



TRS Board of Trustees Meeting

April 18 – 19, 2013

**TEACHER RETIREMENT SYSTEM OF TEXAS MEETING
BOARD OF TRUSTEES**

AGENDA

April 18, 2013 – 12:30 p.m.

April 19, 2013 – 9:15 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, April 18, 2013, or the following day beginning at the time and place specified on this agenda.

The open portions of the April 18-19, 2013, 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. *[Estimated time 12:30-12:45]*
2. Consider approval of the February 20-22, 2013 Board meeting minutes – David Kelly. *[Estimated time 12:30-12:45]*
3. Consider the Board meeting date and location for the February 2014 Board meeting – David Kelly. *[Estimated time 12:30-12:45]*
4. Provide opportunity for public comments – David Kelly. *[Estimated time 12:30-12:45]*
5. Review and discuss the Executive Director's report on the following matters – Brian Guthrie: *[Estimated time 12:45 – 1:30]*
 - A. The most recent actuarial valuation of the TRS Pension Trust Fund.
 - B. Legislation impacting TRS, including proposed state funding for TRS' administrative budget, the TRS Pension Trust Fund, and the retirees' health benefit program (TRS-Care).
 - C. The General Counsel search.
 - D. Update on Meeting with OMERS.
 - E. New Process for Identifying and Processing Class Action Lawsuits.
 - F. Board operational matters, including a review of draft agendas for upcoming meetings.
 - G. Enterprise Risk Management program.

- H. Retirement plan benefits and operations.
 - I. Investment activity and operations.
 - J. Health-benefit programs and operations.
 - K. Administrative operations, including financial, audit, legal, staff services, board administration activities, including trustee nominating elections, and special projects.
6. Discuss and consider investment matters, including the following items:
- A. Performance Review: Fourth Quarter 2012 – Brady O’Connell and Steve Voss, Hewitt EnnisKnupp. *[Estimated time 1:30-2:15]*
 - B. Review Quarterly Portfolio Performance and market update – Britt Harris. *[Estimated time 2:15 - 3:30]*
 - C. Measuring Investment Performance: A Primer – Dr. Keith Brown. *[Estimated time 3:30 - 4:30]*
 - D. Review the report of the Investment Management Committee on its April 18, 2013 meeting – Todd Barth *[Estimated time 4:30 - 4:45]*
 - E. Review the report of the Risk Management Committee on its April 18, 2013 meeting – Eric McDonald. *[Estimated time 4:30 - 4:45]*
7. Receive the report of the Policy Committee and consider the following – Joe Colonna: *[Estimated time 4:30 - 4:45]*
- A. Proposed amendments to the Resolution Designating Persons Authorized to Approve and Sign Vouchers.
 - B. Final adoption of proposed amendments to the following Chapter 23 (Administrative Procedures) TRS rules in Title 34 of the Texas Administrative Code.
 - i. Rule § 23.7, relating to the Code of Ethics for Consultants; and
 - ii. Rule § 23.8, relating to the Expenditure Reporting by Consultants, Agents, Financial Advisors, Financial Services Providers, and Brokers.
 - C. Final adoption of proposed amendments to the following Chapter 25 (Membership Credit) TRS rules in Title 34 of the Texas Administrative Code.
 - i. Rule § 25.1, relating to Full-time Service;

- ii. Rule § 25.6, relating to Part-time or Temporary Employment;
 - iii. Rule § 25.21, relating to Compensation Subject to Deposit and Credit;
 - iv. Rule § 25.43, relating to Cost for Unreported Service or Compensation;
 - v. Rule § 25.47, relating to Deadline for Verification; and
 - vi. Rule § 25.81, relating to Out-of-State Service Eligible for Credit.
- D. Final adoption of proposed amendments to the following Chapter 31 (Employment After Retirement) TRS rules in Title 34 of the Texas Administrative Code.
- i. Rule § 31.14, relating to One-half Time Employment; and
 - ii. Rule § 31.41, relating to Return to Work Employer Pension Surcharge.
- E. Final adoption of proposed amendment to Rule § 41.4, relating to the Employer Health Benefit Surcharge of Subchapter A, Retiree Health Care Benefits (TRS-Care) of Chapter 41, Health Care and Insurance Programs.
- F. Final adoption of proposed amendment to Rule § 47.10, relating to Determination of Whether an Order is a Qualified Domestic Relations Order of Chapter 47, Qualified Domestic Relations Orders.
8. Receive the report of the Budget Committee on its April 18, 2013 meeting – Nanette Sissney. *[Estimated time 4:30 - 4:45]*

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

- 9. Provide an opportunity for public comment – David Kelly. *[Estimated time 9:15 – 9:15]*
- 10. Receive a presentation from Focus Consulting on options for conducting executive personnel evaluations – Keith Robinson, Focus Consulting. *[Estimated time 9:15 – 10:00]*
- 11. Receive a presentation from the TEAM Program Independent Program Assessment (IPA) Vendor – Michael Johnson, Bridgepoint Consulting. *[Estimated time 10:00 – 10:45]*
- 12. Receive a review of the TEAM Program –Jamie Michels; Barbie Pearson; Adam Fambrough; and Jay Masci, Provaliant. *[Estimated time 10:45 - 11:30]*

13. Review the reports on the Historically Underutilized Businesses (HUB) and consider related goals, as appropriate, for fiscal year 2013 – John Dobrich. *[Estimated time 11:30 - 11:45]*
14. Review the report of the Audit Committee on its April 19, 2013 meeting – Christopher Moss. *[Estimated time 11:45 – 11:50]*
15. Review the report of the Chief Benefit Officer, and consider related matters – Marianne Woods Wiley: *[Estimated time 11:50 – 12:15]*
 - A. Approve members qualified for retirement.
 - B. Approve minutes of Medical Board meetings.
16. Review the report of the Chief Financial Officer – Don Green: *[Estimated time 12:15 - 12:30]*
 - A. Review the 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.
 - B. Quarterly financial reports on TRS programs.
17. Review the report of the Deputy Director, including – Ken Welch: *[Estimated time 12:30 – 12:45]*
 - A. An update on the TRS Telephone Counseling Center.
18. Review the report of the General Counsel on pending or contemplated litigation, including updates on the following: the Bank of America securities class action; the Countrywide securities litigation; the Facebook securities litigation; the Pfizer securities litigation; the Tyco securities litigation; other securities litigation; the LIBOR litigation; litigation involving fiduciary duties related to investments; and litigation involving benefit-program contributions, retirement benefits, health-benefit programs, and open records – Dennis Gold. *[Estimated time 12:45 - 1:00]*
19. Consider personnel matters, including the appointment, employment, evaluation, compensation, performance, duties, discipline, or dismissal of the Executive Director, Chief Investment Officer, or Chief Audit Executive – David Kelly. *[Estimated time – This item will be taken up on Thursday evening around 4:45]*
20. Consult with the Board's attorney(s) in Executive Session on any item listed above on this meeting agenda as authorized by Section 551.071 of the Texas Open Meetings Act (Chapter 551 of the Texas Government Code) – David Kelly.

Tab 2



Teacher Retirement System of Texas

Minutes of the Board of Trustees

February 20 – 22, 2013

The Board of Trustees of the Teacher Retirement System of Texas met on February 20 – 22, 2013 in the boardroom located on the fifth floor of the TRS East Building offices at 1000 Red River Street, Austin, Texas. The following board members were present:

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

Others present:

Brian Guthrie, TRS
Ken Welch, TRS
Amy Barrett, TRS
Dennis Gold, TRS
Howard Goldman, TRS
Don Green, TRS
T. Britton Harris IV, TRS
Jerry Albright, TRS
Ray Spivey, TRS
Thomas Albright, TRS
Jase Auby, TRS
Mohan Balachandran, TRS
Ashley Baum, TRS
Sylvia Bell, TRS
Stuart Bernstein, TRS
Chi Chai, TRS
Michelle Bertram, TRS
Brian Gomolski, TRS
Rich Hall, TRS
Terry Harris, TRS
Dan Herron, TRS
Janis Hydak, TRS
Dan Junell, TRS
Eric Lang, TRS
Lynn Lau, TRS
Scot Leith, TRS
Denise Lopez, TRS
Shayne McGuire, TRS
Rebecca Merrill, TRS

Kelly Newhall, TRS
Melinda Nink, TRS
Hugh Ohn, TRS
Rhonda Price, TRS
Noel Sherman, TRS
Rebecca Smith, TRS
Sharon Toalson, TRS
David Veal, TRS
Angela Vogeli, TRS
Susan Wade, TRS
Jennifer Wenzel, TRS
Dr. Keith Brown
Steve Huff, Reinhart Boerner Van Deuren
Keith Johnson, Reinhart Boerner Van Deuren
Steve Voss, Hewitt EnnisKnupp
Brady O'Connell, Hewitt EnnisKnupp
George Roberts, KKR
Tess Weil, Purrington Moody Weil
Philip Mullins, Austin Retired Teachers Association and
Texas State Employees Union
Jeff Lambert, State Street
Mark Schafer, State Street
Ann Fickel, Texas Classroom Teachers Association
Tom Rogers, Austin Retired Teachers Association and
Texas Retired Teachers Association
Jeremy Begman, Apollo
Holly McMullan, Apollo
Josh Sanderson, Association of Texas Professional
Educators

Mr. David Kelly called the meeting to order at 10:05 a.m.

1. Call roll of Board members.

Ms. Lynn Lau called the roll. A quorum was present. Mr. Joe Colonna arrived at the meeting around 11:00 a.m.

2. Consider the approval of the December 13–14, 2012 Board meeting minutes

On a motion by Mr. Chris Moss, seconded by Ms. Charlotte Clifton, the board unanimously approved the minutes for the December 13-14, 2012 meeting.

3. Provide opportunity for public comment

Mr. Kelly called for public comment. No public comment was received.

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

5. Receive presentations on the TRS investment management and functions, including the following matters:

A. Receive an update on the Investment Management Division and a review of market conditions and outlook.

Mr. Britt Harris discussed the performance of the pension trust fund, changes to the accounting system, and the recent pension benefit design study. Mr. Brian Guthrie elaborated on the outlook for the pension fund and potential changes related to the benefit design study. Per Mr. Kelly's request, Mr. Harris explained the outperformance of hedge funds in the markets since 2007. Mr. Harris also presented the market outlook for 2013 and global economic conditions, including sustainability issues relating to supply shortages of natural resources. He concluded his presentation by laying out TRS' historical ability to generate the 8 percent target return.

After a brief recess at 11:35 a.m., the board reconvened at 12 p.m.

Mr. Kelly announced that the board would take up agenda item 4.

4. Review and discuss the Executive Director's report on the following matters:

A. Review the agenda items to be taken up on February 20, 2013.

Mr. Guthrie provided an overview of the agenda items for this meeting.

B. Discuss TRS organizational structure, review the agency's 2012 accomplishments, and discuss the Executive Director's 2013 goals and objectives, including strategic planning, identified priorities, and metrics for success.

Mr. Guthrie provided a historical overview of significant events since the fund's inception. Responding to questions from Mr. Kelly about the pension fund and TRS-Care sustainability

studies requested by the Legislature, Mr. Guthrie said that both studies had been favorably received. He said that the pension fund study provided objective information and helped educate policymakers about the viability and advantages of a defined benefit plan like TRS' and the plan-design options for ensuring long-term sustainability. Mr. Guthrie addressed workforce continuity issues given the increasing number of employees becoming eligible for retirement. He presented the agency accomplishments in 2012 and goals and challenges in 2013. Responding to a question from Ms. Nanette Sissney regarding adequate staffing, Mr. Guthrie stated that most of the challenges were tied to the TEAM program.

C. Preview draft agendas for upcoming Board meetings.

Mr. Guthrie reviewed the board meeting agendas for the rest of calendar year 2013.

D. Receive the Board training calendar.

Mr. Guthrie referred the board to the training calendar, which showed upcoming educational opportunities.

E. Discuss the project to review Board orientation materials.

This item was deferred.

F. Retirement plan benefits, investment activity and operations, health-benefit programs and operations, and administrative operations, including financial, audit, legal, and staff services and special projects.

After a brief recess at 2:12 p.m., the board reconvened at 2:25 p.m.

Mr. Kelly announced that the board would take up agenda item number 6.

6. Receive a presentation on Dodd-Frank.

Ms. Angela Vogeli, Ms. Denise Lopez, and Ms. Tess Weil of Purrington Moody Weil provided a presentation on Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010.

Mr. Kelly announced that the board would take up agenda item number 5B and defer item number 5E.

5. Receive presentations on the TRS investment management and functions, including the following matters:

B. Receive an overview and update on principal investments.

Mr. Colonna introduced the general concept of principal investments and their process.

Mr. Jerry Albright profiled TRS' Principal Investment Program (program), including the following: its organizational structure, current allocations in real assets and private equity, historical implementation process, and long-term goals. Mr. Colonna and Dr. Keith Brown shared their insights on the investment process. Mr. Rich Hall and Mr. Eric Lang, respectively,

provided a detailed overview of the private equity and real estate investment programs. They laid out the advantages and opportunities available through the programs. They also discussed the private markets programs' performance drivers, objectives, process, and current goals. Mr. Kelly asked that in the future the staff address negative performance information, if any, reflected in the presentation materials.

