 1% for follow-on allocations, 3% total to any one organization in each of External Public Markets, Private Equity, Real Assets and 6% total to any one organization in the total Trust with each of the foregoing percentage stated as a percentage of the Total Trust and calculated at time of investment. In addition, the CIO has Special Investment Opportunity authority of up to $1 billion. See "Appendix B – IIC Approval Authority and Manager Organization Allocation Limits."

The Trust's objectives are to (a) control risk and (b) achieve a long-term rate of return that exceeds (i) the assumed actuarial rate of return adopted by the Board, (ii) inflation plus 5% and (ii) the Trust's Policy Benchmark. The Trust is subject to a "prudent person" standard of care under the Texas Constitution.

See "Article 1 – Total Fund and Portfolio Design."

Asset Allocation

Asset Class	Target
Global Equity	
US Large Cap	18%
US Small Cap	2
Non-US Developed	15
Emerging Markets	10
Directional Hedge Funds	5
Private Equity	12
Stable Value	
US Treasuries	13%
Absolute Return	0
Stable Value Hedge Funds	4
Cash	1
Real Return	
Global Inflation Linked Bonds	5%
Real Assets	15
Commodities	0
Total	100%

In addition to the target, each asset class has minimum and maximum allocations which, with certain exceptions, are +/-5% around the target allocation.

See "Section 1.6 – Total Fund Asset Mix and Benchmarks."

Measurement and Reporting	Investment performance, policy compliance, asset allocation, external investments activities, derivatives usage, risk limits, liquidity, leverage, private markets strategy, staffing, use of placement agents and other information will be monitored and reported to the Board. See "Section 1.7 – Total Fund Measurement and Reporting Criteria."
Public Markets Portfolios	The portfolios are authorized to invest in publicly traded or Rule 144A (either through an exchange or over-the-counter) assets such as equities, exchange-traded funds, equity-linked notes, options, futures, swaps, forwards, corporate debt, sovereign or sovereign-sponsored entity debt (including US Treasuries), mortgage-backed securities, collateralized mortgage obligations, commercial mortgage-backed securities, asset-backed securities, any investment in one of the public markets benchmarks, mutual funds, closed end funds, structured notes, structured credit transactions, repurchase transactions, State of Texas pooled investment funds, foreign currencies, short sales, local access products and other investments. See "Section 2.2 –Public Markets Portfolios Authorized Investments." Certain restrictions apply to the internally managed portfolios including restrictions on (a) the amount of equity of any company that can be held (not more than 20%), (b) investments linked to a prurient interest in sex, (c) investments linked to Sudan and (d) investments linked to Iran. See "Section 2.3 – Public Markets Portfolios Restrictions."
External Public Markets Portfolio	The portfolio is comprised of (a) externally managed public investments that do not qualify as Hedge Funds (limited to less than 30% of the Trust), (b) Hedge Funds (limited to less than 10% of the Trust) and (c) other absolute return portfolios (includes credit-sensitive investments). Hedge Fund is defined in Section 2.6. Any Board member can require that any investment in the External Public Markets Portfolio be submitted for consideration to the Board. The Investment Division can engage advisors and consultants with respect to the portfolio, allow short positions, engage in overlay strategies, rebalance the portfolio and terminate managers within the portfolio. The separate account investments within the portfolio will adhere to the Sudan and Iran restrictions. See "Section 2.7 – Authorized Investments for the External Public Markets Portfolio" and "Section 2.8 – External Public Markets Portfolio Restrictions."
Private Markets Portfolio	General principles of investing in private markets apply to both the Private Equity and Real Assets portfolios. The Investment Division is authorized to engage advisors and consultants, authorize commitments to be funded over an extended period of years, serve on limited partner or investment advisory committees, engage in rebalancing and engage in overlay strategies. Investments will be submitted to the Board for authorization if the appropriate consultant or advisor does not concur with the investment or at the request of any Board member. The Investment Division can transfer, withdraw or terminate its investments. In certain circumstances, restrictions apply to the portfolios regarding investments linked to a prurient interest in sex, Sudan and Iran. See "Article 3 – Private Markets Portfolios."
Private Equity Portfolio	The portfolio makes investments either through funds or directly in equity, equity-rights securities, preferred stock, convertible securities, debt obligations, warrants, rights, options and other investments. Private equity strategies are often classified as venture capital, mezzanine, buyout, emerging markets and special situation. See "Article 4 – Private Equity Portfolio."
Real Assets Portfolio	The portfolio makes investments either through funds or directly in equity, debt, rights, warrants or other investments in real estate, infrastructure, timber, agriculture,

	oil and gas, mortgage-related investments, real estate investment trusts, master limited partnerships, non-fixed assets and other opportunistic investments in real assets. Real estate investments are often classified as core, core-plus, value-added and opportunistic. Non-real estate investments are restricted to 5% or less of the Total Fund. See "Article 5 – Real Assets Portfolio."
Emerging Managers Program	The Investment Division will make a good-faith effort to invest a target allocation of $1.65 billion with qualified emerging managers in the External Public Markets Portfolio, Private Equity Portfolio and the Real Assets Portfolio. Emerging managers can include, but are not limited to, minority, women, and disabled veteran-owned or -controlled organizations generally with less than $2 billion assets under management or a performance track record of less than five years. See "Article 6 – Emerging Managers Program" and "Appendix C – Emerging Managers."
Overlay Portfolios	Overlay Portfolios are designed to manage risk, asset allocation, and market exposures through futures, options, swap agreements, or forward agreements. Overlay Portfolios may be implemented in connection with the Total Fund or with any investment or portfolio within the Total Fund. Overlay portfolios are restricted by the asset allocation limits of the Trust. In addition, certain uses of currency overlays are restricted to less than (a) 5% to all non-US dollar currencies, (b) 2% to any one developed market currency (except the US dollar) and (c) 1% to any emerging market currency, each calculated as a percentage of the Trust. See "Article 7 – Overlay Portfolios."
Derivatives	Derivatives are authorized only if they efficiently manage and reduce the risk of the overall investment portfolio. Derivatives can be used to (a) implement investment strategies in a lower cost or efficient manner, (b) efficiently manage the Total Fund portfolio, (c) construct portfolios that could not be efficiently constructed using cash market securities, (d) hedge and control risks and (e) facilitate transition trading. Over-the-counter derivatives may not have a tenor of greater than six years (or, thirty years in the case of interest rate swaps). Derivatives may only invest in legally permissible policy asset categories and may not be used to circumvent the asset allocation or other policy restrictions. All use of derivatives must be properly documented. All over-the-counter derivatives must be executed using ISDA documentation or, if centrally cleared, clearing agreements. All counterparties must have a credit rating of at least A- (Standard & Poor's or Fitch) or A3 (Moody's). In addition, the net market value of derivatives positions with any counterparty may not exceed $500 million (calculated net of collateral) and may not exceed 5% of the total market value of the Fund (without consideration of collateral). See "Article 8 – Authorized Uses of Derivatives."
Risk Management	The Investment Division will monitor and manage risk of the Total Fund Portfolio including: Market Risk –will be managed and measured using at a minimum a quantified estimate of downside risk (e.g., value-at-risk), asset allocation limits, private markets holdings analysis, and a quantified estimate of risk relative to the benchmark (tracking error). Foreign Exchange Risk – will be managed according to a Policy Hedge Ratio established by the Board. The current Policy Hedge Ratio is set a 0%. Credit Risk – the primary sources of credit risk are derivatives counterparty risk (mitigated by credit provisions in the derivatives documentation), the risk from repurchase agreements (limited to 5% of the Trust market value) and securities

	lending. Liquidity Risk – a prudent liquidity management will be established to ensure that the Fund maintains ample liquidity to meet its funding commitments, especially disbursements of benefits and TRS investment activities. Leverage Risk – the permitted uses of leverage are defined. Leverage will not be used to exceed the asset allocation ranges of the policy. Other managed risks include operations risk, settlement risk and legal risk. Compliance cure periods or corrective action plan periods established for violations of policy or other compliance limits are 90 days for passive violations (a violation due to changing market or credit conditions) and 15 days for active violations (a violation due to entering into an agreement or investment that breaches a policy limit at inception or thereafter through failure to monitor). See "Article 9 – Risk Management and Oversight."
Health Insurance Program	Authorized investments for the Health Insurance Program Portfolio are conservative, short-term securities consistent with the guidelines employed by the C~~c~~omptroller when investing S~~s~~tate funds. See "Article 10 – Health Insurance Program Portfolio."
Political Contributions; Improper Influence; Placement Agents and Finders	The purpose of this policy is to ensure the integrity of all TRS investment transactions and conformity with the highest fiduciary, ethical, and legal standards by all parties involved. All investment decisions made by the Board and the Investment Division must be based solely on the merits in conformity with fiduciary standards and applicable law. All investment decisions and recommendations must be free of impropriety or improper influence and the appearance of either. The Investment Division shall obtain full disclosure of all matters having the potential to harm TRS's reputation or the integrity of TRS's investment processes, or that could constitute unethical or unlawful conduct during the investment due diligence process. Neither TRS nor any TRS investment shall be burdened with or liable for any Placement Fee. Adequate disclosure must be made in connection with any investment in the form of "Appendix F – Political Contributions; Improper Influence; Placement Agents and Finders Questionnaire." See "Article 11 -- Political Contributions; Improper Influence; Placement Agents and Finders."
Tracking Error	Neutral tracking error targets are established for certain portfolios of the Trust: Internal Equity (Global Best) 100 bp External Equity (US; Large-Cap) 300 bp Equity (US; Small-Cap) 500 Equity (International; Developed, EAFE) 300 Equity (International; Emerging Markets) 300 Equity (World Equity) 300 Stable Value Hedge Funds 400 Directional Hedge Funds 600 Total Public Fund Tracking Error 100 In addition, Total Global Inflation Linked and Total Public Fund have maximum tracking error limits of 200 bp and 300 bp, respectively. See "Appendix A – Tracking

	Error Neutral (in annualized basis points)."
Authority	The employee titles in the Investment Group are specified and three types of investment authority are described including (i) general authority for investment matters, (ii) over-the-counter derivatives contracts and (iii) transfers of funds or assets; fund or account redemptions and withdrawals. In addition, the employees of the Financial Group, Executive Group and Trading Group are also specified and their authority is described. See "Appendix E – Authority Resolution (TRS 477)."

ARTICLE 1 – TOTAL FUND AND PORTFOLIO DESIGN

1.1. Introduction

The Teacher Retirement System of Texas ("TRS") administers a pension trust fund and other health insurance programs for retirees and certain active public education employees under State of Texas constitutional and statutory provisions. TRS is governed by a Board of Trustees (the "Board"). TRS provides service and disability retirement benefits and death and survivor benefits for Texas public education employees and their beneficiaries. Benefits are funded by state and member contributions and investment returns.

1.2. Purpose and Design

The purpose of this Investment Policy Statement (this "Policy") is to provide a formal plan for investing pension trust fund and health insurance program assets to achieve defined investment objectives consistent with the TRS mission statement adopted by the Board and with applicable law.

This Policy also defines the roles and responsibilities of the various entities involved in the investment process and facilitates internal and external communication of investment policy.

The appendices to this Policy are incorporated into and form part of this Policy for all purposes. Capitalized terms not defined in this Policy have the meanings assigned to them in the "TRS Glossary of Investment Terms" ("Glossary"), which definitions are also incorporated into and form part of this Policy for all purposes. Modifications to the appendices or the Glossary that would have a substantive effect on this Policy require Board consideration and adoption.

1.3. Roles of Board, Staff, and Advisors

The Board has the primary fiduciary responsibility for investing TRS trust assets in accordance with Article XVI, Section 67 of the Texas Constitution and with applicable law. The Board establishes investment objectives and policy, obtains expert advice and assistance, and oversees the employment of a qualified and competent investment staff ("Investment Division") and legal staff. The Board also monitors the actions of staff and advisors to ensure compliance with its policies. The Board has a Policy Committee of the Board ("Policy Committee"), an Investment Management Committee of the Board ("IMD Committee") and a Risk Management Committee of the Board ("Risk Management Committee"), each of which is a standing committee of the Board charged with those responsibilities set forth in the Bylaws of the Board. The Board and the Investment Division are assisted by outside investment consultants and internal and external legal counsel.

a. Investment Counsel ("Investment Counsel") selected by the Board provides education, advice, commentary, and discussion as requested at Board meetings, assists with development and review of investment policies and procedures, performs due diligence and recommends managers or investments, reports on the progress of the Fund in meeting its investment objectives, and compares the performance of the portfolio to established benchmarks. The Investment Division and Investment Counsel provide information as needed to assist the consulting actuary in performance of actuarial services.

b. The Investment Division has fiduciary responsibilities delegated by the Board under applicable law. Investment Division manages the Fund according to the Board's policies, advises and informs the Executive Director and the Board about investments, and recommends modifications to this Policy. The Investment Division executes all transactions, performs risk-management functions, and prepares investment reports.

c. The Internal Investment Committee ("IIC") is hereby established to review, consider, and authorize proposed external manager engagements and investments as required by this Policy for the External Public Markets Portfolio and the Private Markets Portfolios. Additionally, the IIC will manage the foreign exchange policy hedge ratios (set forth in Appendix D) and review as needed.

The permanent IIC membership ~~comprises~~ consists of the Chief Investment Officer ("CIO"), the Deputy CIO, the Chief Risk Officer ("CRO"), and the Investment Division Senior Managing Directors ("SMD's"). The CIO will establish procedures and guidelines for the operations of the IIC. The IIC procedures and guidelines may provide that the CIO may appoint and remove select Directors as non-permanent voting members to the IIC. The IIC procedures and guidelines will define a quorum and establish the vote required to authorize an investment or external manager engagement or, if required by this Policy, recommend an investment or external manager engagement to the Board, which vote may not be less than a majority of the then-incumbent IIC members present and voting at a meeting at which a quorum is present. The CIO shall have the power to veto any investment or delegation of investment discretion authorized or recommended by the IIC pursuant to a vote of its members. Termination of a member's TRS employment terminates IIC membership as of the date the employee or TRS gives notice of termination, as the case may be.

The Executive Director or his designee may attend any meeting of the IIC, and the Investment Division shall deliver to the Executive Director copies of all IIC materials, analyses, correspondence, and agendas as and when delivered to IIC members or other TRS employees. The Executive Director is not a member of the IIC, however, acting in his or her capacity as the chief executive officer and chief administrative employee of TRS as set forth in the Board's Bylaws, the Executive Director shall, after consultation with the CIO, have the power to veto any investment or delegation of investment discretion proposed for IIC consideration or authorized or recommended by the IIC pursuant to a vote of its members whenever he deems such veto to be in TRS' best interest. When this Policy requires that the Board authorize an investment or an engagement of an external manager, the IIC shall vote on whether to recommend such investment or engagement to the Board. The results of the vote shall be reported to the Board in the materials provided to the Board for consideration.

d. All proposed changes to this Policy will be reviewed by the legal staff for compliance with state and federal laws regarding fiduciary responsibility, investment prudence, ethics compliance, and other applicable standards or requirements before submission to the Policy Committee. Except as authorized by the Executive Director, proposed changes to this Policy will first be presented to the Policy Committee, which will consider recommending the proposed changes to the Board. The Board may consider and adopt proposed changes that have not been considered by the Policy Committee. This Policy shall be reviewed at least once every three years.

1.4. Total Fund Objectives

In this Policy, the total or overall investment portfolio includes all assets invested by TRS to provide retirement, death, health, and disability benefits administered by the system, including cash and cash equivalents (the "Total Fund" or the "Fund") and will be structured and managed to achieve the following objectives:

a. Control risk through proper diversification of asset classes and by establishing long-term risk and return expectations; and

b. As applicable to the pension plan, achieve a long-term rate of return that:

   i. Exceeds the assumed actuarial rate of return adopted by the Board;

   ii. Exceeds the long-term rate of inflation by an annualized 5%; and

   iii. Exceeds the return of a composite benchmark of the respective long-term normal asset mix weighting of the major asset classes.

1.5. Total Fund Investment Standard

Article XVI, Section 67(a)(3) of the Texas Constitution and Section 825.301, Government Code, states that the standard of care for TRS investments is a "prudent person" standard. Section 825.301, Government Code, provides that Section 117.004(b), Property Code, applies to TRS investment decisions. Section 117.004(b) generally states that the determination of the prudence of a single investment decision will be made taking into consideration the investment of all of the assets of the trust, or the assets of the collective investment vehicle, as the case may be, rather than a consideration as to the prudence of the single investment of the trust, or the single investment of the collective investment vehicle, as the case may be.

All investments made by the Total Fund must be in "securities" as defined in Government Code Section 825.301(a) provided, however, that until September 1, 2019, TRS may buy and sell those instruments set forth in Section 825.301(a-1), Government Code, to efficiently manage and reduce the risk of the overall investment portfolio.

The Board and the Investment Division may obtain the assistance and advice of external investment experts, including external managers operating under Agency Agreements, and other investment counselors or consultants as needed.

1.6. Total Fund Asset Mix and Benchmarks

The Investment Division will assist the Board in engaging in an asset-liability study for the pension plan at least once every five (5) years to review asset classes, return-risk assumptions, and correlation of returns with applicable benchmarks and across asset classes. A key objective of the asset-liability study shall be the development through statistical modeling techniques of a diversified portfolio that specifies ranges of prudent portfolio exposures and a "long-term normal" position for each asset class. The normal portfolio mix will represent the portfolio that is expected to meet the Board's actuarial return objectives for the pension plan within the risk tolerances specified herein.

Each asset class allocation percentage has a "long-term normal" position within the overall portfolio and a maximum and minimum range around that normal allocation. All percentages refer to market value.

Each asset class is described by an associated benchmark that describes, in general terms, the opportunity set and return characteristics associated with the asset class. For certain private or more complex asset classes the benchmark serves as a proxy for expected returns rather than an approximation of the actual investments that will characterize that component of the portfolio. Those benchmarks, along with the allocation ranges, are identified in the table on the following page, and are referred to as the "Policy Benchmarks." The portfolio transition which started on October 1, 2007 for Real Assets is ongoing with a long term target for Real Assets of 15%. Adjustments to the benchmark to accommodate the transition for Real Assets are described in footnote 3 in the table below.

[Table appears on following page]

Asset Class	Benchmark	Bloomberg Ticker	Minimum Range[1]	Maximum Range[1]	Target
Global Equity:					
US Large Cap	MSCI USA Standard	GDDUUS	13%	23%	18%
US Small Cap	MSCI USA Small Cap	GCUDUS	0%	7%	2%
Non-US Developed	MSCI EAFE and Canada	NDDUEC	10%	20%	15%
Emerging Markets	MSCI EM	NDUEEGF	5%	15%	10%
Directional Hedge Funds	HFRI Fund of Funds Composite	HFRIFOF	0%	10%	5%
Total Public Equity	*Target-weighted Blend*		*45%*	*55%*	*50%*
Private Equity	State Street Private Equity Index – lagged one quarter		7%	17%	12%
Total Global Equity	***Target-weighted Blend***		**55%**	**69%**	**62%**
Stable Value:					
US Treasuries	Barclays Capital (BarCap) Long Treasury Index	LUTLTRUU	0%	20%	13%
Absolute Return (Including Credit Sensitive Investments)[2]	3 Month LIBOR + 2%	USC0TR03 (plus 2%)	0%	20%	0%
Stable Value Hedge Funds	HFRI Fund of Funds Conservative	HFRIFOFC	0%	10%	4%
Cash	Citigroup 90-day US Treasury	SBMMTB3	0%	5%	1%
Total Stable Value	***Target-weighted Blend***		***13%***	***23%***	***18%***
Real Return:					
Global Inflation Linked Bonds	BarCap US Treasury TIPS index	LBUTTRUU	0%	10%	5%[3]
Real Assets	NCREIF ODCE - lagged one quarter		5%	20%	15%[3]
Commodities[~~4~~3]	Goldman Sachs Commodity Index	SPGCCITR	0%	5%	0%[3]
~~REITS~~	~~MSCI US REIT~~	~~RMS G~~	~~0%~~	~~5%~~	~~0%~~[3]
Total Real Return	***Target-weighted Blend***		*15%*	*25%*	*20%*
TOTAL PLAN	***Target-weighted Blend***				***100%***

#2

[Notes to table appear on following page]

Notes to table on prior page

[1] With respect to the maximum range and minimum range, the CIO may increase any maximum range by 5% or decrease any minimum range by 5% (but may not decrease a minimum range below zero) if the CIO concludes in a writing delivered to the Executive Director and to the Board of Trustees stating the action taken and the reasons why the CIO believes that such increase or decrease would be in the best interests of TRS; provided, the maximum range for Total Global Equity may not be increased above 69%. Before taking action, the CIO must request comments from the Chairman of the appropriate Board Committee and TRS consultants and advisors. The Board, at the next succeeding Board meeting, must authorize the increase or decrease if the CIO proposes that the changes continue in effect after such Board meeting. The CIO will notify the Compliance Officer of any such change to a maximum or minimum range. If the Board does not authorize the continuation of the change to a maximum or minimum range after the next succeeding Board meeting, the Investment Division shall use best efforts to rebalance the portfolio to bring the asset classes within the ranges in the table above within 90 days.

[2] Absolute Return is a broad category that includes all assets that have a high probability of generating a positive absolute return regardless of market conditions over a one to three year period.

#2

[3] ~~On October 1 of each year, the Target for Real Assets for the succeeding twelve months will be reset by the CIO to the averaged funded level of Real Assets for such succeeding twelve months as projected by the Real Assets investment management team (rounded to the nearest whole percentage); provided, the Target for Real Assets may not be more than 15%. Any decrease to the Target for Real Assets below 15% will result in an equivalent amount of increase allocated to the Targets for first, REITS (until REITS is 2%), second, Commodities (until Commodities is 2%) and, third, Global Inflation Linked Bonds. Any increase or decrease to the target level for each asset class will also be applied to the minimum and maximum range level for that asset class; provided, the minimum range level may not be reduced below 0%.~~

[~~4~~3] Except as specifically provided in Article 5.2, investments in commodities are limited to instruments that constitute a security or an authorized derivative that is either underlain by a financial instrument or, if underlain by a physical commodity, is cash settled. Direct investments in physical commodities are prohibited.

1.7. Total Fund Measurement and Reporting Criteria

The Investment Division will deliver reports to the Board (and the appropriate Board committee, as applicable) adequate to indicate whether the Total Fund is meeting its objectives and that will permit the Board to monitor each portfolio for compliance with this Policy. The Board will establish performance and risk measurement and attribution standards for the Total Fund, each asset class, and component portfolios.

The following comparisons and reviews will be performed quarterly (unless otherwise noted) and presented to the Board:

a. **Investment Performance** – Investment performance for the Total Fund and each component portfolio, net of external management fees (if applicable); will be compared with their respective benchmark indices. Fund performance will be judged primarily by comparisons to long-term (3, 5 and 10 year) Policy Benchmark returns.

b. **Monitoring of compliance with Policy** - Portfolios will be reviewed for compliance with the requirements set forth in this Policy. The Investment Compliance Officer will have overall responsibility for compliance monitoring. However, if considered necessary, TRS will hire external parties to obtain assistance regarding compliance monitoring. To ensure independence in compliance monitoring the Investment Compliance Officer or external parties hired will not be given the authority to trade securities. To ensure ongoing compliance with this Policy and completeness of disclosures to the Board regarding compliance, the Investment Compliance Officer has authority to require certifications from applicable IIC members or ~~a SMD~~ Managing Directors disclosing known compliance violations. The Investment Compliance Officer reports all known compliance exceptions to the Board at the next meeting of the Board.

c. **Asset class exposures and weightings** – The exposure of cash and derivative instruments to each asset class will be aggregated and compared with their respective long-term and transition benchmarks and with the authorized ranges around those benchmarks. Hedge Fund exposure will be reported relative to its statutory limit, if applicable.

d. **External investments under consideration** – For any external investment under consideration by the Investment Division (including hedge funds, external managers, real asset and private equity investments), the Investment ~~Staff~~ Division will provide the Board the following information prior to the date of the applicable IIC meeting:

   i. Name of the investment vehicle and investment manager;

   ii. Total fund or strategy size;

iii. TRS investment amount under consideration;

iv. Investment strategy;

v. Names of the external manager or fund principals;

vi. Projected TRS commitment or funding date;

vii. Placement agent or firm sponsoring the offering or engagement, if any;

viii. Prospective fees;

ix. Other TRS investments with the firm; and

x. Historical fund or manager performance.

e. **External investments activities** – The Investment ~~Staff~~ Division will provide the Board with a list of all external investments, including any additions, withdrawals, transfers or terminations, on at least a semi-annual basis.

f. **Derivatives –** The Investment Division shall provide a comprehensive report of all outstanding derivative applications (including derivative types, counterparties, notional amounts, and fair values) used by internal managers and external managers under Agency Agreements on at least a semi-annual basis**.**

g. **Risk limit** – The Investment Division will report at least semi-annually the Total Fund and benchmark total estimated risk relative to the upper and lower bounds corresponding to the maximum and minimum downside risk measures that could be achieved through the asset allocation limits in this Policy.

h. **Liquidity** – The Investment Division will report at least semi-annually to the Board the use of external liquidity funding mechanisms.

i. **Leverage** – The Investment Division will report the Gross and Net Leverage derived from internal derivative use, internal short sales, external managers, Hedge Funds, and leverage resulting from use of external liquidity funding mechanisms as outlined in the Liquidity Policy on at least a semi-annual basis.

j. **Transparency report** – The Investment Division will provide a transparency report to the Board that may be used to disclose any of the required information mentioned above. This report may be delivered in electronic or physical formats.

k. **Private Markets Long-Term Strategy** – The Investment Division will review with the Board its long-term strategy for the Private Equity and the Real Asset portfolios at least every three years. This review will include information on target sub-strategy allocation, return, risk and liquidity expectations. Tactical deviations from this long-term strategy will be reviewed on an annual basis.

l. **Staffing** – The Investment Division will provide an update no less than annually reporting on the staffing of key employees in the division, including turnover, transfers and the creation of new positions.

#1d

m. **Placement Agent Disclosures** – The ~~investment staff~~Investment Division shall compile all responses to the placement agent questionnaire (Appendix F) for the purposes of Article 11, including for emerging manager investments, and report the results to the ~~b~~Board at least semi-annually. Each response shall include the questionnaire information as of the date the IIC approved the investment. Reports shall include the amounts and recipients of any political contribution or Placement Fee and the relationship of the recipients to the Placement Agent or Texas Elected Official, as applicable.

~~m.~~n. **Other information** – Any other information or reports as the Board may request or require from time to time.

1.8. Total Fund Portfolio Implementation and Design

The Total Fund investment portfolio is characterized by the following functional ~~areas~~ portfolios that are charged with the implementation of day-to-day portfolio management activity:

a. Internal Public Markets Portfolios;

b. External Public Markets Portfolio~~s~~;

c. Private Markets Portfolios;

d. Overlay Portfolios; and

e. Risk Management and Oversight.

The objectives, authority and limitations of each of these functional areas, and the authorized uses of derivatives, are described throughout the remainder of this Policy.

ARTICLE 2 –PUBLIC MARKETS PORTFOLIOS

#3

2.1. ~~Internal~~ Public Markets Portfolios Objectives

The Public Markets Portfolios are comprised of the Internal Public Markets Portfolios and the External Public Markets Portfolios. The primary objectives of the ~~Internal~~ Public Markets Portfolios ~~(the "IPM Portfolios")~~ are to manage publicly-traded, marketable securities and related instruments, in accordance with the risk parameters established by the permitted asset allocation ranges of this Policy, to meet or exceed the performance of the Policy Benchmark, as allocated to the ~~IPM~~ Public Markets Portfolios. The ~~IPM~~ Internal Public Markets Portfolios will serve as the primary vehicles through which transition management will be performed and proxy portfolios will be managed vis-à-vis the unfunded Private Equity, Real Assets, and External Manager Portfolios, and Hedge Fund portions of the Fund.

2.2. Public Markets Portfolios Authorized Investments ~~for Internal Public Markets Portfolios~~

#3

The ~~IPM~~ Public Markets Portfolios are authorized to invest in the securities described as follows:

a. Equity securities of all companies traded or listed on a national exchange in the U.S. or in countries in the MSCI ACWI ex-US benchmark, and any component security of a Policy Benchmark.

b. Common stocks, preferred stocks, convertible bonds, rights, warrants, units and depositary receipts ("DRs") that trade publicly or pursuant to Rule 144A of the Securities and Exchange Commission (the "SEC"), without regard to the issuer's principal place of business or jurisdiction of incorporation or organization (such securities are sometimes referred to in this Policy as "Authorized Equity Securities"), including common or preferred stock issued in initial public offerings ("IPOs").

c. Exchange-traded funds ("ETFs") and closed-end funds tracking an applicable benchmark (or a significant subset or sector of a benchmark) if listed on a U.S. stock exchange or market or on a stock exchange or market in a country in which TRS is authorized to buy and sell securities.

d. Exchange-listed or private placement equity-linked notes intended to track authorized international equity securities or indices, and registered index funds in any country index series intended to track its respective country index, provided that the country is in the Policy Benchmark.

e. Exchange-traded futures contracts, options contracts, and options on futures contracts in order to efficiently manage or reduce the risk of the overall investment portfolio, or both, in accordance with this Policy and applicable law.

f. Over-the-counter swap and option agreements, including but not limited to total return swaps, interest rate swaps, credit default swaps, and currency swaps, to efficiently manage or reduce the risk of the overall investment portfolio, or both. The Fund may also use forward agreements and any other instrument commonly used by institutional investors to manage institutional investment portfolios, in accordance with this Policy and applicable law.

g. Evidence of indebtedness and securities that evidence an ownership interest in debt obligations that are issued, insured, guaranteed by, supported by, or based on the credit of the following:

   i. The United States ("U.S.") or any U.S. agency, department, or government sponsored enterprise ("GSE");

   ii. The debt obligations of states, municipalities or any state agency of the United States of America;

   iii. Corporations chartered by the United States or any state thereof; and

   iv. Foreign governments, supranationals, subnationals, and corporations chartered by foreign governments.

h. Agency and non-agency mortgage-backed securities.

i. Collateralized mortgage obligations ("CMO").

j. Commercial mortgage-backed securities ("CMBS").

k. Asset-backed securities ("ABS").

l. All securities and all types of securities that are either included in the applicable benchmark or that will be added to the benchmark as of the announcement date of their future inclusion.

m. Mutual funds, closed-end funds, exchange traded funds, structured notes, limited partnerships, commingled funds, or any other security types that:

   i. Are intended to track or replicate the returns of the Policy Benchmark or a portion thereof or that are intended to reduce the overall tracking error of the portfolio; or

   ii. Invest in non-dollar fixed income instruments that are predominantly investment grade quality; or

   iii. Invest in bank loans that are predominantly investment grade quality; or

   iv. Actively invest in a dynamic portfolio of high yield securities.

n. Passive funds, structured credit basket transactions, or trusts containing high-yield fixed income securities selected according to defined parameters and, if the investment contract, offering documents, or prospectus requires distribution to TRS of securities held by fund or trust under specified circumstances, such securities.

o. Repurchase and triparty repurchase transactions.

p. Investments in State of Texas pooled investment funds.

q. Foreign currencies that may be required to settle security transactions denominated in those foreign currencies and any authorized instrument or contract intended to manage transaction or currency exchange risk in purchasing, selling or holding investments.

r. Short sales as authorized and limited by Article 2.7 for the Externally Managed Public Assets Portfolio.

s. Local Access Products, including equity-linked certificates, participation notes, and low-exercise price call warrants which replicate the performance of an underlying security, index, or market for which investment in the local market or in the ADRs or GDRs, or the total return swap market would be difficult or costly, or both.

In addition to the foregoing, the ~~IPM~~ Public Markets Portfolios are authorized to engage in overlay strategies in accordance with the guidelines set forth in Article 7. Overlay strategies may not be used to circumvent the asset allocation parameters, risk guidelines, or any other controls otherwise established by this Policy.

2.3. Internal Public Markets Portfolio Restrictions

a. Not more than 20% of the outstanding equity securities of a single class of any company may be purchased. In calculating this 20% limit, any amounts that are held in the EPM Portfolios and which are also deemed to be beneficially held by TRS for purposes of Section 13 of the Securities Exchange Act of 1934, including equity securities held in a separate account (or a commingled account in which TRS is deemed to be the beneficial owner for purposes of Section 13 of such act), shall be included.

b. TRS will not invest in securities of any company that derives a significant portion of its revenues from products or services intended exclusively to appeal to a prurient interest in sex through explicit depictions of sexual activity. These include, but are not limited to, sexually explicit films, videos, publications, and software; topless bars and strip clubs; and explicit sexually-oriented telephone and Internet services. The restriction does not apply to pooled investment vehicles, provided that the Investment Division shall engage with the managers of such vehicles and use commercially reasonable efforts during due diligence to determine whether such vehicles invest in any company that would not be eligible for direct investment by TRS.

c. Except as required by fiduciary duties created by the Texas Constitution or other applicable law, TRS will comply with Chapter 806, Government Code relating to prohibition on investments in Sudan, including reporting requirements on investments in listed companies and on decisions to cease divestment, remain invested, or reinvest in listed companies. Additionally, TRS will avail itself of the protection afforded by the U.S. Sudan Accountability and Divestment Act. To the fullest extent allowed by law and consistent with fiduciary duties, TRS will treat direct holdings in investments in companies with active business operations in Iran in a similar manner to investments in listed companies in Sudan. TRS will use the Iran scrutinized list of companies subject to the Iran Sanctions Act, or any successor legislation, as maintained by a governmental body or a reputable private organization and which is available in June of each year. If, in order to comply with the fiduciary duties created by the Texas Constitution, the IIC determines that divestment of or a ban on investments in companies on the Iran list would be imprudent under the circumstances because alternative investments to the listed companies do not offer commensurate return with no

greater risk or commensurate risk with the same or greater return, the IIC may exempt companies from the Iran list and authorize investment in the securities of those companies.

d. The IPM Portfolio shall conform to the tracking error target prescribed in Appendix A.

2.4. External Public Markets Portfolio

The component portfolios of the External Public Markets Portfolio (the "EPM Portfolio") are:

a. The External Manager Portfolio, which consists of:
   i. Commingled or other private investment funds which are not determined to be Hedge Funds as defined by Section 2.6 of this Policy, and
   ii. Separate accounts managed or advised by external managers operating under an Agency Agreement with TRS.
b. The Hedge Fund Portfolio.
c. The Other Absolute Return Portfolio including Credit Sensitive Investments.

The CIO will determine the proper mix of assets allocated for internal management under the parameters of the IPM Portfolio and those to be allocated to the External Manager Portfolio component of the EPM Portfolio. In no event shall the aggregate allocation to external managers pursuant to Agency Agreements exceed 30 percent (or a different percentage of not more than 50 percent if a different percentage is specified in the Government Code) of the Total Fund at the time of investment, as specified in Section 825.301 (a-2), Government Code.

This preceding paragraph does not affect the target allocation and the range of allocation for the Hedge Fund Portfolio, which shall not exceed 10% of the Total Fund, or such lesser or greater percentage as allowed by applicable law and Section 2.7 of this Policy.

2.5. External Public Markets Portfolio Objectives

The primary objective of the EPM Portfolio is to invest in publicly-traded marketable securities, commingled funds, Hedge Funds, and related instruments, in accordance with the asset allocation parameters of this Policy, to meet or exceed the performance of the Policy Benchmark over a 5 to 10 year market cycle as allocated to the EPM Portfolio. The EPM Portfolio will employ a wide variety of investment and trading strategies with varying levels of liquidity and leverage. It is expected that some strategies will involve more concentrated, shorter term investments as well as those that are longer term in nature and thus will generally have more tracking error than expected within the IPM Portfolio, while other investments will have less correlation, beta and volatility and thus will offset the overall volatility of the EPM Portfolio and the Total Fund.

2.6. Hedge Fund Defined

In this Policy, "Hedge Fund" means a private, commingled investment vehicle with the following general characteristics, as set forth in Section 825.3012, Government Code:

a. Is not registered as an investment company;

b. Issues securities only to accredited investors or qualified purchasers under an exemption from registration; and

c. Engages primarily in strategic trading of securities and other financial instruments.

"Hedge Fund" includes a private investment fund of funds or other commingled vehicle that itself invests in Hedge Funds. An investment in a Hedge Fund issuing securities to TRS does not involve a delegation of investment discretion to an external manager for the External Manager Portfolio, including for purposes of the statutory limit on delegation to external managers, and the assets of a Hedge Fund are not TRS assets.

For the purposes of complying with Section 825.3012, Government Code, the Investment Division shall use the following criteria to analyze and determine whether a private investment fund is "primarily engaged in strategic trading" and should be classified as a hedge fund:

[Table appears on following page]

Criteria "Strategic Trading of Securities"	Characteristics Non-Hedge Fund	Characteristics Potential Hedge Fund
1. Variability in Asset Class Concentration	Asset allocation typically stays the same throughout a market cycle, as shown by historical practice	Unconstrained; asset class mix can change dynamically in response to market conditions or as opportunities arise
2. Beta to underlying index specified for the particular mandate	Generally higher levels of beta (e.g., 0.75+)	Often less beta (e.g., <0.75)
3. Securities Traded	Primarily publicly-traded securities	Typically public or private instruments, and often with some illiquid (e.g., "side pockets") investments segregated for accounting and incentive fee purposes
4. Leverage	Gross leverage less than 250% *and* net leverage 75% to 125%	Unconstrained by policy and practice – managers often unwilling to commit to constraints
5. Short sales of company-specific securities (i.e., non-derivatives)	Typically <50% gross short	Shorting of company-specific securities is integral to investment strategy or process, with gross short positions exceeding 50%
6. Use of Derivatives	Limited use of derivatives (notional is less than 100% of contributed capital)	Derivatives are integral to strategy or process (notional value greater than 100% of contributed capital)
7. Transparency	Generally position-level transparency for investor	Risk-level transparency, but little or no position-level transparency
8. Liquidity	Limited use of lock-ups, short or no notice period; frequent (e.g., monthly) or no redemption windows	Often lock-ups, withdrawal fees, notice periods exceeding 30 days and/or less frequent redemption windows than monthly; gates and ability to suspend redemptions can extend redemption for years or frustrate liquidity goals
9. Performance Fees	May charge performance fees, but often over asset class hurdle	Generally, manager charges management and performance or incentive fees, or both, but usually with no asset class hurdle

In this Section 2.6:

Beta is a measure of an asset's volatility in relation to a specific market or risk factor, as observed over a market cycle; the measure of an asset's risk in relation to the market (for example, the S&P500) or to an alternative benchmark or factors. Generally, the return of a security with a beta of 1.5 will be, on average, 1.5 times the market return.

Leverage is a condition in which the net potential monetary exposure of an obligation exceeds the value of the underlying assets supporting the obligation. ***Net Leverage*** is calculated as the difference between (A) the sum of (i) the market value of all long cash market positions, (ii) the notional value of all long derivative positions, and (B) the sum of (i) the absolute market

value of all short cash market positions, and (ii) the absolute notional value of all short derivative positions divided by (C) the net market value of the fund. ***Gross Leverage*** is the total of (A) the sum of (i) the market value of all long cash market positions, (ii) the notional value of all long derivative positions, (iii) the absolute market value of all short cash market positions, and (iv) the absolute notional value of all short derivative positions divided by (B) the net market value of the fund. For option based instruments, notional value may be calculated using hedge ratios to derive a delta-equivalent exposure.

Proposed investments in funds classified as Hedge Funds will be reported to the Board of Trustees (and appropriate Board committee, as applicable) quarterly. If the criteria examined do not clearly indicate, based on at least a preponderance of criteria, how a fund should be classified for statutory purposes, Investment Division may elect to present the pertinent information to the IIC for consideration of classification. Further, if the application of any one or more of the criteria for leverage, short sales, and derivatives, standing alone, would classify the fund as a Hedge Fund, but the preponderance of criteria would classify the fund as a non-Hedge Fund, the Investment Division may either decline to authorize the investment or may elect to present the pertinent information to the IIC for consideration of the classification of the fund and, if applicable, authorization for investment.

Prior to investment, the CIO will determine whether each Hedge Fund is a Stable Value Hedge Fund or a Directional Hedge Fund by reference to factors such as investment strategy, underlying investments, correlation, beta, leverage, expected return and expected risk.

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2.7. External Public Markets Portfolio Authorization~~Authorized Investments for External Public Markets Portfolio~~

a. **Approval Authority – Hedge Fund Portfolio, External Manager and Other Absolute Return Portfolios -** The IIC is hereby authorized to approve investments in the External Public Markets Portfolio in accordance with the guidelines set forth in Section 2.5. The limits are defined and set forth in Appendix B of this Policy apply to allocations and commitments by the External Public Markets Portfolio.

The Investment Division may authorize an allocation to an external manager even if the external manager will invest the assets in a commingled fund or funds or a tax-qualified collective trust managed by an Affiliate of the external manager, provided, however, that the Investment Division shall determine whether any such commingled fund should be classified as a Hedge Fund for purposes of Section 825.3012, Government Code.

b. **Board Consideration -** If a Board member desires that any Hedge Fund investment or external manager strategy mandate on the list delivered to the Board under Section 1.7 be submitted for consideration by the Board, the Board member should notify the Executive Director and the CIO sufficiently in advance to permit completion of due diligence and consideration by the Board before the anticipated closing date.

c. **External Public Markets Advisors and Consultants -** The Investment Division is authorized to engage one or more qualified external advisors (each, an "Advisor") to assist and advise the Investment Division with respect to investment opportunities within the EPM Portfolio. Each Advisor engaged by the Investment Division must be approved by the CIO and the Board. The applicable advisor or consultant will provide a prudence letter or letter of recommendation for all opportunities presented to the IIC unless an exception has been made by the CIO. Notwithstanding the foregoing, IIC consideration and approval of a sub-manager of an external manager who manages sub-managers does not in any event require a separate, additional prudence letter or letter of recommendation from an Advisor; provided, further, that such external manager of sub-managers (i) is fully liable for any action or omission of the sub-manager as if the action or omission had been taken by such external manager and (ii) recommends the engagement of the sub-manager in writing to the IIC. For avoidance of doubt, this paragraph does not prohibit the CIO from requesting a separate prudence letter from an Advisor with respect to the IIC's consideration of a sub-manager to be recommended by a manager.

d. **Authority to Execute Documents and Agreements for the External Public Markets Portfolio -** The general authority resolution adopted by the Board on August 13, 2010 and designating those officers authorized to execute documents and attached as Appendix E is incorporated in this Investment Policy. Should the Board supersede such resolution, such superseding resolution shall be incorporated in this Investment Policy and replace the superseded resolution as Appendix E as of the effective date of the superseding resolution.

e. **Allocation measurement** - Only the net long position of each external manager, fund vehicle, separate account, or Hedge Fund will be counted against the asset allocation policy; however, both long and short positions will be modeled (through proxies if necessary) to calculate Total Fund risk.

f. **Short positions limit** - In addition to investments authorized under Section 2.2, the External Public Markets Portfolio may hold short positions in securities listed on a national exchange or U.S. treasuries. The aggregate short positions exposure of the External Public Markets Portfolio may not exceed 25% of the market value of the External Public Markets Portfolio without the prior written consent of the CIO. In no event may the aggregate short positions exposure of the External Public Markets Portfolio exceed 50% of the market value of the External Public Markets Portfolio, nor may any short sale or position violate the laws or rules of any jurisdiction or exchange in or on which the applicable Securities are traded or listed.

g. **Overlay strategies** – The External Public Markets Portfolio is authorized to engage in overlay strategies in accordance with the guidelines set forth in Article 7. Overlay strategies may not be used to circumvent the asset allocation parameters, risk guidelines, or any other controls otherwise established by this Policy.

h. **Rebalancing Authority –** Subject to the limits set forth in this Policy, the CIO, Deputy CIO or the head of External Public Markets may add funds to previously approved investments for the purposes of rebalancing or adjusting risks. Such additional investments or allocations shall not, on a monthly basis, exceed 2% of the Hedge Fund Portfolio, External Manager Portfolio, or Other Absolute Return Portfolio (as appropriate) per investment. This subsection does not affect or limit the authority of the Investment Division to withdraw funds from approved investments.

i. **Termination Authority -** The CIO, Deputy CIO or the head of External Public Markets may transfer, withdraw or terminate interests in the EPM Portfolio, provided that the action does not result in a material, unwaived breach of the terms and conditions of the applicable investment agreements.

2.8. External Public Markets Portfolio Restrictions

a. Agency Agreements, considered in the aggregate, may not be used to circumvent the asset allocation parameters, risk guidelines, or any other controls otherwise established by this Policy, including the provisions of Section 2.2.

b. The Investment Division may delegate management of not more than 30% (or a different percentage of not more than 50% if a different percentage is specified in the Government Code) of the market value of the assets of the Total Fund to external managers pursuant to Agency Agreements. For avoidance of doubt, this restriction does not apply to assets held by funds (including Hedge Funds) which limit the liability of TRS to the capital contributed and any distributions that TRS might be legally obligated to contribute or repay to the fund.

c. The Investment Division is authorized to invest up to 10% (unless extended by law, this authority reverts to 5% on September 1, 2019) of the Total Fund in Hedge Funds as defined in Section 2.6. Compliance with the statutory limit is to be determined at the time TRS executes subscription documents for each Hedge Fund investment or additional investment.

d. Each Agency Agreement with an external manager shall specify the applicable policies, risk controls, portfolio characteristics, reporting requirements, requirements or restrictions, including criteria for determining quality of investments or the use of standard debt rating services.

e. Each Agency Agreement with an external manager shall terminate on or before September 1, 2019; provided, however, that an Agency Agreement may include provisions for optional renewal or extension of the agreement by the Investment Division beyond September 1, 2019 that are contingent on amendment of TRS statutes to authorize such agreements after that date.

f. Each Agency Agreement shall require the external manager to comply with TRS restrictions and investments relating to direct holdings in companies having active business operations in Sudan or Iran, including divestment. TRS will comply with any requirements imposed by Section 806.057 of the Government Code relating to notification, requests, or action involving indirect holdings in funds containing listed companies.

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2.9. External Public Markets Portfolio Conflicts of Interest

Conflicts of interest, including the appearance of conflicts, in the selection and engagement of external investment managers will be avoided at all times. Potential or actual conflicts of interest must be evaluated during due diligence and after engagement under applicable ethics policies and statutory provisions, including without limitation Sections 825.211 and 825.212, Government Code, which do not apply to Hedge Fund managers in that capacity. The Investment Division will develop guidelines and procedures to identify actual or potential conflicts of interest affecting external managers to be engaged pursuant to Agency Agreements. The Investment Division shall employ reasonable diligence to identify conflicts of interest affecting TRS trustees, employees and advisors with respect to all private investments.

ARTICLE 3 - PRIVATE MARKETS PORTFOLIOS

3.1. Private Markets ~~Component~~ Portfolios

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The ~~component portfolios of the~~ Private Markets Portfolios are (1) the Private Equity Portfolio (the "PE Portfolio") and (2) the Real Assets Portfolio (the "RA Portfolio"). The Board shall approve the respective long-term normal allocation and the range of allocation for each ~~component~~ portfolio. ~~The Private Markets Portfolio has the following investment objectives:~~

~~a. Provide a long-term rate of return in excess of the return of the Policy Benchmark for each authorized Private Markets investment strategy;~~

~~b. Provide diversification to the Total Fund; and~~

~~c. Provide for enhanced returns and diversification within the Private Markets Portfolio by allocating assets among the various Private Asset strategies.~~

3.2. Private Markets Portfolios Authorization~~Portfolio Guidelines~~

The Private Markets Portfolios ~~is~~ are authorized to invest in the asset classes specified in this Policy and may hold and exercise rights, options and warrants attached to securities relating to an investment by the Private Markets Portfolios.

Funding of committed capital in either the PE Portfolio or the RA Portfolio will occur over an extended time period and may take several years before the total allocation to each asset class is fully invested. Because an individual investment may begin to return capital to the investor prior to the full funding of the investor's commitment, the outstanding invested capital of the investment might at times be substantially less than the total commitment. In recognition of the above characteristics unique to the PE and RA Portfolios, a "committed" allocation to both private equity and real assets may exceed the respective allocation targets authorized. It will not be a violation of this Policy if changes in the market values of the ~~P~~public ~~A~~assets ~~P~~portfolios or the Private Markets Portfolios cause the market value of the Private Markets Portfolios to exceed the upper limit of the allocation ranges established in this Policy.

3.3. Private Markets Investment Process

Private Markets External Advisors and Consultants

The Investment Division is authorized to engage one or more Advisors to assist and advise the Investment Division with respect to investment opportunities within the Private Markets Portfolios. Each Advisor engaged by the Investment Division to provide investment advice with respect to private equity, real estate, and other real assets investments must be approved by the CIO, either the head of Private Equity or the head of Real Assets (as appropriate),~~Markets~~ and the Board. Subject to the direction of the ~~Private Markets~~private equity or real assets ~~I~~investment ~~S~~staff, as appropriate (each, ~~the~~ a "Private Markets Team"), Advisor duties may include, but are not limited to, the following:

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a. Performing due diligence on specific Private Markets investment opportunities assigned by ~~the~~ a Private Markets Team;

b. Providing research related to private equity and real assets markets and opportunities, economic conditions, and performance expectations;

c. Assisting ~~the~~ a Private Markets Team, upon request, in identifying potential Private Markets investment opportunities;

d. Providing, upon request, written recommendations to ~~the~~ a Private Markets Team regarding investments for the Private Markets Portfolios; and

e. Assisting ~~the~~ a Private Markets Team in the negotiation of required investment contracts and legal documentation.

f. Providing a prudence letter or letter of recommendation for all opportunities presented to the IIC unless an exception has been made by the CIO.

To the extent an Advisor is directed by ~~the~~ a Private Markets Team to perform due diligence on an investment opportunity, such due diligence will be performed in accordance with prudent underwriting objectives established by ~~the~~ a Private Markets Team for the TRS Private Equity and Real Assets programs. Each investment opportunity must meet these prudent underwriting standards in order to merit inclusion within the respective portfolios.

3.4. Private Markets Authorization of Investments ~~for Private Markets Portfolios~~

Investment Authority.

#1c. Green language moved from Article 4

The limits defined and set forth in Appendix B of this Policy apply to allocations and commitments by the Private ~~Equity~~Markets Portfolios.

If, after due diligence by either of the Advisor and the Investment Division, the Advisor and the Investment Division do not concur on whether a ~~Private Equity~~private markets investment within the Investment Division's discretion should be ~~submitted to the IIC~~made, the Investment Division may elect to present the opportunity to the appropriate Board committee for consideration of a recommendation to the Board to authorize the investment. Unless the Board authorizes an investment, a proposed investment may not be made without the concurrence of both the Investment Division and the Advisor.

Private ~~equity~~markets opportunities that will be considered for investment include the following: primary investments in any legally permissible investment vehicle, including limited liability entities (usually limited partnerships), co-investments, secondary investments, commingled funds, separate accounts, hybrid structures investing in equity or debt, joint ventures, secondary market transactions, entity-level investing or other off-market investments, new and emerging managers, and opportunistic investments (e.g., investments in the management entity of a private ~~equity~~markets investment firm or sponsor, public-to-private transactions, and the acquisition of business development company or investment trust assets).

To the extent a Board member desires that any private ~~equity~~markets investment opportunity submitted for consideration by the IIC be also submitted for consideration by the trustees, the Board member should notify the Executive Director and the CIO sufficiently in advance to permit completion of due diligence and consideration by the Board and by the appropriate Board committee, as applicable, before the anticipated closing date.

The CIO, Deputy CIO or either the head of Private ~~Markets~~Equity or the head of Real Assets (as applicable) may transfer, withdraw or terminate interests in the Private ~~Equity~~Markets Portfolios in accordance with the investment documents, provided that the action does not breach any agreement to which TRS is legally bound.

#1c ~~**Private Equity Portfolio Commitment Authorization.** Each private equity investment must be authorized as required by the provisions, guidelines, and limitations established in this Policy.~~

~~**Real Assets Portfolio**~~ **Commitment Authorization.** Each ~~real assets~~ investment must be authorized as required by the provisions, guidelines, and limitations established in this Policy. ~~The Real Assets Portfolio may invest in any legally permissible investment vehicle, including separate accounts, commingled funds, and other hybrid investment structures investing in real assets equity or debt, which may include joint ventures, co-investments, secondary market transactions, entity level investing or other off-market investments.~~ Any structure in which TRS invests shall meet established legal requirements.

#4 **Limited Partner or Investor Advisory Committees.** When approved by the CIO or either the head of Private Equity or the head of Real Assets (as appropriate)~~Markets~~, ~~PE and RA Investment Staff~~Private Markets Team members may serve as investor representatives on the advisory committee of any private equity or real assets investment vehicle to which TRS has committed capital.

Authority to Execute Documents and Agreements for the Private Markets Portfolios. The general authority resolution adopted by the Board on August 13, 2010 and designating those officers authorized to execute documents and attached as Appendix E is incorporated in this Investment Policy. Should the Board supersede such resolution, such superseding resolution shall be incorporated in this Investment Policy and replace the superseded resolution as Appendix E as of the effective date of the superseding resolution.

#4 **Rebalancing Authority.** Subject to the limits set forth in this Policy, the CIO, Deputy CIO or either the head of ~~External Private Markets~~ Private Equity or the head of Real Assets (as appropriate) may add funds to previously approved investments for the purposes of rebalancing or adjusting risks. Such additional investments or allocations shall not exceed, on a monthly basis, 2% of each of the Private Equity Portfolio or the Real Assets Portfolio (respectively, as appropriate) per investment. This subsection does not affect or limit the authority of the Investment Division to withdraw funds from approved investments; provided, the withdrawal does not breach any agreement by which TRS is legally bound.

Overlay Authority. The Private Markets Portfolios ~~is~~ are authorized to engage in overlay strategies in accordance with the guidelines set forth in Article 7. Overlay strategies may not be used to circumvent the asset allocation parameters, risk guidelines, or any other controls otherwise established by this Policy.

3.5. Private ~~Equity~~Markets Portfolio Restrictions

1c. Green language moved from Article 4

a. As part of the Investment Division's due diligence, the Investment Division will seek to obtain assurance from prospective private ~~equity~~ markets fund managers or sponsors that they will use commercially reasonable best efforts, consistent with their duties to all investors, to avoid investing in companies or enterprises that derive a significant portion of their revenues from products or services intended exclusively to appeal to a prurient interest in sex. These would include, but not be limited to, sexually explicit films, videos, publications, and software; topless bars and strip clubs; and sexually oriented telephone and Internet services. Notwithstanding any other provision of this Policy, it is not a violation of this Policy if the Investment Division proceeds with a private ~~equity~~ investment based on oral or non-contractual written assurance.

b. TRS will comply with notification requests or action required by Section 806.057, Government Code relating to indirect holdings in listed companies through ~~private~~ equity funds. To the extent ~~the~~a Private ~~Equity~~Markets Portfolios contain~~s~~ direct ~~investments~~holdings in publicly-traded securities of listed scrutinized companies doing business in Sudan or Iran, the Investment Division will comply with TRS restrictions and reporting requirements for direct holdings. Co-investments shall comply with TRS restrictions relating to direct holdings in companies having active business operations in Sudan or Iran, including divestment.

ARTICLE 4 - PRIVATE EQUITY PORTFOLIO

4.1. Private Equity Portfolio Objectives

Diversification

The primary long-term objective of the PE Portfolio is to develop a prudently diversified portfolio of investments that is expected to enhance the overall risk-return profile of the Total Fund and to reduce risk within the PE Portfolio.

The following attributes will be considered in constructing a diversified PE Portfolio: strategy, geography, industry sectors, size of investment, and vintage year.

#1b

.2. Private Equity Portfolio Authorized Investments ~~for Private Equity Portfolio~~

Private equity funds build portfolios of private investments in the equity or equity-rights securities of ~~privately owned~~ operating companies. Private equity funds may acquire investments in debt obligations, public or private common and preferred stocks, convertible securities, and any warrants, rights, or options attached to any of the foregoing that relate to equity ownership in an issuer. Privately-acquired securities usually have transfer restrictions and are not as liquid as publicly-traded securities. Private equity funds are often classified by strategy, including: venture capital; mezzanine; buyout - acquisition; international - emerging markets; and special situation (e. g., growth equity, turnarounds, distressed).

~~**Investment Authority**~~

1c. Green language moved to Article 3

~~The limits defined and set forth in Appendix B of this Policy apply to allocations and commitments by the Private Equity Portfolio.~~

~~If, after due diligence by either of the Advisor and the Investment Division, the Advisor and the Investment Division do not concur on whether a Private Equity investment within Investment Division's discretion should be submitted to the IIC, the Investment Division may elect to present the opportunity to the appropriate Board committee for consideration of a recommendation to the Board to authorize the investment. Unless the Board authorizes an investment, a proposed investment may not be made without the concurrence of both the Investment Division and the Advisor.~~

~~Private equity opportunities that will be considered for investment include the following: primary investments in limited liability entities (usually limited partnerships), co-investments, secondary investments, new and emerging managers, and opportunistic investments (e.g., investments in the management entity of a private equity investment firm or sponsor, public to-private transactions, and the acquisition of business development company or investment trust assets).~~

~~To the extent a Board member desires that any private equity investment opportunity submitted for consideration by the IIC be also submitted for consideration by the trustees, the Board member should notify the Executive Director and the CIO~~

~~sufficiently in advance to permit completion of due diligence and consideration by the Board and the appropriate Board committee before the anticipated closing date.~~

~~The CIO, Deputy CIO or the head of Private Markets may transfer, withdraw or terminate interests in the Private Equity Portfolio in accordance with the investment documents, provided that the action does not breach any agreement to which TRS is legally bound.~~

~~Private Equity Portfolio Restrictions~~

c. ~~As part of the Investment Division's due diligence, the Investment Division will seek to obtain assurance from prospective private equity fund managers or sponsors that they will use commercially reasonable best efforts, consistent with their duties to all investors, to avoid investing in companies or enterprises that derive a significant portion of their revenues from products or services intended exclusively to appeal to a prurient interest in sex. These would include, but not be limited to, sexually explicit films, videos, publications, and software; topless bars and strip clubs; and sexually oriented telephone and Internet services. Notwithstanding any other provision of this Policy, it is not a violation of this Policy if the Investment Division proceeds with a private equity investment based on oral or non-contractual written assurance.~~

d. ~~TRS will comply with notification requests or action required by Section 806.057, Government Code relating to indirect holdings in listed companies through private equity funds. To the extent the Private Equity Portfolio contains direct investments in publicly traded securities of listed scrutinized companies doing business in Sudan or Iran, the Investment Division will comply with TRS restrictions and reporting requirements for direct holdings. Co-investments shall comply with TRS restrictions relating to direct holdings in companies having active business operations in Sudan or Iran, including divestment.~~

4.3 Private Equity Portfolio Restrictions

The Private Equity Portfolio is authorized by and is subject to the terms and conditions described in Article 3.

ARTICLE 5 - REAL ASSETS PORTFOLIO

5.1 Real Assets Portfolio Objectives

The Real Assets ("RA") Portfolio will be structured to achieve the following investment objectives:

a. As the primary focus, contribute favorably to diversification of the Total Fund through exposure to real assets' low or negative correlation to the Public Markets portfolios.

b. Provide competitive returns through capital appreciation.

c. The following attributes will be considered in constructing a diversified RA Portfolio: strategy, geography, property types, size of investment, ~~and~~ vintage year~~the RA Portfolio will be prudently diversified by sub-asset class (benchmark type), property type, geographic location~~, and the number of funds or investment managers represented in the portfolio. No specific geographic diversification or leverage targets are required..