C. Confer with employees, consultants, or legal counsel of TRS and one or more representatives of KKR & Co. L.P. about TRS' investment in a private investment fund or the purchase, holding, or disposal of restricted securities or a private investment fund's investment in restricted securities.

Mr. Colonna briefly introduced the item.

Mr. Kelly announced that the board would go into executive session on agenda item number 5C under the following statutes: section 825.3011 of the Government Code to confer about confidential investment matters relating to a private investment fund for the purchase, holding, or disposal of restricted securities; and section 551.071 of the Government Code to seek advice from the board's legal counsel as needed. He asked all members of the public and staff not needed for the executive session to leave the meeting room and take their belongings with them.

The open portion of the board meeting recessed at 4:35 p.m. After the executive session concluded, Mr. Kelly announced that the open session was reconvened at 5:45 p.m.

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

D. Receive an update on TRS' Emerging Manager Program.

Mr. Stuart Bernstein profiled the Emerging Managers Program (program), including the following: its organizational structure, history since inception, process, achievements, and performance. Mr. Todd Barth asked about the program's current allocation, invested amount, net asset value, and available funding. Mr. Harris and Mr. Bernstein responded by providing a historical overview of the allocation approved by the board and explained how staff had built the program with the approved allocation. Mr. Harris stated that the program had grown from \$500 million to \$1.65 billion in value and from 30 relationships to over 101 relationships. He stated that the program was being funded within its allocation limit as rapidly and prudently as possible. Mr. Hall and Mr. Bernstein discussed commitments and investments in the Credit Suisse funds of funds. Mr. Steve Voss confirmed for Ms. Sissney that the policy currently caps the total allocation, measured by commitments, for emerging managers at \$1.65 billion. Mr. Dennis Gold described the commitment policies for the Emerging Managing Program and the Private Equity and Real Assets Portfolios. He clarified for Mr. Barth that, although an allocation to the program remained at \$1.65 billion, it could be replenished through unused capital left at the end of an investment period or by distributions received on investments. He noted that not many investments, if any, had reached the expiration of their investment periods. He said that, in managing program investments, staff could overcommit capital in order to meet the committed allocation target. Mr. Albright explained for Mr. Eric McDonald that an unused capital commitment would be rolled into the total fund and not kept as idle cash in the program, which would stay fully funded.

Mr. Bernstein laid out the investment process and best practices for the program. Mr. Albright provided an overview of the experience gained, the accomplishments achieved since inception, and the future plans and additional resources needed. Responding to questions from Mr. McDonald and Ms. Clifton regarding the ultimate goal of the program and its benefit to the TRS membership, Mr. Harris stated that the program was intended to build long-term investment relationships that would produce future returns.

Whereupon, the meeting recessed at 7:00 p.m.

The Board of Trustees of the Teacher Retirement System of Texas reconvened on February 21, 2013, in the boardroom located on the fifth floor of the TRS East Building offices at 1000 Red River Street, Austin, Texas. The following board members were present:

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

Others present:

Brian Guthrie, TRS
Ken Welch, TRS
Amy Barrett, TRS
Dennis Gold, TRS
Howard Goldman, TRS
Janet Bray, TRS
T. Britton Harris IV, TRS
Jerry Albright, TRS
Betsey Jones, TRS
Ray Spivey, TRS
Marianne Woods Wiley, TRS
Tina Carnes, TRS
Mary Chang, TRS
Janie Duarte, TRS
Michelle Bertram, TRS
Adam Fambrough, TRS
Tom Guerin, TRS
Dan Herron, TRS
Bob Jordan, TRS
Dan Junell, TRS
Lynn Lau, TRS
Scot Leith, TRS
Sam Martin, TRS
Rebecca Merrill, TRS
Jamie Michels, TRS
Melinda Nink, TRS
Rhonda Price, TRS

Jimmie Savage, TRS
Noel Shelman, TRS
Charmaine Skillman, TRS
Ellen Small, TRS
Rebecca Smith, TRS
David Veal, TRS
Angela Vogeli, TRS
Susan Wade, TRS
Merita Zoga, TRS
Steve Voss, Hewitt EnnisKnupp
Brady O'Connell, Hewitt EnnisKnupp
Steve Huff, Reinhart Boerner Van Deuren
Keith Johnson, Reinhart Boerner Van Deuren
Philip Mullins, Austin Retired Teachers Association and Texas State Employees Union
Bill Hickman, Gabriel Roeder Smith and Company
Tom Rogers, Texas Retired Teachers Association
Sammy Berrios, Aetna
Josh Sanderson, Association of Texas Professional Educators
Ted Melina Raab, Texas American Federation of Teachers
Ann Fickel, Texas Classroom Teachers Association
Derly Rivera, Austin Retired Teachers Association
Jon Scolnik, Unite Here
Craig Kessler, ESI
Tim Lee Texas Retired Teachers Association
David Runyan, Express Scripts

Mr. Kelly called the meeting to order at 8:10 a.m.

1. Call roll of Board members.

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

7. Provide opportunity for public comment.

Mr. Kelly called for public comment. No comment was received.

8. Review the agenda items to be taken up on February 21, 2013.

Mr. Guthrie reviewed the February 21, 2013 agenda.

Mr. Guthrie announced that the Senate Finance Committee had confirmed the appointments of four board members: Ms. Karen Charleston, Mr. Colonna, Mr. Kelly, and Ms. Anita Palmer.

9. Receive an overview of the Texas budgeting process and the legislative landscape, including a discussion of the proposed state budget for TRS in the House and Senate Appropriations bills.

Mr. Ray Spivey described the legislative landscape and summarized challenges faced by TRS. Mr. Don Green provided an overview of the appropriation process, including the following: timelines, roles of key participants, major budget drivers, state revenue sources, constitutional spending limits, and revenues available through the Economic Stabilization Fund, Texas' so-called rainy day fund. He also summarized the fiscal years 2014-2015 biennial budget recommendations and the Legislative Budget Board's recommendations for appropriations to TRS. Mr. Green, Mr. Guthrie, and Mr. Gold also clarified for the trustees the process of paying agency expenses.

After a brief recess at 9:35 a.m., the meeting reconvened at 9:49 a.m.

10. Receive an overview of the organization and functions of the TRS Human Resources Division.

Ms. Janet Bray provided an overview of the TRS workforce. She presented the key functions of the Human Resources Division and its organizational structure.

11. Discuss agency staffing and resource matters.

Ms. Bray presented the current agency staffing considerations. She highlighted the staffing needs for the TEAM program.

Mr. Green discussed strategies to address the staffing needs for TEAM. He described the Legislature's allocation of full-time equivalent (FTE) employees to TRS for TEAM under the current General Appropriations Act for fiscal year (FY) 2013 and in the filed general appropriations bill for the next biennium. He said that the Legislature wanted TRS to give a status report on the progress of TEAM before restoring the previously authorized FTEs for FY 2014-2015. He added that those FTEs, if approved, would be paid from the TRS trust fund. Mr.

Guthrie clarified for Mr. Kelly that the legislative cap on FTEs would be eliminated if the Legislature removed TRS' administrative budget from the appropriations act. In that case, Mr. Guthrie said, the TRS board would determine the system's administrative operating budget, including staffing, outside the strictures of the appropriations act. He noted that other statewide pension funds typically have such budget discretion.

Mr. Green concluded his presentation by laying out the long-term considerations for staffing needs and the opportunities for insourcing and outsourcing to tackle some of the staffing issues.

12. Receive an overview of the organization and functions of the Legal Services Division.

Per Mr. Kelly's request, Mr. Guthrie provided an update on the selection of the new general counsel. He stated that three finalists had been selected for a final interview by Mr. Ken Welch and himself. He stated that the finalists will be invited to meet with Mr. Kelly, Ms. Clifton, and managers on the Executive Council. He confirmed for Mr. Kelly that the finalists could be invited to meet an individual board member upon his or her request. Mr. Colonna commented that the finalists should be aware of the general counsel's role in providing legal services related to board governance and have common sense about business matters. Mr. McDonald and Mr. Barth concurred with Mr. Colonna's comment.

Mr. Gold profiled TRS Legal Services. Per Mr. Kelly's request, he explained the role of TRS legal staff in serving the board and the agency as a public entity and the distinction between the role of the general counsel office and the fiduciary counsel. He described the different roles of members of the legal staff and summarized their professional credentials and experience. In response to a question from Mr. Barth regarding the cost and resources needed to respond to open record requests, Mr. Gold discussed the challenge faced by Legal and other departments in fulfilling those requests. He said that staff was looking at software that would help expedite open records processing and make it more efficient. There was an extensive discussion concerning open record requests affecting employees' privacy. Mr. Colonna suggested that the board discuss the issue further to seek remedies for this issue.

13. Review trustee roles, responsibilities, and fiduciary duties; qualifications for office and standards of conduct; immunities, indemnification, and insurance; and requirements related to trustee ethics, conflicts, and disclosures.

Mr. Steve Huff and Mr. Keith Johnson presented the trustee ethics policies relating to gifts, lodging and entertainment of trustees' duties, policies relating to personal investments, conflicts of interest, recusal and disclosure remedies, and trustee qualifications. They discussed best governance practices and compared them with TRS'. The board also discussed a process for evaluating board members. In response to a question from Mr. Kelly regarding the function of the board's Ethics Committee, Mr. Gold explained that it is a committee of the whole that mainly would consider any proposal to waive a provision in the Ethics Policy. He also elaborated on sovereign immunity.

14. Receive open government training.

Mr. Dan Junell provided an overview of the Public Information Act. He explained the process of meeting open record requests, the fee schedule, trustee requirements, timeline, and current workload. In response to Ms. Clifton's request, Mr. Gold provided detail on the software that may help facilitate the process. Mr. Junell further explained for Mr. Colonna how staff determines whether information is confidential.

Mr. Junell provided an overview of the Open Meeting Act (Act) and an update of significant opinions by the courts and Attorney General in 2012. Mr. Barth and Ms. Sissney asked about a recent incident when trustees were restricted to attend a conference to avoid a quorum, Ms. Rebecca Merrill clarified that both deliberation among board members and receiving information from a third party can constitute a public meeting if a quorum is involved and the meeting is about TRS business. She noted an exception in the Act for regional networking conferences that would allow any number of trustees to attend a conference at the same time. Mr. Junell confirmed for Mr. Kelly that most offenses under the Act are misdemeanors.

Mr. Junell highlighted significant meeting issues addressed in 2012, including meeting through e-mail, discussions outside board meetings, attorney consultations, attendance of a board quorum at a committee meeting, and emergency meetings.

15. Receive an overview of the Communications Division, including a discussion of TRS communication initiatives and policies.

Mr. Howard Goldman provided an overview of the Communications Department. He laid out the division's functions and responsibilities. He described different social media sites hosted by TRS. He reviewed the department's accomplishments in FY 2012 and discussed its focus for FY 2013. He also presented information on current issues and trends as well as online and software tools designed to improve communications with TRS members and the public.

Mr. Goldman and Mr. Guthrie discussed with board members how TRS responds to media inquiries, requests for interviews and published or broadcast reports about TRS. They also discussed press releases, corrections and other communications with the media initiated by TRS. Mr. Guthrie said that one option for the board to consider would be to limit media communication in writing only. Mr. Goldman discussed the risks and opportunities of social media for TRS. He said that Communications monitors and uses social media to correct misunderstandings about issues related to TRS.

16. Receive an overview of the organization and functions of the Special Projects Department, including the 403(b) company certification and product registration program and the legislative fiscal-note preparation function.

Ms. Merrill provided an overview of the Special Projects Department, including its organizational structure and key functions. She highlighted the 403(b) program, fiscal notes preparation, CEM benchmarking study and other studies and publications assigned to the department to complete. Ms. Merrill reviewed her role in board operations, including overseeing

the switch from paper to electronic board materials and expediting the turnaround time of delivering final materials to the board.

17. Receive an overview of the organization and functions of the Financial Division.

Mr. Green provided an overview of the Financial Division, which consists of Benefit Accounting, General Accounting, Investment Accounting, and Staff Services. He introduced the functions of each team, team leaders, and their organizational structures. He highlighted the division's 2012 accomplishments as well as ongoing and future challenges.

18. Review the reports of the Chief Financial Officer:

A. Review the 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 months of November and December 2012 that were required to perform the fiduciary duties of the board.

B. Quarterly financial reports on TRS programs.

Mr. Green provided the quarterly financial reports on TRS programs as of November 30, 2012.

Mr. Green suggested adding a new section to report expenditures by division or department. He said that he would provide a sample of the new section for the board's review before incorporating it into the regular quarterly reports.

19. Receive a presentation on the administration and operation of the TRS pension plan, including the following subjects:

A. Overview of the TRS Pension Plan.

Ms. Marianne Woods Wiley provided an overview of the pension plan. She also summarized the key plan terms for determining retirement eligibility and benefits.

B. Information on Increased Cost of Certain Service Credit.

Mr. Tom Guerin presented information on the increased costs to purchase special service.

C. Organization and functions of the Benefits Services Division

Ms. Woods Wiley provided an overview of the functions, organization and departments of the Benefit Services Division, including those related to Member Data Services, Benefit Counseling and Benefit Processing. She highlighted the division's 2012 accomplishments as well as ongoing and future challenges.

After a recess at 5:25 p.m., the board reconvened at 5:40 p.m.