1c. Green language moved from Section 5.4

5.2 Real Assets Portfolio Authorized Investments ~~for Real Assets Portfolio~~

The RA Portfolio will focus on private or public real estate equity or equity linked investments, private or public real estate debt, infrastructure, timber, agricultural real estate, oil and gas, real asset mezzanine debt or equity, mortgage-related investments, entity-level investments, real estate investment trusts ("REITs"), master limited partnerships ("MLPs"), non-fixed assets and other opportunistic investments in real assets. Real estate investments are often classified by strategy, including: core; core-plus; value-added; and opportunistic.

~~5.3 Real Assets Investment Authority~~

1c. Deleted blue language in this Article 5 is redundant with language in Article 3

~~**Investment Authority**~~

~~The limits defined and set forth in Appendix B of this Policy apply to allocations and commitments by the Real Assets Portfolio. If, after due diligence by either of the Advisor and the Investment Division, the Advisor and the Investment Division do not concur on whether a Real Assets investment within the Investment Division's discretion should be made, the Investment Division may elect to present the opportunity to the appropriate Board committee for consideration of a recommendation to the Board to authorize the investment. Unless the Board authorizes an investment, a proposed investment may not be made without the concurrence of both the Investment Division and the Advisor~~

~~Real Assets strategies that will be considered for investment include the following: primary investments in limited liability entities (usually limited partnerships); co-investments; secondary investments; separate accounts, new and emerging managers; and opportunistic investments (e.g., investments in the management entity of an investment sponsor and public to private transactions).~~

~~To the extent a Board member desires that any real assets investment opportunity on the RA Opportunity Log be submitted for consideration by the trustees, the Board member should notify the Executive Director and the CIO sufficiently in advance to permit completion of due diligence and consideration by the Board and by the appropriate Board committee, as applicable, before the anticipated closing date.~~

~~The CIO, Deputy CIO or the head of Private Markets may transfer, withdraw or terminate interests in the Real Assets Portfolio accordance with the investment documents, provided that the action does not breach any agreement to which TRS is legally bound.~~

~~5.4 Real Assets Diversification~~

~~The primary long-term objective of the RA Portfolio is to develop a prudently-diversified portfolio of investments that is expected to enhance the overall risk - return profile of the Total Fund and reduce risk within the RA Portfolio. Therefore, the RA Portfolio will be prudently diversified by sub-asset class (benchmark type), property type, geographic location, and the number of funds or investment managers represented in the portfolio. No specific geographic diversification or leverage targets are required.~~

Green language moved to Section 5.1

~~5.5~~5.3 Real Assets Portfolio Restrictions

~~Aggregate annual commitments to real assets can be expected to vary with the market value of the Total Fund or the Real Assets Portfolio, and the overall economic and real assets environment. Therefore, during the early stages of the program and until the RA Portfolio approaches its investment allocation target, the following restrictions might be exceeded.~~

~~a. As part of the Investment Division's due diligence, the Investment Division will seek to obtain proper assurance from prospective investment managers or sponsors of RA funds that they will use commercially reasonable best efforts, consistent with their duties to all investors, to avoid investing in companies or enterprises that derive a significant portion of their revenues from products or services intended exclusively to appeal to a prurient interest in sex. These would include, but not be limited to, sexually explicit films, videos, publications, and software; topless bars and strip clubs; and sexually oriented telephone and Internet services. Notwithstanding any other provision of this Policy, it is not a violation of this Policy if the Investment Division proceeds with a RA fund investment based on oral or non-contractual written assurance.~~

~~b. To the extent the Real Assets Portfolio contains direct investments in publicly traded securities of listed Sudan or Iran companies, TRS will require compliance with TRS restrictions and reports involving direct holdings as well as notification requests for indirect holdings. Co investments will comply with TRS restrictions relating to direct holdings in companies having active business operations in Sudan or Iran, including divestment.~~

a. ~~c.~~ Not more than 5% of the Total Fund may be invested ~~to~~ in certain real asset strategies. For the purposes of this calculation, these certain real assets include timber, agricultural real estate, oil and gas, master limited partnerships ("MLPs"), and non-fixed assets.

b. The Real Assets Portfolio is authorized by and is subject to the terms and conditions described in Article 3.

ARTICLE 6 – EMERGING MANAGERS PROGRAM

TRS shall make a good-faith effort to invest with qualified emerging managers for the External Managers Portfolio, Private Equity Portfolio, and the Real Assets Portfolio. The Investment Division is authorized to invest with qualified funds-of-funds managers skilled at identifying small and emerging managers in the private equity, real asset and public equity markets. The target dollar allocation is outlined for this program in Appendix C.

Emerging managers can include, but are not limited to, minority, women, and disabled veteran-owned or -controlled organizations. Conversely, not all minority, women, and disabled veteran-owned or -controlled organizations are necessarily considered emerging managers for the purposes of this program. Whether a management firm is an "emerging manager" depends on all of the facts and circumstances. In general, emerging managers are defined as newer, independent private investment management firms that manage less than $2 billion, or have a performance track record as a firm shorter than five years, or both.

Green language moved from Appendix C

All investments with emerging managers will be subject to due diligence by an independent qualified external advisor. The advisor will present each investment recommendation to the IIC for its approval. In general, an emerging manager should be registered with the appropriate authorities if such registration would be consistent with industry practices. Each investment will have a minimum size of $5 million. With respect to the External ~~Manager~~Public Markets Portfolio, the total investment by TRS with each emerging manager may not exceed 40% of such emerging manager's assets under management. With respect to the Private Equity Portfolio and the Real Assets Portfolio, the total investment by TRS into each fund raised by an emerging manager may not exceed 40% of the size of such fund. This paragraph does not apply to investments executed as part of a fund-of-funds mandate.

The Investment Division shall document its efforts to identify and expand its investments with qualified emerging managers for the purpose of board and legislative reporting on the methods and results, including data disaggregated by race, ethnicity, gender, and fund size. All investments under the emerging manager program must be made prudently and in accordance with fiduciary and ethical standards.

ARTICLE 7 - OVERLAY PORTFOLIOS

7.1. Overlay Portfolios Objectives

Overlay Portfolios are designed to manage risk, asset allocation, and market exposures through futures, options, swap agreements, or forward agreements. Overlay Portfolios may be implemented in connection with the Total Fund or with any investment or portfolio within the Total Fund.

7.2. Overlay Portfolios Authorized Investments ~~for Overlay Portfolios~~

Overlay Portfolios may contract for, buy, sell, and hold the following contracts and derivative instruments in accordance with this Policy:

a. Exchange-traded futures contracts;

b. Exchange-traded option contracts;

c. Options on exchange-traded futures contracts;

d. Over-the-counter or exchange-traded swap agreements;

e. Over-the-counter option agreements;

f. Forward agreements; and

g. Forward-settling securities transactions.

7.3. Overlay Portfolios Restrictions

Overlay Portfolios may not be used to circumvent the asset allocation parameters, risk guidelines, or any other controls or restrictions otherwise established by this Policy or applicable law.

Direct purchase of derivatives underlain by physical commodities is prohibited for any TRS portfolio unless such derivatives are cash-settled. This prohibition does not apply to private investment funds, including Hedge Funds.

When engaging in currency overlay strategies, the Overlay Portfolio may not increase or decrease the net notional exposure of the Total Fund:

a. To all non-dollar currencies in aggregate by more than 5% of the market value of the Total Fund;
b. To any single developed market currency (except for the U.S. Dollar) by more than 2% of the market value of the Total Fund; and
c. To any single emerging market currency by more than 1% of the market value of the Total Fund.

The foregoing percentage limit restrictions do not apply to currency derivatives used (i) as part of the non-discretionary foreign exchange risk management policy described in Section 9.2, (ii) to settle security transactions denominated in those foreign currencies and any authorized instrument or contract intended to manage transaction or currency exchange risk in purchasing and selling investments and (iii) for hedging the characteristics of an individual investment to align it with the characteristics of such investment's benchmark.

ARTICLE 8 - AUTHORIZED USES OF DERIVATIVES

This Article enumerates the applications, documentation and limitations for the use of derivatives as permitted under Section 825.301, Government Code.

#1b

8.1. Derivatives Objective and Investment Standard ~~Applicable to Derivatives~~

The Board's objectives for using derivatives are to efficiently manage and reduce the risk of the overall investment portfolio. Through the use of derivatives, the ~~complex~~ risks that are bound together in traditional cash market investments can be separated and managed independently.

Derivatives authorized by this Policy may only be used to efficiently manage and reduce the risk of the overall investment portfolio in accordance with applicable law. In addition, all uses of derivatives must comply with the fiduciary standard of prudence set forth in Article XVI, Section 67(a)(3), Texas Constitution, which requires that all TRS investments must be made using the judgment and care under the circumstances then prevailing that persons of ordinary prudence, discretion, and intelligence exercise in the management of their own affairs, not in regard to speculation, but in regard to the permanent disposition of their funds, considering the probable income there from as well as the probable safety of their capital.

8.2. ~~Scope of~~ Derivatives Policy Scope

Except where specifically noted, this Policy applies to all derivatives transactions executed by the Investment Division and by external managers operating under an Agency Agreement. This Policy does not apply to registered or private investment funds, including limited liability entities, issuing securities to TRS.

This Policy applies to all exchange-traded derivatives and over the counter ("OTC") derivative instruments authorized by law. This Policy does not apply to the use of derivatives by private investment funds issuing securities to TRS unless TRS in fact controls and has a legal right to approve the investment policy or guidelines of such funds.

8.3. ~~Uses of~~ Derivatives Use by External Managers and Commingled Funds (Hedge Funds)

The Total Fund may have external exposure to derivatives in two ways.

a. First, the Total Fund will invest as a passive investor in Hedge Funds organized as limited-liability entities, which limits potential losses to the capital contributed to the entity. TRS is not a party to the management agreement between the Hedge Fund and its investment manager. Hedge Fund and other commingled fund managers owe the same legal duties to all investors.

    i. The Investment Division must exercise thorough due diligence in assessing the scope of the Hedge Fund manager's uses of derivatives, their purpose, experience of the fund manager's staff in managing these positions, inherent leverage, and the manager's systems, controls and operations in determining suitability of these entities for TRS investment.

b. Second, TRS may delegate discretion, through Agency Agreements, to external managers who act as a TRS agent with respect to Total Fund assets and who are authorized to enter into specified contracts and commitments that will be legally binding on TRS. External managers are TRS fiduciaries.

i. For external managers engaged pursuant to Agency Agreements, Investment Division must view the external manager as an extension of the internal Investment Division's investment management processes and must require external managers to comply with this Policy and applicable guidelines and law on the use of derivatives to the same extent as Investment Division. Guidelines for the scope and use of derivatives will be established on a case-by-case basis with each external manager in the applicable Agency Agreement. An external investment manager of publicly-traded investments engaged by TRS under an Agency Agreement may engage in derivatives transactions only if expressly authorized by, and the transactions are consistent with, the overall investment objectives and restrictions established in the Agency Agreement, this Policy, and applicable law. Each Agency Agreement must be consistent with applicable law, this Policy, and other TRS policies. An Agency Agreement may only authorize such uses of derivative instruments when the Investment Division reasonably concludes after due diligence that the external manager possesses the experience, expertise, and qualifications to prudently use derivatives, and has appropriate operational, compliance, and risk management personnel, policies, and procedures to effectively monitor and control their use, including the use of leverage.

ii. Selection, engagement, and monitoring of external managers engaged through an Agency Agreement requires a clear understanding of the managers' uses of derivatives, particularly as it relates to various risk controls, compliance functions, and leverage. Investment Division will monitor risk exposures and leverage on both an individual entity and aggregate basis. The permitted uses of derivatives and leverage by each external manager must be fully documented in each Agency Agreement.

8.4. Derivatives Definition ~~of Derivatives~~; Authorization

Derivatives are financial instruments the value of which are derived, in whole or part, from the value of any one or more underlying securities or assets, or index of securities or assets (such as a bonds, stocks, financial commodities, and currencies). For the purposes of this Policy, derivatives include, without limitation, futures contracts; options; options on futures contracts; forward contracts; swap agreements, including swap contracts with embedded options; any instrument or contract intended to manage transaction or currency exchange risk in purchasing, selling or holding investments; and any other instrument commonly used by institutional investors to manage institutional investment portfolios. Derivatives, for purposes of this policy, do not include currency forwards with a tenor of 30 days or less if such forwards do not require upfront amounts to be paid or received. Derivatives may be purchased through a national exchange or through a direct OTC arrangement with a counterparty.

Except as specifically provided in Article 5.2, this Policy does not apply to, or authorize, any use of derivatives underlain by physical commodities (unless such derivatives are cash-settled), single-asset real estate mortgages, or title to real estate or property affixed to real estate.

8.5. ~~Permitted~~ Derivatives Applications Permitted

Consistent with the objectives set out in Article 8.1, derivative applications may be used by Investment Division and external managers engaged through Agency Agreements to:

a. Implement investment strategies in a lower cost and efficient manner;

b. Efficiently manage the Total Fund portfolio by altering the portfolio's market (systematic) exposure in lieu of trading the underlying cash market securities through purchases or short sales, or both, of appropriate derivatives;

c. Construct portfolios with risk and return characteristics that could not be efficiently created with cash market securities consistently with the objectives in this Policy and in compliance with applicable law;

d. Hedge and control risks so that the Total Fund's risk-return profile is more closely aligned with the Total Fund's targeted risk-return profile through purchases or short sales, or both, of appropriate derivatives; and

e. Facilitate transition trading when holdings must be rebalanced or reallocated among permissible investments as a result of changes to applicable benchmark indexes or policy changes.

The only authorized uses of derivative transactions are efficient portfolio management and reduction of risk in portfolios and to implement investment strategies authorized by this Policy more effectively and at a lower cost than would be possible in the cash market. External managers may not engage in derivative applications that are inconsistent with the applicable Agency Agreement, this Policy and applicable law, unless specifically authorized by the TRS Board and the Agency Agreement has been amended accordingly.

8.6. Derivatives Applications Not Permitted

Derivatives may not be used for any activity a primary purpose of which is speculation or to profit while materially increasing risk to TRS. Derivatives are considered speculative if their uses have no material relation to objectives and strategies specified by this Policy or any related policies or resolutions of the Board, and their use is not reasonably and substantially intended to produce efficiency in portfolio management and reduce market, credit, or liquidity risks applicable to the portfolio. Derivatives may not be used for circumventing limitations or restrictions imposed by this Policy or applicable regulatory requirements.

#5

~~The tenor of interest rate over-the-counter ("OTC") swaps may not exceed 30 years or shorter based on market liquidity.~~

~~The tenor of all other OTC derivative instruments may not exceed 5 years.~~

Derivative applications may only be used to invest in asset classes that are consistent with TRS's legally permissible policy asset categories (including currencies), implementation strategies, and risk-return characteristics.

Except as specifically provided in Article 5.2, investments in derivatives underlain by physical commodities are prohibited unless such derivatives are cash-settled.

8.7. Derivatives Documentation and Controls

Prior to the implementation of a new internal derivative instrument type or application, Investment Division shall document the purpose, justification, baseline portfolio, derivative application portfolio, risks (including, at a minimum, market, modeling, pricing, liquidity, and legal risks), the expected increase or reduction in systematic and idiosyncratic risk resulting from the application, the amount of leverage employed under the strategy, the prudent reasons for employing leverage, and the procedures in place to monitor and manage the derivative exposure. The documentation will be approved by the CIO and reported to the IIC and the Board (or appropriate Board committee, as applicable) at their next regularly-scheduled quarterly meetings. The Investment Division shall adopt fully documented control procedures to properly account and value the Total Fund's exposure to each derivatives application, whether internal or external under an Agency Agreement. The Investment Division shall establish an appropriate risk management procedure to monitor compliance both internally and by external managers and will take corrective action if necessary. The Investment Division shall have due regard for operational risks associated with various derivatives strategies, including risk management, accounting systems, liquidity needs, adequate staffing, and staff qualifications.

8.8. Derivatives Limitations ~~Applicable to Derivatives~~

#6

Counterparty Risks: In order to limit the financial risks associated with derivative applications, guidelines for rigorous counterparty selection criteria and ISDA agreements shall be created by the Investment Division to reduce counterparty risk for over-the-counter ("OTC") derivatives. Any counterparty in an OTC derivative transaction with TRS must have a credit rating of at least A- (Standard & Poor's or Fitch) or A3 (Moody's). All OTC derivative transactions, including those managed through Agency Agreements, must be subject to established ISDA Master Agreements or, if centrally cleared, clearing agreements and have full documentation of all legal obligations of both parties to each transaction. All ISDA Master Agreements entered into by or on behalf of TRS by the Investment Division or an external manager engaged pursuant to an Agency Agreement (if applicable) shall provide for netting of obligations. The Investment Division and external managers may also use collateral arrangements to mitigate counterparty credit or performance risk. The net market value of all OTC derivative positions, including those managed through Agency Agreements, less collateral posted, for any individual counterparty may not exceed $500 million. The net market value of all OTC derivative positions for any individual counterparty, without consideration of collateral, may not exceed 5% of the total market value of the Fund. If these market-value limits are exceeded, the Investment Division will inform the CIO, Executive Director, and Chairman of the appropriate Board committee as soon as practicable and take appropriate corrective action within a 90-day period or develop a corrective action plan that will be presented to the Board at its next regularly scheduled meeting at which investment matters will be discussed following the initial 90-day corrective action period.

Global Risk Limitations: Notwithstanding other limitations in this Policy, transactions that would cause the aggregate risk exposure of the Total Fund, including externally-managed portfolios, to exceed the aggregate risk limits established by the current asset allocation policies of the Board are not permitted. On a Total Fund basis, the combined economic exposure introduced through both cash and derivative market positions is subject to the asset allocation ranges, risk limits, and other portfolio parameters described in this Policy.

Position Limits: For futures and options positions TRS will comply with all position and aggregate limits established by the applicable regulatory and legal organizations and authorities within each jurisdiction.

8.9. Derivatives Risk Management and Compliance

To ensure compliance with this Article 8, all internally- and externally-managed derivatives (other than derivatives held in Hedge Funds) must be marked to market on a daily basis by the Fund's external custodian(s), and such daily reports will be reviewed for accuracy by the TRS Risk Management staff and Investment Administration Center personnel. Compliance with the requirements of this Policy will be monitored by the TRS Investments Compliance Officer using information systems and data from internal and external sources. Any violations of this Article 8 will be reported immediately to the Executive Director and to the Chief Investment Officer, who will determine, if considered material as determined by Investments Compliance Officer, Chief Investment Officer, and Executive Director, the appropriate remedy and report promptly to the Board (and the appropriate Board committee, as applicable).

ARTICLE 9 – RISK MANAGEMENT AND OVERSIGHT

9.1. Market Risk Management

The Investment Division will establish a framework for measuring enterprise-level risk for both the Total Fund Portfolio and the established benchmark, including any transition benchmarks employed during asset allocation shifts. At a minimum, this framework must include a quantified estimate of downside risk (e.g., value-at-risk ("VaR"), estimated shortfall, or various parametric and non-parametric statistics). The Investment Division will monitor the relative positioning of the Total Fund Portfolio vis-à-vis the benchmark no less frequently than monthly.

a. **Asset allocation limits** – In addition to the Total Fund Portfolio level risk limits, the portfolio will be constrained to the asset allocation percentages and ranges prescribed by this Policy. Accordingly, the total exposure to each asset class must be based on the individual exposures of each cash security and each outstanding derivative contract.

b. **Risk limit** – ~~TRS staff~~The Investment Division will model and monitor the Total Fund Portfolio and benchmark to ensure that the total estimated risk for the Public Markets portion of the Portfolio is within the upper and lower bounds corresponding to the maximum and minimum downside risk measures that could be achieved through the asset allocation limits in this Policy.

c. **Proxy securities and indices** –If necessary and prudent, ~~staff~~ the Investment Division will employ proxies to approximate the economic characteristics of actual investments if the terms and conditions of the actual investments or the underlying holdings are not readily available or where the complexity of the underlying investment renders a deterministic model impractical.

d. **Transition portfolio** – During portfolio transitions from or to private market investments in real estate, other real assets, or private equity, a transition benchmark may be employed that either explicitly creates placeholders for unfunded private investments or that treats the allocations to private market assets separately from the allocations to public market assets based on the funded portion of the Private Markets Portfolios. In either case, the risk statistics and limits will be applied relative to this transition benchmark.

e. **Private market assets holdings** – ~~Staff~~ The Investment Division may include private investments in real estate, other real assets, and private equity in this analysis either by proxy or by actually modeling the terms and conditions of the underlying exposures; however, if the inclusion of these investments is deemed to distort the true risk characteristics of the portfolio, the Board may approve the use of an alternative methodology for analyzing the risk characteristics of those investments.

f. **Active risk limits** – In addition to the portfolio-level risk statistics described above, a target tracking error will be imposed on each asset class mandate whether implemented through internal or external managers or commingled funds. Additionally, a target tracking error will be imposed on the entire portfolio that takes into account both

internally and externally managed portfolios and commingled funds as well as both asset allocation and security selection decisions. These limits are specified in Appendix A, attached hereto.

9.2. Foreign-Exchange Risk Management

The objective of the Foreign-Exchange ("F/X") policy is to effectively manage portfolio return volatility associated with foreign currency risk. F/X risk is the possibility of a negative currency return as a result of adverse movements in foreign exchange rates. The F/X policy sets forth a structure and implementation plan to determine the level of strategic currency risk that the Fund is willing to tolerate.

F/X Policy Structure

The "PHRs" are policy hedge ratios that will be separately applied to the Fund's public-markets and private-markets non-dollar exposures. PHR is the percentage of aggregate, non-dollar currency exposure to be passively hedged. The hedging horizon for the PHRs is intermediate (one to three years). The results of the PHR decisions will be presented to the Board (or the appropriate Board committee, as applicable) for approval by the Board and incorporated into the benchmark as prescribed in Appendix D.

From an implementation perspective, an F/X overlay manager would have responsibility for implementing the PHR decisions and would not exercise delegated investment discretion. The F/X overlay may be implemented internally or externally. If external, the non-discretionary F/X overlay manager would not fall under the definition of either an "external manager" or a Hedge Fund. A non-discretionary external F/X overlay manager would merely implement the investment decision that has already been made by the IIC.

9.3. Credit Risk Management

a. **Counterparty exposures** – The maximum allowable unsecured counterparty exposure for OTC derivative transactions is $500 million, based on the total net market value of all OTC positions held with each counterparty. The total counterparty exposure for each counterparty, including the collateralized portions of these agreements, may not exceed 5% of the market value of the Total Fund. The minimum credit rating, based on a nationally recognized statistical rating organization ("NRSRO"), must be at least A- or better at the inception of the contract. For any counterparty that experiences deterioration in credit quality that results in a NRSRO rating below the A- level, subsequent to the inception of transaction, additional eligible collateral may be posted, or the transaction may be terminated.

#6

b. All OTC derivatives must be governed by an ISDA Master Agreement and Credit Support Annex or, if centrally cleared, by clearing agreements, and must include both close-out netting provisions and collateralization provisions.

c. **Repurchase agreements** – The counterparty limits for repurchase transactions and tri-party repurchase transactions may not exceed 5% of the market value of the Total Fund unless those transactions are covered by a third-party indemnification agreement by an organization that bears a long-term NRSRO credit rating of A- or better and is enhanced by acceptable collateral. Each repurchase agreement will be entered into under the PSA/ISMA Global Master Repurchase Agreement.

Each ISDA Master Agreement must also include a table that delineates the excess purchased securities margin (haircut) required, based on the collateral type, duration, and credit quality.

d. **Securities lending** – When securities lending activity is performed by an external, third party lending agent, Investment Division will examine the credit underwriting practices of the lending agent, including enforcement of collateral requirements, counterparty analysis, and surveillance. Additionally, Investment Division will periodically review the securities lending lines by counterparty. A securities lending agent must be an organization rated A- or better by a NRSRO. More detailed information about TRS securities lending activities is specified in the separate Securities Lending Policy.

9.4. Liquidity Risk Management

The objective of the Liquidity Risk Management policy is to ensure that the Fund maintains ample liquidity to meet its funding commitments. The two kinds of commitments which necessitate a prudent liquidity policy are:

a. Disbursements of benefits and related obligations to plan participants, including retirement, death, health, and disability benefits payments.
b. TRS investment activities: These are mainly associated with risk management and funding of external managers. Some examples include:
   i. TRS engages in derivatives to efficiently manage and reduce risk of the overall investment portfolio. Use of these instruments requires liquidity for collateral, margin and payment obligations at the time of a reset, call or maturity;
   ii. TRS funds accounts managed by public markets external managers; and
   iii. TRS manages unfunded capital commitments that the Fund is legally obligated to fund when called by private equity or real asset general partners.

External Funding Authority

The Investment Division is authorized to establish external funding mechanisms (such as master repurchase agreements with one or more counterparties) and the flexibility to operate in all types of market liquidity environments to allow prudent management of these commitments while achieving a long-term rate of return and adhering to the asset allocation limits outlined in this Policy. In addition to these external funding mechanisms, TRS will maintain adequate funds in its custodial account to cover investment-related obligations. Finally, the Board authorizes the Investment Division to access the cash holdings backing the OTC swaps to manage its commitments.

Limitations Applicable to External Funding Authority

Liquidity provided from these external funding mechanisms may not exceed 2% of the market value of the Total Fund. The expectation is that the liquidity funded through external funding mechanisms will be short-term (less than 30 days). The Investment Division must seek approval from the CIO for extended use of external funding sources. The Investment Division shall report such approvals for extended use to the Board not later than the next regular quarterly meeting.

9.5. Operations Risk Management

a. **Overdrafts** – The Investment Division will monitor the frequency and costs associated with all overdraft activity.

b. **Custodial Bank(s)** – The Investment Division will conduct on-site due diligence to review the operational controls set in place by all custodial banks. The Investment Division will also consider the extent of remedies provided by the custodian and its overall ability to fulfill its commitments should operational failures occur.

9.6. Settlement Risk Management

The Investment Division will monitor unsettled trade activity by counterparty and instrument type.

9.7. Legal Risk Management

Legal documentation for all accounts, investment subscriptions, external managers, investments in private investment funds (private equity, real assets, and Hedge Funds), and derivatives will be reviewed, negotiated and approved for TRS execution by internal or external legal counsel, or both. The Investment Division, in consultation with Legal Services, will exercise diligence to ensure that all contracts are legally binding and enforceable in a suitable venue. The Investment Division will seek the assistance, review, and advice of legal counsel whenever it is prudent to do so. The General Counsel and the Legal Services Department have primary responsibility for the engagement of outside legal counsel for investment matters, subject to applicable statutes and rules adopted by the Office of the Attorney General.

9.8. Risk Management Compliance Cure Periods and Remedies

a. **Passive violations** – A passive violation occurs when the portfolio breaches a prescribed policy limit as the result of changing market or credit conditions. ~~Staff~~ The Investment Division will report the violation to the Board and will remedy the violation within 90 days of the violation or prepare a written action plan that must be approved by Board resolution to extend the cure period beyond 90 days.

b. **Active violation**s – An active violation is caused by entering into an agreement or investment that breaches a policy limit at inception or thereafter through failure to monitor. In this case, a thorough analysis of controls will ensue and be reported to the Chief Investment Officer, the Executive Director and the Chairman of the appropriate Board committee, as soon as practical, and to the full Board at its next regularly scheduled meeting at which investment matters will be discussed. ~~Staff~~ The Investment Division will seek to remedy the violation when possible. In instances where the costs of immediate remedies are prohibitive, ~~Staff~~ the Investment Division will develop a corrective action plan that will be submitted to the CIO within a reasonable time after the violation occurs, not to exceed 15 days, depending on the nature and complexity of the investment holding and transactions needed to remedy the violation. The Board will be apprised of the violation at its next regularly scheduled meeting along with the corrective action plan.

9.9. Permitted Uses of Leverage

The Investment Division is authorized to use the following types of leverage:

a. Derivative strategies in accordance with the risk parameters established by the asset allocation ranges of this Policy and applicable legal restrictions;
b. Short sales in accordance with this Policy;
c. F/X hedging in accordance with this Policy;
d. Embedded leverage within the Total Fund's limited partnership investments; and
e. Collateralized fundings including securities lending activities, pledges, repurchase and reverse repurchase agreements and other external funding mechanisms.

Leverage will not be used to exceed the risk parameters established by the asset allocation ranges of this Policy.

ARTICLE 10 – HEALTH INSURANCE PROGRAM PORTFOLIO

10.1 Health Insurance Program Portfolio Objective

The primary objective of the Health Insurance Program Portfolio is to preserve capital through investment in conservative, short-term securities.

10.2 Authorized Investments for the Health Insurance Program Portfolio

Section 404.024, Government Code describes the Authorized Investments employed by the comptroller when he or she invests state funds. The Investment Division shall employ this list of Authorized Investments when the Investment Division invests the Health Insurance Program Portfolio.

ARTICLE 11 -- POLITICAL CONTRIBUTIONS; IMPROPER INFLUENCE; PLACEMENT AGENTS AND FINDERS

#1d. Green language moved from Addendum

~~1.~~ 11.1 Scope~~.~~

This policy applies to all TRS investment transactions in which a placement agent or finder is or may be involved, including new agreements (including follow-on and co-investments), extension of existing agreements, increase in funding or capital commitment to an existing relationship or fund, or an amendment that increases management fees or compensation under an agreement.

This policy also applies to attempts to influence TRS investment decisions through contacts with TRS trustees, or contacts with, or political contributions made for the benefit of, one or more Texas Elected Officials, and also applies to contacts with persons employed by any such official.

If any provision of this policy conflicts with a provision of another policy adopted by the TRS board, the stricter provision shall apply.

~~2.~~ 11.2 Purpose~~.~~

The purpose of this policy is to ensure the integrity of all TRS investment transactions and conformity with the highest fiduciary, ethical, and legal standards by all parties involved. All investment decisions made by the Board and the ~~staff~~Investment Division and must be based solely on the merits in conformity with fiduciary standards and applicable law. All investment recommendations made by consultants and advisers must be based solely on the merits after the necessary due diligence. All investment decisions and recommendations must be free of impropriety or improper influence and the appearance of either.

~~3.~~ 11.3 Philosophy~~.~~

The Board desires that the ~~staff~~Investment Division obtain full disclosure of all matters having the potential to harm TRS's reputation or the integrity of TRS's investment processes, or that could constitute unethical or unlawful conduct during the investment due diligence process.

~~4.~~ 11.4 Required ~~d~~Disclosures~~.~~

At a minimum, all external Fund or Manager Parties shall provide detailed written responses to the questionnaire attached hereto as Appendix ~~A~~F as early as reasonably possible in the due diligence process for a TRS investment transaction. The Executive Director is authorized to approve such revisions to Appendix ~~A~~F from time to time as he deems to be in the best interest of TRS and consistent with this policy.

In addition, all Fund or Manager Parties shall provide a detailed description of the services to be performed by the Placement Agent and how the Placement Agent is used (e.g., with all prospects, or only with a subset of prospects). The ~~i~~Investment ~~staff~~Division shall obtain a copy or summary of the terms of an agreement to compensate a Placement Agent for the due diligence file. The ~~i~~Investment ~~staff~~Division shall provide all prospective Fund or Manager Parties with a copy of this policy upon commencement of due diligence.

~~5.~~ 11.5 Contractual ~~r~~Representations, ~~w~~Warranties and ~~c~~Covenants~~.~~

Each Fund or Manager Party shall represent and warrant to TRS in the executed closing documents for the transaction that its responses to Appendix ~~A~~F to this policy and any supplemental inquiries are true, correct, and complete in all material respects, and shall also covenant to update any such information within 10 business days of any change in the information in the responses.

In addition, each Placement Agent shall fully disclose the terms of its arrangements with a Fund or Manager Party for payment of a Placement Fee and any political contributions by the Placement Agent to any Texas Elected Officials, and shall certify as to the matters addressed in Appendix ~~A~~F, as applicable, to TRS in a writing executed by an authorized officer that the disclosures required by this policy are true and complete in all material respects.

Each final investment agreement shall provide TRS with the option to receive a reimbursement of management or advisory fees equal to the amount of Placement Fees to be paid to any and all Placement Agents, and, in addition and not in the alternative, the right to terminate the management agreement or withdraw without penalty from the fund investment vehicle or vehicles if any certificates or contractual representations, warranties or covenants relating to this policy have been breached.

~~6.~~ 11.6 Prohibitions~~.~~

Neither TRS nor any TRS investment shall be burdened with or liable for any Placement Fee. No TRS investment may be made if the transaction involves either (a) a Placement Agent who is not registered with either of the Securities and Exchange Commission or the Financial Industry Regulatory Authority ("FINRA"), or (b) the sharing of a Placement Fee with a non-registered person or entity. No TRS investment may be made if an authorized officer or the board, in consultation with legal

counsel, determines that a disclosed contact with a TRS board member or Texas Elected Official, or a contribution to a Texas Elected Official, has created an unacceptable risk to the integrity and reputation of the TRS investment program or has been made in violation of a TRS policy or applicable law. A contact-based referral, without more, by a trustee of either an investment opportunity or a Manager or Fund Party contact to the Executive Director, Chief Investment Officer, or Deputy Chief Investment Officer does not constitute such a risk or a violation of this policy.

~~7.~~ 11.7 Definitions ~~applicable to this Policy.~~

Affiliate – means a person or entity controlled by or under common control with another person or entity.

Fund or Manager Party – includes, (a) as to a private investment fund, a fund sponsor, the general partner, managing member, or its equivalent with respect to a fund, fund sponsor, or fund management firm, (b) as to an external, separate account investment manager, the asset management entity and the parent of such asset management entity, and (c) as to (a) and (b), any Affiliate, principal, owner, officer, shareholder, director, managing member, or employee having authority to act on behalf of such fund or firm.

Placement Agent – includes any third party, whether or not affiliated with a Fund or Manager Party, that is a party to an agreement or arrangement (whether oral or written) with a Fund or Manager Party for the direct or indirect payment of a Placement Fee in connection with a TRS investment. Any other person or entity who claims a Placement Fee or who by agreement with a Placement Agent will share in a Placement Agent's Placement Fee is deemed to be a Placement Agent whether or not the person or entity is an Affiliate, principal, owner, officer, shareholder, director, managing member, or employee of a Placement Agent. A "finder" is a Placement Agent.

Placement Fee – includes any compensation or payment, directly or indirectly, of a commission, finder's fee, or any other consideration or benefit to be paid to a Placement Agent.

Relative – means a spouse (including an ex-spouse), parent, child (including adopted), sibling, niece, nephew, aunt, or uncle.

Texas Elected Official – includes any elected official of the State of Texas, including but not limited to the governor, lieutenant governor, comptroller of public accounts, attorney general, and any member of the Texas Legislature, and also includes a campaign fund or political action committee, or PAC for an elected official, and any Relative of a Texas elected official.

TRS Person – means any person listed on Exhibit A attached to Appendix ~~A~~F to this Policy or to any other due diligence document, and includes without limitation any current or former TRS board member, Executive Director, Deputy Director, Chief Financial Officer, Investment Division or Legal Services employee, any investment consultant or actuary, any outside counsel engaged by TRS, and any Relative of a TRS Person, whether or not listed on an Exhibit A, TRS Persons.

APPENDIX A - TRACKING ERROR NEUTRAL (IN ANNUALIZED BASIS POINTS)[1]

Internal	Neutral
Equity (Global Best)	100
External	
Equity (US; Large-Cap)	300
Equity (US; Small-Cap)	500
Equity (International; Developed, EAFE)	300
Equity (International; Emerging Markets)	300
Equity (World Equity)	300
Stable Value Hedge Funds	400
Directional Hedge Funds	600

	Neutral	Maximum
Total Global Inflation Linked		200
Total Public Fund Tracking Error	100	300

[1] Tracking error will be measured on a realized basis over a three year period.

APPENDIX B - IIC APPROVAL AUTHORITY AND MANAGER ORGANIZATION ALLOCATION LIMITS

Allocations to a single manager organization may only exceed the limits specified in this Appendix B with the prior authorization of the Board.

Article Affected	Portfolio	Initial Allocation or Commitment with Manager Organization, by Portfolio	Additional or Follow-On Allocation or Commitment with the same Manager Organization, by Portfolio	Total Manager Organization Limits, by Portfolio
2.7	External Public Markets Portfolio	0.5%	1%	3%
4.2	Private Equity Portfolio	0.5%	1%	3%
5.2	Real Assets Portfolio	0.5%	1%	3%
	Total IIC Approval Authority, each Manager Organization			6%

All allocation or commitment limits are expressed as a percentage of the Total Fund value and are to be calculated as of the date the applicable investment agreements are executed.

"Affiliate" means any person directly or indirectly controlling, controlled by, or under common control with, another person. A "manager organization" includes its Affiliates without regard to the names of the entities.

The percentage limit for additional or follow-on allocations or commitments applies to each additional or follow-on allocation or commitment by a listed portfolio to a manager organization and is in addition to, and not cumulative of, the limit specified for initial allocations or commitments. By way of example, if a portfolio initially allocates 0.2% of the Total Fund to a manager organization, the portfolio may thereafter allocate or commit up to 1.0% in a single additional or follow-on allocation or commitment to the same manager organization for a total of 1.2% allocated or committed to the same manager organization (0.2%+1.0%). If a portfolio initially allocates 0.2%, then makes an additional allocation or commitment of 0.8%, and desires to make a further additional or follow-on allocation to the same manager organization, the applicable limit for the further additional or follow-on allocation is 1.0% of the Total Fund, for a total of 2.0% allocated or committed to the manager organization (0.2%+0.8%+1.0%). ~~In general, a follow-on investment, co-investment, or additional investment in the same fund or external manager mandate should follow the initial investment not earlier than three months after the initial allocation or commitment investment has been closed. A follow-on investment, co-investment, or additional investment that is anticipated to occur earlier than three months after the initial closing will be included in the calculations for purposes of this Appendix B.~~ All investments occurring in the six months prior to the follow-on investment, co-investment or additional investment shall be included in the calculation of the percentage limits. If the initial investment occurred less than six months prior to the current investment, the initial allocation limit of 0.5% rather than the follow-on allocation limit of 1.0% will apply.

#7

In calculating the available limits, returned capital is excluded from the sum of existing total allocations or commitments. Committed capital is included during the applicable investment period of a fund without regard to whether the commitment amount is funded or unfunded or the fund is open-ended. After the investment period, committed but unfunded capital is not included in the calculation of outstanding commitments for the purposes of this Appendix B. Capital that has been returned but that is subject to recall by a private investment fund is considered to be committed or allocated for the purposes of the limits in this Appendix B.

#9

Authority for Special Investment Opportunities. Notwithstanding the limits set forth in this Appendix B, the CIO may designate ~~one or more~~an investment opportunity~~ies~~ as a "Special Investment Opportunity" if the circumstances indicate a reasonable probability that a rapid investment response will be required in order for TRS to acquire the investment in excess of the limits on ~~staff~~ Investment Division authority set forth in this Appendix B ~~and it is not practicable to present the opportunity for consideration by the Board~~. Circumstances requiring a rapid response may include, but are not limited to, distressed situations or market dislocations creating opportunities to acquire interests or assets at pricing that indicates a reasonable probability that the interests or assets are undervalued or will increase in value. The CIO shall notify the Executive Director as promptly as possible of ~~each~~ the Special Investment Opportunity. The CIO and the Executive Director shall ~~request comments from~~consult with the Chairman of the ~~appropriate~~ Board ~~committee~~ and the Chairman of the Investment Management Committee~~TRS consultants and advisers~~ and determine if it is not practicable to present the opportunity for consideration by the Board. If the opportunity will not be added to an agenda, and the CIO and the Executive Director conclude that the investment would be in the best interests of TRS, the CIO and the Executive Director may authorize and conclude an investment up to $1 billion in that Special Investment Opportunity.

After ~~investments totaling $1 billion in the aggregate in one or more~~one investment in a Special Investment Opportunity~~ies~~ ~~have~~ has been made, no further investment in a Special Investment Opportunity ~~will~~ may be made until the Board has reauthorized the CIO's authority to designate a Special Investment Opportunity. Such reauthorization shall renew the CIO's and the Executive Director's authority to invest up to $1 billion in a Special Investment Opportunity~~ies~~ under this provision.

APPENDIX C – EMERGING MANAGERS

Articles Affected:	Portfolio	Target Allocation (in millions)
2.7	External ~~Manager~~ Public Markets Portfolio[1]	250
4.2	Private Equity Portfolio[1,2]	950
5.2	Real Assets Portfolio[1,2]	450
	Total	1,650

Green language moved to Article 6

~~All investments with emerging managers will be subject to due diligence by an independent qualified external advisor. The advisor will present each investment recommendation to the IIC for its approval. In general, an emerging manager should be registered with the appropriate authorities if such registration would be consistent with industry practices. Each investment will have a minimum size of $5 million. With respect to the External Manager Portfolio, the total investment by TRS with each emerging manager may not exceed 40% of such emerging manager's assets under management. With respect to the Private Equity Portfolio and the Real Assets Portfolio, the total investment by TRS into each fund raised by an emerging manager may not exceed 40% of the size of such fund. This paragraph does not apply to investments executed as part of a fund of funds mandate.~~

[1] The CIO may increase or decrease each portfolio Target Allocation by $200 million; provided, the total Target Allocation must remain unchanged as a result of such increase or decrease.

[2] Target Allocation based on commitments.

APPENDIX D – POLICY HEDGE RATIOS

Portfolio	PHRs
Public Markets Portfolios	0%
Private Markets Portfolios	0%

[SPECIAL NOTE: Appendix E will be revised to reflect changes separately adopted by the Board (if any) at its September 2012 meeting.]

#8

Board of Trustees

Adopted August 13, 2010

A. Investment Group

Resolved, That employees holding the following TRS working titles are members of the **"Investment Group"**:

Chief Investment Officer	**Deputy Chief Investment Officer**
Senior Managing Director	**Managing Director**
Senior Director	**Director**
Senior Investment Manager	**Investment Manager**

Further, That the Executive Director is authorized and directed to designate those individual employees who are members of the **Investment Group** authorized to take any one or more of the following actions listed below with respect to investment matters as specified in writing by the Executive Director, at least annually or as he deems necessary from time to time:

General Authority for Investment Matters

1. Acquire, modify, and sell investments and negotiate, fix, execute, amend, modify, renew, extend, terminate, certify, and endorse contracts and agreements for portfolio investment transactions, including without limitation trading authorizations, subscription agreements, tax forms, investment contracts, investment vehicle entity agreements, investment management agreements, license agreements, brokerage or margin account agreements, securities or commodities exchange documents, and agreements and documents relating to trading operations.

2. Give directions and instructions to external managers, and to amend, modify, fix, and execute investment guidelines in investment management agreements.

3. Negotiate, fix, execute, amend, modify, renew, extend, transfer, assign, terminate, certify, and endorse the following: amendments; notes; powers of attorney; indentures; deeds; conveyances; certificates; instruments of transfer or assignment; instruments or agreements evidencing, releasing, or creating liens, mortgages, or security interests; and all other instruments and agreements, sealed or unsealed, attested or unattested, relating to TRS investments.

4. Waive, modify, or amend specific provisions of an investment contract or management agreement, if the waiver, modification or amendment is deemed by the employee to be in the best interest of TRS.

Over-the-Counter Derivatives Contracts

5. Negotiate, fix, execute, amend, modify, renew, extend, transfer, assign, terminate, endorse, and terminate master agreements for over-the-counter derivatives transactions and any schedules or credit support annexes relating to such agreements, and any deliverables relating to such agreements, schedules, or annexes.

6. Waive, modify, or amend specific provisions of over-the-counter master agreements for derivatives transactions, and any transaction confirmations under such agreements, if the waiver, modification or amendment is deemed by the employee to be in the best interest of TRS.

7. Negotiate, fix, execute, amend, modify, renew, extend, transfer, assign, endorse, or terminate transactions entered into under master agreements for over-the-counter derivatives transactions, including without limitation confirmations of transactions.

Transfers of Funds or Assets; Fund or Account Redemptions and Withdrawals

8. Authorize and instruct TRS employees, brokers or custodians to transfer funds or assets in connection with TRS investment transactions or commitments of capital or to or from managed investment accounts, investment funds, and custodians of TRS assets.

9. Authorize and instruct TRS employees, brokers, and custodians to deliver cash, securities or other assets as collateral or margin in accordance with regulatory, account, or contractual requirements, including without limitation credit support annexes or agreements relating to over-the-counter derivatives transactions.

10. Execute redemption or withdrawal notices for private investment funds and managed investment accounts and, when required by applicable policies and procedures, not solely but jointly with a member of the Financial Group.

B. Financial Group

Further, That employees holding the following TRS working titles are members of the **"Financial Group"**:

Chief Financial Officer	**Manager of Investment Accounting**
Manager of General Accounting	**Team Leader of Investment Accounting**
Team Leader of Financial Reporting	**Team Leader of Budgeting**

Further, That each employee in the **Financial Group** is authorized and empowered on behalf of TRS to deliver or otherwise transfer cash, securities, collateral, or contracts, and to execute affidavits, certificates and powers of attorney required to transfer, redeem, or exchange securities, collateral, or contracts.

Further, That each employee in the **Financial Group** is authorized and empowered on behalf of TRS, not solely but jointly with an employee in the **Investment Group** or the **Executive Group**, to execute fund or account redemption and withdrawal notices and related documents.

Further, That each employee in the **Financial Group** is authorized and empowered on behalf of TRS to instruct TRS custodians to deliver securities, collateral, contracts, or cash to fund margin or collateral requirements, clear and settle securities trades, fund capital called or subscribed for investment under an investment contract, and to exchange securities, collateral, contracts, or cash for other securities, collateral, contracts, or cash, in accordance with internal procedures.

C. Executive Group

Further, That the **Executive Group** is comprised of employees holding the TRS working titles of Executive Director and Deputy Director, and each employee in the **Executive Group** is authorized and empowered to perform, with respect to a particular transaction, any of the acts that employees in the **Investment Group** or the **Financial Group** are authorized to perform; *provided*, however, that when joint action by a member of the **Investment Group** and a member of the **Financial Group** is required by applicable policies and procedures, only one member of the **Executive Group** may act jointly with a member of either of the **Investment Group** or the **Financial Group**.

D. Trading Group

Further, That the **"Trading Group"** is comprised of the employees holding the following TRS working titles: Director – Trading Center, and Trader**,** and each employee in the **Trading Group** is authorized and empowered on behalf of TRS to take the following actions: to place orders or agree with brokers, dealers and market-makers to purchase or sell securities, futures or forward contracts, options, or currency; to monitor and supervise execution and settlement of such orders or agreements; and to negotiate, fix, and vary the commissions, spreads, or discounts for individual orders or agreements to purchase or sell securities, futures or forward contracts, options, or currency.

Further, That the TRS employee groups described in this resolution are identified as such only for the purposes of this resolution and not for any other purpose unless the Board or the Executive Director, as authorized, expressly so provides.

Addendum to the Teacher Retirement System of Texas

Investment Policy Statement

Political Contributions; Improper Influence; Placement Agents and Finders

Effective date: July 1, 2009

8.1. Scope.

#1d. Green language moved to Article 11

This policy applies to all TRS investment transactions in which a placement agent or finder is or may be involved, including new agreements (including follow-on and co-investments), extension of existing agreements, increase in funding or capital commitment to an existing relationship or fund, or an amendment that increases management fees or compensation under an agreement.

This policy also applies to attempts to influence TRS investment decisions through contacts with TRS trustees, or contacts with, or political contributions made for the benefit of, one or more Texas Elected Officials, and also applies to contacts with persons employed by any such official.

If any provision of this policy conflicts with a provision of another policy adopted by the TRS board, the stricter provision shall apply.

9.2. Purpose.

The purpose of this policy is to ensure the integrity of all TRS investment transactions and conformity with the highest fiduciary, ethical, and legal standards by all parties involved. All investment decisions made by the Board and the staff and must be based solely on the merits in conformity with fiduciary standards and applicable law. All investment recommendations made by consultants and advisers must be based solely on the merits after the necessary due diligence. All investment decisions and recommendations must be free of impropriety or improper influence and the appearance of either.

10.3. Philosophy.

The Board desires that the staff obtain full disclosure of all matters having the potential to harm TRS's reputation or the integrity of TRS's investment processes, or that could constitute unethical or unlawful conduct during the investment due diligence process.

11.4. Required disclosures.

At a minimum, all external Fund or Manager Parties shall provide detailed written responses to the questionnaire attached hereto as Appendix A as early as reasonably possible in the due diligence process for a TRS investment transaction. The Executive Director is authorized to approve such revisions to Appendix A from time to time as he deems to be in the best interest of TRS and consistent with this policy.

In addition, all Fund or Manager Parties shall provide a detailed description of the services to be performed by the Placement Agent and how the Placement Agent is used (e.g., with all prospects, or only with a subset of prospects). The investment staff shall obtain a copy or summary of the terms of an agreement to compensate a Placement Agent for the due diligence file. The investment staff shall provide all prospective Fund or Manager Parties with a copy of this policy upon commencement of due diligence.

12.5. Contractual representations, warranties and covenants.

Each Fund or Manager Party shall represent and warrant to TRS in the executed closing documents for the transaction that its responses to Appendix A to this policy and any supplemental inquiries are true, correct, and complete in all material respects, and shall also covenant to update any such information within 10 business days of any change in the information in the responses.

~~In addition, each Placement Agent shall fully disclose the terms of its arrangements with a Fund or Manager Party for payment of a Placement Fee and any political contributions by the Placement Agent to any Texas Elected Officials, and shall certify as to the matters addressed in Appendix A, as applicable, to TRS in a writing executed by an authorized officer that the disclosures required by this policy are true and complete in all material respects.~~

~~Each final investment agreement shall provide TRS with the option to receive a reimbursement of management or advisory fees equal to the amount of Placement Fees to be paid to any and all Placement Agents, and, in addition and not in the alternative, the right to terminate the management agreement or withdraw without penalty from the fund investment vehicle or vehicles if any certificates or contractual representations, warranties or covenants relating to this policy have been breached.~~

~~13.~~6. ~~Prohibitions.~~

~~Neither TRS nor any TRS investment shall be burdened with or liable for any Placement Fee. No TRS investment may be made if the transaction involves either (a) a Placement Agent who is not registered with either of the Securities and Exchange Commission or the Financial Industry Regulatory Authority ("FINRA"), or (b) the sharing of a Placement Fee with a non-registered person or entity. No TRS investment may be made if an authorized officer or the board, in consultation with legal counsel, determines that a disclosed contact with a TRS board member or Texas Elected Official, or a contribution to a Texas Elected Official, has created an unacceptable risk to the integrity and reputation of the TRS investment program or has been made in violation of a TRS policy or applicable law. A contact-based referral, without more, by a trustee of either an investment opportunity or a Manager or Fund Party contact to the Executive Director, Chief Investment Officer, or Deputy Chief Investment Officer does not constitute such a risk or a violation of this policy.~~

~~14. Reporting.~~

~~The investment staff shall compile all responses to the questionnaire and report the results to the board at least semi-annually. Reports shall include the amounts and recipients of any political contribution or Placement Fee and the relationship of the recipients to the Placement Agent or Texas Elected Official, as applicable.~~

~~15.~~7. ~~Definitions applicable to this Policy.~~

~~**Affiliate** – means a person or entity controlled by or under common control with another person or entity.~~

~~**Fund or Manager Party** – includes, (a) as to a private investment fund, a fund sponsor, the general partner, managing member, or its equivalent with respect to a fund, fund sponsor, or fund management firm, (b) as to an external, separate account investment manager, the asset management entity and the parent of such asset management entity, and (c) as to (a) and (b), any Affiliate, principal, owner, officer, shareholder, director, managing member, or employee having authority to act on behalf of such fund or firm.~~

~~**Placement Agent** – includes any third party, whether or not affiliated with a Fund or Manager Party, that is a party to an agreement or arrangement (whether oral or written) with a Fund or Manager Party for the direct or indirect payment of a Placement Fee in connection with a TRS investment. Any other person or entity who claims a Placement Fee or who by agreement with a Placement Agent will share in a Placement Agent's Placement Fee is deemed to be a Placement Agent whether or not the person or entity is an Affiliate, principal, owner, officer, shareholder, director, managing member, or employee of a Placement Agent. A "finder" is a Placement Agent.~~

~~**Placement Fee** – includes any compensation or payment, directly or indirectly, of a commission, finder's fee, or any other consideration or benefit to be paid to a Placement Agent.~~

~~**Relative** – means a spouse (including an ex-spouse), parent, child (including adopted), sibling, niece, nephew, aunt, or uncle.~~

~~**Texas Elected Official** – includes any elected official of the State of Texas, including but not limited to the governor, lieutenant governor, comptroller of public accounts, attorney general, and any member of the Texas Legislature, and also includes a campaign fund or political action committee, or PAC for an elected official, and any Relative of a Texas elected official.~~

~~**TRS Person** – means any person listed on Exhibit A attached to Appendix A to this Policy or to any other due diligence document, and includes without limitation any current or former TRS board member, Executive Director,~~

~~Deputy Director, Chief Financial Officer, Investment Division or Legal Services employee, any investment consultant or actuary, any outside counsel engaged by TRS, and any Relative of a TRS Person, whether or not listed on an Exhibit A, TRS Persons.~~

~~Appendix A – Questionnaire~~
~~to Addendum to the Teacher Retirement System of Texas~~
~~Investment Policy Statement~~

~~Political Contributions; Improper Influence; Placement Agents and Finders~~

~~Capitalized terms are defined in main text of policy.~~

APPENDIX F – POLITICAL CONTRIBUTIONS; IMPROPER INFLUENCE; PLACEMENT AGENTS AND FINDERS QUESTIONNAIRE

Fund or Manager Name: _____

Completed by: _____

Date submitted: _____

Note: TRS may require completion of a new questionnaire or updating of responses at any time, including as of the closing date for any transaction investment or additional funding.

A) Contacts with State Officials; Political Contributions. Has any person lobbied, communicated with, or made political contributions during the past three years on behalf of the Fund or Manager Party to a Texas Elected Official in connection with a prospective investment transaction with a Texas state investment entity, including TRS?

1) If the answer is "yes," please provide a complete list of the name(s) of the entities and individual(s) involved, the approximate dates of the contributions, the amounts of the contributions, a summary of the contacts or communications, and the nature of the discussion in regards to the investment with any Texas state investment entity, including TRS.

B) Contacts with TRS Board Members. Has any person lobbied or otherwise communicated on behalf of the Fund or Manager Party with a current or former member of the TRS Board of Trustees during the past two years for the purpose of asking the current or former member to seek to influence a decision by the TRS investment staff or a TRS advisor or consultant to recommend that TRS invest?

1) If the answer is "yes," please provide a complete listing of the name(s) of the entities and individual(s) involved, the approximate dates of the contacts or communications, and the nature of the discussion in regards to this investment.

C) Placement Agents and Placement Fees. Is or was the Fund or Manager Party a party to any agreement or arrangement (whether oral or written) to pay a Placement Fee to or for the benefit of any Placement Agent in connection with TRS's prospective investment in a fund or engagement of an external manager?

1) If the answer to C) is "yes," please provide a copy of the written agreement or agreements creating the obligation to pay a Placement Fee. If the agreement is not written, please provide a written summary of the agreement. Additionally, please state the amount of the Placement Fee (or the formula for its determination if the amount is not yet determined) and the date of its payment or anticipated payment.

2) If the answer is "yes," please list the name(s) of the person or entity. If the party to the agreement is an entity, please also list the names of the principal owners, officers, directors, or managing members of the Placement Agent and provide a resume for each such person.

3) If the answer is "yes," state whether the Placement Agent, or any of its Affiliates, is registered as a lobbyist with any state government or the federal government and identify the registrants and the applicable jurisdictions where registered.

4) Will or did any TRS Person or any Relative of a TRS Person receive, has any such person received, or might any such person receive, any compensation or payment, directly or indirectly, of a commission, finder's fee, or any other consideration or benefit to be paid to a Placement Agent (a "Placement Fee") in connection with TRS's investment? If the answer is "yes," please list the name or names of the TRS Person or Relative of a TRS Person and provide details about the terms of the Placement Fee.

5) Will or did any Texas Elected Official or a Relative of a Texas Elected Official receive a Placement Fee in connection with TRS's investment? If the answer is "yes," please list the name or names of the official and provide details about the terms of the Placement Fee, including the amounts and timing of payments.

6) Did (or will) any third party person or entity who is not employed or otherwise affiliated with a Placement Agent, including a current or former TRS Person, either (a) recommend the Placement Agent or (b) receive a share of a Placement fee or any other economic benefit in connection with TRS's investment, whether directly or indirectly through a Placement Agent engaged by you?

7) If the answer to 6) is "yes," please list the name of the person or entity, the relationship of the person or entity to the Placement Agent and your firm, and provide a description of the arrangement and the reason for the payment.

8) State whether the Placement Agent or any of its Affiliates is registered as an investment advisor with the Securities and Exchange Commission or the Financial Industry Regulatory Association, or a similar agency outside the United States. Provide details about registration or explain why registration is not required.

The undersigned certifies, represents and warrants on behalf of the Fund or Manager Party that, to the best of its knowledge after due inquiry, (a) the foregoing responses to this questionnaire are complete, true, and correct and do not omit any statement or fact necessary to make any statement made not misleading in any material respect, and (b) no prior statements or representations, if any, whether oral or written, made on behalf of the Fund or Manager Party relating to the subject matter of this questionnaire in connection with TRS's due diligence inquiries, ~~and~~ a prospective investment management agreement, or a subscription to the ~~fund~~Fund, as the case may be, including any side letter agreements, ~~was~~ were untrue or misleading in any material respect when they were made.