20. Receive a presentation on Health Care 101, including an overview of the administrative organization and functions of TRS-Care and TRS-ActiveCare and an update on the TRS-Care Medicare Advantage and Prescription Drug Plans.

Ms. Betsey Jones presented an overview of the Health and Insurance Benefits Department. She described the department's organizational structure, core functions, and vendors' responsibilities. She introduced the team leaders.

Ms. Jones provided an update on the TRS-Care program. She described the transition to Express Scripts as the Pharmacy Benefit Manager (PBM). She reviewed the implementation of the new Aetna Medicare Advantage and Part D plans, which had generated significant savings and improved the near-term solvency of TRS-Care. She said that the program was projected to be solvent through 2015. She stated that the primary challenge for TRS-Care continued to be its long-term solvency. She said that any staff recommendations for changes to the program would be presented to the board in June 2013. The board discussed ways to generate savings and provide funding for TRS-Care.

Ms. Jones provided an overview of the TRS-ActiveCare program. She presented the following information about the program: its history, accomplishments, funding sources, eligibility requirements, levels of plan benefits, current district participation and member enrollment, key processes, vendor responsibilities, and ongoing and future challenges.

21. Receive presentation on and consider premiums and plan design for the preferred-provider organization (PPO) plan options under the active employees health benefits program (TRS-ActiveCare).

Ms. Jones provided an overview of the proposed changes to the premiums and plan design for TRS-ActiveCare. She reviewed employee-only benefits, including participation rates and funding sources. She highlighted the shift in participation from TRS-ActiveCare 2 to TRS-ActiveCare 1 and 1-HD, which have higher deductibles. She said that the shift occurred after premiums increased and benefits decreased for ActiveCare 2. She explained how the shift affected the fund balance. The challenge, she said, was to project shifts of enrollment to accurately set premiums for each tier. She stated that a negative fund balance of \$69 million was anticipated at the end of 2013 because of the enrollment shift and insufficient premiums. Mr. Hickman of Gabriel, Roeder, Smith & Company (GRS) elaborated on the projected change in enrollment distribution among the benefit tiers for 2013. He stated that claims over \$100,000 significantly and unexpectedly increased from the year before.

Ms. Jones presented in detail the proposed increase in monthly rates and additional benefit changes to the TRS-ActiveCare plan options recommended by staff and GRS to generate necessary funding for the program. Responding to a question from Mr. Kelly regarding the 25% increase in premiums for TRS-ActiveCare 3, Ms. Jones stated that ActiveCare 3 was not a sustainable tier under the current or proposed funding structure and had only a 3 percent enrollment rate. She stated that the 25 percent increase was insufficient to pay for the plan and showed that it should eventually be eliminated. She stated that doubling the premium of ActiveCare 3 likely would drive participants to switch to ActiveCare 2. Mr. Hickman stated that the rate increase was driven by this migration of population, which was anticipated to be 25

percent for this year. He explained that statutes required ActiveCare 1 and 2 to offer primary and catastrophic health benefits comparable to those provided for state employees. He stated that raising the family deductible was intended to provide an affordable option for everyone in the current funding environment. Ms. Jones explained for Ms. Sissney the proposed premium for each tier. Further discussion followed concerning other options to keep the plans affordable and solvent as well as staff's projections on the impact of the changes.

On a motion by Mr. McDonald, seconded by Mr. Colonna, the board unanimously adopted the following resolution discontinuing TRS-ActiveCare 1 and approving premium rates and benefits for TRS-ActiveCare 1-HD, TRS-ActiveCare 2, and TRS-ActiveCare 3:

Whereas, Chapter 1579, Insurance Code, authorizes the Teacher Retirement System of Texas (TRS), as trustee, to implement and administer the uniform group health benefits program under the Texas School Employees Uniform Group Health Coverage Act (TRS-ActiveCare), as described in the statute;

Whereas, TRS staff and the TRS health benefits consultant, Gabriel, Roeder, Smith & Company ("GRS"), have recommended that TRS-ActiveCare 1 be discontinued effective September 1, 2013;

Whereas, TRS staff and GRS have recommended that all enrollees in TRS-ActiveCare 1 be transitioned to TRS-ActiveCare 1-HD effective September 1, 2013, unless the employee selects TRS-ActiveCare 2 or 3 during the annual enrollment periods for the 2013-2014 plan year;

Whereas, TRS staff and GRS have recommended that benefit changes, as indicated below, be made to TRS-ActiveCare 1-HD and 2 for the plan year commencing on September 1, 2013;

Whereas, TRS staff and GRS have recommended that the current benefits for TRS-ActiveCare 3 remain unchanged for the plan year commencing on September 1, 2013;

Whereas, TRS staff and GRS have recommended that for the plan year commencing on September 1, 2013, rates at all levels of coverage in TRS-ActiveCare 1-HD, 2, and 3 be adjusted to the gross premium amounts indicated in this resolution; and

Whereas, The TRS Board of Trustees ("Board") desires to adopt the recommendations of TRS staff and GRS; now, therefore, be it

Resolved, That the Board hereby adopts and authorizes the following benefit changes, subject to all other plan requirements and restrictions, for TRS-ActiveCare 1-HD, beginning in the plan year commencing on September 1, 2013 and thereafter, until further action by the Board:

Plan Feature	From 2012-2013 Plan Year	To 2013-2014 Plan Year
Family Deductible	\$2,400	\$4,800
Individual Out-of-pocket maximum	\$3,000	\$3,850
Family Out-of-pocket maximum (Out-of-pocket maximums exclude deductibles and copayments)	\$5,000	\$4,200

Resolved, That the Board hereby adopts and authorizes the following benefit changes, subject to all other plan requirements and restrictions, for TRS-ActiveCare 2, beginning in the plan year commencing on September 1, 2013 and thereafter, until further action by the Board:

Plan Feature	From 2012-2013 Plan Year	To 2013-2014 Plan Year
Individual Deductible	\$750	\$1,000
Family Deductible	\$2,250	\$3,000
Individual Out-of-pocket maximum	\$2,000	\$4,000
Family Out-of-pocket maximum (Out-of-pocket maximums exclude deductibles and	\$6,000	\$8,000
Retail Short-term Drug Copays		
Tier 1 Drugs	\$15	\$20
Tier 2 Drugs	\$35	\$40
Tier 3 Drugs	\$60	\$65
(Up to 31 day supply)*		
Retail Maintenance Drug Copays		
Tier 1 Drugs	\$20	\$25
Tier 2 Drugs	\$45	\$50
Tier 3 Drugs	\$75	\$80
(Up to 31 day supply)*		

* Maximum day supply is increased from 30 to 31 for the 2013-2014 plan year.

Resolved, That the Board hereby adopts and authorizes the following gross premium rates for TRS-ActiveCare 1-HD, 2, and 3 for the plan year commencing on September 1, 2013 and thereafter, until further action by the Board:

	Current Gross Monthly Premium Before State and District Contributions	Proposed Gross Monthly Premium Before State and District Contributions
	From 2012-2013 Plan Year	To 2013-2014 Plan Year
ActiveCare 1-HD		
Employee Only	\$298.00	\$325.00
Employee and Spouse	\$731.00	\$794.00
Employee and Child(ren)	\$466.00	\$572.00
Employee and Family	\$957.00	\$1,060.00

ActiveCare 2		
Employee Only	\$460.00	\$529.00
Employee and Spouse	\$1,046.00	\$1,203.00
Employee and Child(ren)	\$731.00	\$841.00
Employee and Family	\$1,150.00	\$1,323.00
ActiveCare 3		
Employee Only	\$637.00	\$796.00
Employee and Spouse	\$1,448.00	\$1,810.00
Employee and Child(ren)	\$1,015.00	\$1,269.00
Employee and Family	\$1,592.00	\$1,990.00

Resolved, That all enrollees in TRS-ActiveCare 1 be transitioned to TRS-ActiveCare 1-HD effective September 1, 2013, unless the employee selects TRS-ActiveCare 2 or 3 during the annual enrollment periods for the 2013-2014 plan year; and

Resolved, That the Board authorizes the Executive Director or his designees to take any actions that are necessary or advisable to implement the benefit structure and premium rates, as adopted or authorized herein, to otherwise continue the existing approved TRS-ActiveCare 1 plan of coverage until September 1, 2013, to discontinue TRS-ActiveCare 1 effective September 1, 2013, and continue the existing approved plans of coverage for TRS-ActiveCare 1-HD, 2, and 3, until further action by the Board.

22. Receive presentation on and consider premiums and plan design for health maintenance organizations (HMOs) under the active employees health benefits program (TRS-ActiveCare).

Ms. Jones referred the board to the memo by Mr. Hickman laying out recommended premium and plan design changes for health maintenance organizations (HMOs) under TRS-ActiveCare. On a motion by Mr. Barth, seconded by Mr. Moss, the board unanimously adopted the following resolution regarding the rates and benefits of HMOs for the TRS-ActiveCare program:

Whereas, Chapter 1579, Insurance Code, authorizes the Teacher Retirement System of Texas (TRS), as trustee, to implement and administer the uniform group health benefits program under the Texas School Employees Uniform Group Health Coverage Act (TRS-ActiveCare), as described in the statute;

Whereas, TRS currently has contracts with three health maintenance organizations, SHA, L.L.C. d/b/a FIRSTCARE, Scott & White Health Plan, and Valley Baptist Health Plan, Inc., to offer benefits to participants in TRS-ActiveCare who reside or work in the respective service areas of each health maintenance organization (“HMO”);

Whereas, The respective contract with each HMO automatically renews for successive one (1) year terms, unless terminated as provided in each contract;

Whereas, Staff and TRS health benefits consultant, Gabriel, Roeder, Smith & Company (“GRS”) have recommended that during Fiscal Year 2014, SHA, L.L.C. d/b/a FIRSTCARE, Scott & White Health Plan, and Valley Baptist Health Plan, Inc. be allowed to provide health care services to TRS-ActiveCare participants in their respective service areas under the same respective plan design that each HMO offered in Fiscal Year 2013, with only those major changes in benefits noted hereafter, along with other minor benefit changes that will be reflected in the TRS-ActiveCare Enrollment Guide and the Evidence of Coverage issued by each respective HMO;

Whereas, Staff and GRS have recommended that the premiums to be paid by TRS-ActiveCare participants enrolled in an HMO include the rates offered for Fiscal Year 2014 by each of the three HMOs plus a monthly administration fee of \$5.00 per contract between a participant and an HMO to cover the clearinghouse fees and other administrative expenses incurred by the TRS-ActiveCare program;

Whereas, Scott & White Health Plan has received a Certificate of Authority from the Texas Department of Insurance to include the County of Limestone in its authorized service area, and TRS staff and GRS have concluded that the addition of this county to the service area offered under TRS-ActiveCare by Scott & White Health Plan is beneficial to the overall plan and its participants, and the addition of this county is recommended; and

Whereas, The Board desires to approve the recommendations, including the respective plan design offered in Fiscal Year 2014 by each of the three HMOs, with the respective changes in benefits proposed by SHA, L.L.C. d/b/a FIRSTCARE, Scott & White Health Plan, and Valley Baptist Health Plan, Inc., and to approve the rates offered for Fiscal Year 2014 by each of the three HMOs and the premiums recommended by Staff and GRS; now, therefore, be it

Resolved, That the Board hereby approves the proposal for SHA, L.L.C. d/b/a FIRSTCARE to offer to TRS-ActiveCare participants during Fiscal Year 2014 the same plan design it offered in Fiscal Year 2013, with no benefit changes, and approves and adopts the following monthly premiums to be charged to TRS-ActiveCare participants enrolled in this HMO during Fiscal Year 2014 according to coverage tier:

SHA, L.L.C. d/b/a FIRSTCARE Premium Changes

Coverage Tier	FY 2013 Premiums	FY 2014 Premiums	Percent Change
Employee Only	\$382.06	\$391.50	+2.5%
Employee & Spouse	\$961.16	\$985.06	+2.5%
Employee & Child(ren)	\$607.56	\$622.62	+2.5%
Employee & Family	\$970.70	\$994.84	+2.5%

Resolved, That the Board hereby approves the proposal for Scott & White Health Plan to offer to TRS-ActiveCare participants during Fiscal Year 2014 the same plan design it offered in Fiscal Year 2013, with the following proposed benefit change, and approves and adopts the following monthly premiums to be charged to TRS-ActiveCare

participants enrolled in this HMO during Fiscal Year 2014, according to coverage tier:

Scott & White Health Plan Benefit Change Highlights

Benefit	2012-2013 Plan Year	Commencing 9-1-2013
Urgent Care Copay	\$40	\$55

Scott & White Health Plan Premium Changes

Coverage Tier	FY 2013 Premiums	FY 2014 Premiums	Percent Change
Employee Only	\$398.00	\$418.42	+5.1%
Employee & Spouse	\$961.00	\$945.10	-1.7%
Employee & Child(ren)	\$641.00	\$664.00	+3.6%
Employee & Family	\$997.00	\$1,048.54	+5.2%

Resolved, That the Board hereby approves the proposal for Scott & White Health Plan to include the County of Limestone in its authorized service area for TRS-ActiveCare, beginning on September 1, 2013;

Resolved, That the Board hereby approves the proposal for Valley Baptist Health Plan, Inc. to offer to TRS-ActiveCare participants during Fiscal Year 2014 the same plan design it offered in Fiscal Year 2013, with the following proposed major benefit changes, and approves and adopts the following monthly premiums to be charged to TRS-ActiveCare participants enrolled in this HMO during Fiscal Year 2014 according to coverage tier:

Valley Baptist Health Plan, Inc. Benefit Change Highlights

Benefit	2012-2013 Plan Year	Commencing 9-1-2013
Out-of-pocket maximum		
• Individual	\$3,500	\$4,000
• Family	\$7,000	\$8,000

Valley Baptist Health Plan, Inc. With No Premium Changes

Coverage Tier	FY 2013 Premiums	FY 2014 Premiums	Percent Change
Employee Only	\$387.06	\$387.06	0.0%
Employee & Spouse	\$941.04	\$941.04	0.0%
Employee & Child(ren)	\$607.86	\$607.86	0.0%
Employee & Family	\$960.14	\$960.14	0.0%

Resolved, That the approved plans of coverage offered by each HMO to participants in TRS-ActiveCare who reside or work in the respective service areas of each HMO, each of which commences on September 1, 2013, shall remain unchanged until further action by the Board.

Resolved, That with prior written approval from the Executive Director or his designee, each HMO may offer to participants in TRS-ActiveCare who reside or work in the respective service areas of each HMO, lower premiums than those herein approved, each of which commences on September 1, 2013.

Resolved, That the Board authorizes the Executive Director or his designees to take any actions, including the expenditure of funds and the execution of all documents, deemed by him or such designee to be

necessary or advisable to implement this resolution and to administer the TRS-ActiveCare contracts with the HMOs.

23. Consider the enrollment periods for the 2013-2014 plan year for the active employees health benefits program (TRS-ActiveCare), including presentation of participation data.

Ms. Jones referred the board to the resolution establishing the enrollment periods for TRS-ActiveCare, as required by law. She noted that staff recommended adding an enrollment period from August 1, 2013 through August 31, 2013 to provide plan participants an opportunity to make changes, if necessary. On a motion by Ms. Clifton, seconded by Mr. McDonald, the board unanimously adopted the following resolution establishing the enrollment periods for the 2013-2014 plan year for TRS-ActiveCare:

Whereas, Chapter 1579, Insurance Code, authorizes the Teacher Retirement System of Texas (TRS), as trustee, to implement and administer the uniform group health benefits program under the Texas School Employees Uniform Group Health Coverage Act (TRS-ActiveCare), as described in the statute;

Whereas, 34 TEX. ADMIN. CODE § 41.36 provides that the TRS Board of Trustees may set the plan enrollment periods for TRS-ActiveCare by resolution;

Whereas, TRS staff and the TRS-ActiveCare health plan administrator, Blue Cross and Blue Shield of Texas, have recommended that the plan enrollment periods for Fiscal Year 2014 TRS-ActiveCare coverage, effective September 1, 2013, occur from April 22, 2013 through May 24, 2013, and from August 1, 2013 through August 31, 2013;

Whereas, These plan enrollment periods do not affect the enrollment periods for any entity that becomes a participating entity after September 1, 2013; and

Whereas, The Board desires to adopt the recommended plan enrollment dates; now, therefore, be it

Resolved, Subject to alternative plan enrollment dates established under 34 Texas Administrative Code § 41.30, that the Fiscal Year 2014 TRS-ActiveCare plan enrollment dates for entities who are participating entities on or before September 1, 2013 are from April 22, 2013 through May 24, 2013, and from August 1, 2013 through August 31, 2013.

Whereupon, the meeting recessed at 7:24 p.m.

The Board of Trustees of the Teacher Retirement System of Texas reconvened on February 22, 2013, in the boardroom located on the fifth floor of the TRS East Building offices at 1000 Red River Street, Austin, Texas. The following board trustees were present:

David Kelly, Chair
Todd Barth

Karen Charleston
Charlotte Clifton
Joe Colonna
Eric McDonald
Chris Moss
Anita Palmer
Nanette Sissney

Others present:

Brian Guthrie, TRS
Ken Welch, TRS
Jerry Albright, TRS
Amy Barrett, TRS
Janet Bray, TRS
Dennis Gold, TRS
Howard Goldman, TRS
Don Green, TRS
T. Britt Harris, TRS
Amy Morgan, TRS
Marianne Woods Wiley, TRS
Don Ballard, TRS
Sylvia Bell, TRS
Jamie Michels, TRS
Cindy Haley, TRS
Dan Herron, TRS
Eric Lang, TRS

Dan Junell, TRS
Lynn Lau, TRS
Jay LeBlanc, TRS
Rebecca Merrill, TRS
Melinda Nink, TRS
Rhonda Price, TRS
Rebecca Smith, TRS
Steve Huff, Reinhart Boerner Van Deuren, Fiduciary Counsel
Jay Masci, Provaliant
Tim Lee, Texas Retired Teachers Association
Michael Johnson, Bridgepoint Consulting
Andrea Anderson, Bridgepoint Consulting
Andy Tonkovich, HP
Ernie Sanders, HP
Victor Ferreira, HP
John Grey, Texas State Teachers Association

Mr. Kelly called the meeting to order at 8:09 a.m.

1. Call roll of Board members.

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

24. Provide opportunity for public comment.

In memory of former TRS employee, Diane Amaya of Legal Services, Ms. Rebecca Smith presented a framed print of the painting named “The Storm” by Trustee Anita Palmer. Ms. Smith stated that Ms. Amaya passed away in a sudden, tragic incident in August 2012. Ms. Smith expressed her appreciation to Ms. Palmer for her generous donation. The painting will be displayed in the offices of Legal Services.

Mr. Tim Lee of Texas Retired Teachers Association acknowledged staff’s effort in informing retirees about the new Medicare Advantage plans. He stated that he hoped the positive feedback from those who had switched would encourage other retirees to look into the new options. He stated that the recently released pension plan study indicated that the TRS pension plan benefited both the state and the people who serve in the public school system. He expressed appreciation for the factual information presented in the study, which educated its audience about the benefits of TRS’ defined benefit plan. He stated that the main concerns of his organization were the actuarial soundness of the pension and health benefit funds and the fact that retirees had not received a permanent annuity increase in 12 years.

25. Review the agenda items to be taken up on February 22, 2013.

Mr. Guthrie reviewed the February 22, 2013 agenda items.

Mr. Guthrie presented a draft letter to the state leadership to inform them of the changes adopted relating to the TRS-ActiveCare premiums and plan design. Per Mr. Barth's suggestion, Mr. Guthrie said that he would clarify the rationale for the premium increase in the letter.

26. Receive a presentation from the TEAM Program Independent Program Assessment (IPA) Vendor.

Mr. Michael Johnson of Bridgepoint Consulting, the TEAM Program Independent Program Assessment (IPA) vendor, summarized the work completed to date. He presented the upcoming milestones and IPA activity.

Mr. Johnson explained the risk-based approach to be used in assessing the TEAM Program. He categorized the typical risks faced during different phases of the project, including staffing, process, and technology. Responding to a question from Ms. Sissney regarding inadequate data conversion, Mr. Johnson confirmed that the data cleansing process would occur during the implementation process. He said that the risk-based approach being used would perform quality control to ensure that any inadequacy would be detected and mitigated. Responding to Ms. Charleston's questions regarding the basic skill sets needed to accomplish the project goals and how they would be provided, Mr. Johnson stated that the IPA would monitor the adequacy of those skill sets, the demand for which would substantially increase once the Line of Business (LOB) vendor was on board. Mr. Welch described the process for obtaining enough staff with the needed skill sets to implement the project.

Mr. Johnson explained Bridgepoint's program assessment methodology and reporting process, including the status report. He confirmed for Ms. Sissney that Bridgepoint would be actively engaged in offering solutions to risks presented in the status report, but it would be up to the management to take the actions needed to mitigate the risks.

27. Receive an update on the TEAM Program.

Mr. Welch presented the finalists of the naming the system context and announced that the winning submission was "TRUST," which stands for Teacher Retirement System Unified System for Technology, submitted by Rebecca Smith and Don Ballard of Legal Services.

Ms. Amy Morgan provided an update on the current status of the TEAM project. Responding to a question from Ms. Sissney concerning the distinction between the LOB and the financial system replacement projects, Ms. Woods Wiley stated that the LOB project specifically involves the pension benefit systems. Ms. Morgan stated that the scope of the financial system project had not been established yet. Mr. Jay Masci of Provaliant stated that the delay in the financial system project was due to staffing.

Ms. Morgan summarized the accomplishments of the TEAM program to date and the upcoming milestones.

Ms. Bray provided an overview of the organizational change management project for the implementation of the TEAM program.

After a recess at 10:02 a.m., the meeting reconvened at 10:25 a.m.

28. Receive a panel discussion on the oversight functions for TRS.

Ms. Amy Barrett introduced TRS' oversight functions. Ms. Jamie Michels, Mr. Don Ballard, Mr. Jay LeBlanc, and Ms. Barrett presented the oversight functions performed by General Accounting, Legal Services, Enterprise Risk Management, and Internal Audit, respectively. Ms. Michels and Mr. Hugh Ohn presented the oversight roles of the Comptroller's office and the State Auditor's Office, respectively, in purchasing and contracts. Ms. Barrett also laid out the lines of defense in the areas of purchasing and contracts and TEAM program to help ensure effective oversight and accountability in those areas. Ms. Michels and Mr. Ballard clarified for Ms. Sissney that multiple contracts awarded to the same vendor would be reported internally and to the Legislative Budget Board (LBB).

29. Review the Deputy Director's report, including an update on Board elections.

Mr. Welch provided an update on the board elections. He announced the three candidates currently on the ballot for the active public education seat on the TRS Board: Mr. Hiram Burguete of Mission, Ms. Lindsey Pollock of Houston, and Ms. Dolores Ramirez of San Benito. He briefly laid out the next steps in the election process.

30. Consider personnel matters, including the appointment, employment, evaluation, compensation, performance, duties, discipline, or dismissal of the Executive Director, Chief Investment Officer, or Chief Audit Executive.

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

Mr. Kelly announced that the board would go into executive session on agenda items 30 and 31 under section 551.074 of the Texas Open Meeting Act to deliberate posted personnel matters, and under section 551.071 of the Act to receive legal advice from its attorney. All members of the public and staff not needed for the executive session were asked to leave the meeting room at this time and take their belongings with them.

Whereupon, the open session recessed at 11:17 a.m.

The meeting was reconvened in open session at 12:43 p.m. and then adjourned at 12:45 p.m.

Tab 3

**Teacher Retirement System of Texas
Board of Trustees**

Resolution Setting Meeting Date for February 2014

April 18-19, 2013

RESOLVED, That the Board of Trustees (board) of the Teacher Retirement System of Texas sets the following meeting date and location: February 12 – 14, 2014 in Corpus Christi, Texas, at convenient times to be determined by the board chairman and executive director; and

RESOLVED, That the executive director or his designee shall arrange for an appropriate site at which to hold the February 2014 board meeting.

Tab 5

Teacher Retirement System of Texas



Executive Director's Report

Brian Guthrie
April 19, 2013





Presentation Objectives

- Mid-Year Actuarial Valuation.
- Legislative Update.
- General Counsel Search Update.
- Update on Meeting with OMERS.
- New Process for Identifying and Processing Class Action Lawsuits.
- Update on Agendas for June and July Board Meetings.



Mid-Year Actuarial Valuation

Mid-Year Actuarial Valuation

TRS Trust Fund Valuation	2/28/13	8/31/12	Change 8/31/12 - 2/28/13
Market Value	\$116.3 billion	\$111.4 billion	+4.9 billion
Unfunded Actuarial Accrued Liability	\$27.4 billion	\$26.1 billion	+1.3 billion
Funded Ratio	81.4%	81.9%	-0.5%
Funding Period (years)	Never	Never	0.00%
State Contribution Rate*	6.40%	6.40%	
Member Contribution Rate*	6.40%	6.40%	
Are contributions sufficient to fund future liabilities?	No	No	
Annual Required Contribution* (ARC)	8.77%	8.62%	+0.15%



Mid-Year Actuarial Valuation

- The System's asset performance exceeded expectations for the first six months of the current plan year with a market return of 6.12% (equal to 12.24% annualized).
- If the current contribution policy continues, the trust fund is projected to have sufficient assets to make benefit payments through 2069, after which the funding would return to a pay-as-you-go status.
- Despite strong investment returns over the last six months, the Unfunded Actuarial Accrued Liability increased slightly. This was due, primarily, to recognition of investment losses from 2008-09.
- Roughly \$4 billion remain in unrecognized losses.



Legislative Update



Legislative Update

- Proposed contribution rates in the Appropriation Bills:
 - House proposes 6.6% for both FY 14 and 15; and
 - Senate proposes 6.4% for FY 14 and 6.7% for FY 15.
- TRS' omnibus bill is HB 3357 (Callegari) and SB 1490 (Duncan):
 - Authorizes the Board to meet in executive session to discuss Board procurements with certain qualifications and audit items, such as internal control weaknesses;
 - Authorizes 3rd parties to present to the Board by telephone conference call (currently, 3rd parties can only present by video conference);
 - Exempts the Medical Board from subpoena;
 - Makes confidential TRS employees' personal information, such as account numbers and names of family members, contained on financial disclosure statements and disclosure statements of conflicts of interest;
 - Remove requirement that TRS expenses be funded from General Revenue Fund;
 - Allows retirees to modify annuity option under certain conditions; and
 - Updates TRS-Care and TRS-ActiveCare to match federal law.