[signature block for Fund or Manager Party]

Date: _____

Attachment: Exhibit A, TRS Persons

INVESTMENT POLICY STATEMENT

(Adopted September[ ], 2012 to be effective October 1, 2012)

TABLE OF CONTENTS

EXECUTIVE SUMMARY 4

ARTICLE 1 – TOTAL FUND AND PORTFOLIO DESIGN 9

1.1. Introduction 9

1.2. Purpose and Design 9

1.3. Roles of Board, Staff, and Advisors 9

1.4. Total Fund Objectives 10

1.5. Total Fund Investment Standard 10

1.6. Total Fund Asset Mix and Benchmarks 11

1.7. Total Fund Measurement and Reporting Criteria 13

1.8. Total Fund Portfolio Implementation And Design 14

ARTICLE 2 – PUBLIC MARKETS PORTFOLIOS 15

2.1. Public Markets Portfolios Objectives 15

2.2. Public Markets Portfolios Authorized Investments 15

2.3. Internal Public Markets Portfolios Restrictions 16

2.4. External Public Markets Portfolio 17

2.5. External Public Markets Portfolio Objectives 17

2.6. Hedge Fund Defined 17

2.7. External Public Markets Portfolio Authorization 19

2.8. External Public Markets Portfolio Restrictions 20

2.9. External Public Markets Portfolio Conflicts of Interest 20

ARTICLE 3 – PRIVATE MARKETS PORTFOLIOS 21

3.1. Private Markets Portfolios 21

3.2. Private Markets Portfolios Authorization 21

3.3. Private Markets Investment Process 21

3.4. Private Markets Authorization of Investments 21

3.5. Private Markets Portfolio Restrictions 22

ARTICLE 4 – PRIVATE EQUITY PORTFOLIO 23

4.1. Private Equity Portfolio Objectives 23

4.2. Private Equity Portfolio Authorized Investments 23

4.3. Private Equity Portfolio Restrictions 23
ARTICLE 5 – REAL ASSETS PORTFOLIO 23
5.1 Real Assets Portfolio Objectives 23
5.2 Real Assets Portfolio Authorized Investments 23
5.3 Real Assets Portfolio Restrictions 24
ARTICLE 6 – EMERGING MANAGERS PROGRAM 24
ARTICLE 7 – OVERLAY PORTFOLIOS 25
7.1. Overlay Portfolios Objectives 25
7.2. Overlay Portfolios Authorized Investments 25
7.3. Overlay Portfolios Restrictions 25
ARTICLE 8 – AUTHORIZED USES OF DERIVATIVES 26
8.1. Derivatives Objective and Investment Standard 26
8.2. Derivatives Policy Scope 26
8.3. Derivatives Use By External Managers and Commingled Funds (Hedge Funds) 26
8.4. Derivatives Definition; Authorization 27
8.5. Derivatives Applications Permitted 27
8.6. Derivatives Applications Not Permitted 27
8.7. Derivatives Documentation and Controls 28
8.8. Derivatives Limitations 28
8.9. Derivatives Risk Management and Compliance 28
ARTICLE 9 – RISK MANAGEMENT AND OVERSIGHT 29
9.1. Market Risk Management 29
9.2. Foreign-Exchange Risk Management 30
9.3. Credit Risk Management 30
9.4. Liquidity Risk Management 31
9.5. Operations Risk Management 31
9.6. Settlement Risk Management 31
9.7. Legal Risk Management 31
9.8. Risk Management Compliance Cure Periods and Remedies 32
9.9. Permitted Uses of Leverage 32
ARTICLE 10 – HEALTH INSURANCE PROGRAM PORTFOLIO 32
10.1. Health Insurance Program Portfolio Objective 32
10.2. Health Insurance Program Portfolio Authorized Investments 32
ARTICLE 11 – POLITICAL CONTRIBUTIONS; IMPROPER INFLUENCE; PLACEMENT AGENTS AND FINDERS 33
11.1. Scope 33
11.2. Purpose 33
11.3. Philosophy 33
11.4. Required Disclosures 33

11.5. Contractual Representations, Warranties and Covenants 33
11.6. Prohibitions 34
11.7. Definitions 34
APPENDICES 35
A. Tracking Error Neutral (in Annualized Basis Ponts) 35
B. IIC Approval Authority and Manager Organization Allocation Limits 36
C. Emerging Managers 37
D. Policy Hedge Ratios 38
E. Authority Resolution (TRS 477) 39
F. Political Contributions; Improper Influence; Placement Agents and Finders Questionnaire 40

EXECUTIVE SUMMARY

This Executive Summary is not intended to replace, and must be read in conjunction with, the Investment Policy Statement. In the event of a conflict between the Executive Summary and the Investment Policy Statement, the Investment Policy Statement shall govern.

Total Fund and Portfolio Design

The Investment Policy Statement provides a formal plan for investing pension trust fund and health insurance program assets. The policy defines the roles and responsibilities of the Investment Division and other parties within that plan.

The Internal Investment Committee is established and assigned the authority to review and approve investments. The IIC's authority is limited by the size of the investments it can approve without also obtaining approval from the Board. The limitations are 0.5% for initial allocations, 1% for follow-on allocations, 3% total to any one organization in each of External Public Markets, Private Equity, Real Assets and 6% total to any one organization in the total Trust with each of the foregoing percentage stated as a percentage of the Total Trust and calculated at time of investment. In addition, the CIO has Special Investment Opportunity authority of up to $1 billion. See "Appendix B – IIC Approval Authority and Manager Organization Allocation Limits."

The Trust's objectives are to (a) control risk and (b) achieve a long-term rate of return that exceeds (i) the assumed actuarial rate of return adopted by the Board, (ii) inflation plus 5% and (ii) the Trust's Policy Benchmark. The Trust is subject to a "prudent person" standard of care under the Texas Constitution.

See "Article 1 – Total Fund and Portfolio Design."

Asset Allocation

Asset Class	Target
Global Equity	
US Large Cap	18%
US Small Cap	2
Non-US Developed	15
Emerging Markets	10
Directional Hedge Funds	5
Private Equity	12
Stable Value	
US Treasuries	13%
Absolute Return	0
Stable Value Hedge Funds	4
Cash	1
Real Return	
Global Inflation Linked Bonds	5%
Real Assets	15
Commodities	0
Total	100%

In addition to the target, each asset class has minimum and maximum allocations which, with certain exceptions, are +/-5% around the target allocation.

See "Section 1.6 – Total Fund Asset Mix and Benchmarks."

Measurement and Reporting	Investment performance, policy compliance, asset allocation, external investments activities, derivatives usage, risk limits, liquidity, leverage, private markets strategy, staffing, use of placement agents and other information will be monitored and reported to the Board. See "Section 1.7 – Total Fund Measurement and Reporting Criteria."
Public Markets Portfolios	The portfolios are authorized to invest in publicly traded or Rule 144A (either through an exchange or over-the-counter) assets such as equities, exchange-traded funds, equity-linked notes, options, futures, swaps, forwards, corporate debt, sovereign or sovereign-sponsored entity debt (including US Treasuries), mortgage-backed securities, collateralized mortgage obligations, commercial mortgage-backed securities, asset-backed securities, any investment in one of the public markets benchmarks, mutual funds, closed end funds, structured notes, structured credit transactions, repurchase transactions, State of Texas pooled investment funds, foreign currencies, short sales, local access products and other investments. See "Section 2.2 –Public Markets Portfolios Authorized Investments." Certain restrictions apply to the internally managed portfolios including restrictions on (a) the amount of equity of any company that can be held (not more than 20%), (b) investments linked to a prurient interest in sex, (c) investments linked to Sudan and (d) investments linked to Iran. See "Section 2.3 – Public Markets Portfolios Restrictions."
External Public Markets Portfolio	The portfolio is comprised of (a) externally managed public investments that do not qualify as Hedge Funds (limited to less than 30% of the Trust), (b) Hedge Funds (limited to less than 10% of the Trust) and (c) other absolute return portfolios (includes credit-sensitive investments). Hedge Fund is defined in Section 2.6. Any Board member can require that any investment in the External Public Markets Portfolio be submitted for consideration to the Board. The Investment Division can engage advisors and consultants with respect to the portfolio, allow short positions, engage in overlay strategies, rebalance the portfolio and terminate managers within the portfolio. The separate account investments within the portfolio will adhere to the Sudan and Iran restrictions. See "Section 2.7 – Authorized Investments for the External Public Markets Portfolio" and "Section 2.8 – External Public Markets Portfolio Restrictions."
Private Markets Portfolio	General principles of investing in private markets apply to both the Private Equity and Real Assets portfolios. The Investment Division is authorized to engage advisors and consultants, authorize commitments to be funded over an extended period of years, serve on limited partner or investment advisory committees, engage in rebalancing and engage in overlay strategies. Investments will be submitted to the Board for authorization if the appropriate consultant or advisor does not concur with the investment or at the request of any Board member. The Investment Division can transfer, withdraw or terminate its investments. In certain circumstances, restrictions apply to the portfolios regarding investments linked to a prurient interest in sex, Sudan and Iran. See "Article 3 – Private Markets Portfolios."
Private Equity Portfolio	The portfolio makes investments either through funds or directly in equity, equity-rights securities, preferred stock, convertible securities, debt obligations, warrants, rights, options and other investments. Private equity strategies are often classified as venture capital, mezzanine, buyout, emerging markets and special situation. See "Article 4 – Private Equity Portfolio."
Real Assets Portfolio	The portfolio makes investments either through funds or directly in equity, debt, rights, warrants or other investments in real estate, infrastructure, timber, agriculture,

	oil and gas, mortgage-related investments, real estate investment trusts, master limited partnerships, non-fixed assets and other opportunistic investments in real assets. Real estate investments are often classified as core, core-plus, value-added and opportunistic. Non-real estate investments are restricted to 5% or less of the Total Fund. See "Article 5 – Real Assets Portfolio."
Emerging Managers Program	The Investment Division will make a good-faith effort to invest a target allocation of $1.65 billion with qualified emerging managers in the External Public Markets Portfolio, Private Equity Portfolio and the Real Assets Portfolio. Emerging managers can include, but are not limited to, minority, women, and disabled veteran-owned or -controlled organizations generally with less than $2 billion assets under management or a performance track record of less than five years. See "Article 6 – Emerging Managers Program" and "Appendix C – Emerging Managers."
Overlay Portfolios	Overlay Portfolios are designed to manage risk, asset allocation, and market exposures through futures, options, swap agreements, or forward agreements. Overlay Portfolios may be implemented in connection with the Total Fund or with any investment or portfolio within the Total Fund. Overlay portfolios are restricted by the asset allocation limits of the Trust. In addition, certain uses of currency overlays are restricted to less than (a) 5% to all non-US dollar currencies, (b) 2% to any one developed market currency (except the US dollar) and (c) 1% to any emerging market currency, each calculated as a percentage of the Trust. See "Article 7 – Overlay Portfolios."
Derivatives	Derivatives are authorized only if they efficiently manage and reduce the risk of the overall investment portfolio. Derivatives can be used to (a) implement investment strategies in a lower cost or efficient manner, (b) efficiently manage the Total Fund portfolio, (c) construct portfolios that could not be efficiently constructed using cash market securities, (d) hedge and control risks and (e) facilitate transition trading. Over-the-counter derivatives may not have a tenor of greater than six years (or, thirty years in the case of interest rate swaps). Derivatives may only invest in legally permissible policy asset categories and may not be used to circumvent the asset allocation or other policy restrictions. All use of derivatives must be properly documented. All over-the-counter derivatives must be executed using ISDA documentation or, if centrally cleared, clearing agreements. All counterparties must have a credit rating of at least A- (Standard & Poor's or Fitch) or A3 (Moody's). In addition, the net market value of derivatives positions with any counterparty may not exceed $500 million (calculated net of collateral) and may not exceed 5% of the total market value of the Fund (without consideration of collateral). See "Article 8 – Authorized Uses of Derivatives."
Risk Management	The Investment Division will monitor and manage risk of the Total Fund Portfolio including: Market Risk –will be managed and measured using at a minimum a quantified estimate of downside risk (e.g., value-at-risk), asset allocation limits, private markets holdings analysis, and a quantified estimate of risk relative to the benchmark (tracking error). Foreign Exchange Risk – will be managed according to a Policy Hedge Ratio established by the Board. The current Policy Hedge Ratio is set a 0%. Credit Risk – the primary sources of credit risk are derivatives counterparty risk (mitigated by credit provisions in the derivatives documentation), the risk from repurchase agreements (limited to 5% of the Trust market value) and securities

	lending. Liquidity Risk – a prudent liquidity management will be established to ensure that the Fund maintains ample liquidity to meet its funding commitments, especially disbursements of benefits and TRS investment activities. Leverage Risk – the permitted uses of leverage are defined. Leverage will not be used to exceed the asset allocation ranges of the policy. Other managed risks include operations risk, settlement risk and legal risk. Compliance cure periods or corrective action plan periods established for violations of policy or other compliance limits are 90 days for passive violations (a violation due to changing market or credit conditions) and 15 days for active violations (a violation due to entering into an agreement or investment that breaches a policy limit at inception or thereafter through failure to monitor). See "Article 9 – Risk Management and Oversight."
Health Insurance Program	Authorized investments for the Health Insurance Program Portfolio are conservative, short-term securities consistent with the guidelines employed by the Comptroller when investing State funds. See "Article 10 – Health Insurance Program Portfolio."
Political Contributions; Improper Influence; Placement Agents and Finders	The purpose of this policy is to ensure the integrity of all TRS investment transactions and conformity with the highest fiduciary, ethical, and legal standards by all parties involved. All investment decisions made by the Board and the Investment Division must be based solely on the merits in conformity with fiduciary standards and applicable law. All investment decisions and recommendations must be free of impropriety or improper influence and the appearance of either. The Investment Division shall obtain full disclosure of all matters having the potential to harm TRS's reputation or the integrity of TRS's investment processes, or that could constitute unethical or unlawful conduct during the investment due diligence process. Neither TRS nor any TRS investment shall be burdened with or liable for any Placement Fee. Adequate disclosure must be made in connection with any investment in the form of "Appendix F – Political Contributions; Improper Influence; Placement Agents and Finders Questionnaire." See "Article 11 -- Political Contributions; Improper Influence; Placement Agents and Finders."
Tracking Error	Neutral tracking error targets are established for certain portfolios of the Trust: Internal Equity (Global Best) 100 bp External Equity (US; Large-Cap) 300 bp Equity (US; Small-Cap) 500 Equity (International; Developed, EAFE) 300 Equity (International; Emerging Markets) 300 Equity (World Equity) 300 Stable Value Hedge Funds 400 Directional Hedge Funds 600 Total Public Fund Tracking Error 100 In addition, Total Global Inflation Linked and Total Public Fund have maximum tracking error limits of 200 bp and 300 bp, respectively. See "Appendix A – Tracking

	Error Neutral (in annualized basis points)."
Authority	The employee titles in the Investment Group are specified and three types of investment authority are described including (i) general authority for investment matters, (ii) over-the-counter derivatives contracts and (iii) transfers of funds or assets; fund or account redemptions and withdrawals. In addition, the employees of the Financial Group, Executive Group and Trading Group are also specified and their authority is described. See "Appendix E – Authority Resolution (TRS 477)."

ARTICLE 1 – TOTAL FUND AND PORTFOLIO DESIGN

1.1. Introduction

The Teacher Retirement System of Texas ("TRS") administers a pension trust fund and other health insurance programs for retirees and certain active public education employees under State of Texas constitutional and statutory provisions. TRS is governed by a Board of Trustees (the "Board"). TRS provides service and disability retirement benefits and death and survivor benefits for Texas public education employees and their beneficiaries. Benefits are funded by state and member contributions and investment returns.

1.2. Purpose and Design

The purpose of this Investment Policy Statement (this "Policy") is to provide a formal plan for investing pension trust fund and health insurance program assets to achieve defined investment objectives consistent with the TRS mission statement adopted by the Board and with applicable law.

This Policy also defines the roles and responsibilities of the various entities involved in the investment process and facilitates internal and external communication of investment policy.

The appendices to this Policy are incorporated into and form part of this Policy for all purposes. Capitalized terms not defined in this Policy have the meanings assigned to them in the "TRS Glossary of Investment Terms" ("Glossary"), which definitions are also incorporated into and form part of this Policy for all purposes. Modifications to the appendices or the Glossary that would have a substantive effect on this Policy require Board consideration and adoption.

1.3. Roles of Board, Staff, and Advisors

The Board has the primary fiduciary responsibility for investing TRS trust assets in accordance with Article XVI, Section 67 of the Texas Constitution and with applicable law. The Board establishes investment objectives and policy, obtains expert advice and assistance, and oversees the employment of a qualified and competent investment staff ("Investment Division") and legal staff. The Board also monitors the actions of staff and advisors to ensure compliance with its policies. The Board has a Policy Committee of the Board ("Policy Committee"), an Investment Management Committee of the Board ("IMD Committee") and a Risk Management Committee of the Board ("Risk Management Committee"), each of which is a standing committee of the Board charged with those responsibilities set forth in the Bylaws of the Board. The Board and the Investment Division are assisted by outside investment consultants and internal and external legal counsel.

a. Investment Counsel ("Investment Counsel") selected by the Board provides education, advice, commentary, and discussion as requested at Board meetings, assists with development and review of investment policies and procedures, performs due diligence and recommends managers or investments, reports on the progress of the Fund in meeting its investment objectives, and compares the performance of the portfolio to established benchmarks. The Investment Division and Investment Counsel provide information as needed to assist the consulting actuary in performance of actuarial services.

b. The Investment Division has fiduciary responsibilities delegated by the Board under applicable law. Investment Division manages the Fund according to the Board's policies, advises and informs the Executive Director and the Board about investments, and recommends modifications to this Policy. The Investment Division executes all transactions, performs risk-management functions, and prepares investment reports.

c. The Internal Investment Committee ("IIC") is hereby established to review, consider, and authorize proposed external manager engagements and investments as required by this Policy for the External Public Markets Portfolio and the Private Markets Portfolios. Additionally, the IIC will manage the foreign exchange policy hedge ratios (set forth in Appendix D) and review as needed.

The permanent IIC membership consists of the Chief Investment Officer ("CIO"), the Deputy CIO, the Chief Risk Officer ("CRO"), and the Investment Division Senior Managing Directors ("SMD's"). The CIO will establish procedures and guidelines for the operations of the IIC. The IIC procedures and guidelines may provide that the CIO may appoint and remove select Directors as non-permanent voting members to the IIC. The IIC procedures and guidelines will define a quorum and establish the vote required to authorize an investment or external manager engagement or, if required by this Policy, recommend an investment or external manager engagement to the Board, which vote may not be less than a majority of the then-incumbent IIC members present and voting at a meeting at which a quorum is present. The CIO shall have the power to veto any investment or delegation of investment discretion authorized or recommended by the IIC pursuant to a vote of its members. Termination of a member's TRS employment terminates IIC membership as of the date the employee or TRS gives notice of termination, as the case may be.

The Executive Director or his designee may attend any meeting of the IIC, and the Investment Division shall deliver to the Executive Director copies of all IIC materials, analyses, correspondence, and agendas as and when delivered to IIC members or other TRS employees. The Executive Director is not a member of the IIC, however, acting in his or her capacity as the chief executive officer and chief administrative employee of TRS as set forth in the Board's Bylaws, the Executive Director shall, after consultation with the CIO, have the power to veto any investment or delegation of investment discretion proposed for IIC consideration or authorized or recommended by the IIC pursuant to a vote of its members whenever he deems such veto to be in TRS' best interest. When this Policy requires that the Board authorize an investment or an engagement of an external manager, the IIC shall vote on whether to recommend such investment or engagement to the Board. The results of the vote shall be reported to the Board in the materials provided to the Board for consideration.

d. All proposed changes to this Policy will be reviewed by the legal staff for compliance with state and federal laws regarding fiduciary responsibility, investment prudence, ethics compliance, and other applicable standards or requirements before submission to the Policy Committee. Except as authorized by the Executive Director, proposed changes to this Policy will first be presented to the Policy Committee, which will consider recommending the proposed changes to the Board. The Board may consider and adopt proposed changes that have not been considered by the Policy Committee. This Policy shall be reviewed at least once every three years.

1.4. Total Fund Objectives

In this Policy, the total or overall investment portfolio includes all assets invested by TRS to provide retirement, death, health, and disability benefits administered by the system, including cash and cash equivalents (the "Total Fund" or the "Fund") and will be structured and managed to achieve the following objectives:

a. Control risk through proper diversification of asset classes and by establishing long-term risk and return expectations; and

b. As applicable to the pension plan, achieve a long-term rate of return that:

   i. Exceeds the assumed actuarial rate of return adopted by the Board;

   ii. Exceeds the long-term rate of inflation by an annualized 5%; and

   iii. Exceeds the return of a composite benchmark of the respective long-term normal asset mix weighting of the major asset classes.

1.5. Total Fund Investment Standard

Article XVI, Section 67(a)(3) of the Texas Constitution and Section 825.301, Government Code, states that the standard of care for TRS investments is a "prudent person" standard. Section 825.301, Government Code, provides that Section 117.004(b), Property Code, applies to TRS investment decisions. Section 117.004(b) generally states that the determination of the prudence of a single investment decision will be made taking into consideration the investment of all of the assets of the trust, or the assets of the collective investment vehicle, as the case may be, rather than a consideration as to the prudence of the single investment of the trust, or the single investment of the collective investment vehicle, as the case may be.

All investments made by the Total Fund must be in "securities" as defined in Government Code Section 825.301(a) provided, however, that until September 1, 2019, TRS may buy and sell those instruments set forth in Section 825.301(a-1), Government Code, to efficiently manage and reduce the risk of the overall investment portfolio.

The Board and the Investment Division may obtain the assistance and advice of external investment experts, including external managers operating under Agency Agreements, and other investment counselors or consultants as needed.

1.6. Total Fund Asset Mix and Benchmarks

The Investment Division will assist the Board in engaging in an asset-liability study for the pension plan at least once every five (5) years to review asset classes, return-risk assumptions, and correlation of returns with applicable benchmarks and across asset classes. A key objective of the asset-liability study shall be the development through statistical modeling techniques of a diversified portfolio that specifies ranges of prudent portfolio exposures and a "long-term normal" position for each asset class. The normal portfolio mix will represent the portfolio that is expected to meet the Board's actuarial return objectives for the pension plan within the risk tolerances specified herein.

Each asset class allocation percentage has a "long-term normal" position within the overall portfolio and a maximum and minimum range around that normal allocation. All percentages refer to market value.

Each asset class is described by an associated benchmark that describes, in general terms, the opportunity set and return characteristics associated with the asset class. For certain private or more complex asset classes the benchmark serves as a proxy for expected returns rather than an approximation of the actual investments that will characterize that component of the portfolio. Those benchmarks, along with the allocation ranges, are identified in the table on the following page, and are referred to as the "Policy Benchmarks." The portfolio transition which started on October 1, 2007 for Real Assets is ongoing with a long term target for Real Assets of 15%. Adjustments to the benchmark to accommodate the transition for Real Assets are described in footnote 3 in the table below.

[Table appears on following page]

Asset Class	Benchmark	Bloomberg Ticker	Minimum Range[1]	Maximum Range[1]	Target
Global Equity:					
US Large Cap	MSCI USA Standard	GDDUUS	13%	23%	18%
US Small Cap	MSCI USA Small Cap	GCUDUS	0%	7%	2%
Non-US Developed	MSCI EAFE and Canada	NDDUEC	10%	20%	15%
Emerging Markets	MSCI EM	NDUEEGF	5%	15%	10%
Directional Hedge Funds	HFRI Fund of Funds Composite	HFRIFOF	0%	10%	5%
Total Public Equity	*Target-weighted Blend*		*45%*	*55%*	*50%*
Private Equity	State Street Private Equity Index – lagged one quarter		7%	17%	12%
Total Global Equity	***Target-weighted Blend***		**55%**	**69%**	**62%**
Stable Value:					
US Treasuries	Barclays Capital (BarCap) Long Treasury Index	LUTLTRUU	0%	20%	13%
Absolute Return (Including Credit Sensitive Investments)[2]	3 Month LIBOR + 2%	USC0TR03 (plus 2%)	0%	20%	0%
Stable Value Hedge Funds	HFRI Fund of Funds Conservative	HFRIFOFC	0%	10%	4%
Cash	Citigroup 90-day US Treasury	SBMMTB3	0%	5%	1%
Total Stable Value	***Target-weighted Blend***		***13%***	***23%***	***18%***
Real Return:					
Global Inflation Linked Bonds	BarCap US Treasury TIPS index	LBUTTRUU	0%	10%	5%
Real Assets	NCREIF ODCE - lagged one quarter		5%	20%	15%
Commodities[3]	Goldman Sachs Commodity Index	SPGCCITR	0%	5%	0%
Total Real Return	***Target-weighted Blend***		*15%*	*25%*	*20%*
TOTAL PLAN	***Target-weighted Blend***				***100%***

[Notes to table appear on following page]

Notes to table on prior page

[1] With respect to the maximum range and minimum range, the CIO may increase any maximum range by 5% or decrease any minimum range by 5% (but may not decrease a minimum range below zero) if the CIO concludes in a writing delivered to the Executive Director and to the Board of Trustees stating the action taken and the reasons why the CIO believes that such increase or decrease would be in the best interests of TRS; provided, the maximum range for Total Global Equity may not be increased above 69%. Before taking action, the CIO must request comments from the Chairman of the appropriate Board Committee and TRS consultants and advisors. The Board, at the next succeeding Board meeting, must authorize the increase or decrease if the CIO proposes that the changes continue in effect after such Board meeting. The CIO will notify the Compliance Officer of any such change to a maximum or minimum range. If the Board does not authorize the continuation of the change to a maximum or minimum range after the next succeeding Board meeting, the Investment Division shall use best efforts to rebalance the portfolio to bring the asset classes within the ranges in the table above within 90 days.

[2] Absolute Return is a broad category that includes all assets that have a high probability of generating a positive absolute return regardless of market conditions over a one to three year period.

[3] Except as specifically provided in Article 5.2, investments in commodities are limited to instruments that constitute a security or an authorized derivative that is either underlain by a financial instrument or, if underlain by a physical commodity, is cash settled. Direct investments in physical commodities are prohibited.

1.7. Total Fund Measurement and Reporting Criteria

The Investment Division will deliver reports to the Board (and the appropriate Board committee, as applicable) adequate to indicate whether the Total Fund is meeting its objectives and that will permit the Board to monitor each portfolio for compliance with this Policy. The Board will establish performance and risk measurement and attribution standards for the Total Fund, each asset class, and component portfolios.

The following comparisons and reviews will be performed quarterly (unless otherwise noted) and presented to the Board:

a. **Investment Performance** – Investment performance for the Total Fund and each component portfolio, net of external management fees (if applicable); will be compared with their respective benchmark indices. Fund performance will be judged primarily by comparisons to long-term (3, 5 and 10 year) Policy Benchmark returns.

b. **Monitoring of compliance with Policy** - Portfolios will be reviewed for compliance with the requirements set forth in this Policy. The Investment Compliance Officer will have overall responsibility for compliance monitoring. However, if considered necessary, TRS will hire external parties to obtain assistance regarding compliance monitoring. To ensure independence in compliance monitoring the Investment Compliance Officer or external parties hired will not be given the authority to trade securities. To ensure ongoing compliance with this Policy and completeness of disclosures to the Board regarding compliance, the Investment Compliance Officer has authority to require certifications from applicable IIC members or Managing Directors disclosing known compliance violations. The Investment Compliance Officer reports all known compliance exceptions to the Board at the next meeting of the Board.

c. **Asset class exposures and weightings** – The exposure of cash and derivative instruments to each asset class will be aggregated and compared with their respective long-term and transition benchmarks and with the authorized ranges around those benchmarks. Hedge Fund exposure will be reported relative to its statutory limit, if applicable.

d. **External investments under consideration** – For any external investment under consideration by the Investment Division (including hedge funds, external managers, real asset and private equity investments), the Investment Division will provide the Board the following information prior to the date of the applicable IIC meeting:

   i. Name of the investment vehicle and investment manager;

   ii. Total fund or strategy size;

   iii. TRS investment amount under consideration;

   iv. Investment strategy;

   v. Names of the external manager or fund principals;

   vi. Projected TRS commitment or funding date;

   vii. Placement agent or firm sponsoring the offering or engagement, if any;

viii. Prospective fees;

ix. Other TRS investments with the firm; and

x. Historical fund or manager performance.

e. **External investments activities** – The Investment Division will provide the Board with a list of all external investments, including any additions, withdrawals, transfers or terminations, on at least a semi-annual basis.

f. **Derivatives –** The Investment Division shall provide a comprehensive report of all outstanding derivative applications (including derivative types, counterparties, notional amounts, and fair values) used by internal managers and external managers under Agency Agreements on at least a semi-annual basis**.**

g. **Risk limit** – The Investment Division will report at least semi-annually the Total Fund and benchmark total estimated risk relative to the upper and lower bounds corresponding to the maximum and minimum downside risk measures that could be achieved through the asset allocation limits in this Policy.

h. **Liquidity** – The Investment Division will report at least semi-annually to the Board the use of external liquidity funding mechanisms.

i. **Leverage** – The Investment Division will report the Gross and Net Leverage derived from internal derivative use, internal short sales, external managers, Hedge Funds, and leverage resulting from use of external liquidity funding mechanisms as outlined in the Liquidity Policy on at least a semi-annual basis.

j. **Transparency report** – The Investment Division will provide a transparency report to the Board that may be used to disclose any of the required information mentioned above. This report may be delivered in electronic or physical formats.

k. **Private Markets Long-Term Strategy** – The Investment Division will review with the Board its long-term strategy for the Private Equity and the Real Asset portfolios at least every three years. This review will include information on target sub-strategy allocation, return, risk and liquidity expectations. Tactical deviations from this long-term strategy will be reviewed on an annual basis.

l. **Staffing** – The Investment Division will provide an update no less than annually reporting on the staffing of key employees in the division, including turnover, transfers and the creation of new positions.

m. **Placement Agent Disclosures** – The Investment Division shall compile all responses to the placement agent questionnaire (Appendix F) for the purposes of Article 11, including for emerging manager investments, and report the results to the Board at least semi-annually. Each response shall include the questionnaire information as of the date the IIC approved the investment. Reports shall include the amounts and recipients of any political contribution or Placement Fee and the relationship of the recipients to the Placement Agent or Texas Elected Official, as applicable.

n. **Other information** – Any other information or reports as the Board may request or require from time to time.

1.8. Total Fund Portfolio Implementation and Design

The Total Fund investment portfolio is characterized by the following functional portfolios that are charged with the implementation of day-to-day portfolio management activity:

a. Internal Public Markets Portfolios;

b. External Public Markets Portfolio;

c. Private Markets Portfolios;

d. Overlay Portfolios; and

e. Risk Management and Oversight.

The objectives, authority and limitations of each of these functional areas, and the authorized uses of derivatives, are described throughout the remainder of this Policy.

ARTICLE 2 –PUBLIC MARKETS PORTFOLIOS

2.1. Public Markets Portfolios Objectives

The Public Markets Portfolios are comprised of the Internal Public Markets Portfolios and the External Public Markets Portfolios. The primary objectives of the Public Markets Portfolios are to manage publicly-traded, marketable securities and related instruments, in accordance with the risk parameters established by the permitted asset allocation ranges of this Policy, to meet or exceed the performance of the Policy Benchmark, as allocated to the Public Markets Portfolios. The Internal Public Markets Portfolios will serve as the primary vehicles through which transition management will be performed and proxy portfolios will be managed vis-à-vis the unfunded Private Equity, Real Assets, and External Manager Portfolios, and Hedge Fund portions of the Fund.

2.2. Public Markets Portfolios Authorized Investments

The Public Markets Portfolios are authorized to invest in the securities described as follows:

a. Equity securities of all companies traded or listed on a national exchange in the U.S. or in countries in the MSCI ACWI ex-US benchmark, and any component security of a Policy Benchmark.

b. Common stocks, preferred stocks, convertible bonds, rights, warrants, units and depositary receipts ("DRs") that trade publicly or pursuant to Rule 144A of the Securities and Exchange Commission (the "SEC"), without regard to the issuer's principal place of business or jurisdiction of incorporation or organization (such securities are sometimes referred to in this Policy as "Authorized Equity Securities"), including common or preferred stock issued in initial public offerings ("IPOs").

c. Exchange-traded funds ("ETFs") and closed-end funds tracking an applicable benchmark (or a significant subset or sector of a benchmark) if listed on a U.S. stock exchange or market or on a stock exchange or market in a country in which TRS is authorized to buy and sell securities.

d. Exchange-listed or private placement equity-linked notes intended to track authorized international equity securities or indices, and registered index funds in any country index series intended to track its respective country index, provided that the country is in the Policy Benchmark.

e. Exchange-traded futures contracts, options contracts, and options on futures contracts in order to efficiently manage or reduce the risk of the overall investment portfolio, or both, in accordance with this Policy and applicable law.

f. Over-the-counter swap and option agreements, including but not limited to total return swaps, interest rate swaps, credit default swaps, and currency swaps, to efficiently manage or reduce the risk of the overall investment portfolio, or both. The Fund may also use forward agreements and any other instrument commonly used by institutional investors to manage institutional investment portfolios, in accordance with this Policy and applicable law.

g. Evidence of indebtedness and securities that evidence an ownership interest in debt obligations that are issued, insured, guaranteed by, supported by, or based on the credit of the following:

   i. The United States ("U.S.") or any U.S. agency, department, or government sponsored enterprise ("GSE");

   ii. The debt obligations of states, municipalities or any state agency of the United States of America;

   iii. Corporations chartered by the United States or any state thereof; and

   iv. Foreign governments, supranationals, subnationals, and corporations chartered by foreign governments.

h. Agency and non-agency mortgage-backed securities.

i. Collateralized mortgage obligations ("CMO").

j. Commercial mortgage-backed securities ("CMBS").

k. Asset-backed securities ("ABS").

l. All securities and all types of securities that are either included in the applicable benchmark or that will be added to the benchmark as of the announcement date of their future inclusion.

m. Mutual funds, closed-end funds, exchange traded funds, structured notes, limited partnerships, commingled funds, or any other security types that:

i. Are intended to track or replicate the returns of the Policy Benchmark or a portion thereof or that are intended to reduce the overall tracking error of the portfolio; or

ii. Invest in non-dollar fixed income instruments that are predominantly investment grade quality; or

iii. Invest in bank loans that are predominantly investment grade quality; or

iv. Actively invest in a dynamic portfolio of high yield securities.

n. Passive funds, structured credit basket transactions, or trusts containing high-yield fixed income securities selected according to defined parameters and, if the investment contract, offering documents, or prospectus requires distribution to TRS of securities held by fund or trust under specified circumstances, such securities.

o. Repurchase and triparty repurchase transactions.

p. Investments in State of Texas pooled investment funds.

q. Foreign currencies that may be required to settle security transactions denominated in those foreign currencies and any authorized instrument or contract intended to manage transaction or currency exchange risk in purchasing, selling or holding investments.

r. Short sales as authorized and limited by Article 2.7 for the Externally Managed Public Assets Portfolio.

s. Local Access Products, including equity-linked certificates, participation notes, and low-exercise price call warrants which replicate the performance of an underlying security, index, or market for which investment in the local market or in the ADRs or GDRs, or the total return swap market would be difficult or costly, or both.

In addition to the foregoing, the Public Markets Portfolios are authorized to engage in overlay strategies in accordance with the guidelines set forth in Article 7. Overlay strategies may not be used to circumvent the asset allocation parameters, risk guidelines, or any other controls otherwise established by this Policy.

2.3. Internal Public Markets Portfolio Restrictions

a. Not more than 20% of the outstanding equity securities of a single class of any company may be purchased. In calculating this 20% limit, any amounts that are held in the EPM Portfolios and which are also deemed to be beneficially held by TRS for purposes of Section 13 of the Securities Exchange Act of 1934, including equity securities held in a separate account (or a commingled account in which TRS is deemed to be the beneficial owner for purposes of Section 13 of such act), shall be included.

b. TRS will not invest in securities of any company that derives a significant portion of its revenues from products or services intended exclusively to appeal to a prurient interest in sex through explicit depictions of sexual activity. These include, but are not limited to, sexually explicit films, videos, publications, and software; topless bars and strip clubs; and explicit sexually-oriented telephone and Internet services. The restriction does not apply to pooled investment vehicles, provided that the Investment Division shall engage with the managers of such vehicles and use commercially reasonable efforts during due diligence to determine whether such vehicles invest in any company that would not be eligible for direct investment by TRS.

c. Except as required by fiduciary duties created by the Texas Constitution or other applicable law, TRS will comply with Chapter 806, Government Code relating to prohibition on investments in Sudan, including reporting requirements on investments in listed companies and on decisions to cease divestment, remain invested, or reinvest in listed companies. Additionally, TRS will avail itself of the protection afforded by the U.S. Sudan Accountability and Divestment Act. To the fullest extent allowed by law and consistent with fiduciary duties, TRS will treat direct holdings in investments in companies with active business operations in Iran in a similar manner to investments in listed companies in Sudan. TRS will use the Iran scrutinized list of companies subject to the Iran Sanctions Act, or any successor legislation, as maintained by a governmental body or a reputable private organization and which is available in June of each year. If, in order to comply with the fiduciary duties created by the Texas Constitution, the IIC determines that divestment of or a ban on investments in companies on the Iran list would be imprudent under the circumstances because alternative investments to the listed companies do not offer commensurate return with no greater risk or commensurate risk with the same or greater return, the IIC may exempt companies from the Iran list and authorize investment in the securities of those companies.

d. The IPM Portfolio shall conform to the tracking error target prescribed in Appendix A.

2.4. External Public Markets Portfolio

The component portfolios of the External Public Markets Portfolio (the "EPM Portfolio") are:

a. The External Manager Portfolio, which consists of:
   i. Commingled or other private investment funds which are not determined to be Hedge Funds as defined by Section 2.6 of this Policy, and
   ii. Separate accounts managed or advised by external managers operating under an Agency Agreement with TRS.
b. The Hedge Fund Portfolio.
c. The Other Absolute Return Portfolio including Credit Sensitive Investments.

The CIO will determine the proper mix of assets allocated for internal management under the parameters of the IPM Portfolio and those to be allocated to the External Manager Portfolio component of the EPM Portfolio. In no event shall the aggregate allocation to external managers pursuant to Agency Agreements exceed 30 percent (or a different percentage of not more than 50 percent if a different percentage is specified in the Government Code) of the Total Fund at the time of investment, as specified in Section 825.301 (a-2), Government Code.

This preceding paragraph does not affect the target allocation and the range of allocation for the Hedge Fund Portfolio, which shall not exceed 10% of the Total Fund, or such lesser or greater percentage as allowed by applicable law and Section 2.7 of this Policy.

2.5. External Public Markets Portfolio Objectives

The primary objective of the EPM Portfolio is to invest in publicly-traded marketable securities, commingled funds, Hedge Funds, and related instruments, in accordance with the asset allocation parameters of this Policy, to meet or exceed the performance of the Policy Benchmark over a 5 to 10 year market cycle as allocated to the EPM Portfolio. The EPM Portfolio will employ a wide variety of investment and trading strategies with varying levels of liquidity and leverage. It is expected that some strategies will involve more concentrated, shorter term investments as well as those that are longer term in nature and thus will generally have more tracking error than expected within the IPM Portfolio, while other investments will have less correlation, beta and volatility and thus will offset the overall volatility of the EPM Portfolio and the Total Fund.

2.6. Hedge Fund Defined

In this Policy, "Hedge Fund" means a private, commingled investment vehicle with the following general characteristics, as set forth in Section 825.3012, Government Code:

a. Is not registered as an investment company;

b. Issues securities only to accredited investors or qualified purchasers under an exemption from registration; and

c. Engages primarily in strategic trading of securities and other financial instruments.

"Hedge Fund" includes a private investment fund of funds or other commingled vehicle that itself invests in Hedge Funds. An investment in a Hedge Fund issuing securities to TRS does not involve a delegation of investment discretion to an external manager for the External Manager Portfolio, including for purposes of the statutory limit on delegation to external managers, and the assets of a Hedge Fund are not TRS assets.

For the purposes of complying with Section 825.3012, Government Code, the Investment Division shall use the following criteria to analyze and determine whether a private investment fund is "primarily engaged in strategic trading" and should be classified as a hedge fund:

[Table appears on following page]

Criteria "Strategic Trading of Securities"	Characteristics Non-Hedge Fund	Characteristics Potential Hedge Fund
1. Variability in Asset Class Concentration	Asset allocation typically stays the same throughout a market cycle, as shown by historical practice	Unconstrained; asset class mix can change dynamically in response to market conditions or as opportunities arise
2. Beta to underlying index specified for the particular mandate	Generally higher levels of beta (e.g., 0.75+)	Often less beta (e.g., <0.75)
3. Securities Traded	Primarily publicly-traded securities	Typically public or private instruments, and often with some illiquid (e.g., "side pockets") investments segregated for accounting and incentive fee purposes
4. Leverage	Gross leverage less than 250% *and* net leverage 75% to 125%	Unconstrained by policy and practice – managers often unwilling to commit to constraints
5. Short sales of company-specific securities (i.e., non-derivatives)	Typically <50% gross short	Shorting of company-specific securities is integral to investment strategy or process, with gross short positions exceeding 50%
6. Use of Derivatives	Limited use of derivatives (notional is less than 100% of contributed capital)	Derivatives are integral to strategy or process (notional value greater than 100% of contributed capital)
7. Transparency	Generally position-level transparency for investor	Risk-level transparency, but little or no position-level transparency
8. Liquidity	Limited use of lock-ups, short or no notice period; frequent (e.g., monthly) or no redemption windows	Often lock-ups, withdrawal fees, notice periods exceeding 30 days and/or less frequent redemption windows than monthly; gates and ability to suspend redemptions can extend redemption for years or frustrate liquidity goals
9. Performance Fees	May charge performance fees, but often over asset class hurdle	Generally, manager charges management and performance or incentive fees, or both, but usually with no asset class hurdle

In this Section 2.6:

Beta is a measure of an asset's volatility in relation to a specific market or risk factor, as observed over a market cycle; the measure of an asset's risk in relation to the market (for example, the S&P500) or to an alternative benchmark or factors. Generally, the return of a security with a beta of 1.5 will be, on average, 1.5 times the market return.

Leverage is a condition in which the net potential monetary exposure of an obligation exceeds the value of the underlying assets supporting the obligation. ***Net Leverage*** is calculated as the difference between (A) the sum of (i) the market value of all long cash market positions, (ii) the notional value of all long derivative positions, and (B) the sum of (i) the absolute market value of all short cash market positions, and (ii) the absolute notional value of all short derivative positions divided by (C) the

net market value of the fund. ***Gross Leverage*** is the total of (A) the sum of (i) the market value of all long cash market positions, (ii) the notional value of all long derivative positions, (iii) the absolute market value of all short cash market positions, and (iv) the absolute notional value of all short derivative positions divided by (B) the net market value of the fund. For option based instruments, notional value may be calculated using hedge ratios to derive a delta-equivalent exposure.

Proposed investments in funds classified as Hedge Funds will be reported to the Board of Trustees (and appropriate Board committee, as applicable) quarterly. If the criteria examined do not clearly indicate, based on at least a preponderance of criteria, how a fund should be classified for statutory purposes, Investment Division may elect to present the pertinent information to the IIC for consideration of classification. Further, if the application of any one or more of the criteria for leverage, short sales, and derivatives, standing alone, would classify the fund as a Hedge Fund, but the preponderance of criteria would classify the fund as a non-Hedge Fund, the Investment Division may either decline to authorize the investment or may elect to present the pertinent information to the IIC for consideration of the classification of the fund and, if applicable, authorization for investment.

Prior to investment, the CIO will determine whether each Hedge Fund is a Stable Value Hedge Fund or a Directional Hedge Fund by reference to factors such as investment strategy, underlying investments, correlation, beta, leverage, expected return and expected risk.

2.7. External Public Markets Portfolio Authorization

a. **Approval Authority – Hedge Fund Portfolio, External Manager and Other Absolute Return Portfolios -** The IIC is hereby authorized to approve investments in the External Public Markets Portfolio in accordance with the guidelines set forth in Section 2.5. The limits are defined and set forth in Appendix B of this Policy apply to allocations and commitments by the External Public Markets Portfolio.

   The Investment Division may authorize an allocation to an external manager even if the external manager will invest the assets in a commingled fund or funds or a tax-qualified collective trust managed by an Affiliate of the external manager, provided, however, that the Investment Division shall determine whether any such commingled fund should be classified as a Hedge Fund for purposes of Section 825.3012, Government Code.

b. **Board Consideration -** If a Board member desires that any Hedge Fund investment or external manager strategy mandate on the list delivered to the Board under Section 1.7 be submitted for consideration by the Board, the Board member should notify the Executive Director and the CIO sufficiently in advance to permit completion of due diligence and consideration by the Board before the anticipated closing date.

c. **External Public Markets Advisors and Consultants -** The Investment Division is authorized to engage one or more qualified external advisors (each, an "Advisor") to assist and advise the Investment Division with respect to investment opportunities within the EPM Portfolio. Each Advisor engaged by the Investment Division must be approved by the CIO and the Board. The applicable advisor or consultant will provide a prudence letter or letter of recommendation for all opportunities presented to the IIC unless an exception has been made by the CIO. Notwithstanding the foregoing, IIC consideration and approval of a sub-manager of an external manager who manages sub-managers does not in any event require a separate, additional prudence letter or letter of recommendation from an Advisor; provided, further, that such external manager of sub-managers (i) is fully liable for any action or omission of the sub-manager as if the action or omission had been taken by such external manager and (ii) recommends the engagement of the sub-manager in writing to the IIC. For avoidance of doubt, this paragraph does not prohibit the CIO from requesting a separate prudence letter from an Advisor with respect to the IIC's consideration of a sub-manager to be recommended by a manager.

d. **Authority to Execute Documents and Agreements for the External Public Markets Portfolio -** The general authority resolution adopted by the Board on August 13, 2010 and designating those officers authorized to execute documents and attached as Appendix E is incorporated in this Investment Policy. Should the Board supersede such resolution, such superseding resolution shall be incorporated in this Investment Policy and replace the superseded resolution as Appendix E as of the effective date of the superseding resolution.

e. **Allocation measurement** - Only the net long position of each external manager, fund vehicle, separate account, or Hedge Fund will be counted against the asset allocation policy; however, both long and short positions will be modeled (through proxies if necessary) to calculate Total Fund risk.

f. **Short positions limit** - In addition to investments authorized under Section 2.2, the External Public Markets Portfolio may hold short positions in securities listed on a national exchange or U.S. treasuries. The aggregate short positions exposure of the External Public Markets Portfolio may not exceed 25% of the market value of the External Public Markets Portfolio without the prior written consent of the CIO. In no event may the aggregate short positions exposure of the External Public Markets Portfolio exceed 50% of the market value of the External Public Markets

Portfolio, nor may any short sale or position violate the laws or rules of any jurisdiction or exchange in or on which the applicable Securities are traded or listed.

g. **Overlay strategies** – The External Public Markets Portfolio is authorized to engage in overlay strategies in accordance with the guidelines set forth in Article 7. Overlay strategies may not be used to circumvent the asset allocation parameters, risk guidelines, or any other controls otherwise established by this Policy.

h. **Rebalancing Authority –** Subject to the limits set forth in this Policy, the CIO, Deputy CIO or the head of External Public Markets may add funds to previously approved investments for the purposes of rebalancing or adjusting risks. Such additional investments or allocations shall not, on a monthly basis, exceed 2% of the Hedge Fund Portfolio, External Manager Portfolio, or Other Absolute Return Portfolio (as appropriate) per investment. This subsection does not affect or limit the authority of the Investment Division to withdraw funds from approved investments.

i. **Termination Authority -** The CIO, Deputy CIO or the head of External Public Markets may transfer, withdraw or terminate interests in the EPM Portfolio, provided that the action does not result in a material, unwaived breach of the terms and conditions of the applicable investment agreements.

2.8. External Public Markets Portfolio Restrictions

a. Agency Agreements, considered in the aggregate, may not be used to circumvent the asset allocation parameters, risk guidelines, or any other controls otherwise established by this Policy, including the provisions of Section 2.2.

b. The Investment Division may delegate management of not more than 30% (or a different percentage of not more than 50% if a different percentage is specified in the Government Code) of the market value of the assets of the Total Fund to external managers pursuant to Agency Agreements. For avoidance of doubt, this restriction does not apply to assets held by funds (including Hedge Funds) which limit the liability of TRS to the capital contributed and any distributions that TRS might be legally obligated to contribute or repay to the fund.

c. The Investment Division is authorized to invest up to 10% (unless extended by law, this authority reverts to 5% on September 1, 2019) of the Total Fund in Hedge Funds as defined in Section 2.6. Compliance with the statutory limit is to be determined at the time TRS executes subscription documents for each Hedge Fund investment or additional investment.

d. Each Agency Agreement with an external manager shall specify the applicable policies, risk controls, portfolio characteristics, reporting requirements, requirements or restrictions, including criteria for determining quality of investments or the use of standard debt rating services.

e. Each Agency Agreement with an external manager shall terminate on or before September 1, 2019; provided, however, that an Agency Agreement may include provisions for optional renewal or extension of the agreement by the Investment Division beyond September 1, 2019 that are contingent on amendment of TRS statutes to authorize such agreements after that date.

f. Each Agency Agreement shall require the external manager to comply with TRS restrictions and investments relating to direct holdings in companies having active business operations in Sudan or Iran, including divestment. TRS will comply with any requirements imposed by Section 806.057 of the Government Code relating to notification, requests, or action involving indirect holdings in funds containing listed companies.

2.9. External Public Markets Portfolio Conflicts of Interest

Conflicts of interest, including the appearance of conflicts, in the selection and engagement of external investment managers will be avoided at all times. Potential or actual conflicts of interest must be evaluated during due diligence and after engagement under applicable ethics policies and statutory provisions, including without limitation Sections 825.211 and 825.212, Government Code, which do not apply to Hedge Fund managers in that capacity. The Investment Division will develop guidelines and procedures to identify actual or potential conflicts of interest affecting external managers to be engaged pursuant to Agency Agreements. The Investment Division shall employ reasonable diligence to identify conflicts of interest affecting TRS trustees, employees and advisors with respect to all private investments.

ARTICLE 3 - PRIVATE MARKETS PORTFOLIOS

3.1. Private Markets Portfolios

The Private Markets Portfolios are (1) the Private Equity Portfolio (the "PE Portfolio") and (2) the Real Assets Portfolio (the "RA Portfolio"). The Board shall approve the respective long-term normal allocation and the range of allocation for each portfolio.

3.2. Private Markets Portfolios Authorization

The Private Markets Portfolios are authorized to invest in the asset classes specified in this Policy and may hold and exercise rights, options and warrants attached to securities relating to an investment by the Private Markets Portfolios.

Funding of committed capital in either the PE Portfolio or the RA Portfolio will occur over an extended time period and may take several years before the total allocation to each asset class is fully invested. Because an individual investment may begin to return capital to the investor prior to the full funding of the investor's commitment, the outstanding invested capital of the investment might at times be substantially less than the total commitment. In recognition of the above characteristics unique to the PE and RA Portfolios, a "committed" allocation to both private equity and real assets may exceed the respective allocation targets authorized. It will not be a violation of this Policy if changes in the market values of the public assets portfolios or the Private Markets Portfolios cause the market value of the Private Markets Portfolios to exceed the upper limit of the allocation ranges established in this Policy.

3.3. Private Markets Investment Process

Private Markets External Advisors and Consultants

The Investment Division is authorized to engage one or more Advisors to assist and advise the Investment Division with respect to investment opportunities within the Private Markets Portfolios. Each Advisor engaged by the Investment Division to provide investment advice with respect to private equity, real estate, and other real assets investments must be approved by the CIO, either the head of Private Equity or the head of Real Assets (as appropriate), and the Board. Subject to the direction of the private equity or real assets investment staff, as appropriate (each, a "Private Markets Team"), Advisor duties may include, but are not limited to, the following:

a. Performing due diligence on specific Private Markets investment opportunities assigned by a Private Markets Team;

b. Providing research related to private equity and real assets markets and opportunities, economic conditions, and performance expectations;

c. Assisting a Private Markets Team, upon request, in identifying potential Private Markets investment opportunities;

d. Providing, upon request, written recommendations to a Private Markets Team regarding investments for the Private Markets Portfolios; and

e. Assisting a Private Markets Team in the negotiation of required investment contracts and legal documentation.

f. Providing a prudence letter or letter of recommendation for all opportunities presented to the IIC unless an exception has been made by the CIO.

To the extent an Advisor is directed by a Private Markets Team to perform due diligence on an investment opportunity, such due diligence will be performed in accordance with prudent underwriting objectives established by a Private Markets Team for the TRS Private Equity and Real Assets programs. Each investment opportunity must meet these prudent underwriting standards in order to merit inclusion within the respective portfolios.

3.4. Private Markets Authorization of Investments

Investment Authority. The limits defined and set forth in Appendix B of this Policy apply to allocations and commitments by the Private Markets Portfolios.

If, after due diligence by either of the Advisor and the Investment Division, the Advisor and the Investment Division do not concur on whether a private markets investment within the Investment Division's discretion should be made, the Investment

Division may elect to present the opportunity to the appropriate Board committee for consideration of a recommendation to the Board to authorize the investment. Unless the Board authorizes an investment, a proposed investment may not be made without the concurrence of both the Investment Division and the Advisor.

Private markets opportunities that will be considered for investment include the following: primary investments in any legally permissible investment vehicle, including limited liability entities (usually limited partnerships), co-investments, secondary investments, commingled funds, separate accounts, hybrid structures investing in equity or debt, joint ventures, secondary market transactions, entity-level investing or other off-market investments, new and emerging managers, and opportunistic investments (e.g., investments in the management entity of a private markets investment firm or sponsor, public-to-private transactions, and the acquisition of business development company or investment trust assets).

To the extent a Board member desires that any private markets investment opportunity submitted for consideration by the IIC be also submitted for consideration by the trustees, the Board member should notify the Executive Director and the CIO sufficiently in advance to permit completion of due diligence and consideration by the Board and by the appropriate Board committee, as applicable, before the anticipated closing date.

The CIO, Deputy CIO or either the head of Private Equity or the head of Real Assets (as applicable) may transfer, withdraw or terminate interests in the Private Markets Portfolios in accordance with the investment documents, provided that the action does not breach any agreement to which TRS is legally bound.

Commitment Authorization. Each investment must be authorized as required by the provisions, guidelines, and limitations established in this Policy. Any structure in which TRS invests shall meet established legal requirements.

Limited Partner or Investor Advisory Committees. When approved by the CIO or either the head of Private Equity or the head of Real Assets (as appropriate), Private Markets Team members may serve as investor representatives on the advisory committee of any private equity or real assets investment vehicle to which TRS has committed capital.

Authority to Execute Documents and Agreements for the Private Markets Portfolios. The general authority resolution adopted by the Board on August 13, 2010 and designating those officers authorized to execute documents and attached as Appendix E is incorporated in this Investment Policy. Should the Board supersede such resolution, such superseding resolution shall be incorporated in this Investment Policy and replace the superseded resolution as Appendix E as of the effective date of the superseding resolution.

Rebalancing Authority. Subject to the limits set forth in this Policy, the CIO, Deputy CIO or either the head of Private Equity or the head of Real Assets (as appropriate) may add funds to previously approved investments for the purposes of rebalancing or adjusting risks. Such additional investments or allocations shall not exceed, on a monthly basis, 2% of each of the Private Equity Portfolio or the Real Assets Portfolio (respectively, as appropriate) per investment. This subsection does not affect or limit the authority of the Investment Division to withdraw funds from approved investments; provided, the withdrawal does not breach any agreement by which TRS is legally bound.

Overlay Authority. The Private Markets Portfolios are authorized to engage in overlay strategies in accordance with the guidelines set forth in Article 7. Overlay strategies may not be used to circumvent the asset allocation parameters, risk guidelines, or any other controls otherwise established by this Policy.

3.5. Private Markets Portfolio Restrictions

a. As part of the Investment Division's due diligence, the Investment Division will seek to obtain assurance from prospective private markets fund managers or sponsors that they will use commercially reasonable best efforts, consistent with their duties to all investors, to avoid investing in companies or enterprises that derive a significant portion of their revenues from products or services intended exclusively to appeal to a prurient interest in sex. These would include, but not be limited to, sexually explicit films, videos, publications, and software; topless bars and strip clubs; and sexually oriented telephone and Internet services. Notwithstanding any other provision of this Policy, it is not a violation of this Policy if the Investment Division proceeds with a private investment based on oral or non-contractual written assurance.

b. TRS will comply with notification requests or action required by Section 806.057, Government Code relating to indirect holdings in listed companies through equity funds. To the extent a Private Markets Portfolios contain direct holdings in publicly-traded securities of listed scrutinized companies doing business in Sudan or Iran, the Investment Division will comply with TRS restrictions and reporting requirements for direct holdings. Co-investments shall comply with TRS restrictions relating to direct holdings in companies having active business operations in Sudan or Iran, including divestment.

ARTICLE 4 - PRIVATE EQUITY PORTFOLIO

4.1. Private Equity Portfolio Objectives

Diversification

The primary long-term objective of the PE Portfolio is to develop a prudently diversified portfolio of investments that is expected to enhance the overall risk-return profile of the Total Fund and to reduce risk within the PE Portfolio.

The following attributes will be considered in constructing a diversified PE Portfolio: strategy, geography, industry sectors, size of investment, and vintage year.

4.2. Private Equity Portfolio Authorized Investments

Private equity funds build portfolios of private investments in the equity or equity-rights securities of operating companies. Private equity funds may acquire investments in debt obligations, public or private common and preferred stocks, convertible securities, and any warrants, rights, or options attached to any of the foregoing that relate to equity ownership in an issuer. Privately-acquired securities usually have transfer restrictions and are not as liquid as publicly-traded securities. Private equity funds are often classified by strategy, including: venture capital; mezzanine; buyout - acquisition; international - emerging markets; and special situation (e. g., growth equity, turnarounds, distressed).

4.3 Private Equity Portfolio Restrictions

The Private Equity Portfolio is authorized by and is subject to the terms and conditions described in Article 3.

ARTICLE 5 - REAL ASSETS PORTFOLIO

5.1 Real Assets Portfolio Objectives

The Real Assets ("RA") Portfolio will be structured to achieve the following investment objectives:

a. As the primary focus, contribute favorably to diversification of the Total Fund through exposure to real assets' low or negative correlation to the Public Markets portfolios.

b. Provide competitive returns through capital appreciation.

c. The following attributes will be considered in constructing a diversified RA Portfolio: strategy, geography, property types, size of investment, vintage year, and the number of funds or investment managers represented in the portfolio. No specific geographic diversification or leverage targets are required..

5.2 Real Assets Portfolio Authorized Investments

The RA Portfolio will focus on private or public real estate equity or equity linked investments, private or public real estate debt, infrastructure, timber, agricultural real estate, oil and gas, real asset mezzanine debt or equity, mortgage-related investments, entity-level investments, real estate investment trusts ("REITs"), master limited partnerships ("MLPs"), non-fixed assets and other opportunistic investments in real assets. Real estate investments are often classified by strategy, including: core; core-plus; value-added; and opportunistic.

5.3 Real Assets Portfolio Restrictions

a. Not more than 5% of the Total Fund may be invested in certain real asset strategies. For the purposes of this calculation, these certain real assets include timber, agricultural real estate, oil and gas, master limited partnerships ("MLPs"), and non-fixed assets.

b. The Real Assets Portfolio is authorized by and is subject to the terms and conditions described in Article 3.

ARTICLE 6 – EMERGING MANAGERS PROGRAM

TRS shall make a good-faith effort to invest with qualified emerging managers for the External Managers Portfolio, Private Equity Portfolio, and the Real Assets Portfolio. The Investment Division is authorized to invest with qualified funds-of-funds managers skilled at identifying small and emerging managers in the private equity, real asset and public equity markets. The target dollar allocation is outlined for this program in Appendix C.

Emerging managers can include, but are not limited to, minority, women, and disabled veteran-owned or -controlled organizations. Conversely, not all minority, women, and disabled veteran-owned or -controlled organizations are necessarily considered emerging managers for the purposes of this program. Whether a management firm is an "emerging manager" depends on all of the facts and circumstances. In general, emerging managers are defined as newer, independent private investment management firms that manage less than $2 billion, or have a performance track record as a firm shorter than five years, or both.

All investments with emerging managers will be subject to due diligence by an independent qualified external advisor. The advisor will present each investment recommendation to the IIC for its approval. In general, an emerging manager should be registered with the appropriate authorities if such registration would be consistent with industry practices. Each investment will have a minimum size of $5 million. With respect to the External Public Markets Portfolio, the total investment by TRS with each emerging manager may not exceed 40% of such emerging manager's assets under management. With respect to the Private Equity Portfolio and the Real Assets Portfolio, the total investment by TRS into each fund raised by an emerging manager may not exceed 40% of the size of such fund. This paragraph does not apply to investments executed as part of a fund-of-funds mandate.

The Investment Division shall document its efforts to identify and expand its investments with qualified emerging managers for the purpose of board and legislative reporting on the methods and results, including data disaggregated by race, ethnicity, gender, and fund size. All investments under the emerging manager program must be made prudently and in accordance with fiduciary and ethical standards.

ARTICLE 7 - OVERLAY PORTFOLIOS

7.1. Overlay Portfolios Objectives

Overlay Portfolios are designed to manage risk, asset allocation, and market exposures through futures, options, swap agreements, or forward agreements. Overlay Portfolios may be implemented in connection with the Total Fund or with any investment or portfolio within the Total Fund.