Legislative Update

- Possible amendments to pension and health benefits in the substitutes for SB 1458 (Duncan) and HB 1884 (Callegari):
 - Increase to either 60 or 62 the minimum age for normal-age retirement eligibility;
 - Grandfather those within 5 years of retirement as of 8/31/14;
 - Member and state contributions match with a member contribution floor of 6.4% and a ceiling of 6.9%;
 - 1% contribution by school districts for those TRS members who do not participate in OASDI;
 - Reduce interest rate on withdrawn service from 5% to 2%;
 - Those who retire prior to age 60 or 62 can only participate in TRS-Care 1 (Those currently in TRS-Care 2 and 3 keep coverage and retirees become eligible for TRS-Care 2 or 3 upon reaching the minimum age); and
 - No longer have to offer an ERS-equivalent plan in TRS-ActiveCare.



General Counsel Search Update



Update on Meeting with Ontario Municipal Employees Retirement System (OMERS)



New Process for Identifying and Processing Class Action Lawsuits



Upcoming Agendas



Upcoming Agendas

June 13-14, 2013 Major items include:

Board

- SPN (KKR and Apollo) review and due diligence discussion in executive session;
- Report on Q1 earnings;
- Adopt FY 2014 Budget;
- Adopt TRS-Care rates;
- Legislative update; and
- Overview of services provided by State Street.

Committees

- IMC - Review Private Equity and Real Assets and receive first overview of Energy & Natural Resources;
- Policy Committee - Begin review of 403(b) rules;
- RMC - Enterprise Risk Management Report;
- Benefits Committee - Benefit Services Division statistics report; and
- Audit Committee - SAO's audit of incentive compensation and results of health care administration audit.



Upcoming Agendas

July 26, 2013 Major items include:

Board

- Conduct annual evaluations of Executive Director, Chief Audit Executive, and Chief Investment Officer;
- Interview and consider selection of fiduciary counsel;
- Legislative implementation update;
- Certify state contributions to TRS-Care;
- Authorize purchase of D&O and fiduciary liability insurance; and
- Recognize outgoing Trustees.

Committees

- Audit Committee will meet to conduct an evaluation of the Chief Audit Executive.

Tab 6A



Teacher Retirement System of Texas

Performance Review: Fourth Quarter 2012
April 2013

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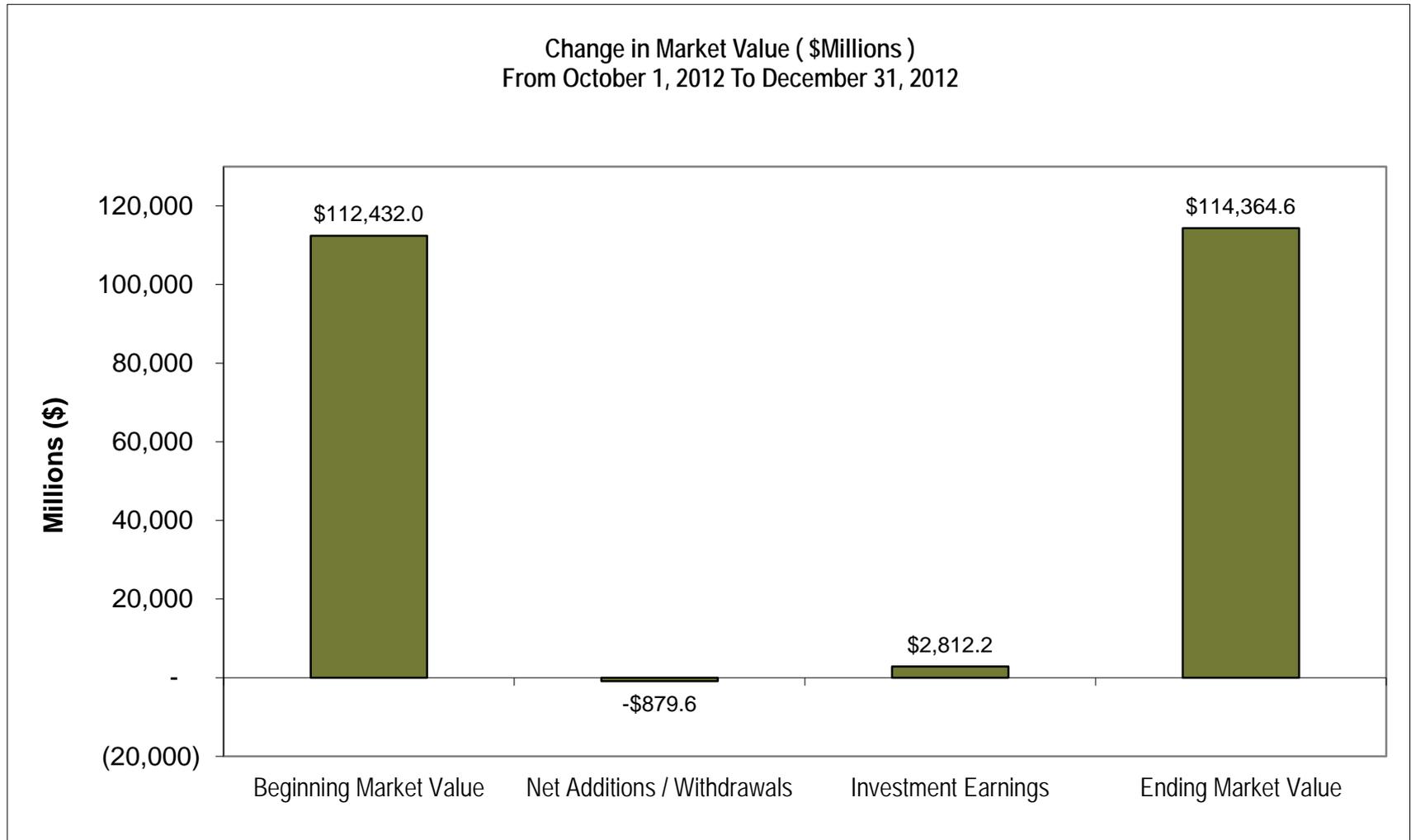
Summary

- Most equity markets around the world posted modest positive returns during the fourth quarter to finish off 2012 with double digit gains.
 - Positive economic data and reduced concern about a Eurozone debt crisis helped during the fourth quarter, but the fiscal cliff in the US kept risk appetites in check.
- TRS Total Fund gained 2.5% during the fourth quarter and modestly outperformed its benchmark
 - Total Fund one-year return of 13.9% is ahead of policy benchmark by 1.7% driven by strong results across most investments, specifically from private equity, other absolute return, and real assets.
- Major sources of outperformance during the quarter included:
 - Global Equity:
 - Private Equity
 - U.S. Large Cap
 - Non-U.S. Emerging Markets (outperformance and an overweight allocation)
 - Stable Value:
 - An underweight allocation to Long Treasuries

1. Market Summary – Fourth Quarter 2012

	Fourth Quarter	One Year	Three Years	Five Years	Ten Years
Global Equity:					
MSCI USA Standard	-0.2%	16.1%	11.0%	1.8%	7.3%
MSCI USA Small Cap	2.8	18.2	13.6	5.6	11.0
MSCI EAFE + Canada Index	5.9	16.4	3.6	-3.4	8.6
MSCI Emerging Markets Index	5.6	18.2	4.7	-0.9	16.5
HFRI Fund of Funds Composite Index	1.3	4.8	1.5	-1.8	3.6
State Street Private Equity Index (qtr lagged)	2.5	11.3	13.0	3.1	11.7
Global Equity Policy Benchmark	2.9	15.0	8.0	0.4	--
Stable Value:					
Barclays Capital Long Treasury Index	-0.8%	3.6%	13.8%	9.7%	7.6%
HFRI Fund of Funds Conservative Index	1.5	4.1	1.8	-1.5	2.8
3 Month LIBOR + 2%	0.6	2.4	2.4	2.9	4.2
90 Day US Treasury Bill	0.0	0.1	0.1	0.5	1.8
Stable Value Policy Benchmark	-0.2	3.6	10.9	7.9	--
Real Return:					
Barclays Capital US Treasury TIPS Index	0.7%	7.0%	8.9%	7.0%	6.7%
NCREIF ODCE (qtr lagged)	2.5	10.5	11.1	-2.0	--
Goldman Sachs Commodities Index	-3.3	0.1	2.5	-8.1	2.7
MSCI US REIT	2.5	17.8	18.0	5.6	11.6
Real Return Policy Benchmark	2.1	10.4	10.8	3.5	--
TRS Policy Benchmark	2.2%	12.2%	9.6%	3.1%	7.7%

2. Market Value Change



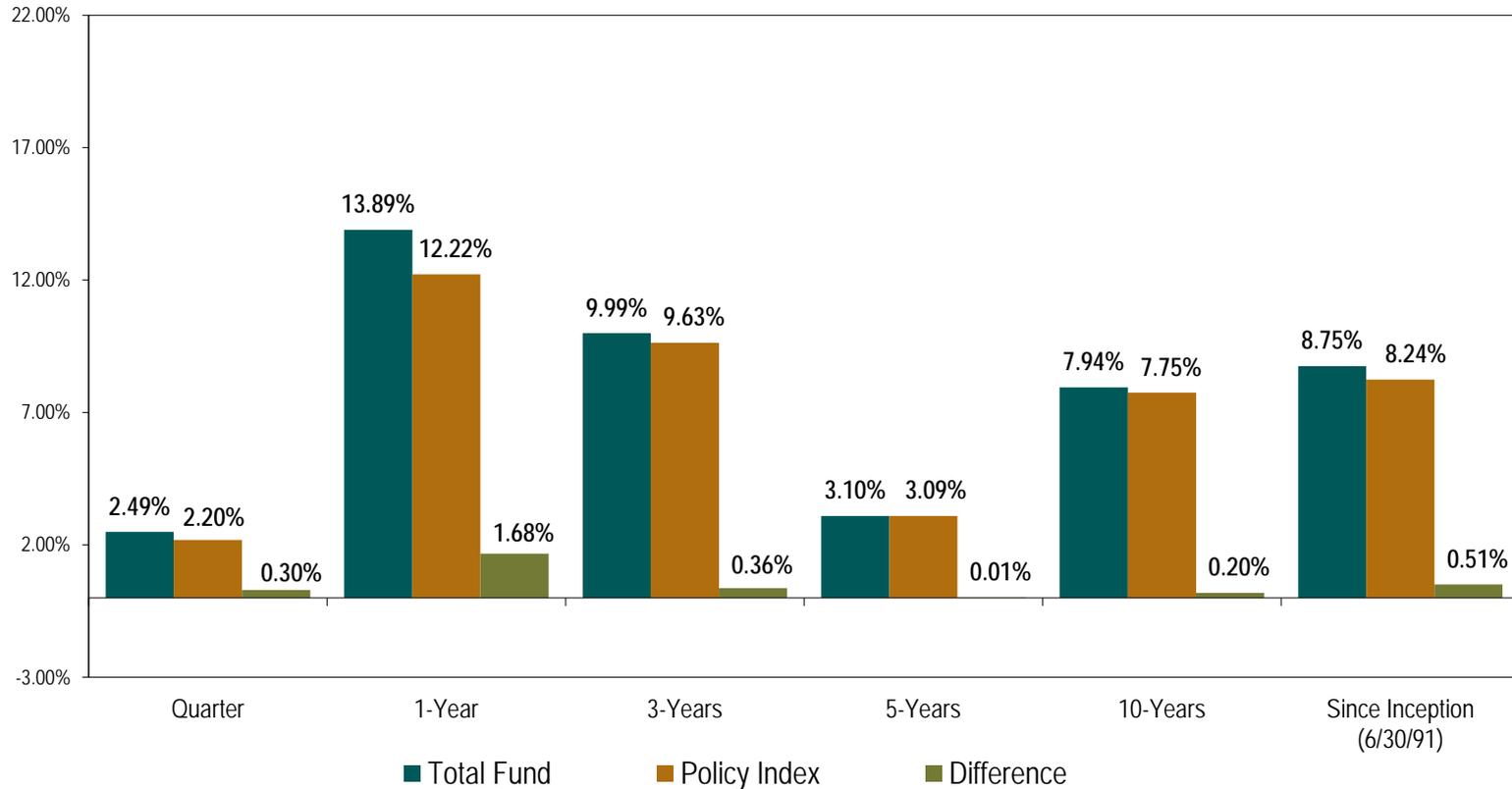
3. Asset Allocation Detail

	Market Value (\$ in millions) as of 12/31/2012		Policy Target	Relative Allocation to Policy Target	Ranges
	(\$)	(%)			
Total Fund	\$114,365	100%	100%	---	--
U.S. Large	\$22,191	19.4%	18%	+1.4%	13-23%
U.S. Small	\$1,835	1.6%	2%	-0.4%	0-7%
Non-U.S. Developed	\$15,020	13.1%	15%	-1.9%	10-20%
Emerging Markets	\$13,879	12.1%	10%	+2.1%	5-15%
Directional Hedge Funds	\$5,774	5.0%	5%	+0.0%	0-10%
Private Equity	\$13,472	11.8%	12%	-0.2%	7-17%
Global Equity	\$72,171	63.1%	62%	+1.1%	55-69%
Long Treasuries	\$13,406	11.7%	13%	-1.3%	0-20%
Stable Value Hedge Funds	\$4,109	3.6%	4%	-0.4%	0-10%
Absolute Return (including OAR)	\$1,075	0.9%	0%	+0.9%	0-20%
Cash	\$2,293	2.0%	1%	+1.0%	0-5%
Stable Value	\$20,883	18.3%	18%	+0.3%	13-23%
TIPS	\$6,260	5.5%	5%	+0.5%	0-10%
Real Assets	\$13,982	12.2%	15%	-2.8%	5-20%
Commodities	\$1,068	0.9%	0%	+0.9%	0-5%
Real Return	\$21,311	18.6%	20%	-1.4%	15-25%