7.2. Overlay Portfolios Authorized Investments

Overlay Portfolios may contract for, buy, sell, and hold the following contracts and derivative instruments in accordance with this Policy:

a. Exchange-traded futures contracts;

b. Exchange-traded option contracts;

c. Options on exchange-traded futures contracts;

d. Over-the-counter or exchange-traded swap agreements;

e. Over-the-counter option agreements;

f. Forward agreements; and

g. Forward-settling securities transactions.

7.3. Overlay Portfolios Restrictions

Overlay Portfolios may not be used to circumvent the asset allocation parameters, risk guidelines, or any other controls or restrictions otherwise established by this Policy or applicable law.

Direct purchase of derivatives underlain by physical commodities is prohibited for any TRS portfolio unless such derivatives are cash-settled. This prohibition does not apply to private investment funds, including Hedge Funds.

When engaging in currency overlay strategies, the Overlay Portfolio may not increase or decrease the net notional exposure of the Total Fund:

a. To all non-dollar currencies in aggregate by more than 5% of the market value of the Total Fund;
b. To any single developed market currency (except for the U.S. Dollar) by more than 2% of the market value of the Total Fund; and
c. To any single emerging market currency by more than 1% of the market value of the Total Fund.

The foregoing percentage limit restrictions do not apply to currency derivatives used (i) as part of the non-discretionary foreign exchange risk management policy described in Section 9.2, (ii) to settle security transactions denominated in those foreign currencies and any authorized instrument or contract intended to manage transaction or currency exchange risk in purchasing and selling investments and (iii) for hedging the characteristics of an individual investment to align it with the characteristics of such investment's benchmark.

ARTICLE 8 - AUTHORIZED USES OF DERIVATIVES

This Article enumerates the applications, documentation and limitations for the use of derivatives as permitted under Section 825.301, Government Code.

8.1. Derivatives Objective and Investment Standard

The Board's objectives for using derivatives are to efficiently manage and reduce the risk of the overall investment portfolio. Through the use of derivatives, the risks that are bound together in traditional cash market investments can be separated and managed independently.

Derivatives authorized by this Policy may only be used to efficiently manage and reduce the risk of the overall investment portfolio in accordance with applicable law. In addition, all uses of derivatives must comply with the fiduciary standard of prudence set forth in Article XVI, Section 67(a)(3), Texas Constitution, which requires that all TRS investments must be made using the judgment and care under the circumstances then prevailing that persons of ordinary prudence, discretion, and intelligence exercise in the management of their own affairs, not in regard to speculation, but in regard to the permanent disposition of their funds, considering the probable income there from as well as the probable safety of their capital.

8.2. Derivatives Policy Scope

Except where specifically noted, this Policy applies to all derivatives transactions executed by the Investment Division and by external managers operating under an Agency Agreement. This Policy does not apply to registered or private investment funds, including limited liability entities, issuing securities to TRS.

This Policy applies to all exchange-traded derivatives and over the counter ("OTC") derivative instruments authorized by law. This Policy does not apply to the use of derivatives by private investment funds issuing securities to TRS unless TRS in fact controls and has a legal right to approve the investment policy or guidelines of such funds.

8.3. Derivatives Use by External Managers and Commingled Funds (Hedge Funds)

The Total Fund may have external exposure to derivatives in two ways.

a. First, the Total Fund will invest as a passive investor in Hedge Funds organized as limited-liability entities, which limits potential losses to the capital contributed to the entity. TRS is not a party to the management agreement between the Hedge Fund and its investment manager. Hedge Fund and other commingled fund managers owe the same legal duties to all investors.

   i. The Investment Division must exercise thorough due diligence in assessing the scope of the Hedge Fund manager's uses of derivatives, their purpose, experience of the fund manager's staff in managing these positions, inherent leverage, and the manager's systems, controls and operations in determining suitability of these entities for TRS investment.

b. Second, TRS may delegate discretion, through Agency Agreements, to external managers who act as a TRS agent with respect to Total Fund assets and who are authorized to enter into specified contracts and commitments that will be legally binding on TRS. External managers are TRS fiduciaries.

   i. For external managers engaged pursuant to Agency Agreements, Investment Division must view the external manager as an extension of the internal Investment Division's investment management processes and must require external managers to comply with this Policy and applicable guidelines and law on the use of derivatives to the same extent as Investment Division. Guidelines for the scope and use of derivatives will be established on a case-by-case basis with each external manager in the applicable Agency Agreement. An external investment manager of publicly-traded investments engaged by TRS under an Agency Agreement may engage in derivatives transactions only if expressly authorized by, and the transactions are consistent with, the overall investment objectives and restrictions established in the Agency Agreement, this Policy, and applicable law. Each Agency Agreement must be consistent with applicable law, this Policy, and other TRS policies. An Agency Agreement may only authorize such uses of derivative instruments when the Investment Division reasonably concludes after due diligence that the external manager possesses the

experience, expertise, and qualifications to prudently use derivatives, and has appropriate operational, compliance, and risk management personnel, policies, and procedures to effectively monitor and control their use, including the use of leverage.

ii. Selection, engagement, and monitoring of external managers engaged through an Agency Agreement requires a clear understanding of the managers' uses of derivatives, particularly as it relates to various risk controls, compliance functions, and leverage. Investment Division will monitor risk exposures and leverage on both an individual entity and aggregate basis. The permitted uses of derivatives and leverage by each external manager must be fully documented in each Agency Agreement.

8.4. Derivatives Definition; Authorization

Derivatives are financial instruments the value of which are derived, in whole or part, from the value of any one or more underlying securities or assets, or index of securities or assets (such as a bonds, stocks, financial commodities, and currencies). For the purposes of this Policy, derivatives include, without limitation, futures contracts; options; options on futures contracts; forward contracts; swap agreements, including swap contracts with embedded options; any instrument or contract intended to manage transaction or currency exchange risk in purchasing, selling or holding investments; and any other instrument commonly used by institutional investors to manage institutional investment portfolios. Derivatives, for purposes of this policy, do not include currency forwards with a tenor of 30 days or less if such forwards do not require upfront amounts to be paid or received. Derivatives may be purchased through a national exchange or through a direct OTC arrangement with a counterparty.

Except as specifically provided in Article 5.2, this Policy does not apply to, or authorize, any use of derivatives underlain by physical commodities (unless such derivatives are cash-settled), single-asset real estate mortgages, or title to real estate or property affixed to real estate.

8.5. Derivatives Applications Permitted

Consistent with the objectives set out in Article 8.1, derivative applications may be used by Investment Division and external managers engaged through Agency Agreements to:

a. Implement investment strategies in a lower cost and efficient manner;

b. Efficiently manage the Total Fund portfolio by altering the portfolio's market (systematic) exposure in lieu of trading the underlying cash market securities through purchases or short sales, or both, of appropriate derivatives;

c. Construct portfolios with risk and return characteristics that could not be efficiently created with cash market securities consistently with the objectives in this Policy and in compliance with applicable law;

d. Hedge and control risks so that the Total Fund's risk-return profile is more closely aligned with the Total Fund's targeted risk-return profile through purchases or short sales, or both, of appropriate derivatives; and

e. Facilitate transition trading when holdings must be rebalanced or reallocated among permissible investments as a result of changes to applicable benchmark indexes or policy changes.

The only authorized uses of derivative transactions are efficient portfolio management and reduction of risk in portfolios and to implement investment strategies authorized by this Policy more effectively and at a lower cost than would be possible in the cash market. External managers may not engage in derivative applications that are inconsistent with the applicable Agency Agreement, this Policy and applicable law, unless specifically authorized by the TRS Board and the Agency Agreement has been amended accordingly.

8.6. Derivatives Applications Not Permitted

Derivatives may not be used for any activity a primary purpose of which is speculation or to profit while materially increasing risk to TRS. Derivatives are considered speculative if their uses have no material relation to objectives and strategies specified by this Policy or any related policies or resolutions of the Board, and their use is not reasonably and substantially intended to produce efficiency in portfolio management and reduce market, credit, or liquidity risks applicable to the portfolio. Derivatives may not be used for circumventing limitations or restrictions imposed by this Policy or applicable regulatory requirements.

Derivative applications may only be used to invest in asset classes that are consistent with TRS's legally permissible policy asset categories (including currencies), implementation strategies, and risk-return characteristics.

Except as specifically provided in Article 5.2, investments in derivatives underlain by physical commodities are prohibited unless such derivatives are cash-settled.

8.7. Derivatives Documentation and Controls

Prior to the implementation of a new internal derivative instrument type or application, Investment Division shall document the purpose, justification, baseline portfolio, derivative application portfolio, risks (including, at a minimum, market, modeling, pricing, liquidity, and legal risks), the expected increase or reduction in systematic and idiosyncratic risk resulting from the application, the amount of leverage employed under the strategy, the prudent reasons for employing leverage, and the procedures in place to monitor and manage the derivative exposure. The documentation will be approved by the CIO and reported to the IIC and the Board (or appropriate Board committee, as applicable) at their next regularly-scheduled quarterly meetings. The Investment Division shall adopt fully documented control procedures to properly account and value the Total Fund's exposure to each derivatives application, whether internal or external under an Agency Agreement. The Investment Division shall establish an appropriate risk management procedure to monitor compliance both internally and by external managers and will take corrective action if necessary. The Investment Division shall have due regard for operational risks associated with various derivatives strategies, including risk management, accounting systems, liquidity needs, adequate staffing, and staff qualifications.

8.8. Derivatives Limitations

Counterparty Risks: In order to limit the financial risks associated with derivative applications, guidelines for rigorous counterparty selection criteria and ISDA agreements shall be created by the Investment Division to reduce counterparty risk for over-the-counter ("OTC") derivatives. Any counterparty in an OTC derivative transaction with TRS must have a credit rating of at least A- (Standard & Poor's or Fitch) or A3 (Moody's). All OTC derivative transactions, including those managed through Agency Agreements, must be subject to established ISDA Master Agreements or, if centrally cleared, clearing agreements and have full documentation of all legal obligations of both parties to each transaction. All ISDA Master Agreements entered into by or on behalf of TRS by the Investment Division or an external manager engaged pursuant to an Agency Agreement (if applicable) shall provide for netting of obligations. The Investment Division and external managers may also use collateral arrangements to mitigate counterparty credit or performance risk. The net market value of all OTC derivative positions, including those managed through Agency Agreements, less collateral posted, for any individual counterparty may not exceed $500 million. The net market value of all OTC derivative positions for any individual counterparty, without consideration of collateral, may not exceed 5% of the total market value of the Fund. If these market-value limits are exceeded, the Investment Division will inform the CIO, Executive Director, and Chairman of the appropriate Board committee as soon as practicable and take appropriate corrective action within a 90-day period or develop a corrective action plan that will be presented to the Board at its next regularly scheduled meeting at which investment matters will be discussed following the initial 90-day corrective action period.

Global Risk Limitations: Notwithstanding other limitations in this Policy, transactions that would cause the aggregate risk exposure of the Total Fund, including externally-managed portfolios, to exceed the aggregate risk limits established by the current asset allocation policies of the Board are not permitted. On a Total Fund basis, the combined economic exposure introduced through both cash and derivative market positions is subject to the asset allocation ranges, risk limits, and other portfolio parameters described in this Policy.

Position Limits: For futures and options positions TRS will comply with all position and aggregate limits established by the applicable regulatory and legal organizations and authorities within each jurisdiction.

8.9. Derivatives Risk Management and Compliance

To ensure compliance with this Article 8, all internally- and externally-managed derivatives (other than derivatives held in Hedge Funds) must be marked to market on a daily basis by the Fund's external custodian(s), and such daily reports will be reviewed for accuracy by the TRS Risk Management staff and Investment Administration Center personnel. Compliance with the requirements of this Policy will be monitored by the TRS Investments Compliance Officer using information systems and data from internal and external sources. Any violations of this Article 8 will be reported immediately to the Executive Director and to the Chief Investment Officer, who will determine, if considered material as determined by Investments Compliance

Officer, Chief Investment Officer, and Executive Director, the appropriate remedy and report promptly to the Board (and the appropriate Board committee, as applicable).

ARTICLE 9 – RISK MANAGEMENT AND OVERSIGHT

9.1. Market Risk Management

The Investment Division will establish a framework for measuring enterprise-level risk for both the Total Fund Portfolio and the established benchmark, including any transition benchmarks employed during asset allocation shifts. At a minimum, this framework must include a quantified estimate of downside risk (e.g., value-at-risk ("VaR"), estimated shortfall, or various parametric and non-parametric statistics). The Investment Division will monitor the relative positioning of the Total Fund Portfolio vis-à-vis the benchmark no less frequently than monthly.

a. **Asset allocation limits** – In addition to the Total Fund Portfolio level risk limits, the portfolio will be constrained to the asset allocation percentages and ranges prescribed by this Policy. Accordingly, the total exposure to each asset class must be based on the individual exposures of each cash security and each outstanding derivative contract.

b. **Risk limit** – The Investment Division will model and monitor the Total Fund Portfolio and benchmark to ensure that the total estimated risk for the Public Markets portion of the Portfolio is within the upper and lower bounds corresponding to the maximum and minimum downside risk measures that could be achieved through the asset allocation limits in this Policy.

c. **Proxy securities and indices** –If necessary and prudent, the Investment Division will employ proxies to approximate the economic characteristics of actual investments if the terms and conditions of the actual investments or the underlying holdings are not readily available or where the complexity of the underlying investment renders a deterministic model impractical.

d. **Transition portfolio** – During portfolio transitions from or to private market investments in real estate, other real assets, or private equity, a transition benchmark may be employed that either explicitly creates placeholders for unfunded private investments or that treats the allocations to private market assets separately from the allocations to public market assets based on the funded portion of the Private Markets Portfolios. In either case, the risk statistics and limits will be applied relative to this transition benchmark.

e. **Private market assets holdings** – The Investment Division may include private investments in real estate, other real assets, and private equity in this analysis either by proxy or by actually modeling the terms and conditions of the underlying exposures; however, if the inclusion of these investments is deemed to distort the true risk characteristics of the portfolio, the Board may approve the use of an alternative methodology for analyzing the risk characteristics of those investments.

f. **Active risk limits** – In addition to the portfolio-level risk statistics described above, a target tracking error will be imposed on each asset class mandate whether implemented through internal or external managers or commingled funds. Additionally, a target tracking error will be imposed on the entire portfolio that takes into account both internally and externally managed portfolios and commingled funds as well as both asset allocation and security selection decisions. These limits are specified in Appendix A, attached hereto.

9.2. Foreign-Exchange Risk Management

The objective of the Foreign-Exchange ("F/X") policy is to effectively manage portfolio return volatility associated with foreign currency risk. F/X risk is the possibility of a negative currency return as a result of adverse movements in foreign exchange rates. The F/X policy sets forth a structure and implementation plan to determine the level of strategic currency risk that the Fund is willing to tolerate.

F/X Policy Structure

The "PHRs" are policy hedge ratios that will be separately applied to the Fund's public-markets and private-markets non-dollar exposures. PHR is the percentage of aggregate, non-dollar currency exposure to be passively hedged. The hedging horizon for the PHRs is intermediate (one to three years). The results of the PHR decisions will be presented to the Board (or the appropriate Board committee, as applicable) for approval by the Board and incorporated into the benchmark as prescribed in Appendix D.

From an implementation perspective, an F/X overlay manager would have responsibility for implementing the PHR decisions and would not exercise delegated investment discretion. The F/X overlay may be implemented internally or externally. If external, the non-discretionary F/X overlay manager would not fall under the definition of either an "external manager" or a Hedge Fund. A non-discretionary external F/X overlay manager would merely implement the investment decision that has already been made by the IIC.

9.3. Credit Risk Management

a. **Counterparty exposures** – The maximum allowable unsecured counterparty exposure for OTC derivative transactions is $500 million, based on the total net market value of all OTC positions held with each counterparty. The total counterparty exposure for each counterparty, including the collateralized portions of these agreements, may not exceed 5% of the market value of the Total Fund. The minimum credit rating, based on a nationally recognized statistical rating organization ("NRSRO"), must be at least A- or better at the inception of the contract. For any counterparty that experiences deterioration in credit quality that results in a NRSRO rating below the A- level, subsequent to the inception of transaction, additional eligible collateral may be posted, or the transaction may be terminated.

b. All OTC derivatives must be governed by an ISDA Master Agreement and Credit Support Annex or, if centrally cleared, by clearing agreements, and must include both close-out netting provisions and collateralization provisions.

c. **Repurchase agreements** – The counterparty limits for repurchase transactions and tri-party repurchase transactions may not exceed 5% of the market value of the Total Fund unless those transactions are covered by a third-party indemnification agreement by an organization that bears a long-term NRSRO credit rating of A- or better and is enhanced by acceptable collateral. Each repurchase agreement will be entered into under the PSA/ISMA Global Master Repurchase Agreement.

   Each ISDA Master Agreement must also include a table that delineates the excess purchased securities margin (haircut) required, based on the collateral type, duration, and credit quality.

d. **Securities lending** – When securities lending activity is performed by an external, third party lending agent, Investment Division will examine the credit underwriting practices of the lending agent, including enforcement of collateral requirements, counterparty analysis, and surveillance. Additionally, Investment Division will periodically review the securities lending lines by counterparty. A securities lending agent must be an organization rated A- or better by a NRSRO. More detailed information about TRS securities lending activities is specified in the separate Securities Lending Policy.

9.4. Liquidity Risk Management

The objective of the Liquidity Risk Management policy is to ensure that the Fund maintains ample liquidity to meet its funding commitments. The two kinds of commitments which necessitate a prudent liquidity policy are:

a. Disbursements of benefits and related obligations to plan participants, including retirement, death, health, and disability benefits payments.
b. TRS investment activities: These are mainly associated with risk management and funding of external managers. Some examples include:
   i. TRS engages in derivatives to efficiently manage and reduce risk of the overall investment portfolio. Use of these instruments requires liquidity for collateral, margin and payment obligations at the time of a reset, call or maturity;
   ii. TRS funds accounts managed by public markets external managers; and
   iii. TRS manages unfunded capital commitments that the Fund is legally obligated to fund when called by private equity or real asset general partners.

External Funding Authority

The Investment Division is authorized to establish external funding mechanisms (such as master repurchase agreements with one or more counterparties) and the flexibility to operate in all types of market liquidity environments to allow prudent management of these commitments while achieving a long-term rate of return and adhering to the asset allocation limits outlined in this Policy. In addition to these external funding mechanisms, TRS will maintain adequate funds in its custodial account to cover investment-related obligations. Finally, the Board authorizes the Investment Division to access the cash holdings backing the OTC swaps to manage its commitments.

Limitations Applicable to External Funding Authority

Liquidity provided from these external funding mechanisms may not exceed 2% of the market value of the Total Fund. The expectation is that the liquidity funded through external funding mechanisms will be short-term (less than 30 days). The Investment Division must seek approval from the CIO for extended use of external funding sources. The Investment Division shall report such approvals for extended use to the Board not later than the next regular quarterly meeting.

9.5. Operations Risk Management

a. **Overdrafts** – The Investment Division will monitor the frequency and costs associated with all overdraft activity.

b. **Custodial Bank(s)** – The Investment Division will conduct on-site due diligence to review the operational controls set in place by all custodial banks. The Investment Division will also consider the extent of remedies provided by the custodian and its overall ability to fulfill its commitments should operational failures occur.

9.6. Settlement Risk Management

The Investment Division will monitor unsettled trade activity by counterparty and instrument type.

9.7. Legal Risk Management

Legal documentation for all accounts, investment subscriptions, external managers, investments in private investment funds (private equity, real assets, and Hedge Funds), and derivatives will be reviewed, negotiated and approved for TRS execution by internal or external legal counsel, or both. The Investment Division, in consultation with Legal Services, will exercise diligence to ensure that all contracts are legally binding and enforceable in a suitable venue. The Investment Division will seek the assistance, review, and advice of legal counsel whenever it is prudent to do so. The General Counsel and the Legal Services Department have primary responsibility for the engagement of outside legal counsel for investment matters, subject to applicable statutes and rules adopted by the Office of the Attorney General.

9.8. Risk Management Compliance Cure Periods and Remedies

a. **Passive violations** – A passive violation occurs when the portfolio breaches a prescribed policy limit as the result of changing market or credit conditions. The Investment Division will report the violation to the Board and will remedy the violation within 90 days of the violation or prepare a written action plan that must be approved by Board resolution to extend the cure period beyond 90 days.

b. **Active violation**s – An active violation is caused by entering into an agreement or investment that breaches a policy limit at inception or thereafter through failure to monitor. In this case, a thorough analysis of controls will ensue and be reported to the Chief Investment Officer, the Executive Director and the Chairman of the appropriate Board committee, as soon as practical, and to the full Board at its next regularly scheduled meeting at which investment matters will be discussed. The Investment Division will seek to remedy the violation when possible. In instances where the costs of immediate remedies are prohibitive, the Investment Division will develop a corrective action plan that will be submitted to the CIO within a reasonable time after the violation occurs, not to exceed 15 days, depending on the nature and complexity of the investment holding and transactions needed to remedy the violation. The Board will be apprised of the violation at its next regularly scheduled meeting along with the corrective action plan.

9.9. Permitted Uses of Leverage

The Investment Division is authorized to use the following types of leverage:

a. Derivative strategies in accordance with the risk parameters established by the asset allocation ranges of this Policy and applicable legal restrictions;
b. Short sales in accordance with this Policy;
c. F/X hedging in accordance with this Policy;
d. Embedded leverage within the Total Fund's limited partnership investments; and
e. Collateralized fundings including securities lending activities, pledges, repurchase and reverse repurchase agreements and other external funding mechanisms.

Leverage will not be used to exceed the risk parameters established by the asset allocation ranges of this Policy.

ARTICLE 10 – HEALTH INSURANCE PROGRAM PORTFOLIO

10.1 Health Insurance Program Portfolio Objective

The primary objective of the Health Insurance Program Portfolio is to preserve capital through investment in conservative, short-term securities.

10.2 Authorized Investments for the Health Insurance Program Portfolio

Section 404.024, Government Code describes the Authorized Investments employed by the comptroller when he or she invests state funds. The Investment Division shall employ this list of Authorized Investments when the Investment Division invests the Health Insurance Program Portfolio.

ARTICLE 11 -- POLITICAL CONTRIBUTIONS; IMPROPER INFLUENCE; PLACEMENT AGENTS AND FINDERS

11.1 Scope

This policy applies to all TRS investment transactions in which a placement agent or finder is or may be involved, including new agreements (including follow-on and co-investments), extension of existing agreements, increase in funding or capital commitment to an existing relationship or fund, or an amendment that increases management fees or compensation under an agreement.

This policy also applies to attempts to influence TRS investment decisions through contacts with TRS trustees, or contacts with, or political contributions made for the benefit of, one or more Texas Elected Officials, and also applies to contacts with persons employed by any such official.

If any provision of this policy conflicts with a provision of another policy adopted by the TRS board, the stricter provision shall apply.

11.2 Purpose

The purpose of this policy is to ensure the integrity of all TRS investment transactions and conformity with the highest fiduciary, ethical, and legal standards by all parties involved. All investment decisions made by the Board and the Investment Division and must be based solely on the merits in conformity with fiduciary standards and applicable law. All investment recommendations made by consultants and advisers must be based solely on the merits after the necessary due diligence. All investment decisions and recommendations must be free of impropriety or improper influence and the appearance of either.

11.3 Philosophy

The Board desires that the Investment Division obtain full disclosure of all matters having the potential to harm TRS's reputation or the integrity of TRS's investment processes, or that could constitute unethical or unlawful conduct during the investment due diligence process.

11.4 Required Disclosures

At a minimum, all external Fund or Manager Parties shall provide detailed written responses to the questionnaire attached hereto as Appendix F as early as reasonably possible in the due diligence process for a TRS investment transaction. The Executive Director is authorized to approve such revisions to Appendix F from time to time as he deems to be in the best interest of TRS and consistent with this policy.

In addition, all Fund or Manager Parties shall provide a detailed description of the services to be performed by the Placement Agent and how the Placement Agent is used (e.g., with all prospects, or only with a subset of prospects). The Investment Division shall obtain a copy or summary of the terms of an agreement to compensate a Placement Agent for the due diligence file. The Investment Division shall provide all prospective Fund or Manager Parties with a copy of this policy upon commencement of due diligence.

11.5 Contractual Representations, Warranties and Covenants

Each Fund or Manager Party shall represent and warrant to TRS in the executed closing documents for the transaction that its responses to Appendix F to this policy and any supplemental inquiries are true, correct, and complete in all material respects, and shall also covenant to update any such information within 10 business days of any change in the information in the responses.

In addition, each Placement Agent shall fully disclose the terms of its arrangements with a Fund or Manager Party for payment of a Placement Fee and any political contributions by the Placement Agent to any Texas Elected Officials, and shall certify as to the matters addressed in Appendix F, as applicable, to TRS in a writing executed by an authorized officer that the disclosures required by this policy are true and complete in all material respects.

Each final investment agreement shall provide TRS with the option to receive a reimbursement of management or advisory fees equal to the amount of Placement Fees to be paid to any and all Placement Agents, and, in addition and not in the alternative, the right to terminate the management agreement or withdraw without penalty from the fund investment vehicle or vehicles if any certificates or contractual representations, warranties or covenants relating to this policy have been breached.

11.6 Prohibitions

Neither TRS nor any TRS investment shall be burdened with or liable for any Placement Fee. No TRS investment may be made if the transaction involves either (a) a Placement Agent who is not registered with either of the Securities and Exchange Commission or the Financial Industry Regulatory Authority ("FINRA"), or (b) the sharing of a Placement Fee with a non-registered person or entity. No TRS investment may be made if an authorized officer or the board, in consultation with legal counsel, determines that a disclosed contact with a TRS board member or Texas Elected Official, or a contribution to a Texas Elected Official, has created an unacceptable risk to the integrity and reputation of the TRS investment program or has been made in violation of a TRS policy or applicable law. A contact-based referral, without more, by a trustee of either an investment opportunity or a Manager or Fund Party contact to the Executive Director, Chief Investment Officer, or Deputy Chief Investment Officer does not constitute such a risk or a violation of this policy.

11.7 Definitions

Affiliate – means a person or entity controlled by or under common control with another person or entity.

Fund or Manager Party – includes, (a) as to a private investment fund, a fund sponsor, the general partner, managing member, or its equivalent with respect to a fund, fund sponsor, or fund management firm, (b) as to an external, separate account investment manager, the asset management entity and the parent of such asset management entity, and (c) as to (a) and (b), any Affiliate, principal, owner, officer, shareholder, director, managing member, or employee having authority to act on behalf of such fund or firm.

Placement Agent – includes any third party, whether or not affiliated with a Fund or Manager Party, that is a party to an agreement or arrangement (whether oral or written) with a Fund or Manager Party for the direct or indirect payment of a Placement Fee in connection with a TRS investment. Any other person or entity who claims a Placement Fee or who by agreement with a Placement Agent will share in a Placement Agent's Placement Fee is deemed to be a Placement Agent whether or not the person or entity is an Affiliate, principal, owner, officer, shareholder, director, managing member, or employee of a Placement Agent. A "finder" is a Placement Agent.

Placement Fee – includes any compensation or payment, directly or indirectly, of a commission, finder's fee, or any other consideration or benefit to be paid to a Placement Agent.

Relative – means a spouse (including an ex-spouse), parent, child (including adopted), sibling, niece, nephew, aunt, or uncle.

Texas Elected Official – includes any elected official of the State of Texas, including but not limited to the governor, lieutenant governor, comptroller of public accounts, attorney general, and any member of the Texas Legislature, and also includes a campaign fund or political action committee, or PAC for an elected official, and any Relative of a Texas elected official.

TRS Person – means any person listed on Exhibit A attached to Appendix F to this Policy or to any other due diligence document, and includes without limitation any current or former TRS board member, Executive Director, Deputy Director, Chief Financial Officer, Investment Division or Legal Services employee, any investment consultant or actuary, any outside counsel engaged by TRS, and any Relative of a TRS Person, whether or not listed on an Exhibit A, TRS Persons.

APPENDIX A - TRACKING ERROR NEUTRAL (IN ANNUALIZED BASIS POINTS)[1]

Internal	Neutral
Equity (Global Best)	100
External	
Equity (US; Large-Cap)	300
Equity (US; Small-Cap)	500
Equity (International; Developed, EAFE)	300
Equity (International; Emerging Markets)	300
Equity (World Equity)	300
Stable Value Hedge Funds	400
Directional Hedge Funds	600

	Neutral	Maximum
Total Global Inflation Linked		200
Total Public Fund Tracking Error	100	300

[1] Tracking error will be measured on a realized basis over a three year period.

APPENDIX B - IIC APPROVAL AUTHORITY AND MANAGER ORGANIZATION ALLOCATION LIMITS

Allocations to a single manager organization may only exceed the limits specified in this Appendix B with the prior authorization of the Board.

Article Affected	Portfolio	Initial Allocation or Commitment with Manager Organization, by Portfolio	Additional or Follow-On Allocation or Commitment with the same Manager Organization, by Portfolio	Total Manager Organization Limits, by Portfolio
2.7	External Public Markets Portfolio	0.5%	1%	3%
4.2	Private Equity Portfolio	0.5%	1%	3%
5.2	Real Assets Portfolio	0.5%	1%	3%
	Total IIC Approval Authority, each Manager Organization			6%

All allocation or commitment limits are expressed as a percentage of the Total Fund value and are to be calculated as of the date the applicable investment agreements are executed.

"Affiliate" means any person directly or indirectly controlling, controlled by, or under common control with, another person. A "manager organization" includes its Affiliates without regard to the names of the entities.

The percentage limit for additional or follow-on allocations or commitments applies to each additional or follow-on allocation or commitment by a listed portfolio to a manager organization and is in addition to, and not cumulative of, the limit specified for initial allocations or commitments. By way of example, if a portfolio initially allocates 0.2% of the Total Fund to a manager organization, the portfolio may thereafter allocate or commit up to 1.0% in a single additional or follow-on allocation or commitment to the same manager organization for a total of 1.2% allocated or committed to the same manager organization (0.2%+1.0%). If a portfolio initially allocates 0.2%, then makes an additional allocation or commitment of 0.8%, and desires to make a further additional or follow-on allocation to the same manager organization, the applicable limit for the further additional or follow-on allocation is 1.0% of the Total Fund, for a total of 2.0% allocated or committed to the manager organization (0.2%+0.8%+1.0%). All investments occurring in the six months prior to the follow-on investment, co-investment or additional investment shall be included in the calculation of the percentage limits. If the initial investment occurred less than six months prior to the current investment, the initial allocation limit of 0.5% rather than the follow-on allocation limit of 1.0% will apply.

In calculating the available limits, returned capital is excluded from the sum of existing total allocations or commitments. Committed capital is included during the applicable investment period of a fund without regard to whether the commitment amount is funded or unfunded or the fund is open-ended. After the investment period, committed but unfunded capital is not included in the calculation of outstanding commitments for the purposes of this Appendix B. Capital that has been returned but that is subject to recall by a private investment fund is considered to be committed or allocated for the purposes of the limits in this Appendix B.

Authority for Special Investment Opportunities. Notwithstanding the limits set forth in this Appendix B, the CIO may designate an investment opportunity as a "Special Investment Opportunity" if the circumstances indicate a reasonable probability that a rapid investment response will be required in order for TRS to acquire the investment in excess of the limits on Investment Division authority set forth in this Appendix B. Circumstances requiring a rapid response may include, but are not limited to, distressed situations or market dislocations creating opportunities to acquire interests or assets at pricing that indicates a reasonable probability that the interests or assets are undervalued or will increase in value. The CIO shall notify the Executive Director as promptly as possible of the Special Investment Opportunity. The CIO and the Executive Director shall consult with the Chairman of the Board and the Chairman of the Investment Management Committee and determine if it is not practicable to present the opportunity for consideration by the Board. If the opportunity will not be added to an agenda, and the CIO and the Executive Director conclude that the investment would be in the best interests of TRS, the CIO and the Executive Director may authorize and conclude an investment up to $1 billion in that Special Investment Opportunity.

After one investment in a Special Investment Opportunity has been made, no further investment in a Special Investment Opportunity may be made until the Board has reauthorized the CIO's authority to designate a Special Investment Opportunity. Such reauthorization shall renew the CIO's and the Executive Director's authority to invest up to $1 billion in a Special Investment Opportunity under this provision.

APPENDIX C – EMERGING MANAGERS

Articles Affected:	Portfolio	Target Allocation (in millions)
2.7	External Public Markets Portfolio[1]	250
4.2	Private Equity Portfolio[1,2]	950
5.2	Real Assets Portfolio[1,2]	450
	Total	1,650

[1] The CIO may increase or decrease each portfolio Target Allocation by $200 million; provided, the total Target Allocation must remain unchanged as a result of such increase or decrease.

[2] Target Allocation based on commitments.

APPENDIX D – POLICY HEDGE RATIOS

Portfolio	PHRs
Public Markets Portfolios	0%
Private Markets Portfolios	0%

APPENDIX E – AUTHORITY RESOLUTION (TRS 477)

[SPECIAL NOTE: Appendix E will be revised to reflect changes separately adopted by the Board (if any) at its September 2012 meeting.]

Board of Trustees

Adopted August 13, 2010

A. Investment Group

Resolved, That employees holding the following TRS working titles are members of the **"Investment Group"**:

Chief Investment Officer	**Deputy Chief Investment Officer**
Senior Managing Director	**Managing Director**
Senior Director	**Director**
Senior Investment Manager	**Investment Manager**

Further, That the Executive Director is authorized and directed to designate those individual employees who are members of the **Investment Group** authorized to take any one or more of the following actions listed below with respect to investment matters as specified in writing by the Executive Director, at least annually or as he deems necessary from time to time:

General Authority for Investment Matters

1. Acquire, modify, and sell investments and negotiate, fix, execute, amend, modify, renew, extend, terminate, certify, and endorse contracts and agreements for portfolio investment transactions, including without limitation trading authorizations, subscription agreements, tax forms, investment contracts, investment vehicle entity agreements, investment management agreements, license agreements, brokerage or margin account agreements, securities or commodities exchange documents, and agreements and documents relating to trading operations.

2. Give directions and instructions to external managers, and to amend, modify, fix, and execute investment guidelines in investment management agreements.

3. Negotiate, fix, execute, amend, modify, renew, extend, transfer, assign, terminate, certify, and endorse the following: amendments; notes; powers of attorney; indentures; deeds; conveyances; certificates; instruments of transfer or assignment; instruments or agreements evidencing, releasing, or creating liens, mortgages, or security interests; and all other instruments and agreements, sealed or unsealed, attested or unattested, relating to TRS investments.

4. Waive, modify, or amend specific provisions of an investment contract or management agreement, if the waiver, modification or amendment is deemed by the employee to be in the best interest of TRS.

Over-the-Counter Derivatives Contracts

5. Negotiate, fix, execute, amend, modify, renew, extend, transfer, assign, terminate, endorse, and terminate master agreements for over-the-counter derivatives transactions and any schedules or credit support annexes relating to such agreements, and any deliverables relating to such agreements, schedules, or annexes.

6. Waive, modify, or amend specific provisions of over-the-counter master agreements for derivatives transactions, and any transaction confirmations under such agreements, if the waiver, modification or amendment is deemed by the employee to be in the best interest of TRS.

7. Negotiate, fix, execute, amend, modify, renew, extend, transfer, assign, endorse, or terminate transactions entered into under master agreements for over-the-counter derivatives transactions, including without limitation confirmations of transactions.

Transfers of Funds or Assets; Fund or Account Redemptions and Withdrawals

8. Authorize and instruct TRS employees, brokers or custodians to transfer funds or assets in connection with TRS investment transactions or commitments of capital or to or from managed investment accounts, investment funds, and custodians of TRS assets.

9. Authorize and instruct TRS employees, brokers, and custodians to deliver cash, securities or other assets as collateral or margin in accordance with regulatory, account, or contractual requirements, including without limitation credit support annexes or agreements relating to over-the-counter derivatives transactions.

10. Execute redemption or withdrawal notices for private investment funds and managed investment accounts and, when required by applicable policies and procedures, not solely but jointly with a member of the Financial Group.

B. Financial Group

Further, That employees holding the following TRS working titles are members of the **"Financial Group"**:

Chief Financial Officer	**Manager of Investment Accounting**
Manager of General Accounting	**Team Leader of Investment Accounting**
Team Leader of Financial Reporting	**Team Leader of Budgeting**

Further, That each employee in the **Financial Group** is authorized and empowered on behalf of TRS to deliver or otherwise transfer cash, securities, collateral, or contracts, and to execute affidavits, certificates and powers of attorney required to transfer, redeem, or exchange securities, collateral, or contracts.

Further, That each employee in the **Financial Group** is authorized and empowered on behalf of TRS, not solely but jointly with an employee in the **Investment Group** or the **Executive Group**, to execute fund or account redemption and withdrawal notices and related documents.

Further, That each employee in the **Financial Group** is authorized and empowered on behalf of TRS to instruct TRS custodians to deliver securities, collateral, contracts, or cash to fund margin or collateral requirements, clear and settle securities trades, fund capital called or subscribed for investment under an investment contract, and to exchange securities, collateral, contracts, or cash for other securities, collateral, contracts, or cash, in accordance with internal procedures.

C. Executive Group

Further, That the **Executive Group** is comprised of employees holding the TRS working titles of Executive Director and Deputy Director, and each employee in the **Executive Group** is authorized and empowered to perform, with respect to a particular transaction, any of the acts that employees in the **Investment Group** or the **Financial Group** are authorized to perform; *provided*, however, that when joint action by a member of the **Investment Group** and a member of the **Financial Group** is required by applicable policies and procedures, only one member of the **Executive Group** may act jointly with a member of either of the **Investment Group** or the **Financial Group**.

D. Trading Group

Further, That the **"Trading Group"** is comprised of the employees holding the following TRS working titles: Director – Trading Center, and Trader**,** and each employee in the **Trading Group** is authorized and empowered on behalf of TRS to take the following actions: to place orders or agree with brokers, dealers and market-makers to purchase or sell securities, futures or forward contracts, options, or currency; to monitor and supervise execution and settlement of such orders or agreements; and to negotiate, fix, and vary the commissions, spreads, or discounts for individual orders or agreements to purchase or sell securities, futures or forward contracts, options, or currency.

Further, That the TRS employee groups described in this resolution are identified as such only for the purposes of this resolution and not for any other purpose unless the Board or the Executive Director, as authorized, expressly so provides.

APPENDIX F – POLITICAL CONTRIBUTIONS; IMPROPER INFLUENCE; PLACEMENT AGENTS AND FINDERS QUESTIONNAIRE

Fund or Manager Name: _____

Completed by: _____

Date submitted: _____

Note: TRS may require completion of a new questionnaire or updating of responses at any time, including as of the closing date for any transaction investment or additional funding.

A) Contacts with State Officials; Political Contributions. Has any person lobbied, communicated with, or made political contributions during the past three years on behalf of the Fund or Manager Party to a Texas Elected Official in connection with a prospective investment transaction with a Texas state investment entity, including TRS?

1) If the answer is "yes," please provide a complete list of the name(s) of the entities and individual(s) involved, the approximate dates of the contributions, the amounts of the contributions, a summary of the contacts or communications, and the nature of the discussion in regards to the investment with any Texas state investment entity, including TRS.

B) Contacts with TRS Board Members. Has any person lobbied or otherwise communicated on behalf of the Fund or Manager Party with a current or former member of the TRS Board of Trustees during the past two years for the purpose of asking the current or former member to seek to influence a decision by the TRS investment staff or a TRS advisor or consultant to recommend that TRS invest?

1) If the answer is "yes," please provide a complete listing of the name(s) of the entities and individual(s) involved, the approximate dates of the contacts or communications, and the nature of the discussion in regards to this investment.

C) Placement Agents and Placement Fees. Is or was the Fund or Manager Party a party to any agreement or arrangement (whether oral or written) to pay a Placement Fee to or for the benefit of any Placement Agent in connection with TRS's prospective investment in a fund or engagement of an external manager?

1) If the answer to C) is "yes," please provide a copy of the written agreement or agreements creating the obligation to pay a Placement Fee. If the agreement is not written, please provide a written summary of the agreement. Additionally, please state the amount of the Placement Fee (or the formula for its determination if the amount is not yet determined) and the date of its payment or anticipated payment.

2) If the answer is "yes," please list the name(s) of the person or entity. If the party to the agreement is an entity, please also list the names of the principal owners, officers, directors, or managing members of the Placement Agent and provide a resume for each such person.

3) If the answer is "yes," state whether the Placement Agent, or any of its Affiliates, is registered as a lobbyist with any state government or the federal government and identify the registrants and the applicable jurisdictions where registered.

4) Will or did any TRS Person or any Relative of a TRS Person receive, has any such person received, or might any such person receive, any compensation or payment, directly or indirectly, of a commission, finder's fee, or any other consideration or benefit to be paid to a Placement Agent (a "Placement Fee") in connection with TRS's investment? If the answer is "yes," please list the name or names of the TRS Person or Relative of a TRS Person and provide details about the terms of the Placement Fee.

5) Will or did any Texas Elected Official or a Relative of a Texas Elected Official receive a Placement Fee in connection with TRS's investment? If the answer is "yes," please list the name or names of the official and provide details about the terms of the Placement Fee, including the amounts and timing of payments.

6) Did (or will) any third party person or entity who is not employed or otherwise affiliated with a Placement Agent, including a current or former TRS Person, either (a) recommend the Placement Agent or (b) receive a share of a

Placement fee or any other economic benefit in connection with TRS's investment, whether directly or indirectly through a Placement Agent engaged by you?

7) If the answer to 6) is "yes," please list the name of the person or entity, the relationship of the person or entity to the Placement Agent and your firm, and provide a description of the arrangement and the reason for the payment.

8) State whether the Placement Agent or any of its Affiliates is registered as an investment advisor with the Securities and Exchange Commission or the Financial Industry Regulatory Association, or a similar agency outside the United States. Provide details about registration or explain why registration is not required.

The undersigned certifies, represents and warrants on behalf of the Fund or Manager Party that, to the best of its knowledge after due inquiry, (a) the foregoing responses to this questionnaire are complete, true, and correct and do not omit any statement or fact necessary to make any statement made not misleading in any material respect, and (b) no prior statements or representations, if any, whether oral or written, made on behalf of the Fund or Manager Party relating to the subject matter of this questionnaire in connection with TRS's due diligence inquiries, a prospective investment management agreement, or a subscription to the Fund, as the case may be, including any side letter agreements, were untrue or misleading in any material respect when they were made.

[signature block for Fund or Manager Party]

Date: _____

Attachment: Exhibit A, TRS Persons

September 13 – 14, 2012
Board of Trustees

Item 6.A, Board Agenda

Resolved, That the Board of Trustees (the "Board") hereby adopts the revised Investment Policy Statement as presented to and recommended for adoption by the Policy Committee, effective as of October 1, 2012;

Resolved, That the revised Investment Policy Statement as adopted above supersedes all prior versions of the Board's Investment Policy Statement.

Tab 6 B.

Memorandum

To: Board of Trustees; Policy Committee of the Board

From: Sylvia Bell, Dennis Gold, Scot Leith

Date: September 6, 2012

Subject: TRS 477 – General Authority Resolution

Based on comments received, we have revised the draft TRS 477 sent to you previously. The revisions are extensive and this draft supersedes the previous version in its entirety.

These latest revisions address the concern that the numbers of Investment Division employees authorized to act with respect to contracts or other matters should, when possible, be limited to a subgroup of the Investment Group (as defined in the TRS 477). This newest draft breaks out various levels of authority to provide maximum flexibility to designate limited numbers of employees authorized for each level, generally based on the seniority of their TRS working titles. In addition, an individual employee's delegated authority need not correspond exactly to that of another employee even if both employees hold the same working title.

- **Item 2** is a presentation describing the processes relating to authority in the TRS 477.
- **Item 3** is a comparison of the current draft to the prior draft
- **Item 4** is a clean draft of the revised TRS 477 with a few explanatory comments.
- **Item 5** compares this revised draft to the adopted version.
- **Item 6** is a sample designation map of incumbency and authority for individual employees.

We look forward to discussing this revised draft with you at the meeting next week.

General Authority Resolution (TRS 477)

Sylvia Bell, Director of Investment Operations
Dennis Gold, Assistant General Counsel
Scot Leith, Director of Investment Accounting
September 2012

Introduction to General Authority Resolution

- Purpose
  - Provides evidence of staff's authority for trading and settlement to broker and clearing community
  - Evidences actual authority of TRS signatories who sign investment contracts and related documents (e.g. private equity, real assets, hedge funds, investment management agreements)
  - Provides for proper segregation of authority for certain actions at TRS
  - Identifies TRS groups that have actual authority to outside parties:
    - Investment Group (designated by investment area)
    - Derivatives team (as a specially designated subgroup of the Investment Group)
    - Financial Group
    - Executive Group
    - Trading Group

TRS

Authority Granted by the TRS 477

- Funding Requests
  - Private Market Capital Calls
  - Public Market Manager Fundings
  - External Manager Fee Payments
- Exchange traded security transactions
- Withdrawal or Redemption Requests
  - Hedge Fund redemptions
  - IMA withdrawals
- Over-The-Counter transactions
- Execution of investment contracts and subscription agreements

TRS

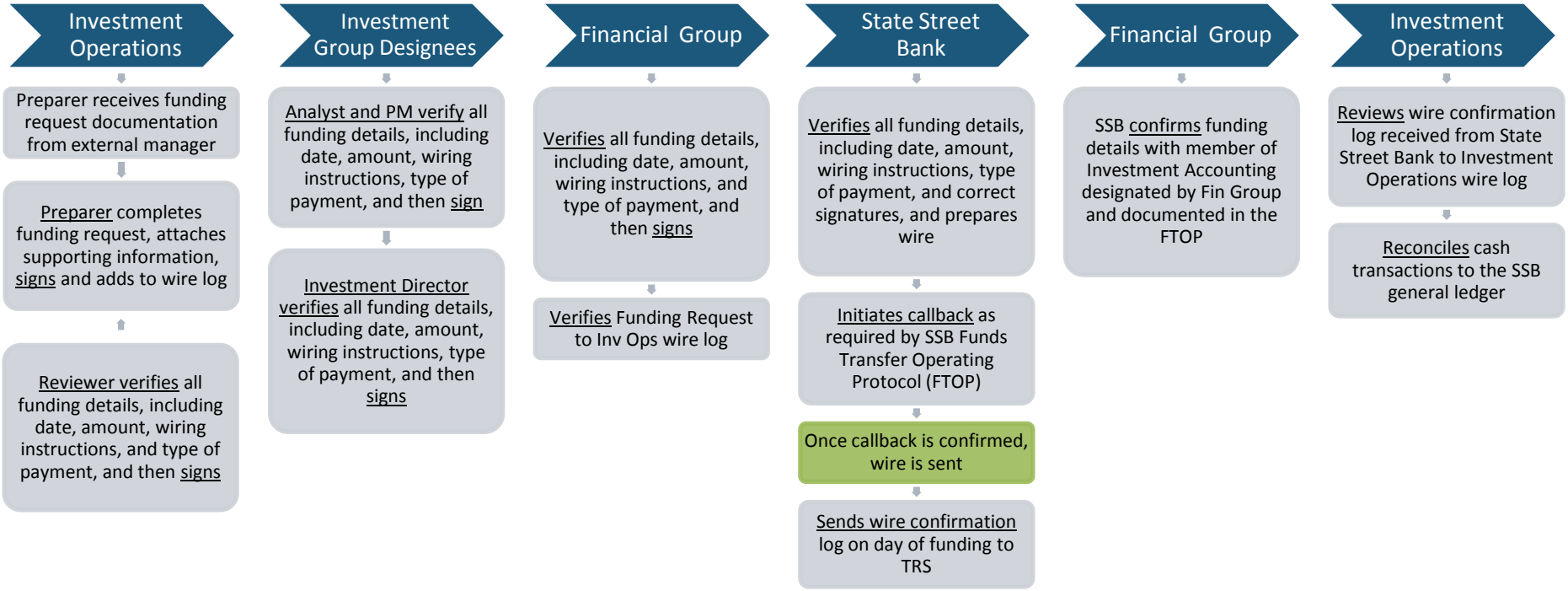
Introduction to General Authority Resolution

Proposed update to TRS 477 accomplishes the following:

- Conforms language to the current process and procedures
- Clarifies the distribution and redundancy of authority for trading, contracting or transferring and receiving assets
- Separates more clearly the authority for derivatives from other authority granted (whether exchange traded or over-the-counter)

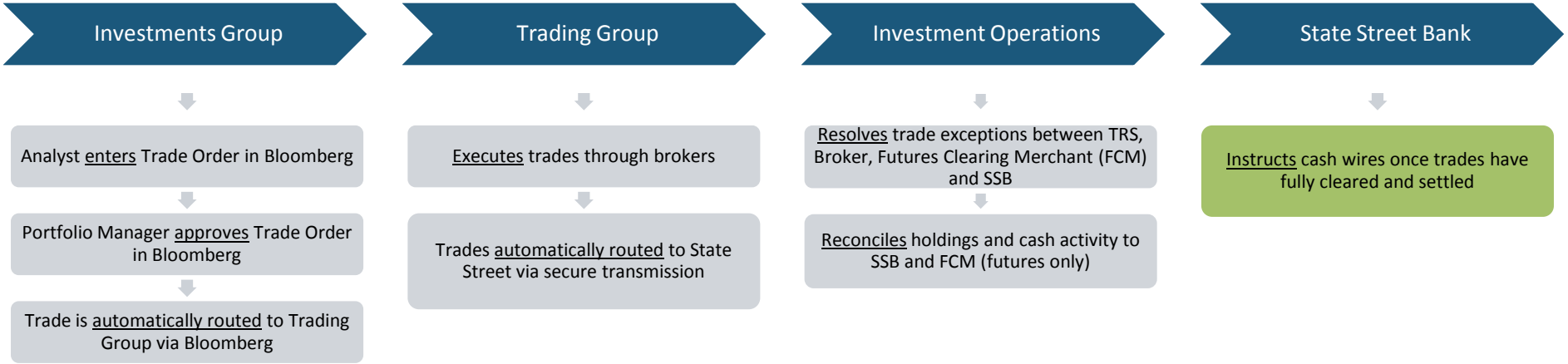
TRS

Funding Request Process - Cash

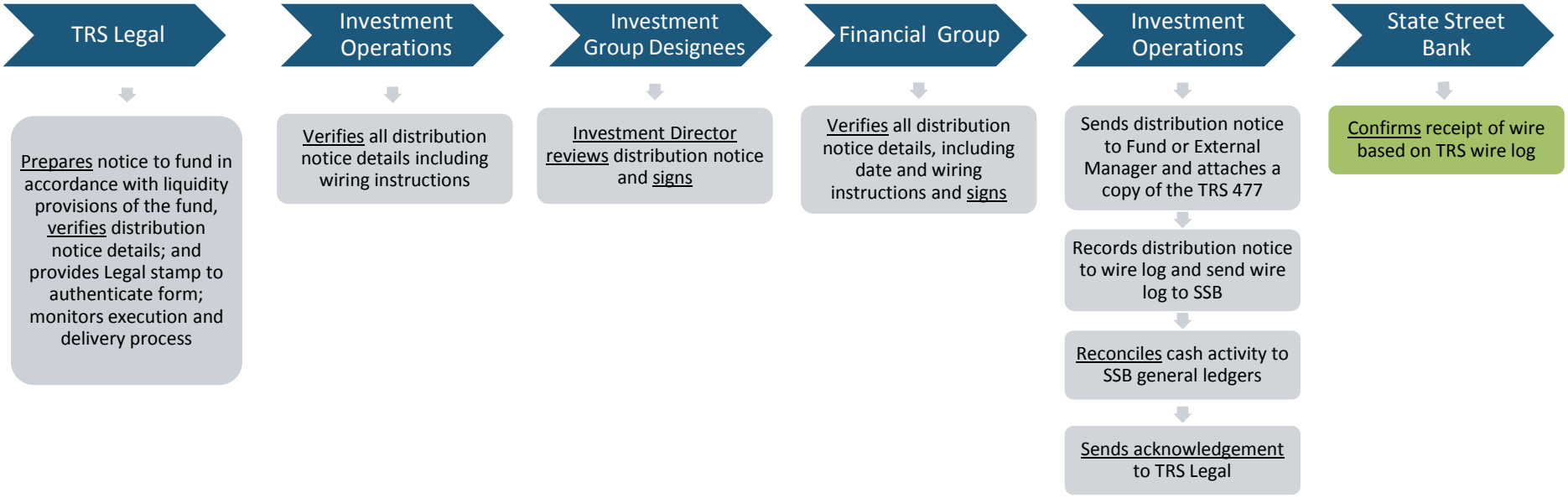


TRS

Exchange-Traded Transactions



Withdrawal or Redemption Process - Cash



Over-The-Counter Transactions

Investment Group Designees

- Portfolio Manager negotiates trade with Counterparty – reviews new terms with TRS Legal
- Portfolio Manager approves and signs Trade Instruction and sends to Investment Operations

Investment Operations

- Confirms Trade Instruction details against Counterparty confirmations
- Trade Instruction sent to SSB via secure fax
- When cash settlement occurs, Investment Operations prepares a Cash Movement Letter, obtains Investment Group signature, attaches supporting information, adds to wire log, sends documents to Financial Group
- Reconciles holdings and cash activity to SSB

Financial Group

- Reviews and signs Cash Movement Letter
- Cash Movement Letter sent to SSB via secure fax
- SSB confirms funding details with member of Investment Accounting designated by Fin Group and documented in the FTOP

State Street Bank

- Processes Trades into SSB record keeping system
- Instructs and prepares wire based on Cash Movement Letter
- Initiates callback to Investment Accounting as required by SSB Funds Transfer Operating Protocol (FTOP)
- Once call back is confirmed, wire is sent
- Reconciles cash balances to SSB accounting and custody

TRS

Board of Trustees

General Authority Resolutions Adopted [~~_____~~September , 2012]

~~A.~~ Investment Group

Resolved, That Investment Division employees holding the following TRS working titles are members of the **"Investment Group"**:

Chief Investment Officer	**Deputy Chief Investment Officer**
Senior Managing Director	**Managing Director**
Senior Director	**Director**
Senior Investment Manager	~~**Investment Manager**~~

Resolved further, That the Executive Director is authorized and directed to designate in writing those individual members of the **Investment Group** who are authorized within ~~their respective teams~~**the investment areas designated by the Executive Director**, in addition to the Chief Investment Officer and the Deputy Chief Investment Officer, to take any one or more of the following actions authorized below **in accordance with these resolutions** until the authority is revoked.

Resolved further, **That the Executive Director is authorized and directed to designate in writing, by investment area and category or item designation, the specific authorities granted to each authorized member of the Investment Group, until the authority is revoked.**

A. General Authority for Investment Matters other than Derivatives

Resolved further, That the Chief Investment Officer, Deputy Chief Investment Officer, and any other member of the **Investment Group** designated by the Executive Director ~~may, on behalf of TRS~~**as having such authority, in addition to any other authority expressly designated by the Executive Director under these resolutions, may act on behalf of TRS to**:

~~A.1.~~**A.1** Buy, sell, or give orders **or instructions** for transactions in currencies and securities~~;~~**, and any amendments or modifications of such orders or instructions.**

A.2 Direct Investment Operations personnel~~,~~ to deliver, pay, expend, or receive **cash,** currencies, monies, securities (including restricted or Rule 144A securities~~),~~**) in connection with a contract to buy or sell securities.**

A.3 **Give directions and instructions to members of the Trading Group or external managers relating to execution, brokerage, clearing or settlement of securities transactions.**

A.4 **Direct Investment Operations personnel to fund subscribed investment funds or capital called by investment funds; transfer funds or assets between custodial accounts,** including ~~such instruments used~~**external manager separate accounts; transfer funds to pay fees under an investment contract; and to instruct other cash movements, including movements of cash to and from custodial accounts held by the Comptroller of Public Accounts and transfers of assets in kind for investment under an investment contract.**

Notwithstanding any provision of this Section A, authority granted under this Section A does not extend to transactions in derivatives, which are governed exclusively by Section C of these resolutions.

B. Investment Contracting Authority other than Derivatives

~~A.2.~~***Resolved further,*** **That the Chief Investment Officer, Deputy Chief Investment Officer, and any other member of the Investment Group designated by the Executive Director** as ~~collateral or margin;~~**having such authority, in addition to any other authority expressly designated by the Executive Director under these resolutions, may act on behalf of TRS to:**

~~A.3.~~**B.1** Make, execute, and deliver ~~any and all~~ investment-related documents ~~necessary or proper to effectuate the authority granted in this resolution~~, including written contracts, **investment management agreements, subscription agreements, account** agreements, consents, ~~waivers, amendments, transfers, assignments,~~ certificates, powers of attorney, notes, deeds, ~~releases,~~ security agreements, pledges, **and** endorsements, and any and all documents necessary or proper to effectuate the authority granted in this ~~resolution~~**Section B.1**.

~~A.4.~~**B.2** ~~Give directions and instructions to members of the **Trading Group**, or external managers~~**Make, execute, and deliver investment-related documents waiving, modifying, or amending in writing specific provisions of a written investment-related agreement**, including directions and instructions to amend, modify, fix, and execute written investment guidelines in investment management agreements with external managers~~, including~~ **and** fund managers.

~~A.5.~~**B.3** ~~Waive, modify~~**Make, execute, and deliver written renewals, extensions, assignments, terminations**, or ~~amend in writing specific provisions~~**transfers** of ~~an account agreement,~~ investment~~ contract,~~ **related contracts** or **agreements, including contracts for** investment management~~ agreement, if the waiver, modification,~~**, commitments of capital, investment vehicles, security interests, liens** or ~~amendment is deemed by the authorized employee~~**mortgages relating** to ~~be in the best interest of~~ TRS **investments**.

~~A.6.~~**B.4** Jointly with a member of the Financial Group or the Executive Group, execute **investment fund and external manager account** redemption and withdrawal notices and instructions for the transfer or delivery by wire or physical transfer of cash, ~~collateral,~~ or securities to a TRS account by a third-party fund, **external manager,** account, debtor, ~~or counterparty,~~ except that an authorized member of the Investment Group may be the sole TRS signatory on **subscription agreements and side letter agreements and any amendments or modifications to** subscription agreements and side letter agreements.

Notwithstanding any provision of this Section B, the authority granted under this Section B does not extend to transactions in derivatives, which are governed exclusively by Section C of these resolutions.

C. Derivatives ~~*Team*~~ Authority

Resolved further, That the Chief Investment Officer or the Deputy Chief Investment Officer and any member of the **Investment Group** who is designated by the Executive Director as a member of the Derivatives Team~~ may~~, in addition to ~~the~~**any** authority ~~granted in Sections A.1 through A.6,~~**expressly designated by the Executive Director under these resolutions is authorized may act** on behalf of TRS **to**:

~~A.7.~~**C.1** Negotiate, make, fix, execute, amend, modify, renew, extend, transfer, assign, terminate, endorse, or terminate **in writing** any and all of the following: master agreements for derivatives transactions; schedules, credit support annexes, transaction confirmations, **account agreements,** and clearing agreements relating to such agreements; and deliverables relating to such agreements, schedules, annexes, confirmations, **account agreements,** or clearing agreements**, including documents relating to derivatives cash settlements and movements of collateral or margin**.

C.2 **Make, execute, and deliver documents and agreements waiving, modifying, or amending in writing specific provisions of a written agreement relating to derivatives account agreements, collateral management agreements, or clearing agreements.**

~~A.8.~~**C.3** Waive, **amend,** modify, renew, extend, transfer, assign, endorse, **or** terminate~~ or amend~~ in writing agreements relating to derivatives transactions, and any transaction confirmations under such agreements~~, if the waiver, modification, or amendment is deemed by the employee to be in the best interest of TRS~~.

C.4 **Jointly with a member of the Financial Group or the Executive Group, execute documents, directions, and instructions, including standing instructions, relating to cash settlement of derivatives and movements of collateral or margin for derivatives transactions.**

~~A.9.~~**C.5** Buy, sell, or give orders **or instructions** for transactions in derivatives**, and any amendments or modifications of such orders or instructions**.

C.6 **Give directions and instructions to members of the Trading Group or external managers relating to execution, brokerage, clearing or settlement of derivatives transactions.**

~~B.~~ Financial Group

Resolved further, That the **"Financial Group"** comprises employees holding the following TRS working titles:

Chief Financial Officer	**Manager of Investment Accounting**
Manager of General Accounting	**Team Leader of Investment Accounting**
Team Leader of Financial Reporting	**Team Leader of Budgeting**

Resolved further, That each member of the **Financial Group** is authorized and empowered on behalf of TRS, jointly with ~~a~~**an authorized** member of the **Investment Group** or the **Executive Group,** to execute redemption and withdrawal notices and instructions for the transfer or delivery by wire or physical transfer of cash, collateral, **margin,** or securities to a TRS account by a third-party fund, account, debtor, or **derivatives** counterparty, except that an authorized member of the **Investment Group** may be the sole TRS signatory on subscription agreements and side letter agreements~~.~~ **and any amendments to subscription agreements or side letter agreements.**

Resolved further, That each member of the **Financial Group** is authorized and empowered on behalf of TRS, to execute

authorizations to fund ~~capital called or~~ subscribed ~~for~~ investment **funds or capital called by investment funds; transfer funds or assets between custodial accounts, including external manager separate accounts; transfer funds to pay fees** under an investment contract~~ or to contribute~~**; instruct other cash movements, including movements of assets to and from custodial accounts held by the Comptroller of Public Accounts and transfers of** assets in kind for investment under an investment contract~~, in accordance with internal procedures~~.

Resolved further, That each member of the **Financial Group** is authorized and empowered on behalf of TRS to authorize and direct members of the Investment Accounting team to verify or confirm to a custodian or prime broker any order for the transfer or delivery of currencies, monies, securities, or contracts to any other person.

~~C.~~ Executive Group

Resolved further, That the **Executive Group** comprises employees holding the TRS working titles of Executive Director and Deputy Director, and each member of the **Executive Group** is authorized and empowered to perform, with respect to a particular matter or transaction, any and all of the acts that any and all employees in the **Investment Group** or the **Financial Group** are authorized to perform, except that when joint action by a member of the **Investment Group** and a member of the **Financial Group** is required, only one member of the **Executive Group** may act jointly with a member of either of the **Investment Group** or the **Financial Group**.

~~D.~~ Trading Group

Resolved further, That the **"Trading Group"** comprises the employees holding the following TRS working titles: Director – Trading Center, and Trader. Each member of the **Trading Group** is authorized and empowered on behalf of TRS to take the following actions: to place orders or agree with brokers, dealers and market-makers to purchase or sell securities, ~~futures or~~**derivatives,** forward contracts~~, options~~, or currency; to monitor and supervise execution and settlement of such orders or agreements; and to negotiate, fix, and vary the commissions, spreads, or discounts for individual orders or agreements to purchase or sell securities, ~~futures or~~**derivatives,** forward contracts, ~~options,~~ or currency.

Board of Trustees

General Authority Resolutions Adopted [September , 2012]

Investment Group

Resolved, That Investment Division employees holding the following TRS working titles are members of the **"Investment Group"**:

Chief Investment Officer	**Deputy Chief Investment Officer**
Senior Managing Director	**Managing Director**
Senior Director	**Director**
Senior Investment Manager	

Resolved further, That the Executive Director is authorized and directed to designate in writing those individual members of the **Investment Group** who are authorized within the investment areas designated by the Executive Director, in addition to the Chief Investment Officer and the Deputy Chief Investment Officer, to take any one or more of the following actions authorized below in accordance with these resolutions until the authority is revoked.

Resolved further, That the Executive Director is authorized and directed to designate in writing, by investment area and category or item designation, the specific authorities granted to each authorized member of the **Investment Group**, until the authority is revoked.

Comment [dg1]: The Executive Director can grant or withold levels of authority granted to each designated IMD employee.

A. General Authority for Investment Matters other than Derivatives

Resolved further, That the Chief Investment Officer, Deputy Chief Investment Officer, and any other member of the **Investment Group** designated by the Executive Director as having such authority, in addition to any other authority expressly designated by the Executive Director under these resolutions, may act on behalf of TRS to:

A.1 Buy, sell, or give orders or instructions for transactions in currencies and securities, and any amendments or modifications of such orders or instructions.

A.2 Direct Investment Operations personnel to deliver, pay, expend, or receive cash, currencies, monies, securities (including restricted or Rule 144A securities) in connection with a contract to buy or sell securities.

A.3 Give directions and instructions to members of the **Trading Group** or external managers relating to execution, brokerage, clearing or settlement of securities transactions.

A.4 Direct Investment Operations personnel to fund subscribed investment funds or capital called by investment funds; transfer funds or assets between custodial accounts, including external manager separate accounts; transfer funds to pay fees under an investment contract; and to instruct other cash movements, including movements of cash to and from custodial accounts held by the Comptroller of Public Accounts and transfers of assets in kind for investment under an investment contract.

Notwithstanding any provision of this Section A, authority granted under this Section A does not extend to transactions in derivatives, which are governed exclusively by Section C of these resolutions.

B. Investment Contracting Authority other than Derivatives

Resolved further, That the Chief Investment Officer, Deputy Chief Investment Officer, and any other member of the **Investment Group** designated by the Executive Director as having such authority, in addition to any other authority expressly designated by the Executive Director under these resolutions, may act on behalf of TRS to:

B.1 Make, execute, and deliver investment-related documents, including written contracts, investment management agreements, subscription agreements, account agreements, consents, certificates, powers of attorney, notes, deeds, security agreements, pledges, and endorsements, and any and all documents necessary or proper to effectuate the authority granted in this Section B.1.

B.2 Make, execute, and deliver investment-related documents waiving, modifying, or amending in writing specific provisions of a written investment-related agreement, including directions and instructions to amend, modify, fix, and execute written investment guidelines in investment management agreements with external managers and fund managers.

B.3 Make, execute, and deliver written renewals, extensions, assignments, terminations, or transfers of investment-related contracts or agreements, including contracts for investment management, commitments of capital, investment vehicles, security interests, liens or mortgages relating to TRS investments.

Comment [dg2]: B1 - B3 divide signature authority for certain actions related to contracting.

B.4 Jointly with a member of the Financial Group or the Executive Group, execute investment fund and external manager account redemption and withdrawal notices and instructions for the transfer or delivery by wire or physical transfer of cash, or securities to a TRS account by a third-party fund, external manager, account, debtor, except that an authorized member of the Investment Group may be the sole TRS signatory on subscription agreements and side letter agreements and any amendments or modifications to subscription agreements and side letter agreements.

Comment [dg3]: Two signatures are required to issue written instructions directing wire transfers to the proper TRS account.

Notwithstanding any provision of this Section B, the authority granted under this Section B does not extend to transactions in derivatives, which are governed exclusively by Section C of these resolutions.

Comment [dg4]: Authority for derivatives must be expressly granted by the Executive Director for any IMD employee other than the CIO or Deputy CIO.

C. Derivatives Authority

Resolved further, That the Chief Investment Officer or the Deputy Chief Investment Officer and any member of the **Investment Group** who is designated by the Executive Director as a member of the Derivatives Team, in addition to any authority expressly designated by the Executive Director under these resolutions is authorized may act on behalf of TRS to:

C.1 Negotiate, make, fix, execute, amend, modify, renew, extend, transfer, assign, terminate, endorse, or terminate in writing any and all of the following: master agreements for derivatives transactions; schedules, credit support annexes, transaction confirmations, account agreements, and clearing agreements relating to such agreements; and deliverables relating to such agreements, schedules, annexes, confirmations, account agreements, or clearing agreements, including documents relating to derivatives cash settlements and movements of collateral or margin.

C.2 Make, execute, and deliver documents and agreements waiving, modifying, or amending in writing specific provisions of a written agreement relating to derivatives account agreements, collateral management agreements, or clearing agreements.

C.3 Waive, amend, modify, renew, extend, transfer, assign, endorse, or terminate in writing agreements relating to derivatives transactions, and any transaction confirmations under such agreements.

C.4 Jointly with a member of the Financial Group or the Executive Group, execute documents, directions, and instructions, including standing instructions, relating to cash settlement of derivatives and movements of collateral or margin for derivatives transactions.

C.5 Buy, sell, or give orders or instructions for transactions in derivatives, and any amendments or modifications of such orders or instructions.

C.6 Give directions and instructions to members of the **Trading Group** or external managers relating to execution, brokerage, clearing or settlement of derivatives transactions.

Financial Group

Resolved further, That the **"Financial Group"** comprises employees holding the following TRS working titles:

Chief Financial Officer	**Manager of Investment Accounting**
Manager of General Accounting	**Team Leader of Investment Accounting**
Team Leader of Financial Reporting	**Team Leader of Budgeting**

Resolved further, That each member of the **Financial Group** is authorized and empowered on behalf of TRS, jointly with an authorized member of the **Investment Group** or the **Executive Group,** to execute redemption and withdrawal notices and instructions for the transfer or delivery by wire or physical transfer of cash, collateral, margin, or securities to a TRS account by a third-party fund, account, debtor, or derivatives counterparty, except that an authorized member of the **Investment Group** may be the sole TRS signatory on subscription agreements and side letter agreements and any amendments to subscription agreements or side letter agreements.

Resolved further, That each member of the **Financial Group** is authorized and empowered on behalf of TRS, to execute authorizations to fund subscribed investment funds or capital called by investment funds; transfer funds or assets between custodial accounts, including external manager separate accounts; transfer funds to pay fees under an investment contract; instruct other cash movements, including movements of assets to and from custodial accounts held by the Comptroller of Public Accounts and transfers of assets in kind for investment under an investment contract.

Resolved further, That each member of the **Financial Group** is authorized and empowered on behalf of TRS to authorize and direct members of the Investment Accounting team to verify or confirm to a custodian or prime broker any order for the transfer or delivery of currencies, monies, securities, or contracts to any other person.

Executive Group

Resolved further, That the **Executive Group** comprises employees holding the TRS working titles of Executive Director and Deputy Director, and each member of the **Executive Group** is authorized and empowered to perform, with respect to a particular matter or

transaction, any and all of the acts that any and all employees in the **Investment Group** or the **Financial Group** are authorized to perform, except that when joint action by a member of the **Investment Group** and a member of the **Financial Group** is required, only one member of the **Executive Group** may act jointly with a member of either of the **Investment Group** or the **Financial Group**.

Trading Group

Resolved further, That the **"Trading Group"** comprises the employees holding the following TRS working titles: Director – Trading Center, and Trader. Each member of the **Trading Group** is authorized and empowered on behalf of TRS to take the following actions: to place orders or agree with brokers, dealers and market-makers to purchase or sell securities, derivatives, forward contracts, or currency; to monitor and supervise execution and settlement of such orders or agreements; and to negotiate, fix, and vary the commissions, spreads, or discounts for individual orders or agreements to purchase or sell securities, derivatives, forward contracts, or currency.

Board of Trustees

~~Adopted August 13, 2010~~

General Authority Resolutions Adopted [September , 2012]

~~A.~~ Investment Group

Resolved, That **Investment Division** employees holding the following TRS working titles are members of the **"Investment Group"**:

Chief Investment Officer	**Deputy Chief Investment Officer**
Senior Managing Director	**Managing Director**
Senior Director	**Director**
Senior Investment Manager	~~**Investment Manager**~~

~~*Further*~~***Resolved further,*** That the Executive Director is authorized and directed to designate **in writing** those individual ~~employees who are~~ members of the **Investment Group** **who are** authorized **within the investment areas designated by the Executive Director, in addition to the Chief Investment Officer and the Deputy Chief Investment Officer,** to take any one or more of the following actions ~~listed~~**authorized** below **in accordance** with ~~respect to investment matters as specified in writing by~~**these resolutions until the authority is revoked.**

Resolved further, **That** the Executive Director~~, at least annually or as he deems necessary from time~~ **is authorized and directed** to ~~time:~~**designate in writing, by investment area and category or item designation, the specific authorities granted to each authorized member of the Investment Group, until the authority is revoked.**

A. General Authority for Investment Matters other than Derivatives

~~**A.1** Acquire, modify, and sell investments and negotiate, fix, execute, amend, modify, renew, extend, terminate, certify, and endorse contracts and agreements for portfolio investment transactions, including without limitation trading authorizations, subscription agreements, tax forms, investment contracts, investment vehicle entity agreements, investment management agreements, license agreements, brokerage or margin account agreements, securities or commodities exchange documents, and agreements and documents relating to trading operations.~~

Resolved further, **That the Chief Investment Officer, Deputy Chief Investment Officer, and any other member of the Investment Group designated by the Executive Director as having such authority, in addition to any other authority expressly designated by the Executive Director under these resolutions, may act on behalf of TRS to:**

A.1 **Buy, sell, or give orders or instructions for transactions in currencies and securities, and any amendments or modifications of such orders or instructions.**

A.2 **Direct Investment Operations personnel to deliver, pay, expend, or receive cash, currencies, monies, securities (including restricted or Rule 144A securities) in connection with a contract to buy or sell securities.**

A.3 Give directions and instructions to **members of the Trading Group or** external managers **relating to execution, brokerage, clearing or settlement of securities transactions.**

A.4 **Direct Investment Operations personnel to fund subscribed investment funds or capital called by investment funds; transfer funds or assets between custodial accounts, including external manager separate accounts; transfer funds to pay fees under an investment contract; and to instruct other cash movements, including movements of cash to and from custodial accounts held by the Comptroller of Public Accounts and transfers of assets in kind for investment under an investment contract.**

Notwithstanding any provision of this Section A, authority granted under this Section A does not extend to transactions in derivatives, which are governed exclusively by Section C of these resolutions.

B. Investment Contracting Authority other than Derivatives

***Resolved further*, That the Chief Investment Officer, Deputy Chief Investment Officer**, and ~~to amend, modify, fix,~~ **any other member of the Investment Group designated by the Executive Director as having such authority, in addition to any other authority expressly designated by the Executive Director under these resolutions, may act on behalf of TRS to:**

B.1 **Make, execute,** and **deliver investment-related documents, including written contracts, investment management agreements, subscription agreements, account agreements, consents, certificates, powers of attorney, notes, deeds, security agreements, pledges, and endorsements, and any and all documents necessary or proper to effectuate the authority granted in this Section B.1.**

~~2.~~**B.2** **Make,** execute**, and deliver investment-related documents waiving, modifying, or amending in writing specific provisions of a written investment-related agreement, including directions and instructions to amend, modify, fix, and execute written** investment guidelines in investment management agreements~~.~~ **with external managers and fund managers.**

~~3.~~**B.3** ~~Negotiate, fix~~**Make**, execute, ~~amend, modify, renew, extend, transfer, assign, terminate, certify,~~ and ~~endorse the following: amendments; notes; powers~~**deliver written renewals, extensions, assignments, terminations, or transfers** of ~~attorney; indentures; deeds; conveyances; certificates; instruments of transfer or assignment; instruments~~**investment-related contracts** or agreements~~ evidencing, releasing, or creating liens, mortgages, or~~ **, including contracts for investment management, commitments of capital, investment vehicles,** security interests~~; and all other instruments and agreements, sealed or unsealed, attested or unattested,~~**, liens or mortgages** relating to TRS investments.

~~**A.4** Waive, modify, or amend specific provisions of an investment contract or management agreement, if the waiver, modification or amendment is deemed by the employee to be in the best interest of TRS.~~

B.4 ~~***Over the Counter***~~ **Jointly with a member of the Financial Group or the Executive Group, execute investment fund and external manager account redemption and withdrawal notices and instructions for the transfer or delivery by wire or physical transfer of cash, or securities to a TRS account by a third-party fund, external manager, account, debtor, except that an authorized member of the Investment Group may be the sole TRS signatory on subscription agreements and side letter agreements and any amendments or modifications to subscription agreements and side letter agreements.**

Notwithstanding any provision of this Section B, the authority granted under this Section B does not extend to transactions in derivatives, which are governed exclusively by Section C of these resolutions.

C. Derivatives ~~*Contracts*~~Authority

***Resolved further*, That the Chief Investment Officer or the Deputy Chief Investment Officer and any member of the Investment Group who is designated by the Executive Director as a member of the Derivatives Team, in addition to any authority expressly designated by the Executive Director under these resolutions is authorized may act on behalf of TRS to:**

~~5.~~**C.1** Negotiate**, make**, fix, execute, amend, modify, renew, extend, transfer, assign, terminate, endorse, ~~and~~**or** terminate **in writing any and all of the following:** master agreements for ~~over the counter~~ derivatives transactions~~ and any~~**;** schedules~~ or~~**,** credit support annexes**, transaction confirmations, account agreements, and clearing agreements** relating to such agreements~~,~~**;** and~~ any~~ deliverables relating to such agreements, schedules, ~~or~~ annexes**, confirmations, account agreements, or clearing agreements, including documents relating to derivatives cash settlements and movements of collateral or margin**.

~~6.~~**C.2** ~~Waive, modify~~**Make, execute, and deliver documents and agreements waiving, modifying**, or ~~amend~~**amending in writing** specific provisions of ~~over the counter master agreements for~~ **a written agreement relating to** derivatives ~~transactions, and any transaction confirmations under such~~**account** agreements, ~~if the waiver, modification or amendment is deemed by the employee to be in the best interest of TRS~~**collateral management agreements, or clearing agreements**.

~~7.~~**C.3** ~~Negotiate, fix, execute~~**Waive**, amend, modify, renew, extend, transfer, assign, endorse, or terminate ~~transactions entered into under master~~**in writing** agreements ~~for over the counter~~**relating to** derivatives ~~transactions, including without limitation confirmations of~~ transactions~~.~~**, and any transaction confirmations under such agreements.**

~~***Transfers of Funds or Assets; Fund or Account Redemptions and Withdrawals***~~

~~**A.8** Authorize and instruct TRS employees, brokers or custodians to transfer funds or assets in connection with TRS investment transactions or commitments of capital or to or from managed investment accounts, investment funds, and custodians of TRS assets.~~

~~**A.9** Authorize and instruct TRS employees, brokers, and custodians to deliver cash, securities or other assets as collateral or margin in accordance with regulatory, account, or contractual requirements, including without limitation credit support annexes or agreements relating to over the counter derivatives transactions.~~

~~A.10 Execute redemption or withdrawal notices for private investment funds and managed investment accounts and, when required by applicable policies and procedures, not solely but jointly with a member of the Financial Group.~~

~~**B. Financial Group**~~

C.4 ~~***Further,*** That~~ **Jointly with a member of the Financial Group or the Executive Group, execute documents, directions, and instructions, including standing instructions, relating to cash settlement of derivatives and movements of collateral or margin for derivatives transactions.**

C.5 Buy, sell, or give orders or instructions for transactions in derivatives, and any amendments or modifications of such orders or instructions.

C.6 Give directions and instructions to members of the Trading Group or external managers relating to execution, brokerage, clearing or settlement of derivatives transactions.

Financial Group

Resolved further, **That the "Financial Group" comprises** employees holding the following TRS working titles~~ are members of the "Financial Group":~~**:**

Chief Financial Officer	**Manager of Investment Accounting**
Manager of General Accounting	**Team Leader of Investment Accounting**
Team Leader of Financial Reporting	**Team Leader of Budgeting**

~~***Further***~~***Resolved further,*** That each ~~employee in~~**member of** the **Financial Group** is authorized and empowered on behalf of TRS~~ to deliver or otherwise transfer cash, securities, collateral, or contracts, and to execute affidavits, certificates and powers of attorney required to transfer, redeem, or exchange securities, collateral, or contracts.~~

~~***Further,*** That each employee in the **Financial Group** is authorized and empowered on behalf of TRS, not solely but~~**,** jointly with an ~~employee in~~**authorized member of** the **Investment Group** or the **Executive Group,** to execute ~~fund or account~~ redemption and withdrawal notices and ~~related documents~~**instructions for the transfer or delivery by wire or physical transfer of cash, collateral, margin, or securities to a TRS account by a third-party fund, account, debtor, or derivatives counterparty, except that an authorized member of the Investment Group may be the sole TRS signatory on subscription agreements and side letter agreements and any amendments to subscription agreements or side letter agreements**.

~~***Further,*** That each employee in the~~ ***Resolved further,*** **That each member of the Financial Group is authorized and empowered on behalf of TRS, to execute authorizations to fund subscribed investment funds or capital called by investment funds; transfer funds or assets between custodial accounts, including external manager separate accounts; transfer funds to pay fees under an investment contract; instruct other cash movements, including movements of assets to and from custodial accounts held by the Comptroller of Public Accounts and transfers of assets in kind for investment under an investment contract.**

Resolved further, **That each member of the Financial Group** is authorized and empowered on behalf of TRS to ~~instruct TRS custodians to deliver securities, collateral, contracts, or cash to fund margin or collateral requirements, clear and settle securities trades, fund capital called~~ **authorize and direct members of the Investment Accounting team to verify** or ~~subscribed for investment under an investment contract, and to exchange securities, collateral, contracts,~~**confirm to a custodian** or ~~cash for other securities, collateral, contracts,~~**prime broker any order for the transfer** or ~~cash, in accordance with internal procedures~~**delivery of currencies, monies, securities, or contracts to any other person**.

~~C.~~ Executive Group

~~***Further***~~***Resolved further,*** That the **Executive Group** ~~is comprised of~~**comprises** employees holding the TRS working titles of Executive Director and Deputy Director, and each ~~employee in~~**member of** the **Executive Group** is authorized and empowered to perform, with respect to a particular **matter or** transaction, any **and all** of the acts that **any and all** employees in the **Investment Group** or the **Financial Group** are authorized to perform~~; *provided*, however,~~**, except** that when joint action by a member of the **Investment Group** and a member of the **Financial Group** is required~~ by applicable policies and procedures~~, only one member of the **Executive Group** may act jointly with a member of either of the **Investment Group** or the **Financial Group**.

~~D.~~ Trading Group

~~***Further***~~***Resolved further,*** That the **"Trading Group"** ~~is comprised of~~**comprises** the employees holding the following TRS working titles: Director – Trading Center, and Trader~~, and each employee in~~**. Each member of** the **Trading Group** is authorized and empowered on behalf of TRS to take the following actions: to place orders or agree with brokers, dealers and market-makers to purchase or sell securities, ~~futures or~~**derivatives,** forward contracts~~, options~~, or currency; to monitor and supervise execution and settlement of such orders or agreements; and to negotiate, fix, and vary the commissions, spreads, or discounts for individual

orders or agreements to purchase or sell securities, ~~futures or~~**derivatives,** forward contracts, ~~options,~~ or currency.

~~***Further,*** That the TRS employee groups described in this resolution are identified as such only for the purposes of this resolution and not for any other purpose unless the Board or the Executive Director, as authorized, expressly so provides.~~

Designations of Investment Group Authority by Investment Area

Working Title	Name of Incumbent	Designated Authority	Specimen Signature
Investment Management			
Chief Investment Officer	T. Britton Harris IV	Groups A, B, and C	
Deputy Chief Investment Officer	Jerry Albright	Groups A, B, and C	
External Public Markets			
Managing Director	Dale West	Groups A and B	
Senior Investment Manager	Brad Gilbert	Group A, B 1 - 3	
Director	Susanne Gealy	Group A, B 1 - 3	
Director	Katy Hoffman	Groups A 1 - 3, B 1 - 3	
Internal Public Markets			
Senior Managing Director	Chi Kit Chai	Groups A and B	
Managing Director	Janis Hydak	A 1 - 3	
Managing Director	David DeStefano	A 1 - 3	
Managing Director	Shayne McGuire	A 1 - 3	
Senior Director	Mark Albert	A 1 - 3	
Senior Director	Ralph Linn	A 1 - 3	
Director	Patrick Cosgrove	A 1 - 3	
Tactical Asset Allocation / Strategic Asset Allocation / Stable Value / Risk Management			
Managing Director	Curt Rogers	Groups A, B, and C	
Managing Director	Mohan Balachandran	Groups A, B, and C	
Managing Director	Jase Auby	Groups A, B, and C	
Senior Investment Manager	Tim Jones	Groups A and C	
Private Equity / Real Assets			
Managing Director	Eric L. Lang	Groups A and B	
Managing Director	Rich Hall	Groups A and B	
Director	Neil Randall	Group A, B 1 - 3	
Director	John Ritter	Group A, B 1 - 3	
Senior Investment Manager	Courtney Vallalta	Group A	
Senior Investment Manager	Grant Walker	Group A	
Senior Investment Manager	Mike Pia	Group A	
Senior Investment Manager	Mike Lazorik	Group A	
Senior Investment Manager	Allen MacDonell	Group A	
Investment Operations			
Director	Sylvia Bell	Group B	

Other Groups

Working Title	Name of Incumbent	Designated Authority	Specimen Signature
Financial Group			
Chief Financial Officer	Don Green	All Financial Group	
Manager of General Accounting	Jamie Michels	All Financial Group	
Team Leader of Financial Reporting	Cindy Haley	All Financial Group	
Manager of Investment Accounting	Scot Leith	All Financial Group	
Team Leader of Investment Accounting	Vicki Garcia	All Financial Group	
Team Leader of Budgeting	[Vacant]	All Financial Group	
Executive Group			
Executive Director	Brian K. Guthrie	All Groups	
Deputy Director	Ken Welch	All Groups	
Trading Group			
Director - Trading Group	Bernie Bozzelli	All Trading Group	
Trader	Kelan Moore	All Trading Group	
Trader	Jaime Llano	All Trading Group	
Trader	Steve Peterson	All Trading Group	
Trader	Demetrius Pope	All Trading Group	
Trader	Komson Silapachai	All Trading Group	
Trader	Jared Morris	All Trading Group	

Tab 7

Memorandum

DATE: August 30, 2012

TO: Policy Committee; Board of Trustees

FROM: Legal Services

RE: Annual Review of Performance Incentive Pay Plan

Executive Summary of proposed changes to Performance Incentive Pay Plan for Performance Period commencing October 1, 2012

At its July 2012 meeting, the committee will review and discuss the Plan revisions proposed to be effective as of the commencement of the next Performance Period. The following materials are provided for your consideration:

1. Mr. Albright's presentation about the proposed Plan;
2. A proposed resolution to adopt the Plan;
3. A clean draft of the Plan, for ease of review;
4. A marked draft of the Plan, showing all proposed changes; and
5. A copy of Addendum A and Addendum B in the existing Plan effective October 1, 2011. The proposed plan has new addenda but they do not show marked changes, and inclusion of the existing addenda will aid comparison.

If acceptable, the Board will consider adoption in September. This memorandum summarizes the most significant revisions marked in the draft provided with your Board materials. Outside tax counsel has also reviewed the Plan revisions. Please note the following legend when reviewing the draft:

Additions are **underlined in blue**.

Deletions are ~~**stricken through in red.**~~

Moves within the document are double-underlined in green.

1. The proposed substantive changes are as follows:

- **Addendums A and B reflect IMD reorganization and revised performance comparison allocations.**

New Addendums A and B attached to the draft include the latest proposed changes that reflect changes in the "investment areas" and "peer groups within the IMD to be effective under the Plan as of October 1, 2012. In addition, the tables in those Addendums show as marked changes revisions to the allocations used to calculate Potential Awards under the Plan. These changes will affect the Potential Awards that can be earned in certain Eligible Positions.

- **Addendum C (IPS benchmarks) is deleted; IPS benchmarks, as modified from time to time, are incorporated by reference.**

In Section 4.6(a), the reference to Addendum C is deleted and replaced with language incorporating by reference the performance benchmarks adopted in the Investment Policy Statement, as amended from time to time, as the basis for calculating performance awards under the Plan. If a benchmark in the policy changes, the Plan benchmarks used for calculating performance awards are automatically changed on the same effective date (during a Performance Period). This fits the method actually used to calculate Potential Awards. This change is intended to obviate having to consider an amendment to the Plan when the Investment Policy Statement benchmarks have been amended. Addendum C is marked for deletion.

- **Employees leaving an Eligible Position within TRS can now earn an award for the final, partial Performance Period worked in the Eligible Position.**

Section 4.6(c) is marked for deletion. Section 4.6(c) currently provides that employees who leave Eligible Positions in the IMD for other positions <u>within TRS</u> during the Performance Period are *not eligible for an award under the Plan with respect to the partial Performance Period worked in an Eligible Position*. The proposed deletion would maintain the eligibility of an employee to receive an award in respect of the final, partial Performance Period. It is felt that the provision unfairly penalizes such employees by arbitrarily denying them a prorated award they might otherwise have earned during their final, partial Performance Period. Deleting the provision also removes any disincentive to voluntarily leave an Eligible Position during a Performance Period, even if that would be in the best interest of both of TRS and the employee. New Section 4.3(b)(v) addresses proration of awards for a partial Performance Period when a Participant accepts a TRS position outside the Plan.

- **Section 4.4(h) has been revised to provide that the qualitative performance component of the Maximum Award Opportunity will be based on a system of performance evaluation approved by the Executive Director.**

The existing language of Section 4.4(h) states that the intermediate levels of the qualitative component of the Potential Award are determined in "discrete quartiles." This language is believed to be too narrow and that the Executive Director should have more flexibility to approve other systems of evaluation. Subsection (h) has also been reformatted for logical structure and readability.

- **The Plan has been clarified to provide that no changes will be applied retroactively, including benchmark or investment area changed, unless tax law requires it.**

Benchmark changes that occur because of changes in the Investment Policy Statement will take effect on the same date as they become effective in the Policy, but may not apply retroactively. However, if the IMD is reorganized during a Performance Period, the change will only be effective as of the commencement of the next Performance Period. The investment areas in effect at the beginning of the Performance Period will be used for all calculations relating to that period. However, if retroactive changes are required by tax laws or regulations, those will be permitted.

- **New Section 4.6(b) addresses the addition of new profit centers in the Investment Management Division.**

Calculation of performance for any new profit centers will be based on full Performance Periods. The provision also addresses allocations between one and three year performance by full Performance Periods.

- **Section 4.6(c) is no longer needed and has been deleted.**

The Plan now has three years of performance on which to base calculations of Potential Awards.

2. Most of the marked changes are intended to clarify the Plan and improve readability.

- Changes marked as moves are intended to improve the Plan's internal logical structure and improve readability.
- The Plan has been edited for consistent and uniform use of defined terms.

  Examples: Replaced "investment division" with "IMD" throughout.

  Replaced instances of "staff" with" "employees" throughout.
- Undefined capitalized terms have been revised to lower case for readability.

  Example: "Qualitative Performance" is now "qualitative performance."
- Long defined terms have been shortened to improve readability and reduce clutter.

  Example: "Potential Performance Incentive Award" is now "Potential Award."
- Minor additions and clarifications have been added to Section 8, Definitions.

  Example: Defined "investment area" and "profit center" by reference to Addendums A and B, where they are listed.
- Clarified when employment in an Eligible Position becomes effective during a Performance Period (Section 4.3(b)).

- Deleted transition language that is no longer needed (Section 4.6(c)).
- Section 7.2 further clarifies that the Plan creates no "property interest" with respect to any aspect of the Plan or an award.
- Addendums A and B have been edited to make it easier to read and understand the allocation plans in each Addendum and how they relate to the calculation of awards under the Plan.
- The investment areas in Addendums A and B have been updated to reflect organizational changes in the IMD.
- An automatically generated Table of Contents has been created to replace the manually prepared Table of Contents. This change will facilitate future editing if the Plan is amended in the future.

Performance Incentive Pay Plan

Jerry Albright
Deputy Chief Investment Officer
September 2012

Summary of Policy Changes

- Proposed Substantive Changes
  1. Addendums A and B reflect IMD reorganization and revised performance comparison allocations

Fund Level	Total Fund	Internal Public	External Public	Private Equity			Real Assets		Public & Private		
					Risk [1]	Stable Value / SAA		TAA	SPN and Opportunistic[2, 3]	Natural Resources	Emerging Managers
Index	Total Fund Policy Composite Index	Global Equity Portfolio vs. MSCI ACWI Free (net)	Daily Weighted Excess Return Based on Actual Portfolio Weights	State Street Private Equity Index	Daily Weighted Excess Return Based on Actual Portfolio Weights		NCREIF	Total Profit & Loss for Incentive Period/Total Trust Average Daily Balance	Daily Weighted Excess Return Based on Actual Portfolio Weights		
Excess Return Target	100 bps	50 bps	100 bps	300 bps	75 bps	35 bps	250 bps	25 bps	175 bps	175 bps	100 bps

  2. Addendum C (IPS benchmark) is deleted; IPS benchmarks, as modified from time to time, are incorporated by reference
  3. Employee leaving an Eligible Position within TRS can now earn an award for the final, partial Performance Period worked in the Eligible Position
  4. Section 4.4(h) has been revised to provide that the qualitative performance component of the Maximum Award Opportunity will be based on a system of performance evaluation approved by the Executive Director
  5. The Plan has been clarified to provide that no changes will be applied retroactively, including benchmark or investment area changed, unless tax law requires it
  6. New Section 4.6(b) addresses the addition of new profit centers in the Investment Management Division
  7. Section 4.6(c) is no longer needed and has been deleted

[1]Risk group allocation excludes Trust hedging activities
[2]Benchmark for Opportunistic portfolio is Total Fund Benchmark; Benchmark for Public SPN is the SPN Composite Index
[3]Daily weightings across Opportunistic portfolio, total Public SPN, total Private Equity SPN and total Real Asset SPN

Summary of Incentives

- Incentives Paid
  - Average amount earned since inception:

	FY 2008	*FY 2009*	*FY 2010*	*FY 2011*	*Total*
Maximum Award Potential	$ 4,729,122	$ 8,718,321	$ 10,348,060	$ 11,445,430	$ 35,240,933
Total Calculated Award	$ 2,470,537	$ 4,414,985	$ 6,308,748	$ 6,144,861	$ 19,339,131
% of Potential Awarded	**52%**	**51%**	**61%**	**54%**	**55%**
Actual Award Paid	$ 2,165,241	$ 4,342,234	$ 6,158,703	$ 3,072,430	$ 15,738,608

  - Approximate amount paid if 100% of excess is achieved for FY 2012 – FY 2013 is $9 million

TRS

September 13 – 14, 2012
Board of Trustees

Item 7, Board Agenda

Whereas, the Board of Trustees (the "Board") of the Teacher Retirement System of Texas desires to adopt a Performance Incentive Compensation Plan for performance periods commencing on October 1, 2012 and each October 1 thereafter (the "Plan");

Now, therefore, be it

Resolved, That the Board hereby adopts the Plan as presented to be effective for the performance period commencing as of October 1, 2012 and ending on September 30, 2013;

Resolved, That the terms of the Plan will apply to each performance period commencing on each October 1 and ending on September 30, and will continue in effect for each subsequent performance period thereafter until the Plan is terminated, rescinded, superseded, repealed, or modified by further action of the Board or pursuant to applicable law; and

Resolved, That the Board's adoption of the Plan for the one-year performance period commencing on October 1, 2012 does not terminate, rescind, modify, repeal, or supersede the terms or conditions of any performance incentive compensation plans adopted by the Board relating to any prior performance period, as defined in each such plan.

Teacher Retirement System of Texas

PERFORMANCE INCENTIVE PAY PLAN

Effective October 1, 2012

This version of the Plan is effective for Performance Periods beginning on or after October 1, 2012. Any awards for performance in prior Performance Periods can become earned and payable subject to the terms and conditions stated in the versions of the Plan effective for those Performance Periods. No modification of the Plan may be given retroactive effect except as required to comply with applicable law, including federal tax laws and regulations.

Table of Contents

1. PERFORMANCE INCENTIVE PLAN PURPOSE AND AUTHORIZATION 3
2. PLAN OBJECTIVES AND STRATEGY 3
   2.1 Plan Objectives 3
   2.2 Plan Strategy 3
3. BASE SALARY ADMINISTRATION 3
   3.1. Salary Structure 3
   3.2. Salary Adjustments 4
4. INCENTIVE PAY PLAN 4
   4.1. Purpose of the Plan and Effective Date 4
   4.2. Performance Period 4
   4.3. Participation in the Plan 4
   4.4. Investment Performance Components, Qualitative Components, and Potential Award 6
   4.5. Compliance with TRS Policies 8
   4.6. Performance Standards and Measurements 8
   4.7. Potential Award Calculations 9
   4.8. Earning Potential Awards and Payouts 9
5. PLAN AUTHORITY AND RESPONSIBILITY 10
   5.1 Plan Modification, Suspension and Termination 10
   5.2 Plan Administration 11
   5.3 Record Keeping and Reporting 11
   5.4 Compliance with State and Federal Law 11
6. AT-WILL EMPLOYMENT 11
7. OTHER PLAN PROVISIONS 11
   7.1. Non-assignment and Non-transferability of Awards 11
   7.2 Plan Does Not Create a Property Interest, Trust, or Entitlement 11
   7.3 Tax and Other Deductions 11
   7.4 Payments Not Eligible for Retirement Purposes 11
   7.5 Grievances 12
8. DEFINITIONS 12
Addendum A 14
Addendum B 15

1. PERFORMANCE INCENTIVE PLAN PURPOSE AND AUTHORIZATION

To remain competitive in its efforts to attract and retain high caliber Investment Management Division (IMD) employees, the Teacher Retirement System of Texas (TRS) strives to offer a competitive compensation package. Awards of performance incentive pay based on specified performance criteria are an industry standard practice in the private investment sector and are rapidly becoming a standard practice in the public sector. By offering both a competitive base salary and performance incentive award opportunity, TRS enhances its ability to fulfill its mission to "prudently invest and manage the assets held in trust for members and beneficiaries in an actuarially sound system administered in accordance with applicable fiduciary principals." Therefore, pursuant to the laws governing TRS, the TRS Board of Trustees (the "Board") has determined that establishing and expending funds for this Performance Incentive Pay Plan (the "Plan") is consistent with and in furtherance of the fiduciary duties of the Board in administering the retirement system.

2. PLAN OBJECTIVES AND STRATEGY

2.1 Plan Objectives

The Plan serves a number of objectives:

- To attract and retain IMD employees who have outstanding ability;
- To create incentives for IMD employees to develop a strong commitment to the long-term investment performance of the assets for which TRS has been delegated investment responsibility; and
- To motivate investment professionals to focus on maximizing real, long-term returns for all funds managed by TRS while assuming appropriate levels of risk.

2.2 Plan Strategy

The Plan strategy includes:

- Base salaries, targeted at competitive levels, as defined by the Executive Director and the Board with actual individual base salaries determined by an employee's experience, education, knowledge, skills and overall job performance.
- Performance incentive pay award opportunities, calculated as a percentage of an employee's base salary for performance above pre-determined standards, earned contingent upon continued employment in an Eligible Position at specified times and generally payable in two annual installments, subject to deferral as set forth in Section 4.8(b).

3. BASE SALARY ADMINISTRATION

3.1. Salary Structure

(a) Notwithstanding any other law, the Board approves the rates of compensation of all IMD employees. Under state law, the Board's Bylaws, and as part of the annual TRS budgeting process, the Board authorizes the Executive Director to determine and propose base salary rates of compensation generally based on the salary schedules, position classifications and salary administration practices of Article IX of the General Appropriations Act, Chapter 659 of the Texas Government Code and other relevant legislation to the extent the Executive Director determines a particular provision is in the best interest of the system and not in conflict with applicable law, fiduciary duty, or TRS policy.

(b) Under the terminology of the state compensation program, "classified" employees are those employees whose position classification titles, pay groups and ranges, and pay administration practices are based on the State Position Classification Plan and related salary administration provisions.

(c) Upon hiring or promotion, classified employees are assigned to a classification title that is consistent with assigned responsibilities. Initial base salaries for classified employees are set between the minimum and maximum of the assigned pay group, considering the employee's experience, education, knowledge and skills, and issues of external competitiveness and internal equity.

(d) "Exempt" employees' job titles, pay groups and ranges, and pay administration practices are not based on the State Position Classification Plan and related salary administration system. For purposes of the Plan, the Chief Investment Officer and the Investment Fund Directors are considered exempt employees, while the remainder of IMD employees are considered classified for compensation and other purposes. Employees who are exempt from the salary classification schedules do not have base salary ranges. As part of the annual TRS budgeting process, the Board authorizes the Executive Director to determine base salaries for exempt positions up to a not-to-exceed rate specified in the General Provisions of the TRS Budget. Initial base salaries for exempt employees are set by the Executive Director at or below the applicable not-to-exceed rate, considering the employee's experience, education, knowledge and skills, and issues of external competitiveness and internal equity.

3.2. Salary Adjustments

(a) Classified employees may receive base salary increases for a number of reasons, including but not limited to career ladder promotions, and merit increases for individual performance. Exempt employees may receive base salary adjustments (increase within the not-to-exceed rate or decrease) at the discretion of the Executive Director.

(b) Notwithstanding subsection 3.2(a), all base salary changes will be executed in accordance with TRS salary administration procedures.

4. INCENTIVE PAY PLAN

4.1. Purpose of the Plan and Effective Date

(a) The purpose of the Plan is to provide the opportunity for IMD employees to receive performance incentive pay based on specific criteria relative to TRS's investment performance and the employee's job performance.

(b) This version of the Plan is effective for Performance Periods beginning on or after the effective date shown on the cover page. A Potential Award for performance in prior Performance Periods can become earned and payable subject to the terms and conditions stated in the version of the Plan effective for those Performance Periods.

4.2. Performance Period

For purposes of the Plan, the "Performance Period" begins on October 1st of each year and ends the following September 30th.

4.3. Participation in the Plan

(a) An IMD employee who is in an "Eligible Position" on October 1 of the Performance Period is eligible to participate in the Plan (a "Participant") during that Performance Period.

(b) Notwithstanding Section 4.3(a) above, an IMD employee who first begins employment in an Eligible Position (through new hire, promotion or reassignment) after the beginning of the Performance Period will become a Participant as follows:

(i) If an IMD employee begins employment in an Eligible Position with an official hire date or effective date after October 1 but no later than January 1 the employee will become a Participant on January 1 and the Participant's award opportunity will be prorated to 75% of the Potential Award for that Performance Period.

(ii) If an IMD employee begins employment in an Eligible Position with an official hire date or effective date after January 1 but no later than April 1 the employee will become a Participant on April 1 and the Participant's award opportunity will be prorated to 50% of the Potential Award for that Performance Period.

(iii) If an IMD employee begins employment in an Eligible Position with an official hire date or effective date after April 1 but no later than July 1 the employee will become a Participant on July 1 and the Participant's award opportunity will be prorated to 25% of the Potential Award for that Performance Period

(iv) If an IMD employee begins employment in an Eligible Position with an official hire date or effective date after July 1 of a Performance Period the employee will not become a Participant until the beginning of the next Performance Period (assuming such employee is employed by TRS in an Eligible Position on October 1 of the Performance Period).

(v) If a Participant leaves an Eligible Position during a Performance Period and begins TRS employment in a non-Eligible Position, the Participant's Potential Award for the partial Performance Period will be prorated based on the number of completed calendar quarters worked in all Eligible Positions during that Performance Period.

(c) Generally, all permanent, full time employee positions assigned to the IMD are Eligible Positions under the Plan. Each Eligible Position within the IMD is assigned to an investment area that determines the profit center allocations included in the Participant's Potential Award calculation under Addendums A and B.

(d) Secondees, contract workers, and other temporary workers are not TRS employees and are not eligible to participate in the Plan.

(e) An Eligible Position in one Performance Period is not automatically an Eligible Position in any subsequent Performance Period.

(f) The Director of Human Resources will certify to the Executive Director in writing the name, base salary, hire date, effective date, Eligible Position title, and investment area assignment of each eligible Participant for the applicable Performance Period, including Participants employed in an Eligible Position for only a portion of the Performance Period.

(g) After the beginning of a Performance Period, if a Participant moves from one Eligible Position to another Eligible Position with a different position title or area assignment, the Participant's Potential Award for that Performance Period and the measurement of the Participant's performance will be prorated between the award calculated for the former Eligible Position title or investment area assignment and the award calculated for the new Eligible Position or investment area assignment as follows:

(i) If a Participant moves to a new Eligible Position or investment area assignment after October 1 but no later than January 1 the Participant's Potential Award and the measurement of the Participant's performance will be based on the former Eligible Position or investment area assignment for the period October 1 through December 31,

and on the new Eligible Position or investment area assignment for the period January 1 through September 30.

(ii) If a Participant moves to anew Eligible Position or investment area assignment after January 1 but on or before April 1 the Participant's Potential Award and the measurement of the Participant's performance will be based on the former Eligible Position or investment area assignment for the period October 1 through March 31, and on the new Eligible Position or investment area assignment for the period April 1 through September 30 .

(iii) If a Participant moves to the new Eligible Position or investment area assignment after April 1 but no later than July 1 the Participant's Potential Award and the measurement of the Participant's performance will be based on the former Eligible Position or investment area assignment for the period October 1 through June 30, and on the new Eligible Position or investment area assignment for the period July 1st through September 30 .

(iv) If a Participant moves to a new Eligible Position or investment area assignment after July 1 of a Performance Period the Participant's Potential Award will be based on the former Eligible Position or investment area assignment for the entire Performance Period.

(h) An employee will cease to be a Participant in the Plan on the earliest to occur of:

(i) Except as specifically provided in Section 4.3(b)(v) with respect to continued TRS employment, the date the employee is no longer employed in an Eligible Position;

(ii) The date of termination of the employee's employment with TRS for any reason. (For purposes of the Plan, the date of termination is the employee's last day worked and does not include any leave the employee was allowed to use to extend their employment for payroll purposes.); or

(iii) The date of termination of the Plan.

4.4. Investment Performance Components, Qualitative Components, and Potential Award

(a) Participants' Potential Awards will be based on a combination of investment performance and qualitative performance components.

(b) The investment performance components comprise two performance categories: 1) performance measured against pre-determined benchmarks and applicable excess return targets, and 2) performance measured against pre-determined peer groups.

(i) The benchmark index category of the investment performance component will determine 50% of the total Potential Award.

(ii) The peer group category of the investment performance component will determine 30% of the total Potential Award.

(c) Notwithstanding that the Performance Period is October 1 through September 30, due to the delay in availability of final performance data for Private Equity and Real Assets, performance measurements for these two investment areas will experience a one quarter time lag, such that all incentive calculations involving Private Equity and Real Assets performance will use data for the one and three year periods ending each June 30.

(d) Each Eligible Position will be assigned specific weightings for Total Fund and investment area performance as shown in Addendums A and B.

(i) To encourage a focus on the "big picture" and a sense of shared mission, the investment performance component (both benchmark and peer group categories) for all Eligible Positions

will have a Total Fund weighting of at least 20%. Weightings for investment area performance categories will be divided among the Eligible Position's primary investment area and other investment areas with which the Eligible Position has regular interaction.

(ii) Where no investment area peer group performance measures are available, that investment area peer group performance weighting allocation is added to the Total Fund peer group performance weighting allocation.

(e) The qualitative performance component will be measured as part of each Participant's annual performance appraisal process and may include multi-rater feedback regarding a variety of contributions and behaviors needed for organizational success that are not directly measured in the investment performance component, such as interpersonal relationship skills, accountability, effective teamwork, etc.

(i) Regardless of a Participant's performance towards the qualitative performance component, a Potential Award will only include the portion attributed to qualitative performance if the Participant has attained at least the threshold level of performance in the investment performance component.

(ii) To encourage appropriate organizational behaviors, the qualitative performance component for all Eligible Positions will be weighted at 20% of the Potential Award.

(f) A Potential Award is the gross award amount calculated based on the actual performance achieved in the Performance Period. Depending on performance, the Potential Award in a Performance Period varies from zero to 100% of the Maximum Potential Award. The Maximum Potential Award that can become earned and payable under the Plan is limited to the percentage of a Participant's Base Salary in an Eligible Position that is listed opposite each Eligible Position in the table below. The Maximum Potential Award applies regardless of whether a Participant has exceeded the stated maximum performance targets or the gross amount of the Potential Award calculated under the Plan.

ELIGIBLE POSITION	MAXIMUM POTENTIAL AWARD
Chief Investment Officer	125%
Deputy CIO	125%
Senior Managing Director	125%
Managing Director	125%
Senior Director	110%
Director	110%
Senior Investment Manager	90%
Investment Manager	85%
Senior Associate	65%
Associate	50%
Senior Analyst	35%
Analyst	25%
Administrative Assistants	5%

(g) Notwithstanding the Maximum Potential Award listed in Section 4.4(f) above, those Participants titled "Senior Investment Manager" who remain in the Eligible Position that was titled "Lead

Investment Manager" or "Lead Trader" in the Plan effective October 1, 2007, will continue to have a Maximum Potential Award of 100% of Base Salary. If the Participant transfers to a different Eligible Position with a title other than Senior Investment Manager, the Maximum Potential Award will change to that appropriate for the new Eligible Position and be prorated as set forth in Section 4.3(g).

(h) For each investment area, the profit center weighting and excess return relative to each assigned excess return target will combine to determine the Potential Award for each Eligible Position.

(i) The Potential Award includes a threshold, a maximum, and intermediate levels of Potential Award that correspond to specific levels of investment performance.

(ii) Intermediate levels of the Potential Award for investment performance are determined by linearly interpolating between the threshold and maximum.

(iii) For the qualitative component, intermediate levels of the Potential Award will be based on a system of annual performance evaluation approved by the Executive Director.

4.5. Compliance with TRS Policies

(a) IMD employees exercise fiduciary responsibilities delegated by the Board under applicable law. Investment professionals manage the portfolio according to the Board's policies, advise and inform the Executive Director and the Board about investments, and recommend modifications to the Investment Policy Statement. In addition, all IMD employees are responsible for complying with TRS policies, including without limitation the Investment Policy Statement, Ethics Policy, and the Fraud, Waste and Abuse Policy.

(b) Excess performance by a Participant or Participants resulting from a failure to manage the assets of TRS in accordance with applicable law, the Investment Policy Statement, or TRS Ethics Policy will result in the forfeiture for that portion of the Potential Award for those Participants resulting from that excess performance for the Performance Period in which the noncompliance occurred. The Executive Director will make this determination on a case-by-case basis.

(c) Serious violations of the TRS Investment Policy Statement, Ethics Policy, Fraud, Waste and Abuse Policy, or other TRS policy by a Participant, as determined by the Executive Director, will result in forfeiture of all Potential Awards for the Performance Period in which the violation(s) occurred, as well as for earlier Performance Periods that have not yet become earned (including without limitation any Potential Awards that are unearned and deferred as set forth in Section 4.8(b) below). Additionally, during the investigation of possible serious violations of law or policy, the Executive Director or the Board may suspend earning and payment of Potential Awards until the conclusion of the investigation.

4.6. Performance Standards and Measurements

(a) Investment Performance (for both benchmark and peer group categories) is measured on one year and three year historical performance data, weighted at 33% for one year performance (i.e., performance during the Performance Period) and 67% for the historical three year performance that includes the Performance Period. Investment Performance is measured relative to appropriate pre-defined benchmarks as detailed in the asset allocation and benchmarks table, including applicable footnotes, in the Board's Investment Policy Statement ("IPS"), as amended from time to time. For the purposes of this Plan, changes to the IPS benchmarks during a Performance Period will be effective from and after the effective date of such changes in the IPS, subject to revisions to the Plan adopted by the Board of Trustees. In no event may benchmark changes be applied retroactively except as required to comply with applicable law, including federal tax laws and regulations.

(b) Notwithstanding Section 4.6(a), the performance of any new profit center will be calculated for purposes of the Plan as follows:

(i) The investment performance of any new profit center (for both benchmark and peer group categories) will commence with the first full Performance Period commencing on or after the date the profit center is created;

(ii) For a new profit center's first full Performance Period, the profit center's investment performance will be based 100% on the profit center's performance data for the first full Performance Period;

(iii) For a new profit center's second full Performance Period, the profit center's investment performance will be weighted (x) 50% on the profit center's performance during the second full Performance Period, and (y) 50% on the profit center's two-year performance during the first and second full Performance Periods.

(iv) For all Performance Periods commencing after the second full Performance Period, the investment performance of a new profit center will be weighted (x) 33% on the profit center's performance during the one-year Performance Period just ended, and (y) 67% on the profit center's three-year performance during the three full Performance Periods just ended.

(v) For the purposes of this Plan, no investment performance will be calculated for a Performance Period for a new profit center created during that Performance Period, unless it existed on October 1 of that Performance Period.

(c) The qualitative performance component is measured annually as part of the Participant's current annual performance appraisal process.

4.7. Potential Award Calculations

(a) Following the end of each Performance Period, the Executive Director will review the actual performance of each Participant relative to the applicable performance components.

(b) Potential Awards are calculated based on the Participant's level of performance achieved in the applicable investment performance and qualitative performance components in each Performance Period.

(c) Relative performance data and calculations may be reviewed by an external independent source selected by the Executive Director, but final calculations are approved by the Executive Director.

4.8. Earning Potential Awards and Payouts

(a) Notwithstanding the Executive Director's approval of Potential Award calculations, Potential Awards will only become earned and payable as stated below:

(i) Subject to Section 4.8(b), if a Participant is employed by TRS on January 1 following the end of the Performance Period for which that employee was a Participant, 50% of the Potential Performance Incentive Award will become earned and payable. Payment of this award will generally be processed with that January payroll for delivery on or about February 1 of that calendar year; provided however that in no event will payment be made later than February 15 of that calendar year.

(ii) Subject to Section 4.8(b), if a Participant is employed by TRS on January 1 following the first anniversary of the end of the Performance Period for which that employee was a Participant, the remaining 50% of the Potential Performance Incentive Award will become earned and payable. Payment of this award will generally be processed with that

January payroll, for delivery on or about February 1 of that calendar year; provided however that in no event will payment be made later than February 15 of that calendar year.

The payment dates in respect of a Performance Period shall be the same for all Participants.

(b) Notwithstanding subsection 4.8(a), no Potential Awards will become earned or payable following a Performance Period in which the Fund experiences a total return of zero or less. If this occurs, Potential Awards for that Performance Period that otherwise would have become earned on the January 1 next following the end of that Performance Period will not become earned until January 1 following the next Performance Period in which the Total Fund has a return greater than zero during a Performance Period, subject to the requirement that the employee be employed by TRS on that January 1. Payment of this award will be processed with the January payroll, typically issued on or about February 1 of that calendar year; provided however that in no event will payment be made later than February 15of that calendar year.

(c) If an employee ceases to be a Participant before the end of a Performance Period due to termination of employment with TRS for any reason other than involuntary termination of employment due to a Reduction in Force, death, or disability within the meaning of Section 409A of the Internal Revenue Code, a Potential Award for that Performance Period will not become earned and will not be paid. Potential Awards from earlier Performance Periods that have not yet become earned (as set forth in Section 4.8(b) above) will not become earned and will not be paid.

(d) If an employee ceases to be a Participant before the end of a Performance Period due to involuntary termination of employment with TRS because of a Reduction in Force, death, or disability within the meaning of Section 409A of the Internal Revenue Code, a Potential Award for that Performance Period will not become earned and will not be paid. Notwithstanding Sections 4.8(a) – (b), Potential Awards from earlier Performance Periods will immediately become earned and payable. Payments under this subsection will be made to the terminated employee, or to the estate of the deceased employee, or to the disabled employee, or as otherwise provided by law. These payments will be made as soon as administratively practicable, but no later than 2½ months after the end of the calendar year in which the Reduction in Force, death or disability occurred.

(e) If an employee ceases to be a Participant before the end of a Performance Period due to termination of the Plan (as provided for in Section 5.1), a Potential Award for that Performance Period will not become earned and will not be paid. Potential Awards from earlier Performance Periods that have not yet become earned (as set forth in this Section 4.8), can become earned and be paid according to the terms in this Section 4.8, if the Board determines that such payments continue to be consistent with and in furtherance of the fiduciary duties of the Board in administering the retirement system, and if such payments are not prohibited by applicable law.

5. PLAN AUTHORITY AND RESPONSIBILITY

5.1 Plan Modification, Suspension and Termination

The Board shall have the right in its sole discretion to modify the Plan or any portion thereof at any time. The Board shall have the right in its sole discretion to suspend or terminate the Plan entirely or any portion thereof at any time. For avoidance of doubt, no modification, amendment, suspension, or reinstatement of this Plan may be given retroactive effect in the administration of this Plan except as required to comply with applicable law, including federal tax laws and regulations.

5.2 Plan Administration

Consistent with the provisions of the Plan, the Executive Director has the sole discretion to administer and interpret the Plan. The Executive Director may adopt such procedures and practices as deemed advisable to carry out the Plan.

5.3 Record Keeping and Reporting

All employee performance, salary and incentive pay records for the Plan shall be maintained by the Director of Human Resources.

5.4 Compliance with State and Federal Law

If the Executive Director or a court with appropriate jurisdiction determines that any provision of the Plan violates applicable state or federal law, that provision shall not be given effect. The remaining provisions of the Plan shall remain in full force and effect to the maximum extent possible, and any amendments or modifications that are necessary to give effect to the remaining provisions will be deemed to have been made to allow proper administration of the Plan.

6. AT-WILL EMPLOYMENT

Nothing in the adoption of this Plan or the awarding of performance incentive pay alters the at-will nature of TRS employment, creates a contract between TRS and any TRS employee, confers on any TRS employee the right to continued employment with TRS, or affects in any way the right of TRS to terminate the employment of employees at any time.

7. OTHER PLAN PROVISIONS

7.1. Non-assignment and Non-transferability of Awards

Potential Awards or the actual awards under the Plan are non-assignable and non-transferable and are not subject to anticipation, adjustment, alienation, encumbrance, garnishment, attachment or levy of any kind.

7.2 Plan Does Not Create a Property Interest, Trust, or Entitlement

(a) Neither the establishment of the Plan, the calculation of Potential Awards or the actual awards shall be deemed to create a property interest, trust or entitlement. The Plan is an unfunded, unsecured liability of TRS to make payments in accordance with the provisions of the Plan. Any amounts budgeted by TRS for awards earned under the Plan are TRS assets, and no employee or third party shall have any property, security, or other interest in any assets of TRS by reason of the Plan.

(b) Nothing in the Plan shall be deemed to create or confer any right, interest, or title to any specific property of TRS to any Participant, or to any personal representative or beneficiary of a Participant.

7.3 Tax and Other Deductions

All payments under the Plan shall be subject to any deductions (1) for tax and withholding required by federal, state, or local law at the time of payment and (2) for any and all amounts owed by the employee to TRS at the time of payment. TRS is not obligated to advise an employee of the existence of any tax or the amounts that TRS will be required to withhold.

7.4 Payments Not Eligible for Retirement Purposes

Any payments made pursuant to the Plan are fringe benefits and are not eligible compensation for TRS pension plan purposes.

7.5 Grievances

All grievances related to the Plan will be addressed according to the TRS Grievance and Appeals Policy or any successor policy, as amended from time to time.

8. DEFINITIONS

Base Salary for use in the Plan is the Participant's annualized monthly salary as of October 1 of the applicable Performance Period (not including longevity or benefit replacement pay), or the annualized monthly salary of new Participants as of the date they first become a Participant, as certified by the Director of Human Resources.

Eligible Position is defined in Section 4.4(f). Eligible Position refers to the position, not the actual Participant in the position, and includes all positions assigned to the Investment Division and listed in Section 4.4(f).

Investment areas are listed in the first column of Addendums A and B.

Maximum Potential Award is defined in Section 4.4(f) and is the maximum Potential Award that can become earned and payable with respect to an Eligible Position during a Performance Period.

Participant is an employee in an Eligible Position on October 1 of the Performance Period, or who first is employed in an Eligible Position after the beginning of the Performance Period based on the schedule detailed in the Plan, as certified by the Director of Human Resources.