Note: Actual allocations above are based upon Account Level information

4. Total TRS Performance Ending 12/31/2012

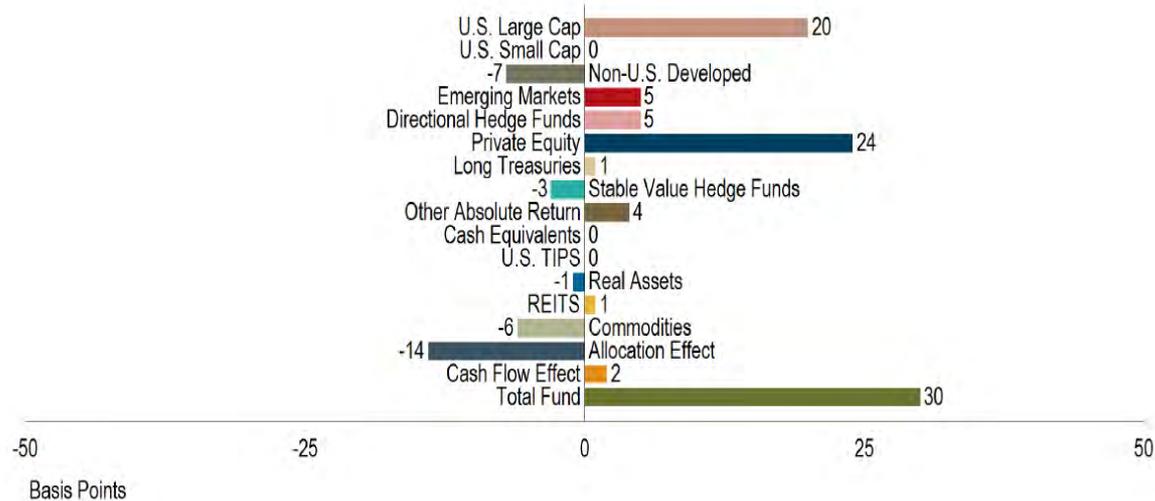
Investment Results As of 12/31/2012



Note: The excess returns shown above may not be a perfect difference between the actual and benchmark returns due entirely to rounding.

5. Total Fund Attribution - Quarter Ending 12/31/2012

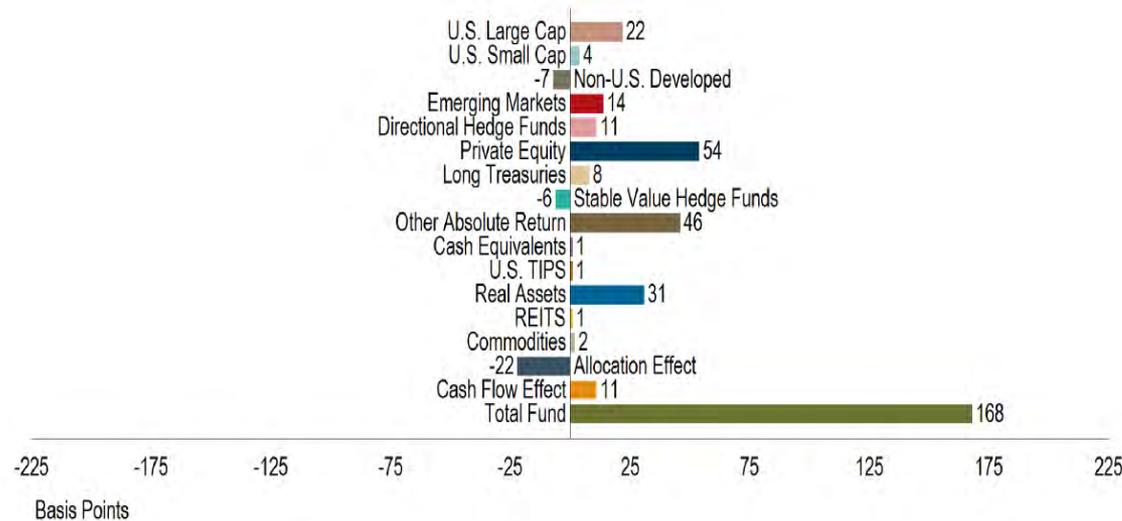
TOTAL FUND ATTRIBUTION ANALYSIS
3 MONTHS ENDING 12/31/12



Asset Class	Allocation Effect (in bps)
U.S. Large Cap	-9
U.S. Small Cap	0
Non-U.S. Developed	-6
Emerging Markets	5
Directional Hedge Funds	0
Private Equity	0
Long Treasuries	6
Stable Value Hedge Funds	0
Cash Equivalents	-2
Other Absolute Return	-1
U.S. TIPS	-1
Real Assets	-1
REITS	0
Commodities	-5
Total Allocation Effect	-14

5. Total Fund Attribution – One Year Ending 12/31/2012

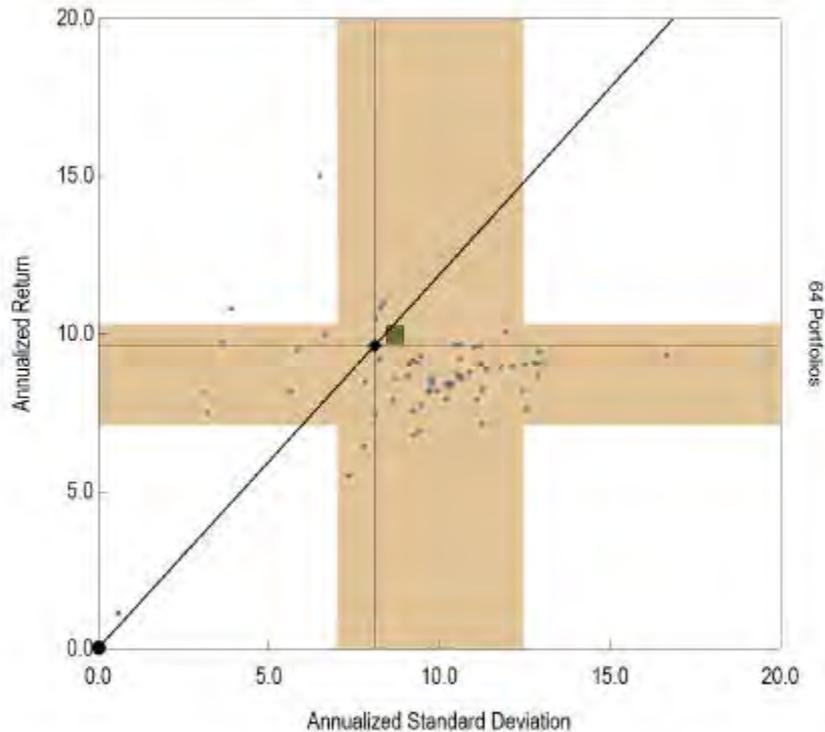
TOTAL FUND ATTRIBUTION ANALYSIS
1 YEAR ENDING 12/31/12



Asset Class	Allocation Effect (in bps)
U.S. Large Cap	-1
U.S. Small Cap	-7
Non-U.S. Developed	2
Emerging Markets	-13
Directional Hedge Funds	0
Private Equity	2
Long Treasuries	24
Stable Value Hedge Funds	4
Cash Equivalents	-4
Other Absolute Return	-16
U.S. TIPS	-3
Real Assets	1
REITS	0
Commodities	-11
Total Allocation Effect	-22

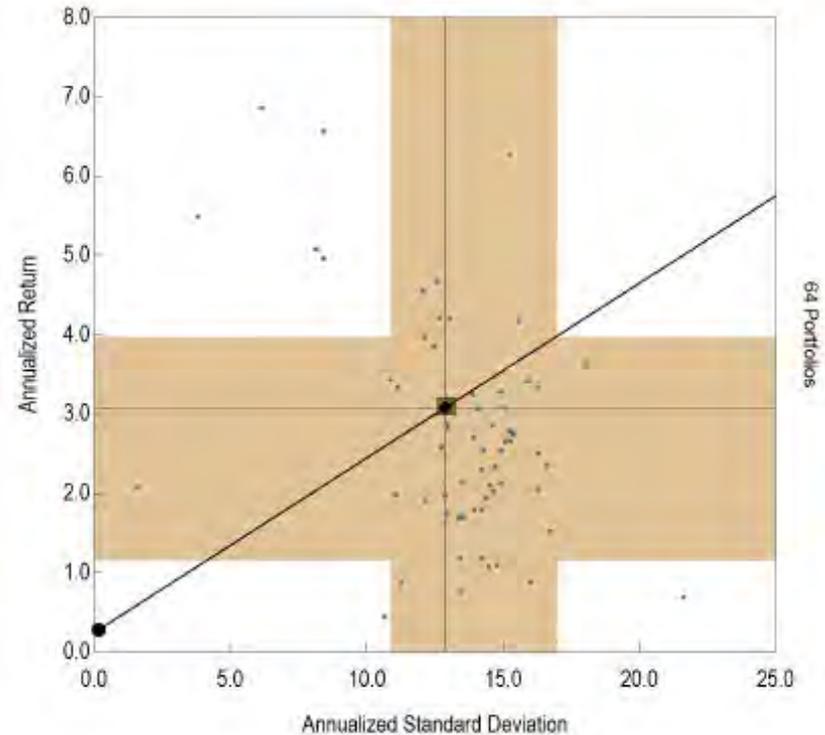
6. Risk Profile: Total Fund Risk-Return vs. Peers

Annualized Return vs. Annualized Standard Deviation
3 Years Ending December 31, 2012



- Total Fund
- ◆ Total Fund Benchmark
- Risk Free
- ▣ 68% Confidence Interval
- Public Funds >\$1B Net

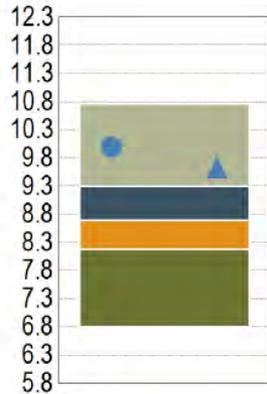
Annualized Return vs. Annualized Standard Deviation
5 Years Ending December 31, 2012



- Total Fund
- ◆ Total Fund Benchmark
- Risk Free
- ▣ 68% Confidence Interval
- Public Funds >\$1B Net

6. Risk Profile: Trailing 3-Year Risk Metrics Peer Comparison

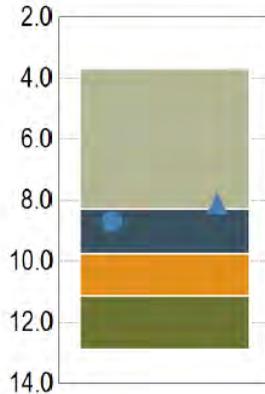
Annualized Return (%)



● Total Fund	
Value	10.0
%tile	10
▲ Total Fund Benchmark	
Value	9.6
%tile	18

Universe	
5th %tile	10.8
25th %tile	9.3
Median	8.7
75th %tile	8.2
95th %tile	6.8

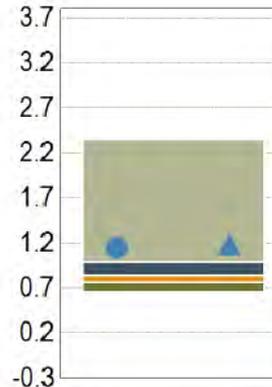
Annualized Standard Deviation



● Total Fund	
Value	8.7
%tile	31
▲ Total Fund Benchmark	
Value	8.1
%tile	19

Universe	
5th %tile	3.7
25th %tile	8.3
Median	9.7
75th %tile	11.1
95th %tile	12.9