Performance Period is the period beginning on October 1 of each year and ending on September 30 of the following year.

Potential Award is defined in Section 4.4(f) and is the amount calculated based on the Participant's performance achieved in the applicable investment performance and qualitative performance components. A Potential Award is capped at the Maximum Potential Award, regardless of whether the Participant exceeds the stated maximum performance. The phrase "award opportunity" is synonymous with Potential Award.

Profit centers are listed in the first row of Addendum A, except that Trade Management is also listed as a profit center in the first row of Addendum B only for peer allocation purposes.

Reduction in Force for use in the Plan refers to termination of an employee due to elimination of the employee's position caused by a required reduction in the number of TRS Full-Time Equivalents (FTEs) or by a required reduction in expenses within the TRS operating budget. The Executive Director has sole discretion in determining whether an employee's termination is due to a Reduction in Force.

SAA means the Strategic Asset Allocation investment area.

SPN means a Strategic Partner Network investment area. TRS has both private markets and public markets SPNs.

TAA means the Tactical Asset Allocation investment area.

Total Fund means the TRS total or overall investment portfolio and includes all pension assets held in trust by TRS and invested by the IMD to provide retirement, death, and disability benefits administered by the system, including cash and cash equivalents. For avoidance of doubt, for the purposes of the Plan the Total Fund does not include the assets of health plans administered by TRS and held in trust by the Board of Trustees.

Administrative Policy

Reviewer: Executive Director, Chief Investment Officer, Human Resources & Legal Services

Review Cycle: Annually

Authorized by: TRS Board of Trustees

Approved: Brian Guthrie_____

Executive Director

*This version of the Plan is effective for performance periods beginning on or after October 1, 2012. Any awards for performance in prior Performance Periods can become earned and payable subject to the terms and conditions stated in the versions of the Plan effective for those Performance Periods.

Current Effective Date: October 1, 2012*

First Issued: October 1, 2007

Last Reviewed/Revised: September ___, 2012

Next Review Due: August, 2013

Date: September ____, 2012

Date: October ____, 2012

Addendum A

Performance Payout Allocation and Maximum Payout Targets vs. Passive Benchmark (50% of Potential Award)

Fund Level	Total Fund	Internal Public	External Public	Private Equity	Risk [1]	Stable Value / SAA	Real Assets	TAA	Public and Private SPN and Opportunistic [2]	Natural Resources	Emerging Managers	Total
Index	**Total Fund Policy Composite Index**	**Global Equity Portfolio vs. MSCI ACWI Free (net)**	**Daily Weighted Excess Return Based on Actual Portfolio Weights**	**State Street Private Equity Index**	**Daily Weighted Excess Return Based on Actual Portfolio Weights**	**Daily Weighted Excess Return Based on Actual Portfolio Weights**	**NCREIF**	**Total Profit & Loss for Incentive Period/Total Trust Average Daily Balance**	**Daily Weighted Excess Return Based on Actual Portfolio Weights**	**Daily Weighted Excess Return Based on Actual Portfolio Weights**	**Daily Weighted Excess Return Based on Actual Portfolio Weights**	
Excess Return Target	**100 bps**	**50 bps**	**100 bps**	**300 bps**	**75 bps**	**35 bps**	**250 bps**	**25 bps**	**175 bps**	**175 bps**	**100 bps**	
CIO/Deputy CIO	75.00%					5.00%	5.00%		5.00%	5.00%	5.00%	100.00%
Risk	50.00%	5.00%	5.00%	5.00%	20.00%	5.00%	5.00%	5.00%				100.00%
Internal Public Markets	30.00%	60.00%	5.00%	5.00%								100.00%
External Public Markets	30.00%	5.00%	60.00%	5.00%								100.00%
Private Equity	30.00%	5.00%	5.00%	60.00%								100.00%
Stable Value / SAA	50.00%					50.00%						100.00%
Real Assets	30.00%						60.00%			10.00%		100.00%
Tactical Asset Allocation (TAA)	30.00%							60.00%	10.00%			100.00%
Public and Private SPN / Opportunistic	30.00%							10.00%	60.00%			100.00%
Natural Resources	30.00%	10.00%								60.00%		100.00%
Emerging Managers	30.00%		10.00%	10.00%			10.00%				40.00%	100.00%
Trade Management Group	30.00%	20.00%	10.00%			20.00%		20.00%				100.00%
Investment Operations	50.00%	10.00%	10.00%	5.00%		10.00%	5.00%	10.00%				100.00%

Notes: [1] Risk group allocation excludes Trust hedging activities. [2] Benchmark for Public SPN is the SPN Composite Index.

Addendum B

Performance Payout Allocation and Maximum Payout Targets vs. Peer Group Comparison
(30% of Potential Award)

Fund Level	Total Fund	Trade Management Group	Private Equity	Real Assets	Total
Index	**TUCS Public Funds > $10 Billion Universe**	**ITG / Plexus**	**TUCS Private Equity > $1 billion Universe**	**Real Estate vs. TUCS Real Estate > $1 billion Universe**	
Excess Return Target	**100 bps**	**8 bps**	**300 bps**	**250 bps**	
CIO/Deputy CIO	90.00%	0.00%	5.00%	5.00%	100.00%
Risk	90.00%	0.00%	5.00%	5.00%	100.00%
Internal Public Markets	95.00%	0.00%	5.00%	0.00%	100.00%
External Public Markets	95.00%	0.00%	5.00%	0.00%	100.00%
Private Equity	40.00%	0.00%	60.00%	0.00%	100.00%
Stable Value / SAA	70.00%	30.00%	0.00%	0.00%	100.00%
Real Assets	40.00%	0.00%	0.00%	60.00%	100.00%
Tactical Asset Allocation (TAA)	100.00%	0.00%	0.00%	0.00%	100.00%
Public and Private SPN / Opportunistic	90.00%	10.00%	0.00%	0.00%	100.00%
Natural Resources	90.00%	0.00%	0.00%	10.00%	100.00%
Emerging Managers	80.00%	0.00%	10.00%	10.00%	100.00%
Trade Management Group	50.00%	50.00%	0.00%	0.00%	100.00%
Investment Operations	50.00%	40.00%	5.00%	5.00%	100.00%

Teacher Retirement System of Texas

PERFORMANCE INCENTIVE PAY PLAN

Effective October 1, ~~2011~~2012

This version of the Plan is effective for Performance Periods beginning on or after October 1, ~~2011~~2012. Any awards for performance in prior Performance Periods~~,~~ can become earned and payable subject to the terms and conditions stated in the versions of the Plan effective for those P~~p~~erformance P~~p~~eriods. No modification of the Plan may be given retroactive effect except as required to comply with applicable law, including federal tax laws and regulations.

Table of Contents

1. PERFORMANCE INCENTIVE PLAN PURPOSE AND AUTHORIZATION 3
2. PLAN OBJECTIVES AND STRATEGY 3
   2.1 Plan Objectives 3
   2.2 Plan Strategy 3
3. BASE SALARY ADMINISTRATION 3
   3.1. Salary Structure 3
   3.2. Salary Adjustments 4
4. INCENTIVE PAY PLAN 4
   4.1. Purpose of the Plan and Effective Date 4
   4.2. Performance Period 4
   4.3. Participation in the Plan 4
   4.4. Investment Performance Components, Qualitative Components, and Potential Award 6
   4.5. Compliance with TRS Policies 8
   4.6. Performance Standards and Measurements 8
   4.7. Potential Award Calculations 9
   4.8. Earning Potential Awards and Payouts 9
5. PLAN AUTHORITY AND RESPONSIBILITY 10
   5.1 Plan Modification, Suspension and Termination 10
   5.2 Plan Administration 11
   5.3 Record Keeping and Reporting 11
   5.4 Compliance with State and Federal Law 11
6. AT-WILL EMPLOYMENT 11
7. OTHER PLAN PROVISIONS 11
   7.1. Non-assignment and Non-transferability of Awards 11
   7.2 Plan Does Not Create a Property Interest, Trust, or Entitlement 11
   7.3 Tax and Other Deductions 11
   7.4 Payments Not Eligible for Retirement Purposes 11
   7.5 Grievances 12
8. DEFINITIONS 12
Addendum A 14
Addendum B 15

~~1. Plan Purpose and Authorization ..... 3~~
~~2. Plan Objectives and Strategy ..... 3~~
~~2.1 Plan Objective ..... 3~~
~~2.2 Plan Strategy ..... 3~~
~~3. Base Salary Administration~~
~~3.1 Salary Structure ..... 4~~
~~3.2 Salary Adjustments ..... 4~~
~~4. Incentive Pay Plan~~
~~4.1 Purpose of the Plan and Effective Date ..... 5~~
~~4.2 Performance Period ..... 5~~
~~4.3 Participation in the Plan ..... 5~~
~~4.4 Investment Performance Components, Qualitative Component, and Incentive Award Opportunity ..... 7~~
~~4.5 Compliance With TRS Policies ..... 10~~
~~4.6 Performance Standards and Measurements ..... 10~~
~~Potential Performance Incentive Award Calculations ..... 11~~
~~4.8Definitions ..... 16~~
~~Addendum A ..... 18~~
~~Addendum B ..... 19~~
~~Addendum C ..... 20~~

1. PERFORMANCE INCENTIVE PLAN PURPOSE AND AUTHORIZATION

To remain competitive in its efforts to attract and retain high caliber Investment Management Division (IMD) ~~staff~~employees, the Teacher Retirement System of Texas (TRS) strives to offer a competitive compensation package. Awards of p~~P~~erformance incentive pay based on specified performance criteria are ~~is~~ an industry standard practice in the private ~~sector~~ investment sector ~~arena~~ and are ~~is~~ rapidly becoming a standard practice in the public sector. By offering both a competitive base salary and performance incentive award opportunity~~pay~~, TRS enhances its ability to fulfill ~~the~~ its mission to "prudently invest and manage the assets held in trust for members and beneficiaries in an actuarially sound system administered in accordance with applicable fiduciary principals." Therefore, pursuant to the laws governing TRS, the TRS Board of Trustees (the "Board") has determined that establishing and expending funds for this Performance Incentive Pay Plan (the "Plan") is consistent with and in furtherance of the ~~required to perform the~~ fiduciary duties of the Board in administering the retirement system.

2. PLAN OBJECTIVES AND STRATEGY

2.1 Plan Objectives

The Plan serves a number of objectives:

- To attract and retain ~~Investment Division~~ IMD ~~staff~~employees who have outstanding ability;
- To create incentives for ~~encourage Investment Division~~IMD ~~staff~~employees to develop a strong commitment to the long-term investment performance of the assets for which TRS has been delegated investment responsibility; and
- To motivate investment professionals to focus on maximizing real, long-term returns for all funds managed by TRS while assuming appropriate levels of risk.

2.2 Plan Strategy

The Plan strategy includes:

- Base salaries, targeted at competitive levels, as defined by the Executive Director and the Board with actual individual base salaries determined by an employee's experience, education, knowledge, skills and overall job performance.
- Performance incentive pay award opportunities, calculated as a percentage of an employee's base salary for performance above pre-determined standards, earned contingent upon continued employment in an Eligible Position at specified times and generally payable in two annual installments, subject to deferral as set forth in Section 4.8(b) ~~over a two-year period~~.

3. BASE SALARY ADMINISTRATION

3.1. Salary Structure

(a) Notwithstanding any other law, the Board approves the rates of compensation of all ~~investment division~~IMD employees. Under state law, the Board's Bylaws, and as part of the annual TRS budgeting process, t~~T~~he Board authorizes the Executive Director to determine and propose base salary ~~adopt~~ rates of compensation generally based on the salary schedules, position classifications and salary administration practices of Article IX of the General Appropriations Act, Chapter 659 of the Texas Government Code and other relevant legislation to the extent the Executive Director determines a particular provision is in the best interest of the system and not in conflict with applicable law, fiduciary duty, or TRS policy.

(b) Under the terminology of the state compensation program, "classified" employees are those employees whose position classification titles, pay groups and ranges, and pay administration practices are based on the State Position Classification Plan and related salary administration provisions. ~~"Exempt" employees' job titles, pay groups and ranges, and pay administration practices are not based on the State Position Classification Plan and related salary administration system. For purposes of the Plan, the Chief Investment Officer and the Investment Fund Directors are considered exempt employees, while the remainder of TRS investment division employees are considered classified.~~

(c) Upon hiring or promotion, classified employees are assigned to a classification title that is consistent with assigned responsibilities. Initial base salaries for classified employees are set between the minimum and maximum of the assigned pay group, considering the employee's experience, education, knowledge and skills, and issues of external competitiveness and internal equity.

(d) "Exempt" employees' job titles, pay groups and ranges, and pay administration practices are not based on the State Position Classification Plan and related salary administration system. For purposes of the Plan, the Chief Investment Officer and the Investment Fund Directors are considered exempt employees, while the remainder of IMD ~~TRS investment division~~ employees are considered classified for compensation and other purposes. ~~Exempt~~ E~~e~~mployees who are exempt from the salary classification schedules do not have base salary ranges. As part of the annual TRS budgeting process, t~~T~~he Board authorizes the Executive Director to determine ~~set~~ base salaries for exempt positions up to a not-to-exceed rate specified in the General Provisions of the TRS Budget. Initial base salaries for exempt employees are set by the Executive Director at or below the applicable not-to-exceed rate, considering the employee's experience, education, knowledge and skills, and issues of external competitiveness and internal equity.

3.2. Salary Adjustments

(a) Classified employees may receive base salary increases for a number of reasons, including but not limited to career ladder promotions, and merit increases for ~~demonstrated~~ individual performance. Exempt employees may receive base salary adjustments (increase within the not-to-exceed rate or decrease) at the discretion of the Executive Director.

(b) Notwithstanding subsection 3.2~~-~~(a), all base salary changes will be executed in accordance with TRS salary administration procedures.

4. INCENTIVE PAY PLAN

4.1. Purpose of the Plan and Effective Date

(a) The purpose of the Plan is to provide the opportunity for ~~Investment Division~~IMD employees to receive performance incentive pay based on specific criteria relative to TRS's investment performance and the employee's job performance.

(b) This version of the Plan is effective for Performance Periods ~~performance periods~~ beginning on or after the effective date shown on the cover page ~~October 1, 2010~~. A Potential Award ~~Any awards~~ for performance in prior Performance Periods can become earned and payable subject to the terms and conditions stated in the version of the Plan effective for those Performance Periods.

4.2. Performance Period

For purposes of the Plan, the "Performance Period" begins on October 1st of each year and ends the following September 30th.

4.3. Participation in the Plan

(a) An IMD employee who is in an "Eligible Position" on October 1st of the Performance Period~~,~~ is eligible to participate in the Plan (a "Participant") during that Performance Period.

(b) Notwithstanding ~~section~~Section 4.3~~.~~(a) above, an IMD employee who first begins employment in an Eligible Position (through new hire, promotion or reassignment) after the beginning of the Performance Period will become a Participant as follows:

(i) If an ~~the~~ IMD employee begins employment in an Eligible Position with an official hire date or effective date after October 1st but no later than January 1st the employee will become a Participant on January 1st and the Participant's award opportunity~~Potential Performance Incentive Awards~~ will be prorated to 75% of the ~~Incentive~~ Potential Award for that Performance Period ~~Opportunity as defined in subsection 4.4 (f)~~.

(ii) If an ~~the~~ IMD employee begins employment in an Eligible Position with an official hire date or effective date after January 1st but no later than April 1st the employee will become a Participant on April 1st and the Participant's award opportunity ~~Potential Performance Incentive Awards~~ will be prorated to 50% of the Potential Award for that Performance Period ~~Incentive Award Opportunity as defined in subsection 4.4 (f)~~.

(iii) If an ~~the~~ IMD employee begins employment in an Eligible Position with an official hire date or effective date after April 1st but no later than July 1st the employee will become a Participant on July 1st and the Participant's award opportunity ~~Potential Performance Incentive Awards~~ will be prorated to 25% of the Potential Award for that Performance Period~~Incentive Award Opportunity as defined in subsection 4.4 (f).~~

(iv) If an IMD ~~the~~ employee begins employment in an Eligible Position with an official hire date or effective date after July 1st of a Performance Period the employee will not become a Participant until the beginning of the next Performance Period (assuming such employee is employed by TRS in an Eligible Position on October 1st of the Performance Period).

(v) If a Participant leaves an Eligible Position during a Performance Period and begins TRS employment in a non-Eligible Position, the Participant's Potential Award for the partial Performance Period will be prorated based on the number of completed calendar quarters worked in all Eligible Positions during that Performance Period.

(c) Generally, all permanent, full time employee positions assigned to the ~~Investment Division~~IMD are Eligible Positions under the Plan. ~~However, contract workers are not TRS employees and thus not eligible to participate in the Plan~~Each Eligible Position within the IMD is assigned to an investment area that determines the profit center allocations included in the Participant's Potential Award calculation under Addendums A and B. ~~Section 4.4 (f) contains a list of Eligible Position titles.~~

(d) Secondees, contract workers, and other temporary workers are not TRS employees and are not eligible to participate in the Plan.

(~~d~~e) An Eligible Position in one Performance Period is not automatically an Eligible Position in any subsequent Performance Period.

(~~e~~f) The Director of Human Resources will certify to the Executive Director in writing the name, base salary, hire date, effective date, Eligible Position title, and investment area assignment of each eligible Participant for the applicable Performance Period, including Participants employed in an Eligible Position for only a portion of the Performance Period. ~~The Director of Human Resources will also certify the base salary, position title and Area assignment for each participant~~

(~~f~~g) After the beginning of a Performance Period, if a Participant moves from one Eligible Position to another Eligible Position with a different position title or area assignment, the Participant's Potential ~~Performance Incentive~~ Award~~s~~ for that Performance Period and the measurement of the Participant's performance will be prorated between ~~that~~ the award calculated ~~appropriate~~ for the former Eligible Position ~~old position~~ title or investment area assignment and the award calculated ~~that appropriate~~ for the new Eligible Position ~~position title~~ or investment area assignment as follows:

(i) If a Participant ~~the employee~~ moves to a ~~the~~ new Eligible Position ~~position title~~ or investment area assignment after October 1st but no later than January 1st the Participant's ~~employee's~~ Potential ~~Performance Incentive~~ Award~~s~~ and the measurement of the Participant's performance will be based on the former Eligible Position ~~old position title~~ or investment area assignment for the period October 1st through December 31st, and on the new Eligible Position ~~position title~~ or investment area assignment for the period January 1st through September 30th.

(ii) If a Participant ~~the employee~~ moves to a~~the~~ new Eligible Position ~~position title~~ or investment area assignment after January 1st but on or before ~~no later than~~ April 1st the Participant's ~~employee's~~ Potential ~~Performance Incentive~~ Award~~s~~ and the measurement of the Participant's performance will be based on the former Eligible Position ~~old position title~~ or investment area assignment for the period October 1st through March 31st, and on the new Eligible Position ~~position title~~ or investment area assignment for the period April 1st through September 30th.

(iii) If a Participant ~~the employee~~ moves to the new Eligible P~~p~~osition ~~title~~ or investment area assignment after April 1st but no later than July 1st the Participant's ~~employee's~~ Potential ~~Performance Incentive~~ Award~~s~~ and the measurement of the Participant's performance will be based on the former Eligible Position ~~old position title~~ or investment area assignment for the period October 1st through June 30th, and on the new Eligible Position ~~position title~~ or investment area assignment for the period July 1st through September 30th .

(iv) If a Participant ~~the employee~~ moves to a ~~the~~ new Eligible Position ~~position title~~ or investment area assignment after July 1st of a Performance Period the Participant's ~~employee's~~ Potential ~~Performance Incentive~~ Award~~s~~ will be based on the former Eligible Position ~~old position title~~ or investment area assignment for the entire Performance Period.

(~~g~~h) An employee will cease to be a Participant in the Plan on the earliest to occur of:

(i) Except as specifically provided in Section 4.3(b)(v) with respect to continued TRS employment, t~~T~~he date the employee is no longer employed in an Eligible Position;

(ii) The date of termination of the employee's employment with TRS for any reason. (For purposes of the Plan, the date of termination is the employee's last ~~physical~~ day worked and does not include any leave the employee was allowed to use to extend their employment for payroll purposes.); or

(iii) The date of termination of the Plan.

4.4. Investment Performance Components, Qualitative Component~~s~~, and ~~Incentive~~ Potential Award ~~Opportunity~~

(a) ~~Generally,~~ Participants' ~~Potential~~ Potential ~~Performance Incentive A~~Awards will be based on a combination of investment performance and qualitative performance components. ~~The Investment Performance Component includes a pre-defined combination of Fund and Area performance versus benchmarks and versus peer groups of other large public funds. The Qualitative Performance Component includes performance in a variety of contributions and behaviors needed for organizational success.~~

(b) The investment performance components ~~Investment Performance Component~~ comprise ~~includes~~ two p~~P~~erformance c~~C~~ategories: ~~–~~ 1) ~~Benchmark P~~performance measured against pre-determined benchmarks and applicable excess return targets, and 2) performance measured against pre-determined ~~Peer~~ peer ~~Group~~ groups. ~~Where applicable, each Performance Category contains two Performance Sub-Categories – Fund Performance and Area Performance.~~

(i) The benchmark index category of the investment performance component will determine 50% of the total Potential Award.

(ii) The peer group category of the investment performance component will determine 30% of the total Potential Award.

~~(i) The Fund Benchmark Performance sub-category measures the performance of the total fund relative to a predetermined benchmark.~~

~~(ii) The Fund Peer Group Performance sub-category measures the performance of the total fund relative to the performance of a predefined universe of large public funds.The Area Benchmark Performance sub-category measures the performance of specific sub-groups ("Areas") of the total fund relative to predetermined benchmarks.~~

(iii) The Area Benchmark Performance sub-category measures the performance ofsub-groups ("Areas") of the total fund relative to predetermined benchmarks.

(iv) Where available, the Area Peer Group Performance sub-category measures the performance of investment Areas relative to the performance of similar investment Areas of a predefined universe of large public funds.

Investment Areas include:

- Strategic Partner Management
- Internal Public Markets
- External Public Markets
- Real Asset
- Private Equity
- Trade Management Group

(c) Notwithstanding that the Performance Period is October 1st through September 30th, due to the delay in availability of final performance data for Private Equity and Real AssetsPrivate Equity and Real Assets, performance measurements for these two iInvestment Aareas will experience a one quarter time lag, such that all incentive calculations involving Private Equity and Real Assets performance will use data for the one and three year twelve month periods ending each June 30th.

For the first year of this change in measurement period for Private Equity and Real Assets, incentive calculations will use data for the nine month period beginning October 1, 2009 and ending June 30, 2010 for one year performance. Measurement of three year performance for these Investment Areas during the first year of this change will use data from October 1, 2007 through June 30, 2010.Benchmark targets and participant performance during the first year of this change will be prorated proportionately to the change in the measurement period.(d) Each Eligible Position will be assigned specific weightings for Total Fund and investment area performance Area Performance as shown in Addendums A and B.

(i) To encourage a focus on the "big picture" and a sense of shared mission, the investment performance component Investment Performance Component (both benchmark and peer group categoriesBenchmark and Peer Group Categories) for all Eligible Positions will have a Total Fund weighting of at least 20%. Weightings for investment area performance Area Performance Sub-categories will be divided among the Eligible Position's primary investment area Area and other investment areas Areas with which the Eligible Position has regular interaction.

(ii) Where no investment area peer group Area Peer Group Pperformance measures are available, that investment area peer group performanceArea Peer Group Performance weighting allocation is added to the Total Fund peer group performance Peer Group Performance weighting allocation.

(e) The qualitative performance componentQualitative Performance Component will be measured as part of the each Participant's annual performance appraisal process and may include multi-rater feedback regarding a variety of contributions and behaviors needed for organizational success that are not directly measured in the investment performance componentInvestment Performance Component, such as interpersonal relationshipal skills, accountability, effective teamwork, etc.

(i) (e) Regardless of a Participant's performance towards the qualitative performance componentQualitative Performance Component, a Potential Performance Incentive Awards will

only include the portion attributed to qualitative performance ~~Qualitative Performance~~ if the Participant has attained at least the threshold level of performance in the investment performance component~~Investment Performance Component~~.

(ii) To encourage appropriate organizational behaviors, the qualitative performance component ~~Qualitative Performance Component~~ for all Eligible Positions will be weighted at 20% of the Potential Award.

~~Where no Area Peer Group Performance measures are available, that Area Peer Group Performance weighting allocation is added to the Fund Peer Group Performance weighting allocation.~~

~~To encourage appropriate organizational behaviors, the Qualitative Performance Component for all Eligible Positions will be weighted at 20~~

~~(e) Regardless of a Participant's performance towards the Qualitative Performance Component, Potential Performance Incentive Awards will only include the portion attributed to Qualitative Performance if the Participant has attained at least the threshold level of performance in the Investment Performance Component.~~

(f) A Potential Award is the gross award amount calculated based on the actual performance achieved in the Performance Period. Depending on performance, the Potential Award in a Performance Period varies from zero to 100% of the Maximum Potential Award. The ~~"Incentive Award Opportunity" for a Performance Period is expressed as a percentage of the "~~Maximum Potential Award that can become earned and payable under the Plan is limited to ~~Opportunity," which~~ the percentage ~~ranges from 5% to 125%~~ of a Participant's Base Salary ~~the employee's base salary, depending on~~ in an ~~the~~ Eligible Position that is listed opposite each Eligible Position ~~detailed~~ in the table below. The Maximum Potential Award applies regardless of whether a Participant has exceeded the stated maximum performance targets or the gross amount of the Potential Award calculated under the Plan.

ELIGIBLE POSITION	**MAXIMUM POTENTIAL AWARD ~~OPPORTUNITY~~**
Chief Investment Officer	125%
Deputy CIO	125%
Senior Managing Director	125%
Managing Director	125%
Senior Director	110%
Director	110%
Senior Investment Manager	90%
Investment Manager	85%
Senior Associate	65%
Associate	50%
Senior Analyst	35%
Analyst	25%
Administrative Assistants	5%

(g) Notwithstanding the Maximum Potential Award listed ~~Opportunities detailed~~ in Section 4.4 (f) above, those Participants titled "Senior Investment Manager" who remain in the Eligible Position

that was titled "Lead Investment Manager" or "Lead Trader" in the Plan effective October 1, 2007, will continue to have a Maximum Potential Award ~~Opportunity~~ of 100% of Base Salary. If the Participant transfers to a different Eligible Position with a title other than Senior Investment Manager, the Maximum Potential Award ~~Opportunity~~ will change to that appropriate for the new Eligible Position and be prorated as set forth ~~detailed~~ in Section 4.3(g) ~~(f)~~.

(h) For each investment area, the profit center weighting and excess return relative to each assigned excess return target will combine to determine the Potential Award for each Eligible Position.

(i) The ~~Incentive Award Opportunity~~Potential Award includes a threshold, a maximum, and intermediate levels of Potential Award ~~potential award~~ that correspond to specific levels of investment performance.

(ii) ~~For the Investment Performance Component, I~~intermediate levels of the Potential Award for investment performance ~~potential award~~ are determined by linearly interpolating between the threshold and maximum.

(iii) For the qualitative component~~Qualitative Component~~, intermediate levels of the Potential Award ~~potential award~~ will be based on a system of annual performance evaluation approved by the Executive Director.~~determined in discrete quartiles~~

~~(i) "Potential Performance Incentive Awards" are the amounts calculated based on the actual performance achieved in the Performance Period.The Incentive Award Opportunity in a Performance Period ranges from zero to 100% of the Maximum Award Opportunity and Potential Performance Incentive Awards are capped at the Maximum Award Opportunity, regardless of whether a Participant exceeds the stated maximum performance levels.~~

4.5. Compliance w~~W~~ith TRS Policies

(a) IMD ~~Investment Division staff~~employees exercise fiduciary responsibilities delegated by the Board under applicable law. Investment professionals manage the portfolio according to the Board's policies, advise and inform the Executive Director and the Board about investments, and recommend modifications to the Investment Policy Statement. In addition, all IMD ~~Investment Division staff~~employees are responsible for complying with TRS policies, including without limitation the ~~TRS~~ Investment Policy Statement, Ethics Policy, and the Fraud, Waste and Abuse Policy.

(b) Excess performance by a Participant or Participants resulting from a failure to manage the assets of TRS in accordance with applicable law, the Investment Policy Statement, or TRS Ethics Policy will result in the forfeiture for that portion of the Potential ~~Performance Incentive~~ Award~~s~~ for those Participants ~~that individual~~ resulting from that excess performance for the Performance Period in which the noncompliance occurred. The Executive Director will make this determination on a case-by-case basis.

(c) Serious violations of the TRS Investment Policy Statement, Ethics Policy, Fraud, Waste and Abuse Policy, or other TRS policy by a Participant, as determined by the Executive Director, will result in forfeiture of all Potential ~~Performance Incentive~~ Awards ~~calculated~~ for the Performance Period in which the violation(s) occurred, as well as for earlier Performance Periods that have not yet become earned (including without limitation any Potential Awards that are unearned and deferred as set forth in S~~s~~ection 4.8(b) below). Additionally, during the investigation of possible serious violations of law or policy, the Executive Director or the Board may suspend earning and payment of Potential ~~Performance Incentive~~ Awards until the conclusion of the investigation.

4.6. Performance Standards and Measurements

(a) Investment Performance (for both b~~B~~enchmark and p~~P~~eer g~~G~~roup c~~C~~ategories) is measured on one year and three year historical performance data, weighted at 33% for one year performance (i.e., performance during the Performance Period) and 67% for the historical three year performance that includes the Performance Period. Investment Performance is measured relative to appropriate pre-defined benchmarks as detailed in the asset allocation and benchmarks table, including applicable footnotes, in the Board's Investment Policy Statement ("IPS"), as amended from time to time ~~Addendum C~~. For the purposes of this Plan, changes to the IPS benchmarks during a Performance Period will be effective from and after the effective date of such changes in the IPS, subject to revisions to the Plan adopted by the Board of Trustees. In no event may benchmark changes be applied retroactively except as required to comply with applicable law, including federal tax laws and regulations.

(b) Notwithstanding Section 4.6(a), the performance of any new profit center will be calculated for purposes of the Plan as follows:

(i) The investment performance of any new profit center (for both benchmark and peer group categories) will commence with the first full Performance Period commencing on or after the date the profit center is created;

(ii) For a new profit center's first full Performance Period, the profit center's investment performance will be based 100% on the profit center's performance data for the first full Performance Period;

(iii) For a new profit center's second full Performance Period, the profit center's investment performance will be weighted (x) 50% on the profit center's performance during the second full Performance Period, and (y) 50% on the profit center's two-year performance during the first and second full Performance Periods.

(iv) For all Performance Periods commencing after the second full Performance Period, the investment performance of a new profit center will be weighted (x) 33% on the profit center's performance during the one-year Performance Period just ended, and (y) 67% on the profit center's three-year performance during the three full Performance Periods just ended.

(v) For the purposes of this Plan, no investment performance will be calculated for a Performance Period for a new profit center created during that Performance Period, unless it existed on October 1 of that Performance Period.

(c~~b~~) The qualitative performance ~~Qualitative Performance~~ component is measured annually as part of the Participant's current annual performance appraisal process.

~~(c) During the initial implementation of the Plan, Investment Performance will be measured as follows:~~

~~(i) For the first year of the Plan (the October 1, 2008 through September 30, 2009 Performance Period), Investment Performance will be measured on two years of historical performance data, weighted at 50% for one year performance (i.e., performance during the Performance Period) and 50% for the performance in the year prior to the Performance Period, except that Fund Performance will be based on one full year of historical performance.~~

~~(ii) For the second year (the October 1, 2009 through September 30, 2010 Performance Period) and subsequent years of the Plan, Investment Performance will be based on one year and three year historical performance as detailed in section 4.6 (a) above, except~~

that, for the second year only, Fund Performance will be based on 2 years of historical performance, weighted at 50% for one year performance (i.e., performance during the Performance Period) and 50% for the performance in the year prior to the Performance Period.

4.7. Potential Performance Incentive Award Calculations

(a) Following the end of each Performance Period, the Executive Director will review the actual performance of each Participant relative to the applicable performance components Performance Components.

(b) Potential Performance Incentive Awards are calculated based on the Participant's level of performance achieved in the applicable investment performance Investment and qualitative performance components Qualitative Performance Components in each Performance Period.

(c) Relative performance data and calculations may be reviewed by an external independent source selected by the Executive Director, but final calculations are approved by the Executive Director.

4.8. Earning Potential Performance Incentive Awards and Payouts

(a) Notwithstanding the Executive Director's approval of Potential Performance Incentive Award calculations, Potential Performance Incentive Awards will only become earned and payable as stated below:

(i) Subject to Section 4.8(b), iIf a Participant the employee is employed by TRS on January 1st following the end of the Performance Period for which that employee was they were a Participant, 50% of the Potential Performance Incentive Award will become earned and payable. Payment of this award will generally be processed with that January payroll, for delivery typically issued on or about February 1st of that calendar year; provided however that in no event will payment be made later than February 15th of that calendar year.

(ii) Subject to Section 4.8(b), iIf a Participant the employee is employed by TRS on January 1st following the first anniversary of the end of the Performance Period for which that employee was they were a Participant, the remaining 50% of the Potential Performance Incentive Award will become earned and payable. Payment of this award will generally be processed with that January payroll, for delivery typically issued on or about February 1st of that calendar year; provided however that in no event will payment be made later than February 15th of that calendar year.

The payment dates in respect of a Performance Period shall be the same for all Participants.

(b) Notwithstanding subsection 4.8-(a), no Potential Performance Incentive Awards will become earned or payable following a Performance Period in which the Fund experiences a total return of zero or less. If this occurs, In this situation, Potential Performance Incentive Awards for that Performance Period that otherwise would might have become earned on the January 1st next following the end of that Performance Period will not become earned until January 1st following the next a Performance Period in which the Total Fund experiences has a return greater than zero during a Performance Period, subject to the requirement that assuming the employee be employed by is employed by TRS on that January 1st. Payment of this award will be processed with the January payroll, typically issued on or about February 1st of that calendar year; provided however that in no event will payment be made later than February 15thof that calendar year.

(c) If an employee ceases to be a Participant before the end of a Performance Period due to no longer being employed in an Eligible Position (but is still employed by TRS), Potential Performance Incentive Awards for that Performance Period will not become earned and will not be paid.Potential Performance Incentive Awards from earlier Performance Periods that have not

~~yet become earned (as set forth in section 4.8 above), can become earned and be paid according to the terms in section 4.8 above, unless such payments are prohibited by applicable law or conflict with the Board's fiduciary duties.~~

(~~d~~c) If an employee ceases to be a Participant before the end of a Performance Period due to termination of employment with TRS for any reason other than involuntary termination of employment due to a Reduction in Force ~~reduction in force~~, death, or disability within the meaning of Section 409A of the Internal Revenue Code, a Potential ~~Performance Incentive~~ Award~~s~~ for that Performance Period will not become earned and will not be paid. Potential ~~Performance Incentive~~ Awards from earlier Performance Periods that have not yet become earned (as set forth in S~~s~~ection 4.8(b) above) will not become earned and will not be paid.

(~~e~~d) If an employee ceases to be a Participant before the end of a Performance Period due to involuntary termination of employment with TRS because of a Reduction in Force ~~reduction in force~~, death, or disability within the meaning of Section 409A of the Internal Revenue Code, a Potential ~~Performance Incentive~~ Award~~s~~ for that Performance Period will not become earned and will not be paid. Notwithstanding ~~subs~~Sections 4.8(a) – (b), Potential ~~Performance Incentive~~ Awards from earlier Performance Periods will immediately become earned and payable. Payments under this subsection will be made to the terminated employee, or to the estate of the deceased employee, or to the disabled employee, or as otherwise provided by law. These payments will be made as soon as administratively practicable, but no later than 2~~-~~½ months after the end of the calendar year in which the Reduction in Force ~~reduction in force~~, death or disability occurred.

(~~f~~e) If an employee ceases to be a Participant before the end of a Performance Period due to termination of the Plan (as provided for in Section 5.1), a Potential ~~Performance Incentive~~ Award~~s~~ for that Performance Period will not become earned and will not be paid. Potential ~~Performance Incentive~~ Awards from earlier Performance Periods that have not yet become earned (as set forth in this ~~section~~Section 4.8 ~~above~~), can become earned and be paid according to the terms in this ~~section~~Section 4.8 ~~above~~, if the Board determines that such payments continue to be consistent with and in furtherance of ~~required to perform~~ the fiduciary duties of the Board in administering the retirement system, and if such payments are not prohibited by applicable law.

5. PLAN AUTHORITY AND RESPONSIBILITY

5.1 Plan Modification, Suspension and Termination

The Board shall have the right in its sole discretion to modify the Plan or any portion thereof at any time. The Board shall have the right in its sole discretion to suspend or terminate the Plan entirely or any portion thereof at any time. For avoidance of doubt, no modification, amendment, suspension, or reinstatement of this Plan may be given retroactive effect in the administration of this Plan except as required to comply with applicable law, including federal tax laws and regulations.

5.2 Plan Administration

Consistent with the provisions of the Plan, the Executive Director has the sole discretion to administer and interpret the Plan. The Executive Director may adopt such procedures and practices as deemed advisable to carry out the Plan.

5.3 Record Keeping and Reporting

All employee performance, salary and incentive pay records for the Plan shall be maintained by the Director of Human Resources.

5.4 Compliance w~~W~~ith State and Federal Law

If the Executive Director or a court with appropriate jurisdiction determines that any~~a~~ provision ~~portion(s)~~ of the Plan violates applicable state or federal law, that provision ~~portion(s)~~ shall not be given ~~in~~ effect ~~at any time~~. The remaining provisions ~~portions~~ of the Plan shall remain in full force and effect to the maximum extent possible, and any amendments or modifications that are necessary to give effect to the remaining provisions will be deemed to have been made to allow proper administration of the Plan.

6. AT-WILL EMPLOYMENT

Nothing in the adoption of this Plan or the awarding of performance incentive pay alters the at-will nature of TRS employment ~~that TRS has with its employees~~, creates a contract between TRS and any TRS employee, confers on any TRS employee the right to continued employment with TRS, or affects in any way the right of TRS to terminate the employment of ~~its~~ employees at any time.

7. OTHER PLAN PROVISIONS

7.1. Non-assignment and Non-transferability of Awards

~~Except as authorized in applicable law,~~ Potential ~~Performance Incentive~~ Awards or the actual awards under the Plan are non-assignable and non-transferable and are not subject to anticipation, adjustment, alienation, encumbrance, garnishment, attachment or levy of any kind.

7.2 Plan Does Not Create a Property Interest, Trust, or Entitlement

(a) Neither the establishment of the Plan, the calculation of Potential ~~Performance Incentive~~ Awards or the actual awards shall be deemed to create a property interest, trust or entitlement. The Plan is an unfunded, unsecured liability of TRS to make payments in accordance with the provisions of the Plan. Any amounts budgeted by TRS for ~~Potential Performance Incentive A~~awards earned under the Plan ~~shall~~ are ~~be the~~ TRS assets ~~of the TRS pension fund~~, and no employee or third party shall have any property, security, or other interest in any assets of TRS by reason of the Plan.

(b) Nothing ~~contained~~ in the Plan shall be deemed to create or confer ~~give~~ any right, interest, or title to any specific property of TRS to any Participant ~~employee~~, or to any personal representative or beneficiary of a Participant.

7.3 Tax and Other Deductions

All payments under the Plan shall be subject to any deductions (1) for tax and withholding required by federal, state, or local law at the time of payment and (2) for any and all amounts owed by the employee to TRS at the time of payment. TRS is not obligated to advise an employee of the existence of any ~~the~~ tax or the amounts that TRS will be required to withhold.

7.4 Payments Not Eligible for Retirement Purposes

~~There is no intention for payments made pursuant to the Plan to be eligible compensation for TRS pension plan purposes, and, as currently written, a~~Any payments made pursuant to the Plan are fringe benefits and are not eligible compensation for TRS pension plan purposes.

7.5 Grievances

All grievances related to the Plan will be addressed according to the TRS Grievance and Appeals Policy or any successor policy, as amended from time to time.

8. DEFINITIONS

Base Salary for use in the Plan is the Participant's annualized monthly salary as of October 1st of the applicable Performance Period (not including longevity or benefit replacement pay), or the annualized monthly salary of new Participants as of the date they first become a Participant, as certified by the Director of Human Resources.

Eligible Position is defined in Section 4.4(f). Eligible Position~~s~~ refers to the position~~s themselves~~, not the actual Participant~~s~~ in the position~~s~~, and includes all positions assigned to the Investment Division and listed ~~as designated~~ in Section 4.4(f) ~~the Plan~~.

~~**Incentive Award Opportunity** is expressed as a percentage of the Maximum Award Opportunity for a Performance Period.~~

Investment areas are listed in the first column of Addendums A and B.

Maximum Potential Award ~~**Award Opportunity**~~ is defined in Section 4.4(f) and is the maximum Potential Award ~~Incentive Award Opportunity~~ that can become earned and payable with respect ~~available~~ to an Eligible Position during a Performance Period. ~~Depending on the Eligible Position, the Maximum Award Opportunity ranges from 5% to 125% of the Participant's base salary.~~

Participant is an employee in an Eligible Position on October 1st of the Performance Period, or who first is employed in an Eligible Position after the beginning of the Performance Period based on the schedule detailed in the Plan, as certified by the Director of Human Resources.

Performance Period is the period beginning on October 1st of each year and ending on September 30th of the following year.

Potential ~~**Performance Incentive**~~ **Award~~s~~** is defined in Section 4.4(f) and is ~~are~~ the amount~~s~~ calculated based on the Participant's ~~level of~~ performance achieved in the applicable ~~I~~investment performance and ~~Qualitative Performance Component~~qualitative performance components. A Potential ~~Performance Incentive~~ Award~~s~~ is ~~are~~ capped at the Maximum Potential Award ~~Award Opportunity~~, regardless of whether the ~~a~~ Participant exceeds the stated maximum ~~P~~performance. The phrase "award opportunity" is synonymous with Potential Award.

Profit centers are listed in the first row of Addendum A, except that Trade Management is also listed as a profit center in the first row of Addendum B only for peer allocation purposes.

Reduction in Force for use in the Plan refers to termination of an employee due to elimination of the employee's position caused by a required reduction in the number of TRS Full-Time Equivalents (FTEs) or by a required reduction in expenses within the TRS operating budget. The Executive Director has sole discretion in determining whether an employee's termination is due to a Reduction in Force ~~reduction in force~~.

SAA means the Strategic Asset Allocation investment area.

SPN means a Strategic Partner Network investment area. TRS has both private markets and public markets SPNs.

TAA means the Tactical Asset Allocation investment area.

Total Fund means the TRS total or overall investment portfolio and includes all pension assets held in trust by TRS and invested by the IMD to provide retirement, death, and disability benefits administered by the system, including cash and cash equivalents. For avoidance of doubt, for the purposes of the Plan the Total Fund does not include the assets of health plans administered by TRS and held in trust by the Board of Trustees.

Administrative Policy

Reviewer: Executive Director, Chief Investment Officer, Human Resources & Legal Services

Review Cycle: Annually

Authorized by: TRS Board of Trustees

Approved: Brian Guthrie_____

Executive Director

*This version of the Plan is effective for performance periods beginning on or after October 1, 2012~~ 2011~~. Any awards for performance in prior Performance Periods can become earned and payable subject to the terms and conditions stated in the versions of the Plan effective for those Performance Periods.

Current Effective Date: October 1, 2012~~1~~*

First Issued: October 1, 2007

Last Reviewed/Revised: September ___~~15~~, 2012~~1~~

Next Review Due: August, 2013~~2~~

Date: September ____~~15~~, 2012~~1~~

Date: October ____~~13~~, 2012~~1~~

Addendum A

Performance Payout Allocation and Maximum Payout Targets vs. Passive Benchmark (50% of Potential Award)

Fund Level	Total Fund	Internal Public	External Public	Private Equity	Risk [1]	Stable Value / SAA	Real Assets	TAA	Public and Private SPN and Opportunistic [2]	Natural Resources	Emerging Managers	Total
Index	**Total Fund Policy Composite Index**	**Global Equity Portfolio vs. MSCI ACWI Free (net)**	**Daily Weighted Excess Return Based on Actual Portfolio Weights**	**State Street Private Equity Index**	**Daily Weighted Excess Return Based on Actual Portfolio Weights**	**Daily Weighted Excess Return Based on Actual Portfolio Weights**	**NCREIF**	**Total Profit & Loss for Incentive Period/Total Trust Average Daily Balance**	**Daily Weighted Excess Return Based on Actual Portfolio Weights**	**Daily Weighted Excess Return Based on Actual Portfolio Weights**	**Daily Weighted Excess Return Based on Actual Portfolio Weights**	
Excess Return Target	**100 bps**	**50 bps**	**100 bps**	**300 bps**	**75 bps**	**35 bps**	**250 bps**	**25 bps**	**175 bps**	**175 bps**	**100 bps**	
CIO/Deputy CIO	75.00%					5.00%	5.00%		5.00%	5.00%	5.00%	100.00%
Risk	50.00%	5.00%	5.00%	5.00%	20.00%	5.00%	5.00%	5.00%				100.00%
Internal Public Markets	30.00%	60.00%	5.00%	5.00%								100.00%
External Public Markets	30.00%	5.00%	60.00%	5.00%								100.00%
Private Equity	30.00%	5.00%	5.00%	60.00%								100.00%
Stable Value / SAA	50.00%					50.00%						100.00%
Real Assets	30.00%						60.00%			10.00%		100.00%
Tactical Asset Allocation (TAA)	30.00%							60.00%	10.00%			100.00%
Public and Private SPN / Opportunistic	30.00%							10.00%	60.00%			100.00%
Natural Resources	30.00%	10.00%		-	-					60.00%		100.00%
Emerging Managers	30.00%		10.00%	10.00%			10.00%				40.00%	100.00%
Trade Management Group	30.00%	20.00%	10.00%			20.00%		20.00%				100.00%
Investment Operations	50.00%	10.00%	10.00%	5.00%		10.00%	5.00%	10.00%				100.00%

Notes: [1] Risk group allocation excludes Trust hedging activities. [2] Benchmark for Public SPN is the SPN Composite Index.

Addendum B

Performance Payout Allocation and Maximum Payout Targets vs. Peer Group Comparison
(30% of Potential Award)

Fund Level	Total Fund	Trade Management Group	Private Equity	Real Assets	Total
Index	**TUCS Public Funds > $10 Billion Universe**	**ITG / Plexus**	**TUCS Private Equity > $1 billion Universe**	**Real Estate vs. TUCS Real Estate > $1 billion Universe**	
Excess Return Target	**100 bps**	**8 bps**	**300 bps**	**250 bps**	
CIO/Deputy CIO	90.00%	0.00%	5.00%	5.00%	100.00%
Risk	90.00%	0.00%	5.00%	5.00%	100.00%
Internal Public Markets	95.00%	0.00%	5.00%	0.00%	100.00%
External Public Markets	95.00%	0.00%	5.00%	0.00%	100.00%
Private Equity	40.00%	0.00%	60.00%	0.00%	100.00%
Stable Value / SAA	70.00%	30.00%	0.00%	0.00%	100.00%
Real Assets	40.00%	0.00%	0.00%	60.00%	100.00%
Tactical Asset Allocation (TAA)	100.00%	0.00%	0.00%	0.00%	100.00%
Public and Private SPN / Opportunistic	90.00%	10.00%	0.00%	0.00%	100.00%
Natural Resources	90.00%	0.00%	0.00%	10.00%	100.00%
Emerging Managers	80.00%	0.00%	10.00%	10.00%	100.00%
Trade Management Group	50.00%	50.00%	0.00%	0.00%	100.00%
Investment Operations	50.00%	40.00%	5.00%	5.00%	100.00%

ADDENDUM CBenchmark Plan for Performance Period Commencing On October 1, 2011

(Note: The benchmarks in Addendum C shall be revised, if necessary, at the beginning of each performance period (October 1) to conform to the benchmarks in the TRS Investment Policy Statement in effect on that date, subject to other action of the Board to modify the Plan.)

Asset Class	Benchmark[1]	Bloomberg Ticker	Target
Global Equity:			
US Large Cap	MSCI USA Standard	GDDUUS	18%
US Small Cap	MSCI USA Small Cap	GCUDUS	2%
Non-US Developed	MSCI EAFE and Canada	NDDUEC	15%
Emerging Markets	MSCI EM	NDUEEGF	10%
Directional Hedge Funds	HFRI Fund of Funds Composite	HFRIFOF	5%
Total Public Equity	*Target weighted Blend*		*50%*
Private Equity	State Street Private Equity Index – lagged one quarter[2]		12%
Total Global Equity	***Target weighted Blend***		***62%***
Stable Value:			
US Treasuries	Barclays Capital (BarCap) Long Treasury Index	LUTLTRUU	13%
Absolute Return (Including Credit Sensitive Investments)	3 Month LIBOR + 2%	USC0TR03 (plus 2%)	0%
Stable Value Hedge Funds	HFRI Fund of Funds Conservative	HFRIFOFC	4%
Cash	Citigroup 90-day US Treasury	SBMMTB3	1%
Total Stable Value	***Target weighted Blend***		***18%***
Real Return:			
Global Inflation Linked Bonds	BarCap US Treasury TIPS index	LBUTTRUU	5%[3]
Real Assets	NCREIF ODCE – lagged one quarter[2]		15%[3]
Commodities	Goldman Sachs Commodity Index	SPGCCITR	0%[3]
REITS	MSCI US REIT	RMS G	0%[3]
Total Real Return	***Target weighted Blend***		***20%***
TOTAL PLAN	***Target weighted Blend***		***100%***

[1] The table in Addendum A will reference the MSCI ACWI Free (net) index for the columns titled "External Public Markets" (with respect to those external managers benchmarked to the MSCI ACWI) and "Total Internal Public Markets".

[2] Due to the delay in availability of final performance data for Private Equity and Real Assets, performance measurements for these two Investment Areas will experience a one quarter time lag, such that all incentive calculations involving Private Equity and Real Assets performance will use data for the 12 month period ending each June 30th.

[3] On October 1 of each year, the Target for Real Assets for the following twelve months will be reset by the CIO to the averaged funded level of Real Assets for such succeeding twelve months as projected by the Real Assets investment management team (rounded to the nearest whole percentage); provided, the Target for Real Assets may not be more than 15%. Any decrease to the Target for Real Assets below 15% will result in an equivalent amount of increase allocated to the Targets for first, REITS (until REITS is 2%), second, Commodities (until Commodities is 2%) and, third, Global Inflation Linked Bonds.

ADDENDUM A
Performance Payout Allocation and Maximum Payout Targets vs. Passive Benchmark
(50% of Incentive Award Opportunity)

Fund Level	**Total Fund**	**Strategic Partners**	**Total Internal Public Markets**	**External Public Markets**	**Private Equity**	**Real Return**	**Total Incentive Weight**
Index	**Policy / Transition Index**	**SPN Composite Index**	**Global Equity Portfolio vs. MSCI ACWI Free (net)**	**Daily Weighted Excess Return Based on Actual Portfolio Weights**	**State Street Private Equity Index**	**NCREIF**	
Excess Return Target	**100 bps**	**130 bps**	**50 bps**	**100 bps**	**300 bps**	**250 bps**	
CIO/Deputy CIO	70.0%		10.0%	10.0%	5.0%	5.0%	100.0%
SRRM Group	60.0%	10.0%	10.0%	10.0%	5.0%	5.0%	100.0%
Internal Public Markets	30.0%		60.0%	10.0%			100.0%
External Public Markets	30.0%		5.0%	60.0%	5.0%		100.0%
Private Equity	30.0%		5.0%	5.0%	30.0%	30.0%	100.0%
Real Estate	30.0%		5.0%	5.0%	30.0%	30.0%	100.0%
Trade Management Group	30.0%		60.0%	10.0%			100.0%
Administrative Center	70.0%		10.0%	10.0%	5.0%	5.0%	100.0%

ADDENDUM B

Performance Payout Allocation and Maximum Payout Targets vs. Peer Group
(30% of Incentive Award Opportunity)

Fund Level	**Total Fund**	Trade Management Group	**Internal Public Markets**	**External Public Markets**	**Private Equity**	**Real Return**	**Total**
Index	**Total Fund vs. TUCS Public Funds >$10 Billion**	**Plexus**	**No Peer**	**No Peer**	**TUCS Private Equity >$1Billion Universe**	**TUCS Real Estate >$1Billion Universe**	
Excess Return over Median Target	**100 bps**				**300 bps**	**250 bps**	
CIO/Deputy CIO	70.0%		10.0%	10.0%	5.0%	5.0%	100.0%
SRRM Group	50.0%	10.0%	10.0%	10.0%	10.0%	10.0%	100.0%
Internal Public Markets	30.0%		60.0%	10.0%			100.0%
External Public Markets	30.0%		5.0%	60.0%	5.0%		100.0%
Private Equity	30.0%		5.0%	5.0%	30.0%	30.0%	100.0%
Real Estate	30.0%		5.0%	5.0%	30.0%	30.0%	100.0%
Trade Management Group	30.0%	60.0%	10.0%	0.0%			100.0%
Administrative Center	50.0%	10.0%	10.0%	10.0%	10.0%	10.0%	100.0%

Memorandum

DATE: September 7, 2012

TO: Compensation Committee; Board of Trustees

FROM: Janet Bray, Scot Leith, Dennis Gold

RE: Supplemental Materials for Annual Review of Performance Incentive Pay Plan commencing October 1, 2012

To aid your further review and discussion of the proposed Plan, attached are the following supplemental materials:

1. A manually marked draft of Addendum A showing the proposed changes to last year's adopted version;
2. A manually marked draft of Addendum B showing the changes proposed changes to last year's adopted version;
3. Two charts prepared by Scot Leith, Investment Accounting, describing performance benchmark development for the calculation of performance and Potential Awards under the Plan;
4. A condensed version of the Plan overview delivered by Janet Bray, Director of Human Resources, at the July 2012 meeting; and
5. A draft organizational chart for the Investment Management Division that illustrates changes made in July 2012. For purposes of the Plan, these changes will be effective only as of October 1.
6. For comparison purposes, an organization chart for the IMD as of February 2012.

Items 1 and 2 include explanatory notes at the foot of each addendum. The proposed changes to the investment areas derive from organizational changes in the Investment Management Division, but also include revisions of the percentage allocations of performance among the various investment areas. Note that the new Natural Resources investment area has not yet begun operations.

Item 3 provides details about the benchmarking process. Note that Addendum A specifies excess return targets (3rd row) for each investment area as compared to a passive benchmark for each area, and that this calculation represents 50 percent of a Potential Award. Addendum B specifies excess return targets for each investment area as compared to defined peer groups for each area, and that this calculation represents 30 percent of a Potential Award. Note that the Trading Management Group investment area does not have a benchmark listed on Addendum A because there is no *investment performance benchmark* for that area. For that reason, that area is not listed in **Item 3**. However, a *peer group comparison* for the Trading Management Group area is listed on Addendum B, which is defined as the ITG / Plexus reporting on industry trade execution. Qualitative Factors are 20 percent of a Potential Award (see **Item 4, Incentive Calculation Basis**, and related note).

Item 4 provides a summary overview of the key characteristics of the Plan, including the Plan philosophy regarding compensation.

Item 5 illustrates the investment areas that are listed in Addendum A and Addendum B to the Plan.
Item 6 shows the organizational structure prior to the recent reorganization.

We hope this additional information is helpful.

September 6, 2012 marked draft Addendum A

Performance Payout Allocation and Maximum Payout Targets vs. Passive Benchmark (50% of Potential Award)

Fund Level	Total Fund	~~Strategic Partners~~	~~Total~~ Internal Public ~~Markets~~	External Public ~~Markets~~	Private Equity	Risk [1]	Stable Value / SAA	Real Assets~~Return~~	TAA	Public and Private SPN and Opportunistic [2]	Natural Resources	Emerging Managers	Total Incentive Weight
Index	Total Fund Policy Composite~~/ Transition~~ Index	~~SPN Composite Index~~	Global Equity Portfolio vs. MSCI ACWI Free (net)	Daily Weighted Excess Return Based on Actual Portfolio Weights	State Street Private Equity Index	Daily Weighted Excess Return Based on Actual Portfolio Weights	Daily Weighted Excess Return Based on Actual Portfolio Weights	NCREIF	Total Profit & Loss for Incentive Period / Total Trust Average Daily Balance	Daily Weighted Excess Return Based on Actual Portfolio Weights	Daily Weighted Excess Return Based on Actual Portfolio Weights	Daily Weighted Excess Return Based on Actual Portfolio Weights	
Excess Return Target	**100 bps**	~~**130 bps**~~	**50 bps**	**100 bps**	**300 bps**	**75 bps**	**35 bps**	**250 bps**	**25 bps**	**200 bps**	**175 bps**	**100 bps**	
CIO/Deputy CIO	75%~~70%~~		~~10%~~	~~10%~~	~~5%~~	0%	5%	5%		5%	5%	5%	100%
Risk ~~SRRM Group~~	50%~~60%~~	~~10%~~	5%~~10%~~	5%~~10%~~	5%	20%	5%	5%	5%				100%
Internal Public Markets	30%		60%~~60%~~	5%~~10%~~	5%~~-~~								100%
External Public Markets	30%		5%~~5%~~	60%~~60%~~	5%								100%
Private Equity	30%		5%~~5%~~	5%~~5%~~	60%~~30%~~			~~30%~~					100%
Stable Value / SAA	50%	[NA]					50%						
Real Assets~~Estate~~	30%		~~5%~~	~~5%~~	~~30%~~			60%~~30%~~			10%		100%
Tactical Asset Allocation (TAA)	30%	[NA]							60%	10%			
Public and Private SPN / Opportunistic	30%	[NA]							10%	60%			
Natural Resources	30%	[NA]	10%								60%		
Emerging Managers	30%	[NA]		10%	10%			10%				40%	
Trade Management Group	30%		20%~~60%~~	10%			20%		20%				100%
Investment Operations~~Administrative Center~~	50%~~70%~~		10%~~10%~~	10%	5%		10%	5%	10%				100%

Notes: [1] Risk group allocation excludes Trust hedging activities. [2] Benchmark for Public SPN is the SPN Composite Index.

Notes to draft:

- **Unnecessary decimals have been deleted without marking that change.**
- **The SRRM Group has been divided into these discrete new investment areas: Risk; Stable Value / Strategic Asset Allocation ("SAA"); and Tactical Asset Allocation ("TAA") (see IMD Org Chart).**
- **Management of the public external manager and private markets strategic partnerships network ("SPN") has been consolidated into a separate new investment area called "Public and Private SPN / Opportunistic" (see IMD Org Chart).**
- **Management of the emerging managers programs has been consolidated into a new investment area called "Emerging Managers" (see IMD Org Chart).**
- **Investment management is creating a new investment area called "Natural Resources," which will have a dedicated team of IMD investment employees led by a new hire (See IMD Org Chart).**

September 6, 2012 marked draft **ADDENDUM B**

Performance Payout Allocation and Maximum Payout Targets vs. Peer Group Comparison

(30% of Potential ~~Incentive~~ Award ~~Opportunity~~)

Fund Level	Total Fund	Trade Management Group	~~Internal Public Markets~~	~~External Public Markets~~	Private Equity	Real Assets~~Return~~	Total
Index	~~Total Fund vs.~~ TUCS Public Funds >$10 Billion Universe	ITG / Plexus	~~No Peer~~	~~No Peer~~	TUCS Private Equity >$1Billion Universe	Real Estate TUCS Real Estate >$1Billion Universe	
Excess Return over Median Target	100 bps	8 bps			300 bps	250 bps	
CIO/Deputy CIO	90%~~70%~~	0%	~~10%~~	~~10%~~	5%	5%	100%
Risk ~~SRRM Group~~	90%~~50%~~	0% ~~10%~~	~~10%~~	~~10%~~	10%	10%	100%
Internal Public Markets	95%~~30%~~	0%	~~60%~~	~~10%~~	5%	0%	100%
External Public Markets	95%~~30%~~	0%	~~5%~~	~~60%~~	5%	0%	100%
Private Equity	40%~~30%~~	0%	~~5%~~	~~5%~~	30%	30%	100%
Stable Value / SAA	70%	30%	[NA]	[NA]	0%	0%	100%
Real Assets ~~Estate~~	40%~~30%~~	0%	~~5%~~	~~5%~~	0%~~30%~~	60%~~30%~~	100%
Tactical Asset Allocation (TAA)	100%	0%	[NA]	[NA]	0%	0%	100%
Public and Private SPN / Opportunistic	90%	10%	[NA]	[NA]	0%	0%	100%
Natural Resources	90%	0%	[NA]	[NA]	0%	10%	100%
Emerging Managers	80%	0%	[NA]	[NA]	10%	10%	100%
Trade Management Group	50%~~30%~~	50% ~~60%~~	~~10%~~	~~0%~~	0%~~-~~	0%~~-~~	100%
Investment Operations ~~Administrative Center~~	50%	40%	~~10%~~	~~10%~~	5%~~10%~~	5%~~10%~~	100%

Notes to draft:

- Unnecessary decimals have been deleted without marking that change.
- The SRRM Group has been divided into these discrete new investment areas: Risk; Stable Value / Strategic Asset Allocation ("SAA"); and Tactical Asset Allocation ("TAA") (see IMD Org Chart).
- Management of the public external manager and private markets strategic partnerships network ("SPN") has been consolidated into a separate new investment area called "Public and Private SPN / Opportunistic."
- Management of the emerging managers programs has been consolidated into a new investment area called "Emerging Managers."
- Investment management is creating a new investment area called "Natural Resources," which will have a dedicated team of IMD investment employees led by a new hire.

Incentive Plan Benchmark Comparison

Investment Area	PureView / Policy Benchmark	Incentive Compensation Benchmark
Total Fund	Daily calculation based on the IPS Normal Asset Allocation	Same
Total Internal Public Markets	Global Best Ideas vs. MSCI All Country World Index	Same
Private Equity	State Street Private Equity Index	Same
Real Assets	NCREIF	Same
External Public Markets	Daily Weighted Excess Return Based on Actual Portfolio Weights	Same: Every day, the sum of each portfolio group's weights across each asset class multiplied by the appropriate index return of each asset class determines the daily index for the specific portfolio group
Risk	Daily Weighted Excess Return Based on Actual Portfolio Weights	
Stable Value / SAA	Daily Weighted Excess Return Based on Actual Portfolio Weights	
Public and Private SPN and Opportunistic	Daily Weighted Excess Return Based on Actual Portfolio Weights	
Natural Resources	Daily Weighted Excess Return Based on Actual Portfolio Weights	
Emerging Managers	Daily Weighted Excess Return Based on Actual Portfolio Weights	
TAA	Total Profit & Loss for Incentive Period / Total Trust Average Daily Balance	Same: Calculated by dividing the Total Value Added across all TAA controlled accounts by the Average Daily Trust Net Asset Value during the incentive period.

TRS

Incentive Plan Benchmark Details

Investment Area	PureView / Policy Benchmark	Incentive Compensation Benchmark
Total Fund	Daily calculation based on the IPS Normal Asset Allocation	Same
Total Internal Public Markets	Global Best Ideas Flagship Portfolio vs. MSCI All Country World Index	Same
Private Equity	State Street Private Equity Index	Same
Real Assets	NCREIF ODCE	Same
External Public Markets	Daily Weighted Excess Return Based on Actual Portfolio Weights across MSCI USA Standard, MSCI USA Small Cap, MSCI EAFE and Canada, MSCI EM, HFRI Fund of Funds Composite, HFRI Fund of Funds Conservative and 3 Month LIBOR + 2%	Same: Every day, the sum of each portfolio group's weights across each asset class multiplied by the appropriate index return of each asset class determines the daily index for the specific portfolio group
Risk	Daily Weighted Excess Return Based on Actual Portfolio Weights initially across HFRI Fund of Funds Composite with MSCI USA Standard added in 2014 and other benchmarks as needed.	
Stable Value / SAA	Daily Weighted Excess Return Based on Actual Portfolio Weights across HFRI Fund of Funds Composite, Barclays Capital Long Treasury Index, Citigroup 90-day US Treasury Index, HFRI Fund of Funds Conservative, 3 Month LIBOR + 2% and Barclays Capital US Treasury TIPS Index	
Public and Private SPN and Opportunistic	Daily Weighted Excess Return Based on Actual Portfolio Weights across Public SPN Benchmark[1], State Street Private Equity Index and NCREIF ODCE.	
Natural Resources	Daily Weighted Excess Return Based on Actual Portfolio Weights initially across NCREIF ODCE, State Street Private Equity Index, and Goldman Sachs Commodity Index with other benchmarks as needed.	
Emerging Managers	Daily Weighted Excess Return Based on Actual Portfolio Weights across MSCI USA Standard, MSCI USA Small Cap, MSCI EAFE and Canada, MSCI EM, State Street Private Equity Index and NCREIF ODCE.	
TAA	Total Profit & Loss for Incentive Period / Total Trust Average Daily Balance.	Same: Calculated by dividing the Total Value Added across all TAA controlled accounts by the Average Daily Trust Net Asset Value during the incentive period.

[1] Public SPN Benchmark mirrors the trust public benchmark allocation.

TRS

Performance Pay Plan Overview

Plan Characteristics for 2012 Plan	
Start Date	October 1, 2011
Performance Period (Plan Year)	October 1, 2011- September 30, 2012
Payout Date	February 1st

Incentive Calculation Basis	
Excess of Benchmark	50%
Peer Group Comparison	30%
*Qualitative Factor	20%

Excess Above Benchmark for Max (total fund)	100 basis points
Target Peer Group Comparison	Basis points above median (max payout at 100 bp)
Performance Measured (for benchmark and peer group)	3 year and 1 year returns

Maximum Award Opportunity	
CIO, Deputy CIO, Sr. Managing Directors & Managing Directors	125%
Sr. Directors and Directors	110%
Sr. Investment Managers and Investment Managers	90% to 85%
Investment Analysts, Operations, Administrative and Support	65% to 5%

# of Staff Eligible for Incentive	up to 112
Maximum Cost	$11.3 million
Expected Value Added at Max.	at least $1.1 billion

*Qualitative factor is only paid if either Benchmark or Peer Group factor is achieved.

Quick Facts on Performance Pay	
Plan start date:	Established by the TRS Board in 2007
Purpose:	Attract, motivate and retain highly talented investors with a unique dedication to teachers
Philosophy:	Competition for investment talent is with top private sector funds ▪ First quartile base pay (among large public funds) ▪ Fourth quartile performance pay (among small private funds) ▪ Address remaining compensation gap with purpose, leadership, place and culture
Plan Basics:	▪ Performance awards are based primarily on value added above "passive benchmarks" and/or returns earned by comparable pension funds (peer groups) ▪ Performance awards are based on one-year (33%) and three-year results (67%) ▪ Performance awards earned are paid over two years (50% each year) ▪ Payouts are made only when the overall Trust has a positive return ▪ Payouts are deferred if value is added but Trust returns are negative until the overall trust has a positive return ▪ Payouts are forfeited if employee leaves TRS or if an employee willfully violates an approved risk constraint
Key Performance Components:	▪ 50% versus passive benchmark(s) ▪ 30% versus peer group results ▪ 20% based on individual productivity rankings of all IMD employees (productivity payouts only made if value added is achieved) ▪ Nine-Box Productivity Rating system used to determine productivity rankings
Performance Pay:	▪ Maximum payout ranges between 5% and 125% of base salary ▪ Higher percentages are due to increased seniority and responsibility

BRITT HARRIS, Chief Investment Officer

Jerry Albright, Deputy CIO

Susan Wade | **Stacy Sakoulas**

Deputy Admin Support
Marina Salazar | Debbie Ferguson | Nonique Gonzalez | Paul Waclawsky

Admins
Sharon Toalson
Susan K. White

Chief of Staff
David Veal
Tommy Albright

Investment Operations
Sylvia Bell
Director

Bus Center
Patricia Cantu
Sheila Anderson
Maribel Nesuda
Hugo Rangel
Becky Van Eenemaan
Kristi Vorce
Irma Z-Castillo

Cash Securities
Kendall Courtney
Karoline Freeman
LeeAnn Gola
Sean Letcher
Lilly Rodgers
Babette Ruiz

Derivatives
Kelly Newhall
Steven Lambert
Christopher Pan
Anthony Paolini

IIS
David Cox
Barbara Forssell
DC Gunnia
Roy Kurian
Jelena Melesenko
Scott Sewell

Performance
Craig McCullough
Ranu Dutta
Jared Simpson
Barbara Woodard
Layne Haggberg

STABLE VALUE-18%

Passive Portfolios
Mohan Balachandran
Managing Director
Bernie Bozzelli

Stable Value
Mohan Balachandran
Tim Jones
Tony Yiu
Hasim Mardin

Trading
Bernie Bozzelli
Pat Barker
Jaime Llano
Scott Moore
Steven Peterson
Demetrius Pope
Komson Silapachi
Jared Morris

GLOBAL EQUITY -62%

Ext Public-12/6
Dale West
Managing Director

Ext Mgrs
Susanne Gealy
Rusty Guinn
Joe Tannehill

Hedge Funds
Brad Gilbert
Todd Centurino
Rachel Clark

Fixed Income
Katy Hoffman
Lulu Llano
Jonathan Klekman
Steven Wilson

Scott Gonsoulin
Mikhael Rawls
Kyle Schmidt
Patty Steinwedell
Courtney Yarbrough

Int Public
Chi Chai
Sr. Managing Director

Portfolio Management
David DeStefano
Kay Cuclis
Patrick Cosgrove
Jon Hook
Ralph Linn
Shayne McGuire

Quant
Janis Hydak
Mark Albert
Jeremy Aston
Terri Krumnow
Monica Larson
Matt Robertson
Wayne Speer
Solomon Gold

Research
Shayne McGuire
Phillip Auth
Tom Cammack
Richard Campbell
Lee Carter
Mark Cassens
John DeMichele
Marissa Hogan
Kevin Lincoln
Stacey Peot
Marshall Reid
Corina Scoggins
Dan Steinberg
KJ VanAckeren
John Watkins

Ext Public
Rich Hall
Managing Director

Private Equity
Michael Lazorik
Allen MacDonell
Gracie Marsh

Scott Ramsower
Neil Randall
Molly Rose
Brad Thawley
Courtney Villalta
Ross Willman
Kamal Maruf
Carter Ware

REAL RETURN-20%

Real Assets
Eric Lang
Managing Director

Brian Baumhover
Chase Hill
Melissa Kleihege
Michael Pia
John Ritter
Craig Rochette
Grant Walker
Jennifer Wenzel
Nathan Zinn

Emerging Mgrs/ Investor Relations

Stuart Bernstein
Andy Cronin

Risk
Jase Auby
Managing Dir

James Nield
Matt Talbert
Mark Telschow
Stephen Kim
Mike Simmons

TAA
Curt Rogers
Managing Dir

JB Daumerie
Jingshan Fu
Daniel Ting
West Garrett

Strategic Partners

Energy/Natural Resources

Ashley Baum
Grant Birdwell

Red font-contractors

Note: contractors are not eligible for performance pay.

Draft; subject to change.

Updated: 7/10/2012

BRITT HARRIS, Chief Investment Officer*

Jerry Albright, Deputy Chief Investment Officer*

Professional Development
Susan Wade
Stacy Sakoulas

Deputy Admin Support
Marina Salazar

PROFIT CENTERS

External Public
Dale West*
Managing Director

External Managers
Susanne Gealy
Rusty Guinn
Joe Tannehill

Hedge Funds
Matt Strube
Todd Centurino
Rachel Clark

Fixed Income Strategies
Brad Gilbert
Katy Hoffman
Lulu Llano
Jonathan Klekman

Tommy Albright
Mikhael Rawls
Patty Steinwedell
Courtney Yarbrough

Red font-contractors

Internal Public
Chi Chai*
Sr. Managing Director

Portfolio Management
David DeStefano
Kay Cuclis
Patrick Cosgrove
Jon Hook
Ralph Linn
Shayne McGuire

Macro, Themes & Quant
Janis Hydak
Mark Albert
Jeremy Aston
Terri Krumnow
Monica Larson
Matt Robertson
Wayne Speer
Solomon Gold

Research
Shayne McGuire
Phillip Auth
Tom Cammack
Richard Campbell
Mark Cassens
John DeMichele
Amit Kumar
Kevin Lincoln
Stacey Peot
Marshall Reid
Corina Scoggins
Tayyib Shah
Dan Steinberg
KJ VanAckeren
John Watkins

INVESTMENT OPERATIONS
Sylvia Bell*
Director

Bussiness Center
Travel, Budget,Staff Svc, Reporting
Patricia Cantu
Rachel Anderson
Sheila Anderson
Becky Van Eenemaan
Debbie Ferguson
Nonique Gonzalez
Hugo Rangel
Maribel Nesuda
Kristi Vorce
Irma Zavaleta-Castillo

Derivatives
Kelly Newhall
Steven Lambert
Christopher Pan
Anthony Paolini

Performance Analytics
Craig McCullough
Ranu Dutta
Felicia Jones
Jared Simpson
Barbara Woodard
Layne Haggberg

Cash Settlements
Kendall Courtney
Karoline Freeman
Lilly Rodgers
Babette Ruiz
Scott Gonsoulin

Information Systems
David Cox
Barbara Forssell
DC Gunnia
Roy Kurian
Jelena Melesenko
Scott Sewell

IIC Members*
Britt Harris
Jerry Albright
Jase Auby
Sylvia Bell
Chi Chai
Steve LeBlanc
Nigel Lewis
Dale West

CIO Chief of Staff
Ashley Baum

CIO Admin Support
Sharon Toalson
Susan K. White

PROFIT CENTERS

External Private
Steve LeBlanc*
Sr. Managing Director

Real Assets
Eric Lang, MD
Brian Baumhover
Andy Cronin
Chase Hill
Michael Pia
John Ritter
Craig Rochette
Molly Rose
Grant Walker
Jennifer Wenzel
Nathan Zinn

PE & Principal
Richard Hall, MD
Michael Lazorik
Allen MacDonell
Scott Ramsower
Neil Randall
Brad Thawley
Courtney Villalta
Ross Willman
Muhammad Mian
Kamal Maruf

Emerging Managers
Stuart Bernstein

EPM Support
Melissa Kleihege
Gracie Marsh
Cynthia Mendoza

Portfolio Strategy and Execution

Tactical Asset Alloc
Curt Rogers
Grant Birdwell
JB Daumerie
Tim Jones
Brandon Kunz
Tony Yiu
Hasim Mardin
West Garrett

Risk Management
Jase Auby*
Mohan Balachandran
Jingshan Fu
James Nield
Matt Talbert
Mark Telschow

Trade Management
Bernie Bozzelli
Pat Barker
Jaime Llano
Scott Moore
Steven Peterson
Demetrius Pope
Komson Silapachi
Jared Morris

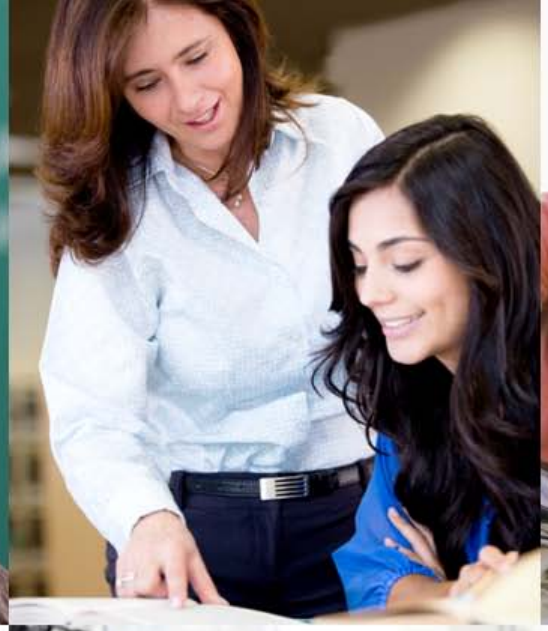
Strategic Research
Nigel Lewis*
Sr. Managing Director

Mike Simmons
Kyle Boyd
Patrick Meyer

Superseded

Updated: 9/7/2012

Tab 10



75th TRS TEACHER RETIREMENT SYSTEM OF TEXAS
1937-2012

TEAM Program Update

Ken Welch

Amy Morgan

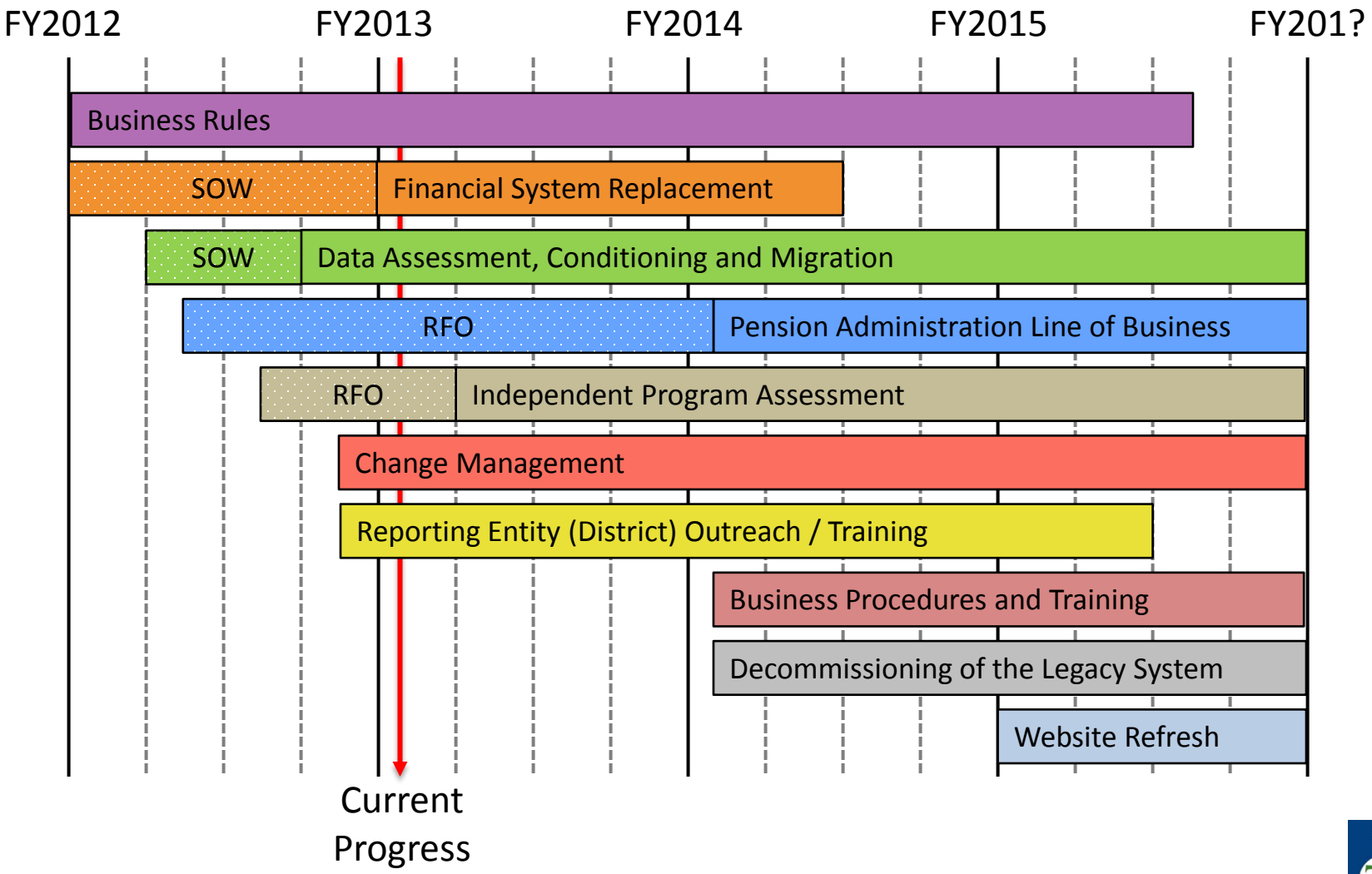
TEAM PROGRAM - AGENDA

Timeline

Risks

Budget

TEAM PROGRAM - TIMELINE



TEAM PROGRAM - RISKS

Risks	Mitigation Strategies
1. Conflicting priorities	- Prioritize & reallocate workload - Communicate & escalate issues - Staffing plans - Intern program
2. Untimely decision-making	- Program/Project Management - Action & decision logs - Weekly status reports & meetings - Communicate & escalate issues

TEAM PROGRAM - RISKS

Risks	Mitigation Strategies
3. Lack of resources	- Prioritize & reallocate workload - Hire staff and/or contract workers - Staffing plans - Intern program
4. Lack of forward-thinking	- Commitment gathering sessions - Vendor demonstrations - Staff involvement
5. Failure to manage scope	- Change control process

TEAM PROGRAM - RISKS

Risks	Mitigation Strategies
6. Accuracy of cost estimates	- Obtain estimates from peers - Periodic reassessments - Weekly status meetings
7. Lack of staff acceptance	- Staff involvement - Vendor demonstrations - Change management project
8. Internal and external fraud	- Project managers identifying whether risks could result in fraud

TEAM PROGRAM - BUDGET

- Original cost estimate for TEAM was $75-80 million to be spread over 3 biennia.
- $25 million was appropriated for the F12-13 Biennium, including the authority for 15 additional FTEs.
- $25 million is being requested for the FY14-15 Biennium, including the authority to carry forward any Unexpended Balances from FY13. For the FY14-15 Biennium, 4 additional FTEs directly related to TEAM are being requested.
- Original estimates are being revised to reflect updated information including additional costs related to the Change Management, Human Resources functionality within the Financial System, Service-Oriented Architecture functionality within the Pension Line of Business, and Web Site Enhancement that were not part of the original estimate.

Tab 12 A.

Fiscal Year 2013 Audit Plan

September 14, 2012

Amy Barrett, CIA, CPA
Chief Audit Executive

Christopher Moss
Chair, Audit Committee, Board of Trustees

Brian Guthrie
Executive Director

R. David Kelly
Chair, Board of Trustees

Executive Summary

Professional and Statutory Requirements

This document provides the *Fiscal Year 2013 Audit Plan* (Audit Plan) for the Teacher Retirement System of Texas (TRS) as required by professional auditing standards and the *Texas Internal Auditing Act* (Act). The Act requires state agencies to conduct a program of internal auditing that includes an annual audit plan that is prepared using risk assessment techniques and identifies individual audit projects to be conducted during the year. The Audit Plan is required to be evaluated and updated annually for recommendation of approval by the TRS Audit Committee of the Board of Trustees (Audit Committee) to the TRS Board of Trustees (Board). Internal Audit is independent of management and provides objective assurance and consulting services designed to add value and improve TRS' operations.

Audit Plan Development and Scope

Our Audit Plan is designed to provide coverage of key risks, given the existing staff and approved budget. See the appendices for information regarding the internal audit budget, performance measures, and audit universe mapped to the TRS Enterprise Risk Inventory or "Stoplight Report" provided by Enterprise Risk Management.

Changes Subsequent to Approval

Interim changes to the Audit Plan will occur from time to time due to changes in business risks, timing of TRS' initiatives, and staff availability. We will report Audit Plan changes to senior management and present changes to the Audit Committee at the following quarterly Audit Committee meeting. Amendments to the approved Audit Plan deemed to be significant (based on discussions with the executive director and audit committee chair) will be submitted to the Audit Committee for approval. The State Auditor's Office also requires notification of material changes to the Audit Plan.

Risk Assessment & Audit Planning Approach

An internal audit risk assessment was conducted in coordination with the board and management to identify perceived areas of risk and potential internal audit projects. This year's risk assessment was designed to create an audit plan which addresses risks to critical objectives while impacting staff time the least. The Audit Plan also includes hours for special projects and requests. The following approach was taken in creating the Audit Plan:

Gathered Information and Scoped

A. Gained understanding of industry trends and current environmental risks through discussions with personnel with industry experience, reading industry publications, and attending relevant training
B. Gained understanding of TRS' strategic objectives and key initiatives by attending the strategic planning meeting and reading the strategic plan
C. Updated audit universe based upon changes in organizational structure and mapped universe to TRS' Stoplight Report

Analyzed Information

A. Interviewed members of the Board and management to obtain various points of view on risks
B. Prepared a risk assessment of the audit universe including risks identified in interviews plus other known risks such as level of outsourcing, organizational change, and audit history
C. Developed Audit Plan based on interviews, risk assessment, resource availability, budget, and division coverage

Developed an Internal Audit Strategy and Plan

A. Met with executive management
   i. Reviewed risk assessment
   ii. Assessed highest priority audits and projects
B. Prepared formal Audit Plan recommendation
C. Reviewed and updated current Internal Audit Charter to ensure alignment with proposed Audit Plan

Next Steps

A. Review and discuss the proposed Audit Plan with the Audit Committee
B. Obtain Audit Committee recommendation and Board approval of the Audit Plan and updated Internal Audit Charter

Trustees and Management Interviewed

The tables below list the members of the Board and management who were interviewed to assess the highest areas of risk inherent to public pension plans like TRS. Questions discussed included the following:

1) ***Highest areas of concern for TRS?***
2) ***Risks that could have significant consequences to TRS?***
3) ***Emerging issues that Internal Audit should monitor?***
4) ***Special requests?***

TRS Board members interviewed:

- R. David Kelly, Board Chair
- Charlotte Clifton, Vice Chair
- Christopher Moss, Audit Committee Chair
- Nanette Sissney, Audit Committee Member
- Todd Barth, Audit Committee Member
- Eric C. McDonald, Audit Committee Member
- Anita Smith Palmer, Audit Committee Member
- Joe Colonnetta, Board Member
- T. Karen Charleston, Board Member

TRS management interviewed:

- Ken Welch, Deputy Director
- Don Green, Chief Financial Officer
- Conni Brennan, General Counsel
- Jerry Albright, Deputy Chief Investment Officer
- Sylvia Bell, Director of Investment Operations
- Amy Morgan, Chief Information Officer
- Janet Bray, Director of Human Resources
- Marianne Woods Wiley, Chief Benefit Officer
- Betsey Jones, Director of Health Policy and Administration
- Howard Goldman, Director of Communications
- Ray Spivey, Director of Governmental Relations

Risks Identified Without Consideration of Mitigating Factors

The following table sets forth risks identified during the interview process. Each risk was considered when creating the Audit Plan.

Risk Area	Description
1. **Ethics**: Ethics violations due to corruption or bad actors	a. Kickbacks and bribes
	b. Insider trading
	c. Ethics policy violations
	d. Lack of transparency
2. **Fraud**: Fraud, waste, and abuse	a. Misappropriation of assets, including information resources
	b. Manipulation of financial data
	c. Waste of resources
3. **Communication**: Ineffective communication and governance	a. Mishandled legislative requests
	b. Communication policy violations
	c. Social media mismanagement
	d. Inadequate personnel practices (policies, training, performance management, administration, workforce continuity)
4. **TEAM**: Mismanagement of TEAM program risks	Risks areas include project management (e.g., budget, schedule, resource utilization, third party oversight, etc.), organizational change management, and data management
5. **Strategic**: Unmet strategic objectives	a. Poor customer service and response time
	b. Unmet program goals for Historically Underutilized Businesses

Risks Identified, continued

Risks	Description
6. **Financial**: Financial mismanagement	a. Accounting standard changes not implemented or not implemented timely
	b. Financial report misstatements
	c. Tax report inaccuracies (e.g., 1099's)
	d. Board report inaccuracies
7. **Compliance**: Noncompliance with laws and regulations	a. Loss of qualified plan status
	b. Board policies noncompliance
	c. Federal and state legislation noncompliance (e.g., Dodd-Frank, HIPAA)
8. Operations: Operational mismanagement	a. Unavailable information systems
	b. Confidential data breach
	c. Ineffective and inefficient processes and use of resources
	d. Improper record retention and storage
	e. Unidentified and unmanaged investment risks (e.g., counterparty, liquidity, environmental)
9. **Audit**: Lack of audit quality	a. High risks not addressed by Audit Plan
	b. Unreliable audits
	c. Unimplemented audit recommendations; lack of audit follow-up
	d. Required reports not submitted to oversight bodies
	e. Ineffective audit communications to Audit Committee

Types of Projects to Cover Risk Areas

Risks identified were considered by Internal Audit when identifying and prioritizing various projects. An important part of the Audit Plan is that the identified processes, systems and initiatives should receive differing types / levels of review based on their importance and perceived risk. Our standard types of internal audit activities are as follows:

Audit (Assurance)

- Audit Focus: Assess evidence available in order to conclude on an audit objective; assurance is provided
- Deliverable: Audit report for public distribution unless protected by statute
- Estimated level of effort per project: 400 - 500 hours

Agreed-Upon Procedures

- Agreed-Upon Procedures Focus: Determine specific steps to test with management's agreement and report on results; used for data analytics and quarterly testing of specific data and transactions
- Deliverable: Agreed-upon procedures report for public distribution (use is limited to those with understanding of procedures performed)
- Estimated level of effort per project: 100 - 300 hours

Formal Consulting

- Consulting Focus: Respond to requests for formal study or assessment with recommendations; no assurance provided
- Deliverable: Consulting report or memo for limited distribution; significant material weaknesses identified would be reported to executive management and the Audit Committee as required by professional auditing standards
- Estimated level of effort per project: 100 - 200 hours

Informal Consulting (Advisory)

- Advisory Focus: Participate in activities in a non-voting capacity, e.g., provide training and input on policies and procedures
- Deliverable: Verbal discussion or a brief memo to management
- Estimated level of effort per year: 10 – 100 hours

Audit Plan: Executive Division

The tables on this and the following pages summarize the name of each project, risks to be addressed, type of project, reason for including in the Audit Plan, and description of work to be performed.

Title	Risks	Type	Reason	Description
Ethics and Communications Policies Compliance Audit	Ethics, communication, compliance	Audit	Risk Assessment, Required	Assess compliance with trustee and employee ethics policies; present results of employee ethics survey; assess compliance with communications policy
Fraud Risk Identification and Prevention Audit	Fraud	Audit	Request, Required	Identify highest areas of fraud risks and related controls; validate that controls are sufficient and working to mitigate fraud risks (e.g., accounts payable, refunds, inactive accounts).
Internal Ethics and Fraud Hotline Administration	Fraud	Advisory	Audit Charter	Follow up on hotline calls (both internal and external)
Fraud, Waste, and Abuse Prevention (FWAP) Committee	Fraud	Advisory	Audit Charter	Attend Fraud, Waste, and Abuse Prevention (FWAP) committee meetings and participate in policy updates and communications initiatives
Meetings Attendance	Communication	Advisory	Audit Charter	Attend Executive Council, Leadership Team, Social Media Advisory Committee and Risk Oversight Committee meetings
Special Requests	All	All	Request	Complete projects as requested by management; complete surprise inspections to gain understanding of controls in an area and provide “perception of detection”

Audit Plan: TEAM-Related Initiatives

Title	Risks	Type	Reason	Description
Independent Program Assessment Support	TEAM	Advisory	Risk Assessment	Coordinate and monitor activities of Independent Program Assessment vendor and ensure direct access to executive management and the Board
TEAM Committees Participation	TEAM	Advisory	Audit Charter	Participate in TEAM Executive Steering Committee and other committees as requested

Audit Plan: Benefit Services Division

Title	Risks	Type	Reason	Description
Call Center Performance Measures	Strategic, operations	Audit	Request	Assess whether call center hold times are being captured and reported accurately; assess whether improvements to processes could be made to reduce hold times
Benefit Payment Testing (financial audit)	Financial	Audit	Request	Test accuracy of benefit payments to support State Auditor's Office for the financial audit
Benefit Payment Testing	Compliance	Agreed-Upon Procedures	Request	Test benefit payments for accuracy, support, and compliance with TRS Laws and Rules (every 6 months)
Benefit Processing Surprise Inspection	Compliance, operations	Advisory	Request	Perform surprise inspections of Benefit Services to assess compliance with documented procedures

Audit Plan: Health Care Division

Title	Risks	Type	Reason	Description
Health Care Administration Audit	Operations	Audit	Risk Assessment	Assess whether controls are working effectively to achieve program goals and mitigate significant risks.
Health Care Vendor Update Meetings	Operations	Advisory	Risk Assessment	Attend quarterly meetings with health care vendors to understand results and issues
Vendor and Auditor Selection Observation	Ethics, compliance	Advisory	Risk Assessment	Observe large vendor and service provider auditor selection process in non-voting capacity

Audit Plan: Information Technology Division

Title	Risks	Type	Reason	Description
Backup and Recovery Audit	Operations	Audit	Risk Assessment, Request	Assess reliability of processes for backup of critical data and information systems and the ability to restore these systems and data timely and accurately; includes hot site observation
Health Insurance Portability and Accountability Act (HIPAA) IT Security Rule Recommendations Implementation and Validation	Compliance	Audit	Risk Assessment, Audit Charter	Validate implementation of management's action plan and assess adequacy of actions taken to address risks noted in the information security audit report from August 2011
Internal Network Vulnerabilities Scan	Operations	Agreed-Upon Procedures	Audit Charter	Identify vulnerabilities within the TRS network that could compromise confidentiality, integrity and availability of TRS data, and negatively impact operations
Network Penetration Test; Security Risk Assessment Review	Operations	Advisory	Audit Charter	Obtain, read, and follow-up on any issues identified during the network penetration tests and security risk assessment conducted by the information security officer
Technology Committee Meetings Attendance	Operations	Advisory	Risk Assessment, Audit Charter	Attend meetings to stay apprised of initiatives relating to enterprise security and information technology operations

Audit Plan: Finance Division

Title	Risks	Type	Reason	Description
Employer Reporting Audit	Compliance	Audit	Risk Assessment, Request	Assess whether employers are reporting data and contributions to TRS completely and accurately in areas such as eligibility, compensation, and return-to-work
Procurement and Contracting Audit	Ethics, strategic, compliance, operations	Audit	Risk Assessment, Request	Assess compliance with TRS procurement and contracting requirements, efficiency of operations, and whether Historically Underutilized Business (HUB) program goals are being met
1099 Reporting and Payment Processing	Financial, compliance	Consulting	Request	Flowchart disbursement activities and 1099 reporting process; inquire about past reporting problems, and suggest process enhancements.
Budget Transfer Inspection	Fraud, Financial	Advisory	Request	Perform surprise inspections of budget transfer process and assess whether transfers are properly approved and supported
Accounting Standards Changes Monitoring	Financial	Advisory	Audit Charter	Monitor impact of accounting standards changes on TRS financial statements
Financial Audit Coordination	Financial	Advisory	Audit Charter	Coordinate activities of State Auditor's Office audit of TRS financial statements to ensure deadlines are met; coordinate quarterly update meetings with executive management and State Auditor’s Office

Audit Plan: Investment Management Division

Title	Risks	Type	Reason	Description
Investments Selection and Monitoring (Emerging Managers)	Ethics, strategic	Audit	Risk Assessment	Assess effectiveness of ongoing monitoring and reporting of investment activities (e.g., public markets, private markets, and emerging managers); audit emerging managers in fiscal year 2013
Derivatives Audit	Financial, compliance, operations	Audit	Request	Determine whether actions taken by TRS comply with the Commodity Futures Trading Commission's new requirements for special entities like TRS for internal and external derivatives usage; determine whether program goals such as efficiency and portfolio risk management have been met
Investment Policy Compliance Testing (quarterly)	Ethics, compliance	Agreed-Upon Procedures	Audit Charter	Assess and monitor compliance with investment policy requirements including placement agent disclosures and Internal Investment Committee processes quarterly; test board report accuracy; provide input to policy changes
Contractual Allowance Identification	Fraud	Consulting	Request	Obtain contractual allowance clauses in asset management contracts, document understanding of how allowances are tracked and monitored, and report results to executive management

Audit Plan: Investment Management Division, continued

Title	Risks	Type	Reason	Description
Incentive Compensation Review	Fraud, financial	Advisory	Request	Review incentive compensation calculations to determine if it is awarded in accordance with plan provisions; reconcile performance to State Street numbers
Employee Trading Policy Compliance Monitoring	Ethics	Advisory	Audit Charter	Maintain watch list and monitor for inappropriate trading activities such as front-running and insider trading; monitor and report on compliance with the Employee Trading Policy
Emerging Risks Monitoring	Financial, compliance, operations	Advisory	Audit Charter, Request	Monitor risks reported in the media and assess implications to TRS portfolio and investment administration and operations
Investment Committees Attendance	Operations	Advisory	Audit Charter	Stay current on Investment Management Division (IMD) initiatives by attending Internal Investment Committee, Derivatives Operations, Technology and Operations Workgroup, Securities Lending, and IMD staff meetings
Travel Inspection	Fraud, compliance	Advisory	Request	Perform surprise inspections of travel processed by the Investment Management Division to review adherence to established procedures

Audit Plan: Internal Audit Department

Title	Risks	Type	Reason	Description
External Quality Assurance Review	Compliance	Audit	Required	External review team will assess Internal Audit's compliance with professional auditing standards
Annual Internal Audit Report	Compliance	Audit	Required	Prepare annual report of audit activities in accordance with State Auditor's Office instructions
Audit Recommendations Follow-up	All	Audit	Required	Follow-up and report on status of outstanding audit recommendations; validate that significant recommendations have been implemented as reported
Audit Plan	Audit, compliance	Advisory	Required	Prepare annual audit plan based on a documented risk assessment in accordance with professional auditing standards and the Texas Internal Auditing Act
Audit Committee Meetings Preparation	Audit, communication	Advisory	Audit Charter	Prepare communications and attend Audit Committee and Board meetings
Internal Audit Strategic Plan	Audit, Strategic	Advisory	Audit Charter	Update, execute, and measure results of internal audit strategic plan initiatives

Audit Plan: Areas Discussed But Excluded From Plan

Area	Risks	Reason for Exclusion
Executive (Human Resources)	Insufficient personnel policies, training, performance management, and personnel administration	Human Resources audit deferred to future to provide time for new management to implement initiatives
Executive	Critical records not retained and stored	TRS staff enrolled in the TRS leadership development program will study and make recommendations on improving electronic records retention
TEAM	TEAM program risks not identified or managed	The Independent Program Assessment vendor will identify program risks and report quarterly to the Board; the vendor is expected to be selected at the December Board meeting
Executive; TEAM	TEAM resource demand and other workload constraints not identified and managed as to impact on TRS' operations	Management is studying the impact of TEAM and other workload constraints and taking steps to address understaffed areas; the Independent Program Assessment will consider risks to TEAM due to lack of resources and report on that risk as part of its regular reporting to the Board

Appendix A
Internal Audit Operating Budget

Internal Audit Operating Budget

LINE ITEM	Budget FY 2012	Budget FY 2013
000 – Salaries	$921,440	$921,440
000 – Benefits	205,356	215,680
200 – Professional Fees	622,500	628,500
505 – Travel-In-State	4,500	7,000
510 – Travel-Out-of-State	14,000	13,500
705 – Dues, Fees, and Staff Development	25,000	25,000
710 – Subscriptions and Reference Materials	4,500	4,500
Total Operating Budget (excluding indirect costs such as computers, office space, and utilities)	$1,797,296	$1,815,620
Full Time Equivalent (FTE) Positions	10.0	10.0

Appendix B
Internal Audit
Performance Measures

Internal Audit Performance Measures

Internal Audit performance measures related to the execution of the Audit Plan are as follows:

1. Plan and execute employer audit activities with significant direction and input from TRS subject matter experts
2. Facilitate and monitor timely hiring and coordination of TEAM Independent Program Assessment vendor
3. Execute 80% of audit and agreed-upon procedures projects (80% allows for flexibility due to changes in TRS business practices and special requests)
4. Complete external quality assurance review with no significant compliance exceptions
5. Enhance trust through transparency and ongoing two-way communication with trustees and executive management through regular meetings, requests for audit plan input, and feedback on performance
6. Enhance value through allocating time for special requests throughout the year
7. Identify and utilize at least two internal or external resources to train and mentor audit staff in employer reporting and information technology
8. Systematically monitor emerging investment issues and impact to TRS via the investment compliance program
9. Spend a minimum of 75% of total available department hours (excludes uncontrollable leave) for professional staff on direct assurance, consulting, and advisory services
10. Facilitate success of external financial audit by effectively providing audit support, coordinating meetings, reserving facilities, and gathering schedule requests to enable timely outcomes with no surprises

Appendix C
Auditable Process Universe Mapped to TRS Stoplight Report

Teacher Retirement System of Texas Audit Universe				
Enterprise		**Operations**	**Finance**	**Investments**
Pension Funding	Communications & External Relations	Pension Benefit Administration	General Accounting & Reporting	Investment Operations
See Pension Benefit Administration	• **Social media** • Board elections • Open records request compliance	• Actuarial assumptions (external) (FY10) • **Benefit payment testing (FY12)** • Beneficiary claims controls (FY09) • Member data change controls (FY 09) • **Benefit processing controls (FY12)** • Qualified Domestic Assistance Orders (FY12) • Disability • **Benefit accounting controls** • Inactive and escheated accounts • Annual statements • Mail room operations • *MyTRS* website application controls	• **CAFR (external) (FY12)** • **Wire transfers (FY12)** • Investment valuation and accounting audit (FY12) • Payroll, accounts payable, travel (external) (FY09) • Compensation, payroll and position control (FY12) • Salary classification (external) (FY10) • Cash receipts (FY10) • Inventory • **Tax reporting (1099s)** • Closing process	• Investment technology controls (FY`10) • **Soft dollars (FY08)** • **Vendor paid expenses (FY09)** • **Commission sharing arrangements (CSA) (FY11)** • **Travel, including third party paid travel (FY11)** • **Incentive compensation (FY12)** • Settlement • Investment performance analytics (FY11) • Master custody services (FY12) • Cash flow projections • Corporate actions • **Proxy voting (FY12)**
Retiree Health Care	Governmental/Association Relations	Health Care Administration	Budget	Investment Reporting
See Health Care Administration	• Legislation tracking system controls	• **Third party vendor contract compliance (external) (FY12)** • **Healthcare vendor selection and contract monitoring** • **Healthcare administration controls** • Healthcare payments and collections (FY10) • Appeals process • Premium refund testing (FY12)	• **Budget allocations and transfers (FY10)** • Budget process and reporting	• **Investment policy compliance (FY12)** • State Street's compliance calculations (FY12) • Investment performance measurement (FY11) • Investment risk management (FY12)
Workforce Continuity	TEAM	403(b)	Employer Reporting	Market
• Employee recruiting and hiring practices (FY10) • Employee training compliance (FY11) • Policy setting and monitoring	• Information technology governance (FY10) • **Independent program assessment (external)** • TEAM risk assessment: risk identification status • TEAM risk assessment: resource utilization	• 403(b) certification process	• **Employer audits** • Employer reporting administration controls • TRAQS application controls	• Asset liability study (external) (FY09) • Tactical asset allocation • Investment benchmark selection (FY11) • Actively-managed internal equity portfolio (FY11) • Passively-managed portfolio • Hedge fund portfolio (FY11) • **Derivatives, including futures, forwards, and swaps (FY11)**

Enterprise		Operations	Finance	Investments
Governance	**Legacy Information Systems**	**Customer Service**	**Procurement & Contract Management**	**Credit**
• **Investment fiduciary study (external) (FY11)** • **Sunset review (external) (FY07)** • **Control environment, governance, and ethics (FY09)** • **Information and communications** • **Strategic planning** • **Enterprise risk management** • **Trustee orientation (FY10)** • **Board reporting (FY12)** • **Open Meetings Act compliance** • **Internal Audit Quality Assurance Review (external) (FY10)**	• Change management controls (FY12) • Application-level controls of legacy systems	• Performance measures (External) (FY11) • **Telephone counseling center / telecommunications** • IT help desk	• Board advisors contract monitoring • Outside counsel procurement and monitoring (FY09) • **Contract administration and purchasing (FY09)** • Contract worker onboarding, monitoring and compliance (FY10) • **HUB program compliance and reporting** • Software license management	• External manager portfolio (FY11) • Private markets portfolio (FY12) • **Emerging manager portfolio** • Trading center (including broker selection and execution) (FY11)
Business Continuity	**Information Security**	**Tax Qualification Status**		**Liquidity/Leverage**
• Disaster recovery • **System and data backup** • Business continuity plan (FY09) • Risk management (health and safety, insurance) (FY12)	• Information security governance • **Network penetration tests (external) (FY12)** • **Internal vulnerability scans** • Patch management • Database administration controls • Information security policy compliance (FY12) • Logical access controls (FY12) • **TAC 202 and HIPAA IT Security Rule compliance (FY11)** • Cloud computing	See Pension Benefit Administration		• **Securities lending (FY12)** • Asset management fees (FY10) • Funding and distributions related to private markets commitments (FY12)
Fraud Prevention & Detection	**Confidential Information**			
• **Fraud risk identification and prevention controls (FY09)**	• Building security and physical access controls (FY12) • HIPAA privacy and confidentiality compliance • Social Security number scans (FY10)			
Records Management				
• Records retention (FY11) • Imaging system application and management controls				

Red **Indicates areas in the audit universe covered by internal or external audit or agreed upon procedures projects planned for FY13**

Blue **Indicates areas that could be audited but coverage is provided through consulting or advisory projects planned for FY13**

(Year) **Indicates last year audited**

Tab 12 B.

MEMORANDUM

TO: Audit Committee Members, TRS Board of Trustees
Mr. Brian Guthrie, Executive Director

FROM: Amy Barrett, Chief Audit Executive

SUBJECT: Proposed Revisions to the Internal Audit Charter

DATE: September 14, 2012

The purpose, authority, and responsibility of the internal audit activity are formally defined in the Internal Audit Charter. The Internal Audit Charter is consistent with the definition of internal auditing provided by the Institute of Internal Auditors, auditor codes of ethics, and professional auditing standards. These professional auditing standards require that the Internal Audit Charter be reviewed periodically and presented to senior management and the board of trustees for approval. The TRS Board of Trustees approved revisions to the Internal Audit Charter in September 2010.

Highlights of the proposed revisions include the following:

- Defining Internal Audit's role in supporting public sector governance
- Defining Attestation Engagements: Agreed-Upon Procedures
- Clarifying responsibilities of internal audit in the following important areas:
    - Audit of employer data and contributions
    - Participation in a consulting or advisory capacity in information systems projects
    - Coordination of the TRS Enterprise Application Modernization (TEAM) Independent Program Assessment vendor
- Incorporating professional auditing standards codes of ethics for internal auditors

TEACHER RETIREMENT SYSTEM OF TEXAS
INTERNAL AUDIT CHARTER

ROLE OF INTERNAL AUDIT

Auditing is a cornerstone of good public sector governance. By providing unbiased, objective assessments of whether public resources are managed responsibly and effectively to achieve intended results, auditors help public sector organizations achieve accountability and integrity, improve operations, and instill confidence among citizens and stakeholders. The public sector auditor's role supports the governance responsibilities of oversight, insight, and foresight. Oversight addresses whether public sector entities are doing what they are supposed to do and serves to detect and deter public corruption. Insight assists decision-makers by providing an independent assessment of public sector programs, policies, operations, and results. Foresight identifies trends and emerging challenges. Auditors use tools such as financial audits, performance audits, investigations, and advisory services to fulfill each of these roles.[1]

MISSION

The mission of the Internal Audit department is to provide independent, objective assurance and consulting services designed to add value and improve the organization's operations. Internal Audit helps the organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

OBJECTIVES AND SCOPE OF WORK

Assurance Objectives

The objectives of assurance services are to provide formal, independent assurance to management and the Audit Committee that the organization's assets are safeguarded, that operating efficiency is enhanced, and that compliance is maintained with prescribed laws, and management and TRS Board of Trustees (Board of Trustees) policies. The assurance services objectives also include independent assessment of the organization's risk awareness and management, reliability and integrity of the organization's data, and achievement of the organization's goals and objectives.

Attestation Engagements: Agreed-Upon Procedures

Agreed-upon procedures consist of auditors performing specific procedures on the subject matter and issuing a report of findings based on the agreed-upon procedures. In an agreed-upon procedures engagement, the auditor does not express an opinion or conclusion, but only reports on agreed-upon procedures in the form of procedures and findings related to the specific procedures applied.[2]

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[1] The Institute of Internal Auditors *Supplemental Guidance: The Role of Auditing in Public Sector Governance*, 2nd Edition, January 2012

[2] *Government Auditing Standards* of the United States Government Accountability Office, 2011 Revision

Consulting and Advisory Services Objectives

The objectives of consulting and advisory services are to provide management with assessments and advice for improving processes that will advance the goals and objectives of the organization. No assurance is provided.

The objectives of consulting services are to provide formal assessments and advice on the front-end of projects so that risks may be managed and internal controls may be designed at the beginning of a project. The objectives and the scope of consulting projects are agreed to by management.

The objectives of advisory services are to provide informal advice to management. Examples of advisory services include participating in various committees in a non-voting capacity; providing routine advice on policies, internal controls, and audit recommendations; providing training and risk management tools; facilitating meetings; and collecting benchmarking information.

Scope

Internal Audit provides opinions on governance, risk management, and controls as the result of an individual assurance project or as an overall opinion of the adequacy of governance, risk management, and control within the organization. The scope of work of the Internal Audit department is to determine whether the organization's framework of risk management, control, and governance processes, as designed and represented by management, is functioning in a manner to ensure:

- Programs are operating within the highest fiduciary standards and are directed toward the requirements defined in the federal and state constitutions, laws, regulations, and TRS policies and procedures.
- Risks within and outside the organization are appropriately identified and managed.
- Risk and control information is effectively communicated throughout the organization.
- Ethics-related programs and activities are effective.
- Significant financial, managerial, and operating information is accurate, reliable, and timely.
- Significant legislative or regulatory issues impacting the organization are recognized and addressed appropriately.
- Interaction with appropriate internal committees occurs as needed.
- Employee actions are in compliance with policies, standards, procedures, and applicable laws and regulations.
- Employer (reporting entity) data and contributions reported to TRS are accurate, complete, and in compliance with applicable laws and rules.
- Resources are acquired economically, used efficiently, and adequately protected.
- Programs, plans, and objectives are monitored and achieved in line with the TRS mission.

- Quality and continuous improvement are fostered in the organization's control process.
- Internal controls are in place and are functioning effectively to accomplish business and strategic objectives.
- Information technology controls including information systems security controls are in place and are functioning effectively.
- Contractors are meeting the obligations of their contracts while in conformance with applicable laws, regulations, policies, procedures, and best practices.
- Specific operations, processes and programs are reviewed at the request of management or the Audit Committee.

During the performance of professional services, recommendations for improvement in risk management, control, and governance processes may be identified. This information will be communicated to management and the Audit Committee.

AUTHORITY

Legal Basis for the Internal Audit Function

The Internal Audit department operates within the Teacher Retirement System of Texas under:

- Article 16, Section 67 of the Texas Constitution
- Title 8, Subtitle C, *Texas Government Code*
- Chapter 2102 (Texas Internal Auditing Act), *Texas Government Code*

Delegation of Authority Relevant to the Performance of Engagements

To fulfill the mission and objectives of the internal audit function, the chief audit executive and staff of the Internal Audit department are hereby authorized by the Board of Trustees to:

- Have unrestricted access to all TRS divisions, departments, personnel, activities, confidential and non-confidential data and records, information systems, physical property, and contractors relevant to the performance of engagements, subject to applicable state and federal laws.
- Have access to contractor records and files in line with contract terms and specifically the "right to audit" section.
- Have unrestricted access to the chair of the Audit Committee, Audit Committee members, and the executive director.
- Allocate resources, set frequencies, select subjects, determine scope of work, and apply the techniques required to accomplish assurance and consulting objectives.
- Obtain the necessary assistance of personnel in units of the organization where audits are performed, as well as other specialized services from within or outside the organization.
- Obtain timely reports from management on actions proposed and taken pertaining to audit recommendations.

The chief audit executive and staff of the Internal Audit department are not authorized to:

- Perform any operational duties for the organization. Compliance duties are not considered operational duties.
- Initiate or approve accounting transactions external to the Internal Audit department.
- Direct the activities of any organization employee not employed by the Internal Auditing department, except to the extent such employees have been appropriately assigned to auditing teams or to otherwise assist the internal auditors.

Section 3.1.1 of the Bylaws of the Board of Trustees states the purpose and responsibilities of the Audit Committee.

INDEPENDENCE AND OBJECTIVITY

Organizational Placement

The chief audit executive reports functionally to the Board of Trustees through the Audit Committee and administratively to the executive director of the Teacher Retirement System. This reporting structure provides for Internal Audit independence and objectivity as required by Texas State law and professional standards.

RESPONSIBILITIES AND ACCOUNTABILITY

The chief audit executive and staff of the Internal Audit department shall be accountable to the Board of Trustees, the Audit Committee, and the executive director to:

- Develop a flexible annual audit plan using an appropriate risk-based methodology, considering any risks or control concerns identified by management and the Board of Trustees, and submit that plan to the Audit Committee for review and approval as well as provide periodic updates.
- Develop short-term and long-term strategic goals for Internal Audit.
- Implement the approved audit plan including appropriate plan amendments, and special projects requested by management and the Audit Committee.
- Provide quarterly reports comparing actual results to the annual audit plan.
- Assess the adequacy and effectiveness of the organization's processes for controlling its activities and managing its risks in the areas set forth under the mission and scope of work, including the effectiveness of the Enterprise Risk Management (ERM) program.
- Report significant issues related to the processes for controlling the activities of the organization including potential improvements to those processes.
- Provide quarterly reports to the Audit Committee and management summarizing the results of audit activities including the implementation status of prior audit recommendations.

- Provide copies of audit reports to management, the Audit Committee, the Board of Trustees and oversight agencies specified in state law.
- Evaluate and assess significant new or changing functions, services, processes, operations, information systems and internal controls concurrent with their development, implementation, and/or expansion.
- Partner with management for all operations to understand the internal control environment, risks, and risk mitigation activities.
- Provide support to the internal investment compliance program.
- Participate in a consulting or advisory capacity in the planning, design, development, implementation, and modification phases of major information systems to determine whether:
    - adequate controls are incorporated during the development phases of business processes and systems before implementation
    - adequate project and risk management processes are in place and functioning effectively to mitigate risks that may hinder achieving project goals and objectives
    - thorough systems testing is performed at appropriate development phases
    - information security is addressed at appropriate development phases and at implementation
    - processes are in place and functioning effectively to develop and maintain complete and accurate systems documentation
    - the intended purpose and objectives of the system implementation or modifications have been met
- Facilitate and monitor the timely hiring and coordination of the TRS Enterprise Application Modernization (TEAM) program Independent Program Assessment vendor and ensure direct access to executive management and the Board of Trustees.
- Select, train, develop and retain professional audit staff members who collectively have the knowledge, skills, abilities, experience, expertise, and professional certifications to meet the requirements of this charter.
- Maintain an effective quality assurance and improvement program to include supervision, training, internal reviews, and external reviews.
- Keep management and the Audit Committee informed of emerging trends and successful practices in risk management, control, and governance through training and other forms of communication.
- Provide the Audit Committee a list of Internal Audit annual performance goals and results and the *Annual Internal Audit Report* required by state law.
- Provide the Audit Committee periodic reports on the sufficiency of Internal Audit resources.
- Assist in the deterrence of fraud by examining and evaluating the adequacy and the effectiveness of the system of internal controls and administering the internal fraud and ethics hot line.

- Report immediately any known incident of significant fraud to executive management, the Audit Committee, the Board of Trustees, and the State Auditor's Office.
- Conduct or participate as appropriate in the investigation of suspected illegal or fraudulent activities within the organization and report results to executive management and the Audit Committee.
- Act as the primary point of contact related to audits, investigations, or inquiries of the State Auditor's Office and other external audit groups.
- Consider the scope of work of external auditor groups as appropriate for the purpose of providing optimal audit coverage to the organization at a reasonable overall cost.
- Coordinate with other control and monitoring functions (risk management, legal, accounting, ethics, investments compliance, and physical and information systems security).

STANDARDS OF AUDIT PRACTICE

The chief audit executive and staff members of the Internal Audit department will comply with the following professional standards:

- *Texas Government Code*, Chapter 2102 (Texas Internal Auditing Act)
- *International Standards for the Professional Practice of Internal Auditing* and the *Code of Ethics* of The Institute of Internal Auditors, Inc., see **Appendix A**
- *Government Auditing Standards* of the United States Government Accountability Office and their Code of Ethics, see **Appendix A**
- *Information Systems Standards, Guidelines and Procedures for Auditing and Control Professionals* of the Information Systems Audit and Control Association, as applicable

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SIGNATURE SECTION

The Internal Audit Charter revision was adopted by the Board of Trustees of the Teacher Retirement System of Texas on September 14, 2012.

Christopher Moss Chair, Audit Committee Board of Trustees	R. David Kelly Chair Board of Trustees
Amy L. Barrett, CIA, CPA Chief Audit Executive	Brian Guthrie Executive Director

APPENDIX A

***Code of Ethics* of The Institute of Internal Auditors, Inc.**

Internal auditors are expected to apply and uphold the following principles:

1. **Integrity -** The integrity of internal auditors establishes trust and thus provides the basis for reliance on their judgment.
2. **Objectivity -** Internal auditors exhibit the highest level of professional objectivity in gathering, evaluating, and communicating information about the activity or process being examined. Internal auditors make a balanced assessment of all the relevant circumstances and are not unduly influenced by their own interests or by others in forming judgments.
3. **Confidentiality -** Internal auditors respect the value and ownership of information they receive and do not disclose information without appropriate authority unless there is a legal or professional obligation to do so.
4. **Competency -** Internal auditors apply the knowledge, skills, and experience needed in the performance of internal audit services.

Rules of Conduct

1. **Integrity**

   Internal auditors:

   1.1. Shall perform their work with honesty, diligence, and responsibility.

   1.2. Shall observe the law and make disclosures expected by the law and the profession.

   1.3. Shall not knowingly be a party to any illegal activity, or engage in acts that are discreditable to the profession of internal auditing or to the organization.

   1.4. Shall respect and contribute to the legitimate and ethical objectives of the organization.

2. **Objectivity**

   Internal auditors:

   2.1. Shall not participate in any activity or relationship that may impair or be presumed to impair their unbiased assessment. This participation includes those activities or relationships that may be in conflict with the interests of the organization.

   2.2. Shall not accept anything that may impair or be presumed to impair their professional judgment.

   2.3. Shall disclose all material facts known to them that, if not disclosed, may distort the reporting of activities under review.

3. Confidentiality

Internal auditors:

3.1. Shall be prudent in the use and protection of information acquired in the course of their duties.

3.2. Shall not use information for any personal gain or in any manner that would be contrary to the law or detrimental to the legitimate and ethical objectives of the organization.

4. Competency

Internal auditors:

4.1. Shall engage only in those services for which they have the necessary knowledge, skills, and experience.

4.2. Shall perform internal audit services in accordance with the *International Standards for the Professional Practice of Internal Auditing*.

4.3. Shall continually improve their proficiency and the effectiveness and quality of their services.

Government Auditing Standards of the United States Government Accountability Office Code of Ethics

The ethical principles that guide the work of auditors who conduct audits in accordance with GAGAS are:

a. the public interest;

b. integrity;

c. objectivity;

d. proper use of government information, resources, and positions; and

e. professional behavior.