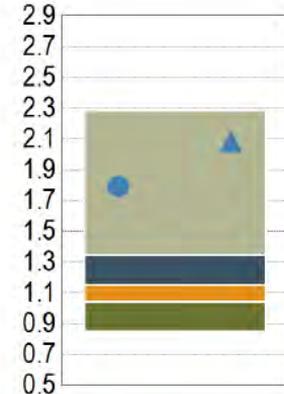
Sharpe Ratio



● Total Fund	
Value	1.1
%tile	21
▲ Total Fund Benchmark	
Value	1.2
%tile	20

Universe	
5th %tile	2.3
25th %tile	1.0
Median	0.8
75th %tile	0.8
95th %tile	0.7

Sortino Ratio

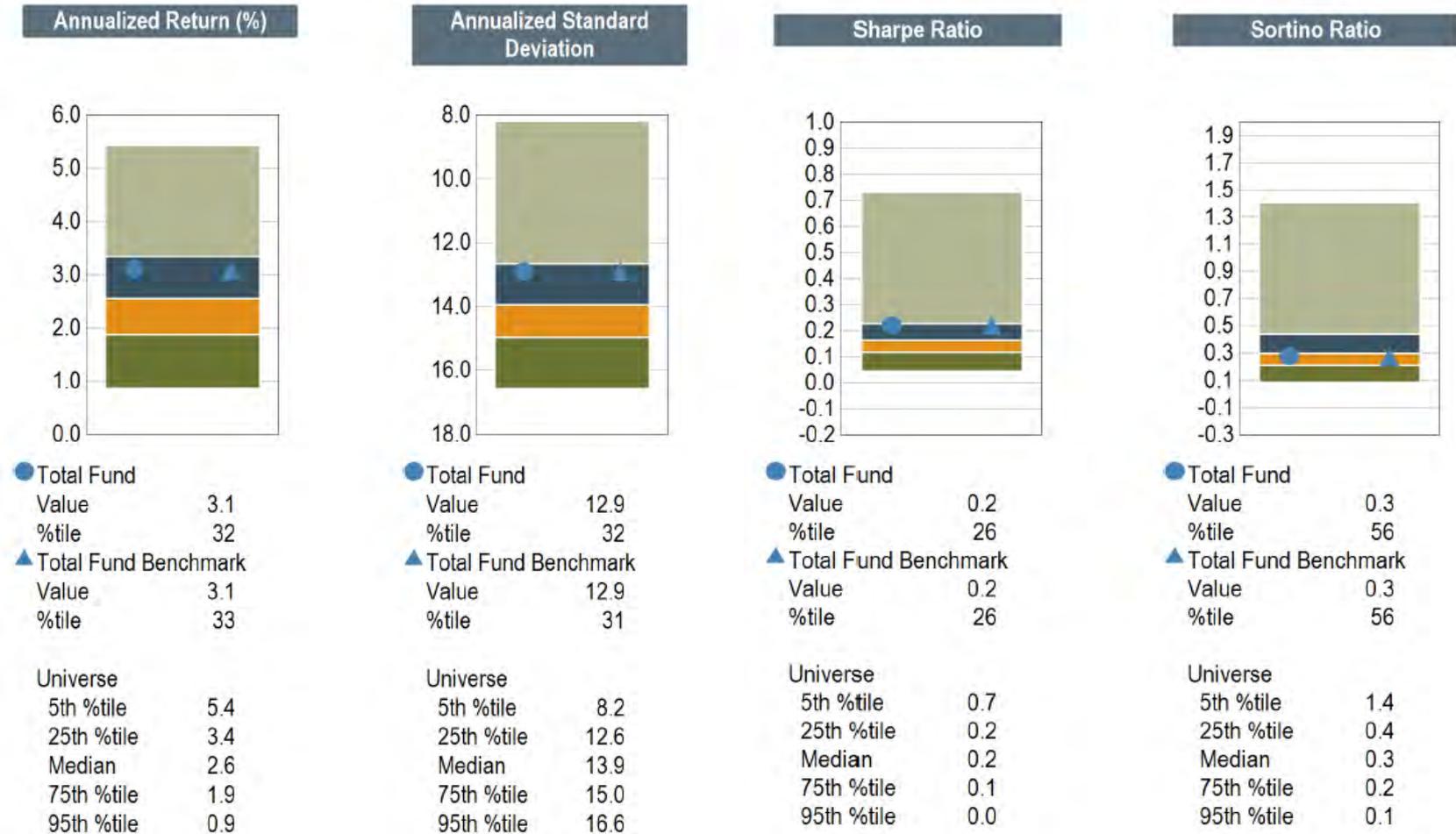


● Total Fund	
Value	1.8
%tile	12
▲ Total Fund Benchmark	
Value	2.1
%tile	8

Universe	
5th %tile	2.3
25th %tile	1.3
Median	1.2
75th %tile	1.0
95th %tile	0.9

Universe: Public Funds > \$1B Net

6. Risk Profile: Trailing 5-Year Risk Metrics Peer Comparison



Universe: Public Funds > \$1B Net

7. Global Equity: Performance Summary Ending 12/31/2012

	Fourth Quarter	One Year	Three Years	Five Years
Total Global Equity	3.5%	16.3%	8.1%	0.4%
Global Equity Benchmark	2.9	15.0	8.0	0.4
<i>Difference</i>	+0.6	+1.3	+0.1	0.0
Total U.S.	0.9%	17.4%	10.8%	2.1%
U.S. Benchmark	0.1	16.3	11.0	2.0
<i>Difference</i>	+0.8	+1.1	-0.2	+0.1
<u>U.S. Large Cap</u>	0.7%	17.1%	10.4%	-
Large Cap Benchmark	-0.2	16.1	10.5	-
<i>Difference</i>	+0.9	+1.0	-0.1	-
<u>U.S. Small Cap</u>	3.0%	22.6%	14.8%	5.8%
Small Cap Benchmark	2.8	18.2	13.6	4.5
<i>Difference</i>	+0.2	+4.4	+1.2	+1.3
Non-U.S. Equity	5.7%	17.2%	4.4%	-1.2%
Non-U.S. Benchmark	5.8	17.2	4.2	-2.0
<i>Difference</i>	-0.1	0.0	+0.2	+0.8
<u>Non-U.S. Developed</u>	5.4%	15.9%	4.2%	-2.7%
MSCI EAFE + Canada	5.9	16.4	3.7	-3.4
<i>Difference</i>	-0.5	-0.5	+0.5	+0.7
<u>Emerging Markets</u>	6.0%	19.5%	4.9%	-0.6%
MSCI Emerging Markets	5.6	18.2	4.7	-0.9
<i>Difference</i>	+0.4	+1.3	+0.2	+0.3

Note: 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.

7. Global Equity: Performance Summary Ending 12/31/2012 (cont'd)

	Fourth Quarter	One Year	Three Years	Five Years
Directional Hedge Funds	2.2%	6.8%	-	-
HFRI Fund of Funds Composite Index	1.3	4.8	-	-
<i>Difference</i>	+0.9	+2.0	-	-
Total Public Equity	3.3%	16.1%	6.7%	-0.3%
Public Equity Benchmark	3.0	15.8	6.9	-0.3
<i>Difference</i>	+0.3	+0.3	-0.2	0.0
Total Private Equity	4.5%	16.4%	15.6%	4.8%
Private Equity Benchmark	2.5	11.3	13.0	4.8
<i>Difference</i>	+2.0	+5.1	+2.6	0.0

Note: 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.

8. Stable Value: Performance Summary Ending 12/31/2012

	Fourth Quarter	One Year	Three Years	Five Years
Total Stable Value	0.1%	6.5%	11.7%	7.9%
Total Stable Value Benchmark	-0.2	3.6	10.9	7.9
<i>Difference</i>	+0.3	+2.9	+0.8	0.0
Long Treasuries	-0.7%	4.2%	14.5%	10.9
Treasury Benchmark	-0.8	3.6	13.8	9.7
<i>Difference</i>	+0.1	+0.6	+0.7	+1.2
Stable Value Hedge Funds	0.8%	2.3%	2.3%	0.0%
Hedge Funds Benchmark	1.5	4.1	2.7	3.1
<i>Difference</i>	-0.7	-1.7	-0.4	-3.1
Other Absolute Return	3.7%	38.6%	17.2%	-
Other Absolute Return Benchmark	0.6	2.4	2.4	-
<i>Difference</i>	+3.1	+36.2	+14.8	-
Cash Equivalents	0.1%	1.0%	-0.3%	0.2%
Cash Benchmark	0.0	0.1	0.1	0.5
<i>Difference</i>	+0.1	+0.9	-0.4	-0.3

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

Note: 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.

9. Real Return: Performance Summary Ending 12/31/2012

	Fourth Quarter	One Year	Three Years	Five Years
Total Real Return	1.4%	11.1%	11.2%	3.9%
Real Return Benchmark	2.1	10.4	10.8	3.5
<i>Difference</i>	-0.7	+0.7	+0.4	-0.4
TIPS	0.8%	7.1%	9.1%	7.3%
U.S. TIPS Benchmark	0.7	7.0	8.9	6.5
<i>Difference</i>	+0.1	+0.1	+0.2	+0.8
Real Assets	2.5%	13.6%	13.6%	-0.4%
Real Asset Benchmark	2.5	10.5	11.1	-1.6
<i>Difference</i>	-0.0	+3.1	+2.5	+1.2
Commodities	-10.1%	-0.3%	2.6%	-6.0%
Commodities Benchmark	-3.3	0.1	2.5	-8.1
<i>Difference</i>	-6.8	-0.4	+0.1	+2.1

Note: 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.



Appendix – Supplemental Reporting

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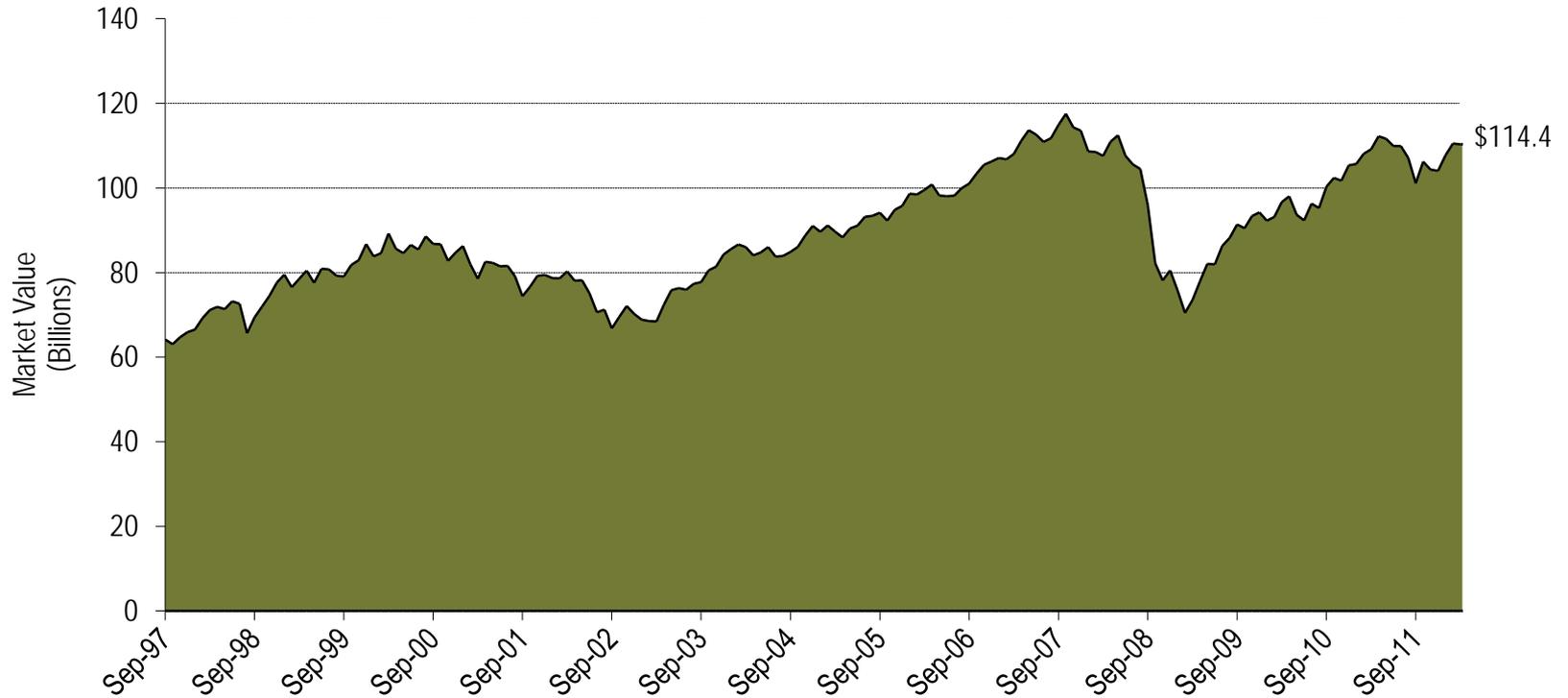
Historical Excess Performance

Quarterly and Cumulative Excess Performance
Total Fund vs. Total Fund Benchmark



TRS Asset Growth

Total Fund Historical Growth (September 1997 - December 2012)



External Manager Program: Public Equity Performance as of 12/31/2012

	Allocation (\$ in billions)	Fourth Quarter	One Year	Three Years
EP Total Global Equity	\$30.4	4.0%	17.4%	6.9%
EP Global Equity Benchmark	--	3.0	15.6	6.6
<i>Difference</i>	--	+1.0	+1.8	+0.3
EP U.S. Large Cap	\$7.3	1.8%	18.5%	11.2%
EP Large Cap Benchmark	--	-0.2	16.1	10.5
<i>Difference</i>	--	+2.0	+2.4	+0.7
EP U.S. Small Cap	\$1.8	2.9	20.0	-
EP Small Cap Benchmark	--	2.8	18.2	-
<i>Difference</i>	--	+0.1	+1.8	-
EP Non-U.S. Developed	\$5.5	5.6	14.6	3.6
MSCI EAFE + Canada Index	--	5.9	16.4	3.7
<i>Difference</i>	--	-0.3	-1.8	-0.1
EP Emerging Markets	\$7.3	5.9	19.9	5.1
MSCI Emerging Markets Index	--	5.6	18.2	4.7
<i>Difference</i>	--	+0.3	+1.7	+0.5
EP World Equity	\$4.0	4.7%	19.9%	7.3%
EP World Equity Benchmark	--	2.9	16.1	6.6
<i>Difference</i>	--	+1.8	+3.8	+0.7
EP Directional Hedge Funds	\$4.5	2.7	8.2	-
HFRI Fund of Funds Composite Index	--	1.3	4.8	-
<i>Difference</i>	--	+1.4	+3.4	-

Note: 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.