The Public Interest

The public interest is defined as the collective well-being of the community of people and entities the auditors serve. Observing integrity, objectivity, and independence in discharging their professional responsibilities assists auditors in meeting the principle of serving the public interest and honoring the public trust. The principle of the public interest is fundamental to the responsibilities of auditors and critical in the government environment.

A distinguishing mark of an auditor is acceptance of responsibility to serve the public interest. This responsibility is critical when auditing in the government environment. GAGAS embodies the concept of accountability for public resources, which is fundamental to serving the public interest.

Integrity

Public confidence in government is maintained and strengthened by auditors performing their professional responsibilities with integrity. Integrity includes auditors conducting their work with an attitude that is objective, fact-based, nonpartisan, and non-ideological with regard to audited entities and users of the auditors' reports. Within the constraints of applicable confidentiality laws, rules, or policies, communications with the audited entity, those charged with governance, and the individuals contracting for or requesting the audit are expected to be honest, candid, and constructive.

Making decisions consistent with the public interest of the program or activity under audit is an important part of the principle of integrity. In discharging their professional responsibilities, auditors may encounter conflicting pressures from management of the audited entity, various levels of government, and other likely users. Auditors may also encounter pressures to inappropriately achieve personal or organizational gain. In resolving those conflicts and pressures, acting with integrity means that auditors place priority on their responsibilities to the public interest.

Objectivity

The credibility of auditing in the government sector is based on auditors' objectivity in discharging their professional responsibilities. Objectivity includes independence of mind and appearance when providing audits, maintaining an attitude of impartiality, having intellectual honesty, and being free of conflicts of interest. Maintaining objectivity includes a continuing assessment of relationships with audited entities and other stakeholders in the context of the auditors' responsibility to the public. The concepts of objectivity and independence are closely related. Independence impairments impact objectivity.

Proper Use of Government Information, Resources, and Positions

Government information, resources, and positions are to be used for official purposes and not inappropriately for the auditor's personal gain or in a manner contrary to law or detrimental to the legitimate interests of the audited entity or the audit organization. This concept includes the proper handling of sensitive or classified information or resources.

In the government environment, the public's right to the transparency of government information has to be balanced with the proper use of that information. In addition, many government programs are subject to laws and regulations dealing with the disclosure of information. To accomplish this balance, exercising discretion in the use of information acquired in the course of auditors' duties is an important part in achieving this goal. Improperly disclosing any such information to third parties is not an acceptable practice.

Accountability to the public for the proper use and prudent management of government resources is an essential part of auditors' responsibilities. Protecting and conserving government resources and using them appropriately for authorized activities is an important element in the public's expectations for auditors.

Misusing the position of an auditor for financial gain or other benefits violates an auditor's fundamental responsibilities. An auditor's credibility can be damaged by actions that could be perceived by an objective third party with knowledge of the relevant information as improperly benefiting an auditor's personal financial interests or those of an immediate or close family member; a general partner; an organization for which the auditor serves as an officer, director, trustee, or employee; or an organization with which the auditor is negotiating concerning future employment.

Professional Behavior

High expectations for the auditing profession include compliance with all relevant legal, regulatory, and professional obligations and avoidance of any conduct that might bring discredit to auditors' work, including actions that would cause an objective third party with knowledge of the relevant information to conclude that the auditors' work was professionally deficient. Professional behavior includes auditors putting forth an honest effort in performance of their duties and professional services in accordance with the relevant technical and professional standards.

TEACHER RETIREMENT SYSTEM OF TEXAS
INTERNAL AUDIT CHARTER

ROLE OF INTERNAL AUDIT

Auditing is a cornerstone of good public sector governance. By providing unbiased, objective assessments of whether public resources are managed responsibly and effectively to achieve intended results, auditors help public sector organizations achieve accountability and integrity, improve operations, and instill confidence among citizens and stakeholders. The public sector auditor's role supports the governance responsibilities of oversight, insight, and foresight. Oversight addresses whether public sector entities are doing what they are supposed to do and serves to detect and deter public corruption. Insight assists decision-makers by providing an independent assessment of public sector programs, policies, operations, and results. Foresight identifies trends and emerging challenges. Auditors use tools such as financial audits, performance audits, investigations, and advisory services to fulfill each of these roles.[1]

MISSION

The mission of the Internal Audit department is to provide independent, objective assurance and consulting services designed to add value and improve the organization's operations. Internal Audit helps the organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

OBJECTIVES AND SCOPE OF WORK

Assurance Objectives

The objectives of assurance services are to provide formal, independent assurance to management and the Audit Committee that the organization's assets are safeguarded, that operating efficiency is enhanced, and that compliance is maintained with prescribed laws, and management and TRS Board of Trustees (Board of Trustees) policies. The assurance services objectives also include independent assessment of the organization's risk awareness and management, reliability and integrity of the organization's data, and achievement of the organization's goals and objectives.

Attestation Engagements: Agreed-Upon Procedures

Agreed-up procedures consist of auditors performing specific procedures on the subject matter and issuing a report of findings based on the agreed-upon procedures. In an agreed-upon procedures engagement, the auditor does not express an opinion or conclusion, but only reports on agreed-upon procedures in the form of procedures and findings related to the specific procedures applied.[2]

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[1] The Institute of Internal Auditors *Supplemental Guidance: The Role of Auditing in Public Sector Governance*, 2nd Edition, January 2012

[2] *Government Auditing Standards* of the United States Government Accountability Office, 2011 Revision

Consulting and Advisory Services Objectives

The objectives of consulting and advisory services are to provide management with assessments and advice for improving processes that will advance the goals and objectives of the organization. No assurance is provided.

~~In particular, the~~The objectives of consulting services are to provide formal assessments and advice on the front-end of projects so that risks may be managed and internal controls may be designed at the beginning of a project. ~~Typically, the~~ The objectives and the scope of ~~the~~ consulting projects are agreed to by management.

The objectives of advisory services are to provide informal advice to management. Examples of advisory services include participating in various committees in a~~n~~ ~~ex-officio~~ non-voting capacity; providing routine advice on policies, internal controls, and audit recommendations; providing training and risk management tools; facilitating meetings; and collecting benchmarking information.

Scope

Internal Audit provides opinions on governance, risk management, and controls as the result of an individual assurance project or as an overall opinion of the adequacy of governance, risk management, and control within the organization. The scope of work of the Internal Audit department is to determine whether the organization's framework of risk management, control, and governance processes, as designed and represented by management, is functioning in a manner to ensure:

- Programs are operating within the highest fiduciary standards and are directed toward the requirements defined in the federal and state constitutions, laws, regulations, and TRS policies and procedures.
- Risks within and outside the organization are appropriately identified and managed.
- Risk and control information is effectively communicated throughout the organization.
- Ethics-related programs and activities are effective.
- Significant financial, managerial, and operating information is accurate, reliable, and timely.
- Significant legislative or regulatory issues impacting the organization are recognized and addressed appropriately.
- Interaction with appropriate internal committees occurs as needed.
- Employee actions are in compliance with policies, standards, procedures, and applicable laws and regulations.
- Employer (reporting entity) data and contributions reported to TRS are accurate, complete, and in compliance with applicable laws and rules.
- Resources are acquired economically, used efficiently, and adequately protected.
- Programs, plans, and objectives are monitored and achieved in line with the TRS mission.

- Quality and continuous improvement are fostered in the organization's control process.
- Internal controls are in place and are functioning effectively to accomplish business and strategic objectives.
- Information technology controls including information systems security controls are in place and are functioning effectively.
- Contractors are meeting the obligations of their contracts while in conformance with applicable laws, regulations, policies, procedures, and best practices.
- Specific operations, processes and programs are reviewed at the request of management or the Audit Committee.

During the performance of ~~audit work,~~ professional services, recommendations for improvement in risk management, control, and governance processes may be identified. This information will be communicated to management and the Audit Committee.

AUTHORITY

Legal Basis for the Internal Audit Function

The ~~internal audit function~~ Internal Audit department operates ~~as a component unit~~ within the Teacher Retirement System of Texas under:

- Article 16, Section 67 of the Texas Constitution
- Title 8, Subtitle C, *Texas Government Code*
- Chapter 2102 (Texas Internal Auditing Act), *Texas Government Code*

Delegation of Authority Relevant to the Performance of Engagements

To fulfill the mission and objectives of the internal audit function, the chief audit executive and staff of the Internal Audit department are hereby authorized by the Board of Trustees to:

- Have unrestricted access to all TRS divisions, departments, personnel, activities, confidential and non-confidential data and records, information systems, physical property, and contractors relevant to the performance of engagements, subject to applicable state and federal laws.
- Have access to contractor records and files in line with contract terms and specifically the "right to audit" section.
- Have unrestricted access to the chair of the Audit Committee, Audit Committee members, and the executive director.
- Allocate resources, set frequencies, select subjects, determine scope of work, and apply the techniques required to accomplish assurance and consulting objectives.
- Obtain the necessary assistance of personnel in units of the organization where audits are performed, as well as other specialized services from within or outside the organization.
- Obtain timely reports from management on actions proposed and taken pertaining to audit recommendations.

The chief audit executive and staff of the Internal Audit department are not authorized to:

- Perform any operational duties for the organization. Compliance duties are not considered operational duties.
- Initiate or approve accounting transactions external to the Internal Audit department.
- Direct the activities of any organization employee not employed by the Internal Auditing department, except to the extent such employees have been appropriately assigned to auditing teams or to otherwise assist the internal auditors.

Section 3.1.1 of the Bylaws of the Board of Trustees states the purpose and responsibilities of the Audit Committee.

INDEPENDENCE AND OBJECTIVITY

Organizational Placement

The chief audit executive reports functionally to the Board of Trustees through the Audit Committee and administratively to the executive director of the Teacher Retirement System. This reporting structure provides for Internal Audit independence and objectivity as required by Texas State law and professional standards.

RESPONSIBILITIES AND ACCOUNTABILITY

The chief audit executive and staff of the Internal Audit department shall be accountable to the Board of Trustees, the Audit Committee, and the executive director to:

- Develop a flexible annual audit plan using an appropriate risk-based methodology, considering any risks or control concerns identified by management and the Board of Trustees, and submit that plan to the Audit Committee for review and approval as well as provide periodic updates.
- Develop short-term and long-term strategic goals for Internal Audit.
- Implement the approved audit plan including appropriate plan amendments, and special projects requested by management and the Audit Committee.
- Provide quarterly reports comparing actual results to the annual audit plan.
- Assess the adequacy and effectiveness of the organization's processes for controlling its activities and managing its risks in the areas set forth under the mission and scope of work, including the effectiveness of the Enterprise Risk Management (ERM) program.
- Report significant issues related to the processes for controlling the activities of the organization including potential improvements to those processes.
- Provide quarterly reports to the Audit Committee and management summarizing the results of audit activities including the implementation status of prior audit recommendations.

- Provide copies of audit reports to management, the Audit Committee, the Board of Trustees and oversight agencies specified in state law.
- Evaluate and assess significant new or changing functions, services, processes, operations, information systems, and internal controls concurrent with their development, implementation, and/or expansion.
- Partner with management for all operations to understand the internal control environment, risks, and risk mitigation activities.
- ~~Coordinate our services and activities with control and monitoring groups such as operations, risk management, compliance, and legal, as appropriate.~~
- Provide support to the internal investment compliance program~~s~~.
- Participate in a consulting or advisory capacity in the planning, design, development, implementation, and modification phases of major information ~~related~~ systems to determine whether:
    - adequate controls are incorporated ~~in the systems~~ during the development phases of business processes and systems before implementation
    - adequate project and risk management ~~techniques~~ processes are in place and functioning effectively to mitigate risks that may hinder achieving project goals and objectives ~~are used~~
    - thorough systems testing is performed at appropriate ~~stages~~ development phases
    - information security is addressed at appropriate development phases and at implementation
    - processes are in place and functioning effectively to develop and maintain complete~~d~~ and accurate systems documentation ~~is complete and accurate~~
    - the intended purpose and objectives of the system implementation or modifications have been met
- Facilitate and monitor the timely hiring and coordination of the TRS Enterprise Application Modernization (TEAM) program Independent Program Assessment vendor and ensure direct access to executive management and the Board of Trustees.
- Select, train, develop and retain professional audit staff members who collectively have the knowledge, skills, abilities, experience, expertise, and professional certifications to meet the requirements of this charter.
- Maintain an effective quality assurance and improvement program to include supervision, training, internal reviews, and external reviews.
- Keep management and the Audit Committee informed of emerging trends and successful practices in risk management, control, and governance through training and other forms of communication.
- Provide the Audit Committee a list of Internal Audit annual performance goals and results and the *Annual Internal Audit Report* required by state law.
- Provide the Audit Committee periodic reports on the sufficiency of Internal Audit resources.
- Assist in the deterrence of fraud by examining and evaluating the adequacy and the effectiveness of the system of internal controls and administering the internal fraud and ethics hot line.

- Report immediately any known incident of significant fraud to executive management, the Audit Committee, the Board of Trustees, and the State Auditor's Office.
- Conduct or participate as appropriate in the investigation of suspected illegal or fraudulent activities within the organization and report results to executive management and the Audit Committee.
- Act as the primary point of contact related to audits, investigations, or inquiries of the State Auditor's Office and other external audit groups.
- Consider the scope of work of external auditor groups as appropriate for the purpose of providing optimal audit coverage to the organization at a reasonable overall cost.
- Coordinate with other control and monitoring functions (risk management, legal, accounting, ethics, investments compliance, and physical and information systems security).

STANDARDS OF AUDIT PRACTICE

The chief audit executive and staff members of the Internal Audit department will comply with the following professional standards:

- *Texas Government Code*, Chapter 2102 (Texas Internal Auditing Act)
- *International Standards for the Professional Practice of Internal Auditing* and the *Code of Ethics* of The Institute of Internal Auditors, Inc., see **Appendix A**
- *Government Auditing Standards* of the United States Government Accountability Office and their Code of Ethics, see **Appendix A**
- *Information Systems Standards, Guidelines and Procedures for Auditing and Control Professionals* of the Information Systems Audit and Control Association, as applicable.

SIGNATURE SECTION

The Internal Audit Charter revision was adopted by the Board of Trustees of the Teacher Retirement System of Texas on September 14~~7~~, 2012~~0~~.

Christopher Moss ~~Philip Mullins~~ Chair, Audit Committee Board of Trustees	R. David Kelly Chair Board of Trustees
Amy L. Barrett, CIA, CPA Chief Audit Executive	Brian Guthrie ~~Ronnie Jung~~ Executive Director

APPENDIX A

Code of Ethics of The Institute of Internal Auditors, Inc.

Internal auditors are expected to apply and uphold the following principles:

1. **Integrity -** The integrity of internal auditors establishes trust and thus provides the basis for reliance on their judgment.
2. **Objectivity -** Internal auditors exhibit the highest level of professional objectivity in gathering, evaluating, and communicating information about the activity or process being examined. Internal auditors make a balanced assessment of all the relevant circumstances and are not unduly influenced by their own interests or by others in forming judgments.
3. **Confidentiality -** Internal auditors respect the value and ownership of information they receive and do not disclose information without appropriate authority unless there is a legal or professional obligation to do so.
4. **Competency -** Internal auditors apply the knowledge, skills, and experience needed in the performance of internal audit services.

Rules of Conduct

1. Integrity

Internal auditors:

1.1. Shall perform their work with honesty, diligence, and responsibility.

1.2. Shall observe the law and make disclosures expected by the law and the profession.

1.3. Shall not knowingly be a party to any illegal activity, or engage in acts that are discreditable to the profession of internal auditing or to the organization.

1.4. Shall respect and contribute to the legitimate and ethical objectives of the organization.

2. Objectivity

Internal auditors:

2.1. Shall not participate in any activity or relationship that may impair or be presumed to impair their unbiased assessment. This participation includes those activities or relationships that may be in conflict with the interests of the organization.

2.2. Shall not accept anything that may impair or be presumed to impair their professional judgment.

2.3. Shall disclose all material facts known to them that, if not disclosed, may distort the reporting of activities under review.

3. Confidentiality

Internal auditors:

3.1. Shall be prudent in the use and protection of information acquired in the course of their duties.

3.2. Shall not use information for any personal gain or in any manner that would be contrary to the law or detrimental to the legitimate and ethical objectives of the organization.

4. Competency

Internal auditors:

4.1. Shall engage only in those services for which they have the necessary knowledge, skills, and experience.

4.2. Shall perform internal audit services in accordance with the *International Standards for the Professional Practice of Internal Auditing*.

4.3. Shall continually improve their proficiency and the effectiveness and quality of their services.

Government Auditing Standards of the United States Government Accountability Office Code of Ethics

The ethical principles that guide the work of auditors who conduct audits in accordance with GAGAS are:

a. the public interest;

b. integrity;

c. objectivity;

d. proper use of government information, resources, and positions; and

e. professional behavior.

The Public Interest

The public interest is defined as the collective well-being of the community of people and entities the auditors serve. Observing integrity, objectivity, and independence in discharging their professional responsibilities assists auditors in meeting the principle of serving the public interest and honoring the public trust. The principle of the public interest is fundamental to the responsibilities of auditors and critical in the government environment.

A distinguishing mark of an auditor is acceptance of responsibility to serve the public interest. This responsibility is critical when auditing in the government environment. GAGAS embodies the concept of accountability for public resources, which is fundamental to serving the public interest.

Integrity

Public confidence in government is maintained and strengthened by auditors performing their professional responsibilities with integrity. Integrity includes auditors conducting their work with an attitude that is objective, fact-based, nonpartisan, and non-ideological with regard to audited entities and users of the auditors' reports. Within the constraints of applicable confidentiality laws, rules, or policies, communications with the audited entity, those charged with governance, and the individuals contracting for or requesting the audit are expected to be honest, candid, and constructive.

Making decisions consistent with the public interest of the program or activity under audit is an important part of the principle of integrity. In discharging their professional responsibilities, auditors may encounter conflicting pressures from management of the audited entity, various levels of government, and other likely users. Auditors may also encounter pressures to inappropriately achieve personal or organizational gain. In resolving those conflicts and pressures, acting with integrity means that auditors place priority on their responsibilities to the public interest.

Objectivity

The credibility of auditing in the government sector is based on auditors' objectivity in discharging their professional responsibilities. Objectivity includes independence of mind and appearance when providing audits, maintaining an attitude of impartiality, having intellectual honesty, and being free of conflicts of interest. Maintaining objectivity includes a continuing assessment of relationships with audited entities and other stakeholders in the context of the auditors' responsibility to the public. The concepts of objectivity and independence are closely related. Independence impairments impact objectivity.

Proper Use of Government Information, Resources, and Positions

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In the government environment, the public's right to the transparency of government information has to be balanced with the proper use of that information. In addition, many government programs are subject to laws and regulations dealing with the disclosure of information. To accomplish this balance, exercising discretion in the use of information acquired in the course of auditors' duties is an important part in achieving this goal. Improperly disclosing any such information to third parties is not an acceptable practice.

Accountability to the public for the proper use and prudent management of government resources is an essential part of auditors' responsibilities. Protecting and conserving government resources and using them appropriately for authorized activities is an important element in the public's expectations for auditors.

Misusing the position of an auditor for financial gain or other benefits violates an auditor's fundamental responsibilities. An auditor's credibility can be damaged by actions that could be perceived by an objective third party with knowledge of the relevant information as improperly benefiting an auditor's personal financial interests or those of an immediate or close family member; a general partner; an organization for which the auditor serves as an officer, director, trustee, or employee; or an organization with which the auditor is negotiating concerning future employment.

Professional Behavior

High expectations for the auditing profession include compliance with all relevant legal, regulatory, and professional obligations and avoidance of any conduct that might bring discredit to auditors' work, including actions that would cause an objective third party with knowledge of the relevant information to conclude that the auditors' work was professionally deficient. Professional behavior includes auditors putting forth an honest effort in performance of their duties and professional services in accordance with the relevant technical and professional standards.

Tab 13

June and July 2012 Cash Disbursements
Pension Trust Fund

To: TRS Board of Trustees
Brian Guthrie, Executive Director
Ken Welch, Deputy Director

From: Don Green, Chief Financial Officer

Date: August 30, 2012

Section 825.314(b) of the Texas Government Code requires the staff of the retirement system to report to the board the amounts and uses, since the preceding board meeting, of any money expended by the system for administrative expenses paid from the Pension Trust Fund along with an explanation of why the amounts were needed to perform the fiduciary duties of the board. The 82nd Texas State Legislature adopted provisions allowing operating expenses of the system to be paid out of the Pension Trust Fund. On June 16, 2011, the board approved the Administrative Operations budget for fiscal year 2012.

During June 2012, the Pension Trust Fund disbursed a total of $5.1 million for administrative operations, which included approximately $3.8 million for salaries & other personnel costs, $0.4 million for professional fees, $0.1 million for capital projects, and $0.8 million for other operating expenses. Items of interest include payments of $223,000 for investment counsel, $143,000 for leased space, $108,000 for software purchases and maintenance, and $100,000 for absolute return consultants.

A total of $5.7 million was disbursed for administrative operations in July 2012. Administrative operating costs included approximately $4.0 million for salaries & other personnel costs, $0.4 million for professional fees, $0.4 million for capital projects, and $0.9 million for other operating expenses. Items of interest include payments of $296,000 for investment counsel, $162,000 for employee overtime, and $152,000 for leased space.

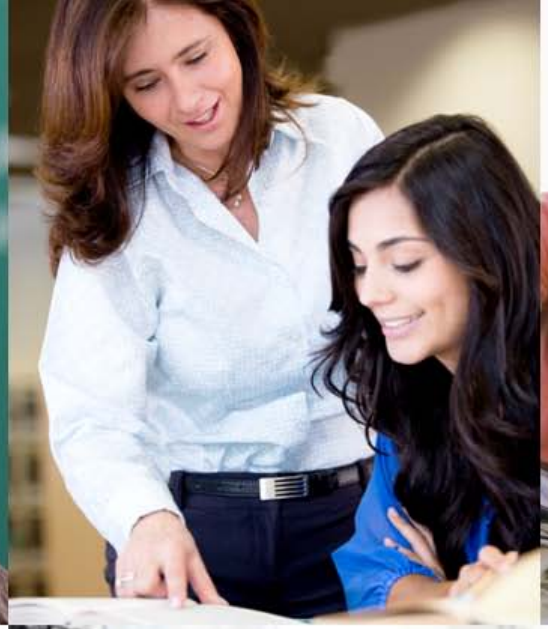
Additionally, disbursements for June and July 2012 for TEAM program expenses were $107,000 for salaries & other personnel costs, $237,000 for professional fees, and $359,000 for other operating costs.

Cash Disbursements from the Pension Trust Fund

Month		Fiscal Year 2012		Fiscal Year 2011	
September		$ 6,793,546		$ 7,254,568	
October		6,450,857		5,216,390	
November		4,929,626		7,108,612	
December		5,984,486		5,493,018	
January	(a)	12,409,354		15,385,714	
February		5,413,959		5,038,352	
March		5,359,992		5,482,609	
April		5,071,073		5,177,178	
May		5,398,688		4,800,661	
June		**5,264,585**		5,503,529	
July		**6,285,330**		5,493,462	(b)
August				5,830,201	
Totals		$ 69,361,496	(c)	$ 77,784,294	

(a) Includes $6.1 million in incentive compensation pay for FY 2012 and $9.7 million for FY 2011.
(b) Cash Disbursements totaled $71,954,093 at July 31, 2011.
(c) Includes reimbursements of $429,497.

Tab 14



75th TRS TEACHER RETIREMENT SYSTEM OF TEXAS
1937-2012

Deputy Director Report

Ken Welch

September 14, 2012

SPN
Exchange Program Overview

Primary Goal

- Offer TRS professionals and senior leaders a set of experiences to learn more about investment processes and the culture at the SPN, and to facilitate additional opportunities for relationship building between TRS and SPN employees

Purpose and Philosophy – Offer broad experiences with strategic partners through:

- Greater understanding of SPN's strategy, values and people
- Macro drivers of SPN's strategy
- Key processes for execution of strategy (e.g., Investment Committee, Portfolio Management, Portfolio Company Operations, Stakeholder Management, Compliance Management, Talent Management, etc.)
- Various Industry, Operational and Capital Markets expertise
- Relationship building with SPN's senior leadership, industry experts, country leaders, investment teams, senior advisors, etc.
- Exposure to "live" deals and role of SPN's executives over lifecycle of an investment
- Technical skills training

Key Elements of Exchange Opportunities

Three Primary Populations/Approximate Onsite Timeframes

1. TRS Analysts & Associates: 30-90 days
2. TRS Investment Managers: 2-4 weeks
3. Senior TRS Leaders: 1-2 days

Approach/Key Components **(level of intensity determined based on duration of visit)**

- Presentations/discussions on key topics of interest
- "Shadowing" SPN deal teams, portfolio company visits, committee meetings, etc.
- Experienced-based development (e.g., TRS professionals embedded with SPN deal teams)
- Mentors assigned for each TRS longer-duration visit

Rollout Plan

- **Pilot in 2nd Qtr 2012:** Abridged version of above three components piloted by the Investment Manager for Emerging Managers via regional office visits.
- **3rd Qtr 2012:** Refinements and more robust and targeted offerings developed for rollout to relevant target audiences above.

Funding

- All travel costs will be born by the Strategic Partners through a 100% reimbursement basis.

75th TRS

Inaugural Exchange Class

Investment Manager: 3-month exchange, Apollo, Hong Kong

- Focus on debt-oriented transactions, an area of particular Apollo expertise.
- Interest in Asia stems from current and projected dynamic growth.

Investment Manager: 4-week exchange (in 1- or 2-week increments) Apollo & KKR, NYC and London

- Focus on exploring potential interplay between the private and public side of our investments.
- Goal is to create a proxy investment for private companies by using a basket of public companies, and gaining more exposure in the private space.

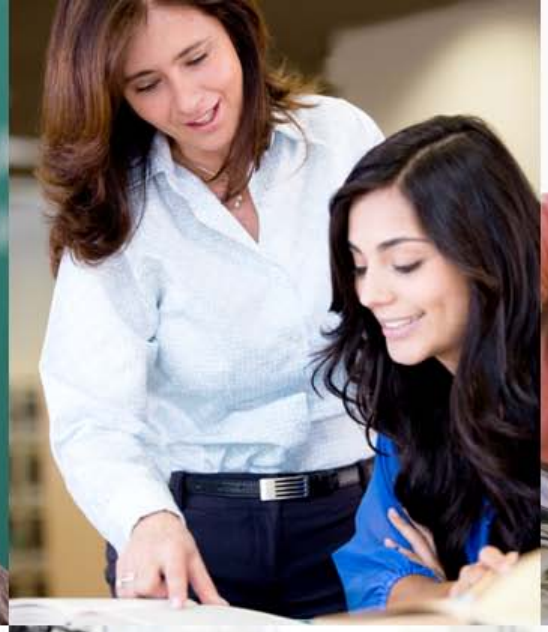
Senior Associate: 3-month exchange, KKR, NYC and San Francisco

- Focus on KKR's public markets technology & materials group.
- Goal is to use his background in workflow analysis to assess KKR's processes and culture and bring back great ideas for Internal Public Markets.

Senior Analyst: 3-month exchange, KKR, NYC

- Focus on real estate deal-flow and multi-family housing opportunities.
- Goal is to learn from KKR's operational expertise and underwriting process for External Private Markets' benefit.

Tab 15 A.



75th TRS TEACHER RETIREMENT SYSTEM OF TEXAS
1937-2012

Executive Director's Report

Brian Guthrie

September 14, 2012

Legislative & Stakeholder Meetings

DATE	OFFICE	SUBJECT	TRS Staff
07-13-12	GOBPP	GASB questions	Welch
08-20-12	Speaker, PIFS, and Lt. Governor Staff	Legislative Studies	Guthrie, Welch, Green, Merrill, Jones, Spivey
08-21-12	GOBPP Staff	Legislative Studies	Guthrie, Welch, Green, Merrill, Jones, Spivey
08-28-12	House PIFS Staff	Legislative Studies	Guthrie, Welch, Green, Merrill, Jones, Spivey
08-28-12	Member Associations	Legislative Studies	Guthrie, Welch, Green, Merrill, Jones, Spivey
08-29-12	TPPF	Legislative Studies	Guthrie, Welch, Green, Merrill, Jones, Spivey
08-30-12	LBB and GOBPP	Joint Budget Hearing on LAR	Guthrie, Welch, Green, Merrill, Jones, Spivey
08-31-12	Senator Williams' Staff	Legislative Studies	Guthrie, Welch, Spivey
09-04-12	SFC Staff	Legislative Studies	Guthrie, Welch, Green, Merrill, Jones, Spivey
09-12-12	House PIFS	Legislative Studies	Guthrie, Welch, Spivey
09-27-12	Senate State Affairs	Legislative Studies	Guthrie, Welch, Spivey
09-28-12	TASA/TASB	Annual Convention	Guthrie
10/7 – 10/12	NCTR	Annual Convention	Guthrie, Nink, Trustees

Texas Retired Teachers Association
2012 District Fall Conventions

DATE	DISTRICT	CITY	TRS PRESENTER
09-06-12	VIII	Mt. Pleasant	Spivey
09-19-12	XIV	Abilene	Spivey
09-21-12	XIII	San Marcos	Guthrie
09-24-12	XII	Waco	Welch
09-27-12	XV	Brownwood	Welch
10-02-12	VII	Henderson	Spivey
10-03-12	VI	Huntsville	Guthrie
10-04-12	V	Beaumont	Guerin
10-08-12	XI	Fort Worth	Spivey
10-09-12	IX	Wichita Falls	Spivey
10-11-12	IV	Katy	Spivey
10-11-12	XX	Boerne	Guerin
10-11-12	XVII	Lubbock	Welch
10-15-12	X	Dallas	Welch
10-15-12	XVIII	Midland	Green
10-16-12	XIX	El Paso	Spivey
10-18-12	XVI	Amarillo	Spivey
10-26-12	I	Weslaco	Guthrie
10-30-12	II	Corpus Christi	Green
10-31-12	III	Columbus	Guerin

75th TRS TEACHER RETIREMENT SYSTEM OF TEXAS
1937-2012

FY 2014-15 LAR

Prepared for
Joint GOBPP/LBB Budget Hearing
August 30, 2012

Summary Request (All Funds)

- TRS manages a $110 billion trust fund and provides pension and health care benefits to 1.3 million members.
- The base request for FY 2014-15 totals $4.3 billion, an increase of approximately $125 million over FY 2012-13.
- The exceptional items for FY 2014-15 total $608.8 million.
- The request can be broken down into the following major categories:
  - Pension Trust Fund
  - Retiree Health Insurance (TRS-Care)
  - TRS Administrative Budget

Summary of LAR for FY 2014-15

Pension Trust Fund at 6.4% Baseline

BASE REQUEST

APPROPRIATION		2014	2015	2014-2015 Biennium	(A) 2012-2013 Baseline	(B) Base Request Net Incr (Decr)	(C) Exceptional Items Request 2014	(D) Exceptional Items Request 2015	Grand Total Requested
Pension Trust Fund									
Public Education – 6.4% State Contribution	$	1,312,733,736	1,312,733,736	2,625,467,472	2,543,773,634	81,693,838	102,577,323	205,114,646	2,933,139,441
Higher Education – 6.4% State Contribution		177,165,490	180,761,365	357,926,856	332,159,203	25,767,652	13,841,054	28,243,963	400,011,873
Higher Education - General Revenue Dedicated		104,889,524	107,310,339	212,199,863	204,252,500	7,947,363	8,194,494	16,767,240	237,161,598
Administrative Operations		80,638,608	78,411,088	159,049,696	149,773,752	9,275,944	n/a	n/a	159,049,696
Total Pension Trust Fund	$	1,675,427,359	1,679,216,528	3,354,643,887	3,229,959,089	124,684,798	124,592,871	250,125,850	3,729,362,608
Retiree Health Benefits Program (TRS-Care)								(E)	
State Contribution at 1% / 0.5%	$	247,120,173	123,492,062	370,612,235	370,612,235	(0)	-	234,089,825	604,702,060
GRAND TOTAL APPROPRIATIONS	**$**	**1,922,547,532**	**1,802,708,590**	**3,725,256,122**	**3,600,571,325**	**124,684,797**	**124,592,871**	**484,215,675**	**4,334,064,668**
METHOD OF FINANCING									
General Revenue Fund	$	1,734,437,211	1,614,402,670	3,348,839,881	3,241,846,244	106,993,637	116,196,644	467,044,608	3,932,081,132
General Revenue Dedicated - Other Education Local Funds		104,889,524	107,310,339	212,199,863	204,252,500	7,947,363	8,194,494	16,767,240	237,161,598
Sub-Total GR & GR Dedicated	**$**	**1,839,326,736**	**1,721,713,008**	**3,561,039,744**	**3,446,098,744**	**114,941,000**	**124,391,138**	**483,811,848**	**4,169,242,730**
Pension Trust Fund - Employee Retirement	$	2,582,188	2,584,493	5,166,681	4,698,828	467,853	201,733	403,827	5,772,241
Pension Trust Fund - Administration		80,638,608	78,411,088	159,049,696	149,773,752	9,275,944	n/a	n/a	159,049,696
GRAND TOTAL FUNDING	**$**	**1,922,547,532**	**1,802,708,589**	**3,725,256,121**	**3,600,571,324**	**124,684,797**	**124,592,871**	**484,215,675**	**4,334,064,667**
FTEs - Requested/Authorized		503.3	503.3		490.3				

NOTES:

(A) Baseline request for pension fund state contribution is 6.4%. Payroll growth assumptions are at 0% for Public Education and 2% for Higher Education.
Baseline request for TRS-Care state contribution is 1.0% for FY 2014 and 0.5% for FY 2015.

(B) Pension fund state contribution is 6.0% for FY 2012 and 6.4% for FY 2013. TRS-Care is 1.0% for FY 2012 and 0.5% for FY 2013.
Note: Implementation of Rider 18 in FY 2013 would increase base for TRS-Care. Settle up amounts due to state for FY 2012 would be re-appropriated to TRS-Care.

(C) Exceptional Items Request based on state matching percentage of 6.9%.

(D) Exceptional Items Request based on state matching percentage of 7.4%.

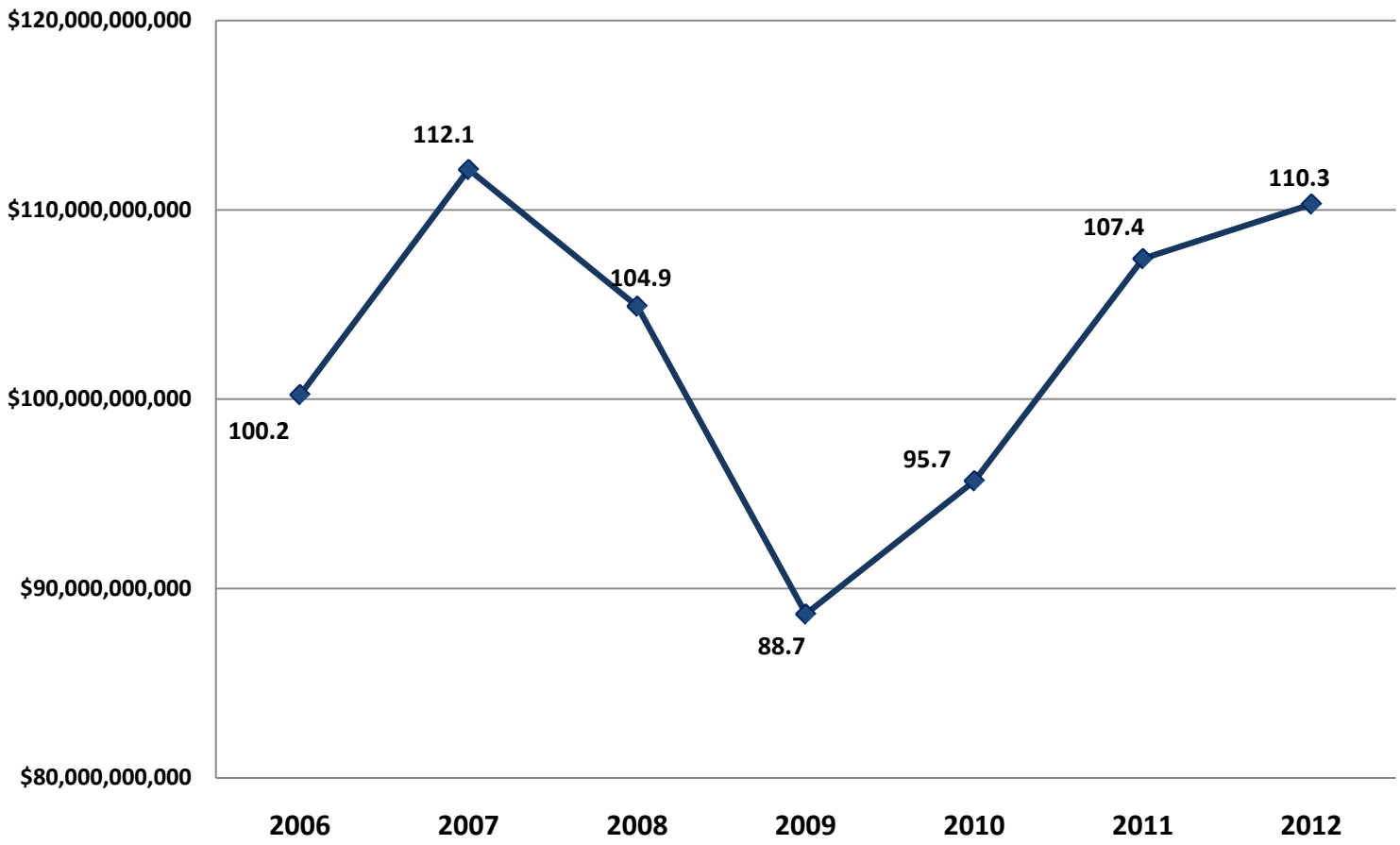
(E) Exceptional Items Request for TRS-Care based on state matching percentage of 1.0% for FY 2015 and $110.5 million supplemental funding required for solvency.

3

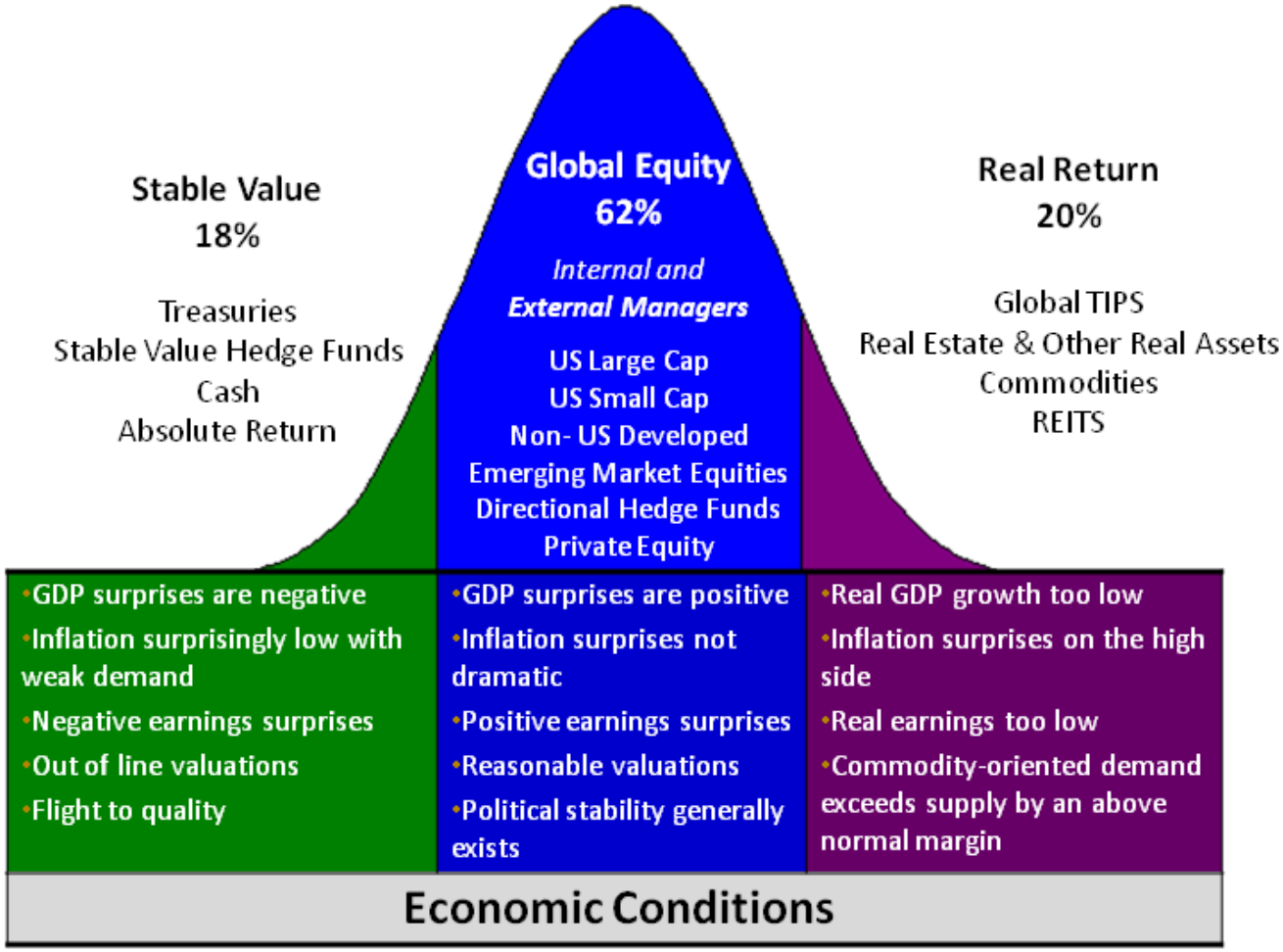
Pension Trust Fund

- Base request assumes a state contribution rate of 6.4% for each year of the biennium.
- Base request assumes covered payroll growth of 0% per year for Public Education and 2% per year for Higher Education.
- The exceptional item request increases the state contribution rate to 6.9% in 2014 and to 7.4% in 2015, and is consistent with the recommendations made by TRS actuaries in the past three biennia.
- Each 0.5% increase would cost approximately $125 million per year.
- Based on the August 31, 2011 valuation, a state contribution rate of 8.13% would be required to make the system actuarially sound (assuming the member rate stays at 6.4%).
- Two actuarial valuation updates as of August 31, 2012 and February 28, 2013 will be available for use during the upcoming legislative session.

Pension Trust Fund Balance FY 2006 thru 2012



Investment Diversification



TRS Pension Benefit Design Study
Major Study Findings

The 82nd Legislature directed TRS to conduct a study on the impacts of potential changes to its current defined benefit pension plan. The major findings are:

1. While the TRS Pension Fund can pay currently projected benefits through 2075, the state needs to begin addressing the unfunded liability. Delays will only increase costs.
2. The value of the retirement benefit available to TRS members is 36% less than the average benefits available to members of peer systems.
3. The defined benefit plan provides current benefits at a lower cost than alternative plans.
4. The majority of TRS members will do significantly worse investing on their own in a plan with a defined-contribution component.
5. Alternative plan structures carry differing levels of risk for the state and TRS members.
6. Other systems changing structures have lowered benefits to realize savings.
7. Moving new hires to an alternative plan will not eliminate existing liabilities.
8. 95% of public school TRS employees do not participate in Social Security; leaving the TRS benefit as their only lifetime annuity.

Retiree Health Insurance (TRS-Care) – Base Request

- Base request assumes a state contribution rate of 1% for FY 2014 and 0.5% for FY 2015.
- Base request assumes a covered payroll growth of 0% for Public Education and 2% for Higher Education per year.
- Revenues of the TRS-Care Trust Fund are not tied to expenditures. The fund was expected to be depleted in FY 2014; however, recent modifications to the program will delay the insolvency until either late FY 2015 or early FY 2016.

TRS-Care – Exceptional Item

- The exceptional item request increases the state contribution by 0.5% in 2015, consistent with the statutory contribution rate of 1.0%. The cost is approximately $125 million more than the base request.

- The exceptional item request also includes $110 million required for program solvency in 2015, assuming there is only a 60% level of participation in Medicare Advantage.

  - TRS expects to have greater Medicare Advantage participation and if so, this supplemental funding will not be needed.

TRS-Care Projections through 2018

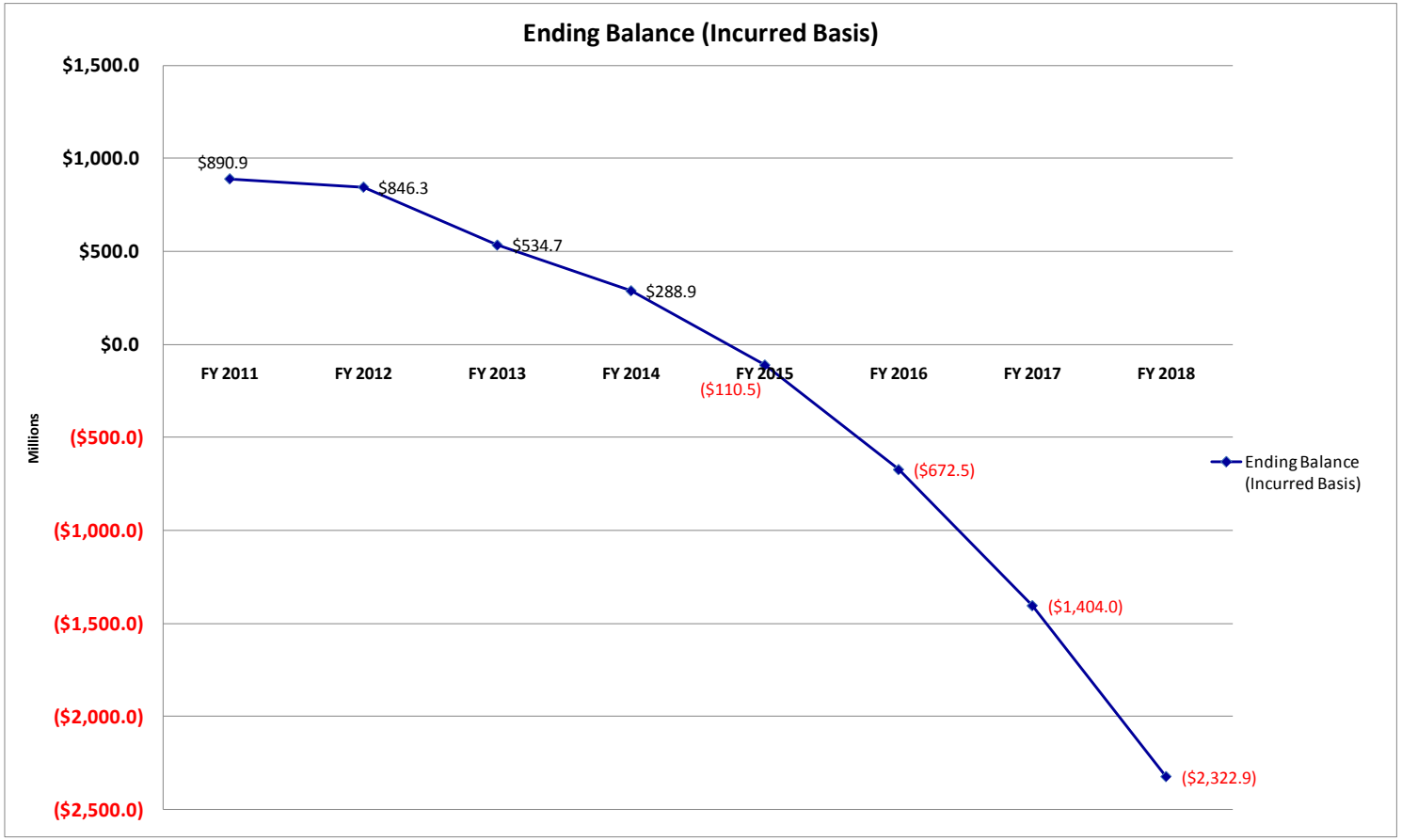
	Revenue									Expenditures					
	Retiree Contributions	State Contributions	Supplemental Appropriations	Active Employee Contributions	District Contributions	Investment Income	RDS Subsidy	ERRP Subsidy	$EGWP_{Rx}$ Revenues	Medical Incurred	Drug Incurred	Medicare Advantage Premiums	$EGWP_{Rx}$ Expenses	Administrative Costs	Ending Balance (Incurred Basis)
2011	$345,164,271	$282,782,431	$0	$183,808,580	$158,724,010	$8,168,640	$66,258,008	$70,629,797	$0	$608,461,321	$384,017,059	$0	$0	$47,151,354	$890,870,304
2012	$366,995,791	$271,471,134	$96,559,837	$176,456,237	$154,538,933	$10,111,921	$61,694,871	$0	$0	$677,401,210	$457,060,386	$0	$0	$47,933,354	$846,304,078
2013	$363,797,898	$135,735,567	$0	$176,456,237	$154,538,933	$7,770,213	$42,450,132	$0	$82,236,010	$712,446,655	$347,393,015	$0	$170,224,739	$44,564,441	$534,660,219
2014	$369,349,724	$271,471,134	$0	$176,456,237	$154,538,933	$5,418,588	$33,879,175	$0	$130,142,376	$724,297,198	$322,854,603	$9,010,536	$285,975,457	$44,906,971	$288,871,619
2015	$377,250,577	$271,471,134	$0	$176,456,237	$154,538,933	$2,299,135	$39,234,376	$0	$137,966,809	$792,769,989	$365,389,810	$23,631,179	$330,896,995	$45,930,585	($110,529,739)
2016	$384,768,025	$271,471,134	$0	$176,456,237	$154,538,933	$2,858	$45,193,123	$0	$145,511,571	$868,108,379	$412,361,402	$31,654,829	$380,874,547	$46,919,187	($672,506,203)
2017	$391,375,564	$271,471,134	$0	$176,456,237	$154,538,933	$0	$51,947,376	$0	$153,145,319	$947,263,702	$463,651,596	$34,189,848	$437,471,031	$47,830,386	($1,403,978,201)
2018	$397,616,611	$271,471,134	$0	$176,456,237	$154,538,933	$0	$59,466,282	$0	$160,540,711	$1,033,907,446	$520,202,336	$35,703,756	$500,473,362	$48,716,833	($2,322,892,027)

NOTES

- *Reduction in pharmacy spend as a result of the implementation of ESI/Medco as the new PBM effective 9/1/2012;*
- *60% participation in Medicare Advantage and 60% participation in Part D plan, which will be effective 1/1/2013;*
- *60% participation in Part D plan*
- *Enrollment assumptions based on GASB headcounts*
- *10% medical trend, 9.5% pharmacy trend;*
- *Interest Rate = 1%*

TRS-Care Budget Model

Actual through March 2012 and Projected through FY 2018

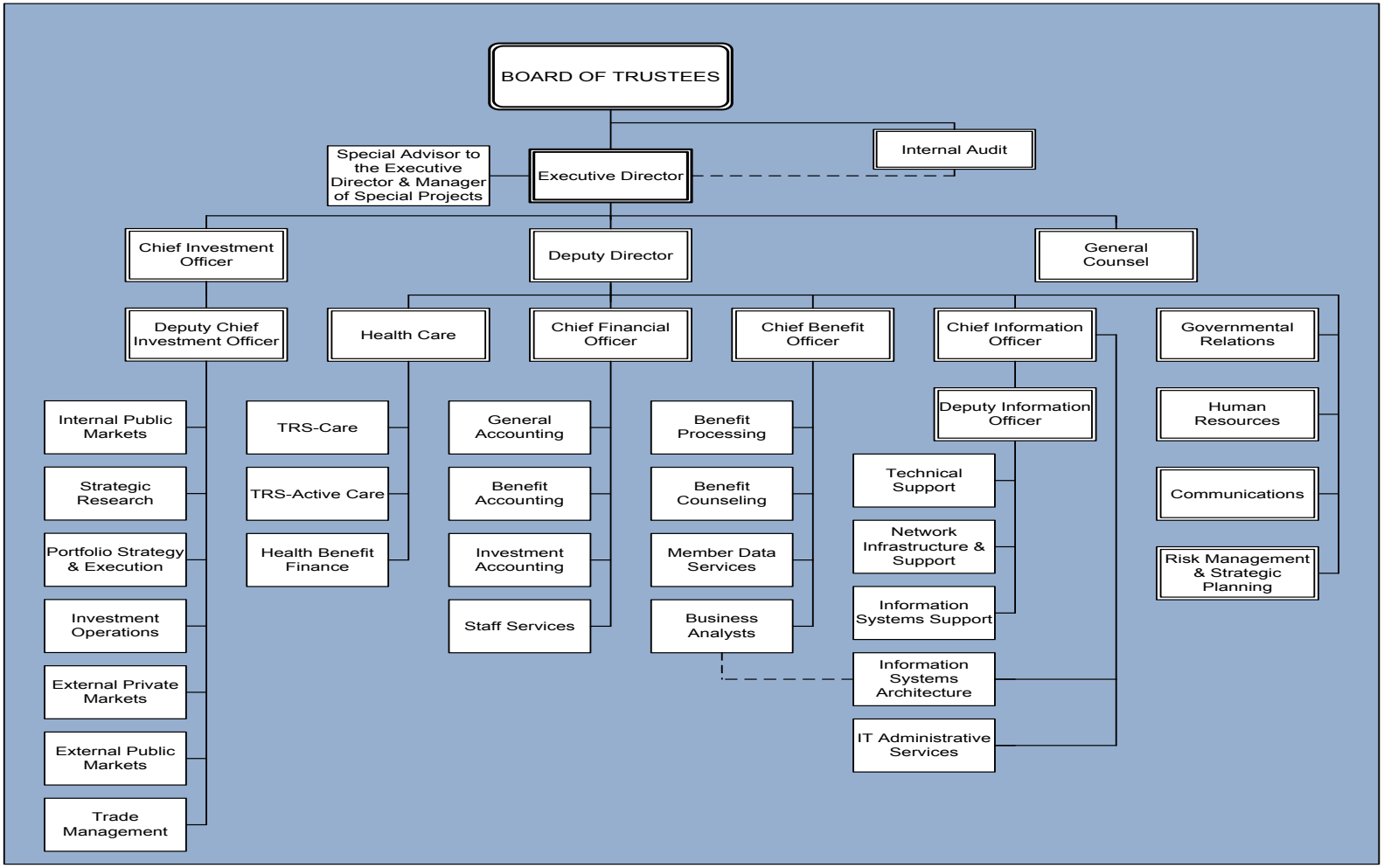


TRS-Care Sustainability Study

TRS was instructed by the 82nd Legislature not to increase premium costs for members for health care. They also directed TRS to conduct a study of potential design and other changes to its current TRS-Care health benefit plan to improve sustainability. Options considered were:

1. Pre-fund the long-term liability
2. Fund on a pay-as-you-go basis for the biennium
3. Retiree pays full cost for optional coverage
4. Require Medicare eligible enrollees to purchase Medicare Part B
5. Opt out consequence for participants eligible for Medicare Advantage and Medicare Part D plans
6. Tighten eligibility requirements
7. TRS-Care 1 only for non-Medicare
8. Defined contribution for non-Medicare retirees to shop in the private market
9. Move non-Medicare retirees to TRS Active-Care

TRS Administration



TRS Administrative Budget

- Assumes 100% funding from pension trust fund – not GR.
- Request includes:
  - 13 additional FTEs and funding for mission critical travel.
  - $25 million and unexpended balances from FY 2013 for TEAM expenditures relating to the continued ongoing replacement of its legacy systems for benefits administration and accounting.
  - $6.8 million for capital projects to address safety issues, postponed building repairs and renovations, and business needs.

Administrative Budget Detail for FY 2014-15

	Object of Expense	FY 14 Requested	FY 15 Requested	Total 14/15 Biennium	FY 12 / FY 13 Base	$ Increase	% Increase
1001	Salaries and Wages	$ 38,838,064	$ 38,874,076	$ 77,712,140	$ 75,053,262	$ 2,658,878	3.5%
1002	Other Personnel Costs	1,105,935	1,119,055	2,224,990	2,105,060	119,930	5.7%
2001	Professional Fees & Srvs	8,636,050	9,033,050	17,669,100	16,013,288	1,655,812	10.3%
2002	Fuels and Lubricants	3,100	3,100	6,200	5,920	280	4.7%
2003	Consumable Supplies	474,300	477,300	951,600	915,473	36,127	3.9%
2004	Utilities	1,129,475	1,153,600	2,283,075	2,175,978	107,097	4.9%
2005	Travel	1,197,018	1,184,618	2,381,636	2,097,461	284,175	13.5%
2006	Rent-Building	1,945,827	2,047,327	3,993,154	3,698,330	294,824	8.0%
2007	Rent-Machine /Other	348,900	348,800	697,700	663,360	34,340	5.2%
2009	Other Operating Exp	10,598,618	10,156,483	20,755,101	20,070,999	684,102	3.4%
5000	Capital Expenditures	29,240,000	1,135,000	30,375,000	26,974,621	3,400,379	12.6%
	OOE Total	$ 93,517,287	$ 65,532,409	$ 159,049,696	$ 149,773,752	$ 9,275,944	6.2%

TRS FTE Request

TRS has 490.3 budgeted FTEs for FY 2013 and is requesting an additional 13 FTEs for the FY 2014-15 biennium.

Division:	Job Titles:
Legal - 1	Open Records Attorney
Investments - 1	Energy Portfolio Manager
Benefits - 6	Benefits Processors (4) / Phone Counselors (2)
Financial - 1	Accountant
Information Tech - 4	Systems Analysts (2) / Network Specialists (2)

Eleven of the thirteen are directly or indirectly related to TEAM which, when fully implemented, should result in a decrease in FTEs over time.

TEAM Program – Timeline

FY2012 FY2013 FY2014 FY2015 FY201?

Business Rules

SOW Financial System Replacement

SOW Data Assessment, Conditioning and Migration

RFO Pension Administration Line of Business

RFO Independent Program Assessment

Change Management

Reporting Entity (District) Outreach / Training

Business Procedures and Training

Decommissioning of the Legacy System

Website Refresh

Current Progress

Tab 15 C.

Overview of December Agenda

TRS Board Meeting

September 13-14, 2012

Constructing a Secure Future

TRS

Outline of December Agenda

- **Investment Management Committee Meeting**
  - Review Tactical Asset Allocation, Strategic Asset Allocation, Risk Strategies, and Strategic Partnership Network.
- **Policy Committee Meeting**
  - Consider publishing for public comment publication a TRS rule amendment to require that QDRO's conform to a model QDRO form adopted by TRS.
  - Consider recommending for final adoption TRS-Care rule amendments necessary for the Medicare Advantage and Medicare Part D plans.

Outline of December Agenda

- **Risk Management Committee Meeting**
  - Enterprise Risk Management Program update.
- **Audit Committee Meeting**
  - Receive financial audit and accounting changes reports.
  - Receive internal audit reports, including Internal Audit Annual Report and administrative reports.
  - Discuss status of prior audit consulting recommendations.

Outline of December Agenda

- **Board Meeting**
  - Administrative matters.
  - Discuss TRS' assumed investment rate of return.
  - Discuss actuarial valuations for TRS pension and health benefits plans.
  - Discuss Comprehensive Annual Financial Report (CAFR).
  - Discuss legislative preparation.

Outline of December Agenda

- **Board Meeting**
  - Receive Investment Management Committee report.
  - Receive Policy Committee report and consider adoption of TRS-Care rule amendments.
  - Receive Risk Management Committee Report.
  - Receive Audit Committee Report.
  - Receive an overview of supplemental benefit programs.

Outline of December Agenda

- Receive an update on Leadership Development Program.
- Receive CBO Report, including statistics report.
- Receive an overview of the TRS call center, including hiring, staffing, and operations.
- Receive Informational Reports.
- Receive CFO, ED, DD, and Litigation Reports.