External Manager Program: Stable Value/Total Program Performance as of 12/31/2012

	Allocation (\$ in billions)	Fourth Quarter	One Year	Three Years
EP Total Stable Value	\$4.2	1.4%	10.6%	6.5%
EP Stable Value Benchmark	--	0.0	0.4	1.5
<i>Difference</i>	--	+1.4	+10.2	+5.0
EP Stable Value Hedge Funds	\$4.1	0.8%	2.3%	2.3%
EP Stable Value Hedge Funds Benchmark	--	1.5	4.1	2.7
<i>Difference</i>	--	-0.7	-1.7	-0.4
EP OAR	\$0.1	12.1%	52.1%	18.9%
EP OAR Benchmark	--	0.6	2.4	2.4
<i>Difference</i>	--	+11.5	+49.7	+16.5
Total External Public Program	\$34.6	3.7%	16.4%	7.3%
EP External Public Benchmark	--	2.9	13.7	5.8
<i>Difference</i>	--	+0.8	+2.7	+1.5

Note: 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.

Strategic Partnership Program (SPN): Performance Summary

Ending 12/31/2012

	Allocation (\$ in billions)	Fourth Quarter	One Year	Three Years
Public Strategic Partnership	\$5.8	2.4%	15.0%	10.0%
Public SPN Benchmark	--	1.7	13.5	9.8
<i>Difference</i>	--	+0.7	+1.5	+0.2
Blackrock	\$1.3	2.2%	13.4%	9.3%
J.P. Morgan	\$1.4	3.8%	17.0%	10.4%
Neuberger Berman	\$1.3	1.8%	14.5%	9.9%
Morgan Stanley	\$1.3	1.8%	15.3%	10.1%
Barclays Capital	\$0.6	2.4%	14.9%	--
Private Markets Strategic Partnership	\$0.3	2.7%	-	-
Private Markets SPN Benchmark	--	2.5	-	-
<i>Difference</i>	--	+0.2	-	-
Apollo	\$0.1	-1.4%	-	-
KKR	\$0.2	5.5%	-	-
Public and Private Strategic Partnership Program	\$6.1	2.4%	-	-
Total SPN Benchmark	--	1.8	-	-
<i>Difference</i>	--	+0.6	-	-

- The Public SPNs in aggregate outperformed the benchmark during all time periods shown above
- The three-year return of the Public SPN coincidentally matches the return of the TRS total portfolio at 10.0%.
- The Private Markets Strategic Partnership outperformed its benchmark by 0.2% during the quarter.

Note: 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.

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, and 15% 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

Benchmarks (cont'd)

- **Real Return Benchmark** – 25% BC US TIPS and 75% NCREIF ODCE
- US TIPS Benchmark - BC US TIPS Index
- Real Assets Benchmark –NCREIF ODCE (1qtr lagged)
- 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.

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)

Tab 6B



Managing a Global Investment System

Britt Harris

Chief Investment Officer

April 2013

Managing a Global Investment Portfolio Successfully

TRS Investment Management Division

Competitive Advantages

Large

Liquid

Not Levered

Long Term

Right Plan

+

Right People

+

Right Metrics

=

Long-Term
Success

Investment Policy

Integrity

Beta Results

25 Years

Beta

Alpha

Risk

Cost

Intellectual/
Emotional Strength

Alpha Results

8% per
Year

Market
Returns

Market
Efficiency

Boundaries

Low Base

Cultural Fit

Diversification
Effectiveness

\$8 Billion
per Year

Effective
Diversification

Circle of
Competence

Control

Performance
Based

Fully Engaged

Critical Process
Productivity

Risk Well Managed

CAPM

Risk
Parity

Micro

Macro

Com-
pliance

Mgmt.

Aligned

Personal Genius

Resource Adequacy/
Utilization

Strong Brand

62/20/
18

25/75

Security
Selection

TAA

Within
Policy?

Environ-
ment

Properly Trained

Competitive
Status

Satisfied Customers

Equity
Risk
80%

Equal
Risk

Diverse

Cycles

Trans-
parent

Bubbles

Properly
Compensated

Aggregate
Results

Not
Levered

Levered

Focused

Dis-
location

Within
Specs

CUSUM

Effective Decision
Makers

Individual
Contributions

Levered

Trend
Dev.

Customer
Perspective

Liquid

Concent.



Right Metrics

Trust Returns and IMD Value Added

As Percent of the Trust

	Percent of Trust	2012 Return	Value Added
Total Trust	100%	13.9%	1.7%
Global Equity	62%	16.3%	1.3%
Stable Value	19%	6.5%	2.9%
Real Return	19%	11.1%	0.7%
EAFE	14%	15.9%	-0.6% ¹
Emerging Markets	12%	19.5%	1.3%
Real Assets	12%	13.6%	3.1%
Private Equity	12%	16.4%	5.1%
Long Treasury Bonds	12%	4.2%	0.6%
Large Cap Value (US)	8%	16.1%	1.1%
Large Cap Growth (US)	8%	17.8%	0.5%
TIPS	5%	7.1%	0.2%
Directional Hedge Funds	5%	6.8%	2.0%
Stable Value Hedge Funds	4%	2.3%	-1.7% ²
Cash	3%	1.0%	0.9%
Small Cap (US)	2%	22.6%	4.4%
Tactical Credit	1%	39.3%	36.9%
Precious Metals	1%	2.0%	2.3%

Notes:

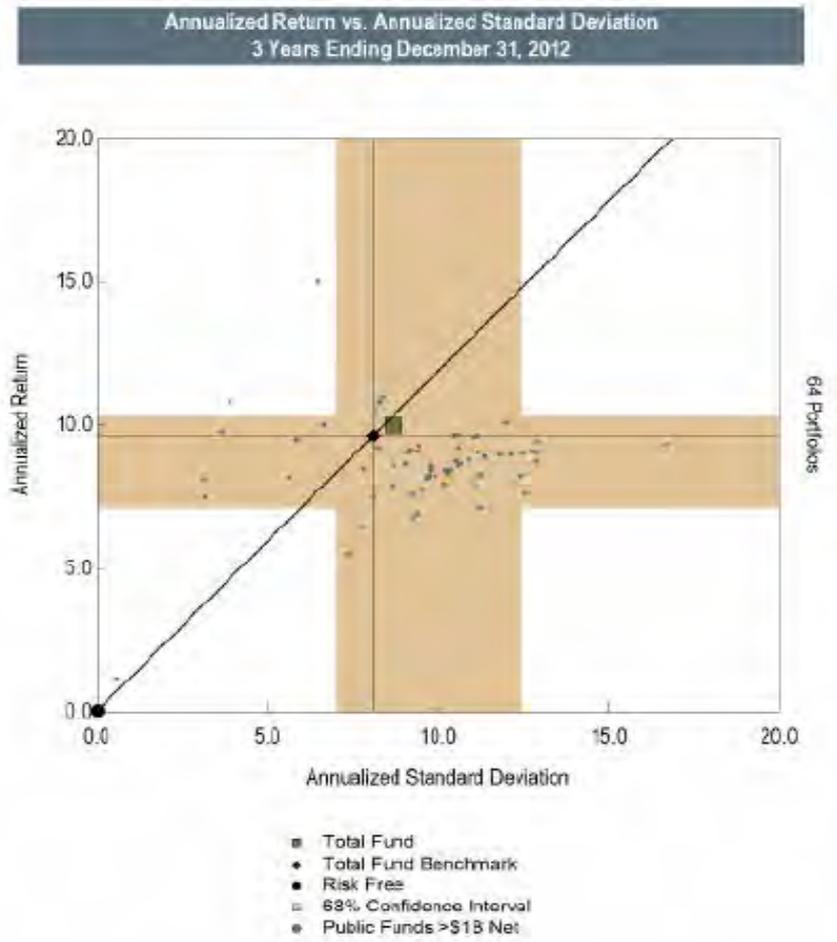
¹ Positive 50 basis points for 3 years

² Negative 40 basis points for 3 years



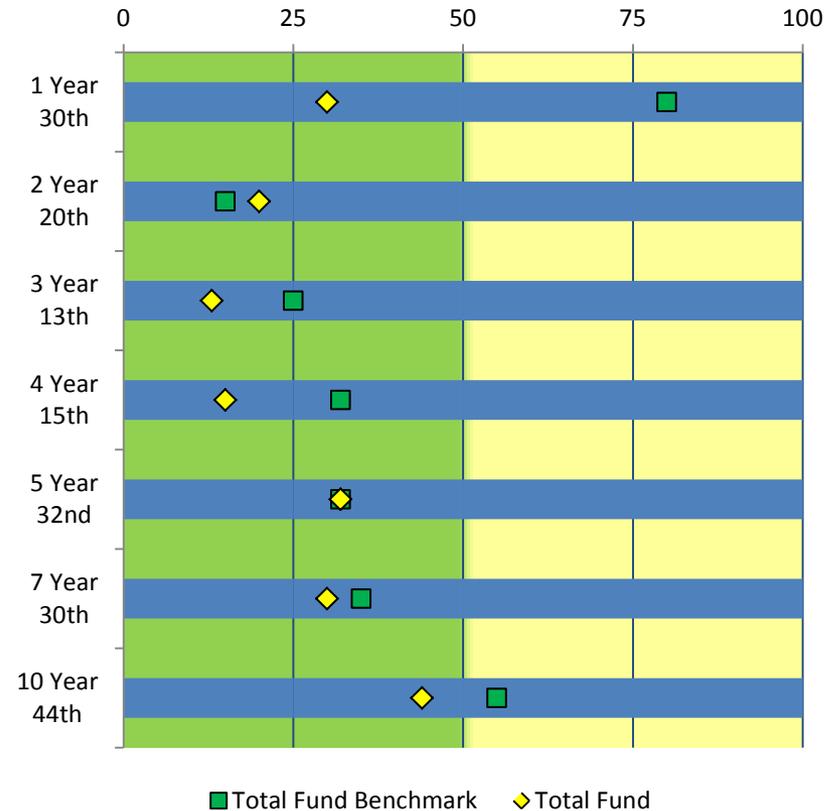
Peer Comparison

As of December 31, 2012



- 6th of 64 funds

TUCS Percentile Public Funds >\$10B

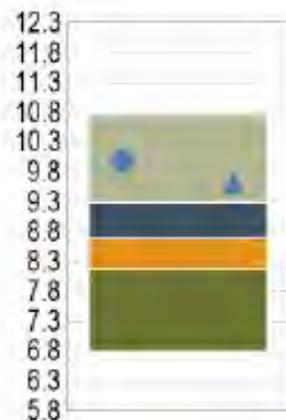


- Top Quartile: 2, 3, 4 year periods
- 2nd Quartile: 1, 5, 7, 10 year periods

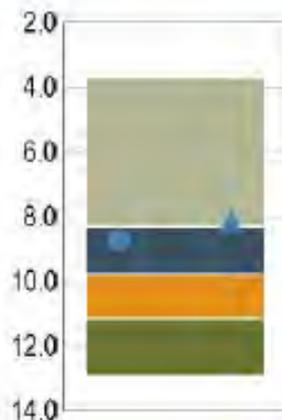
Risk Profile

Trailing 3-Year Risk Metrics

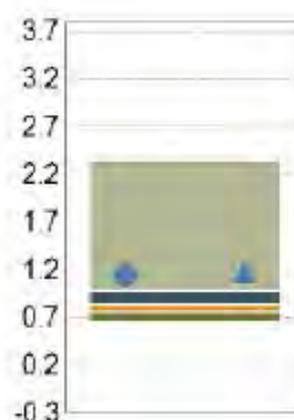
Annualized Return (%)



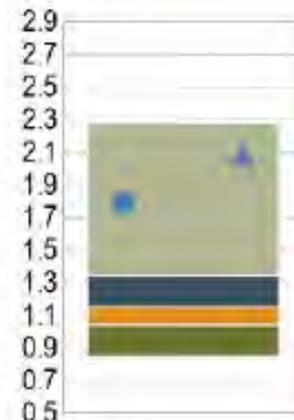
Annualized Standard Deviation



Sharpe Ratio



Sortino Ratio



● Total Fund	
Value	10.0
%tile	10
▲ Total Fund Benchmark	
Value	9.6
%tile	18

● Total Fund	
Value	8.7
%tile	31
▲ Total Fund Benchmark	
Value	8.1
%tile	19

● Total Fund	
Value	1.1
%tile	21
▲ Total Fund Benchmark	
Value	1.2
%tile	20

● Total Fund	
Value	1.8
%tile	12
▲ Total Fund Benchmark	
Value	2.1
%tile	8

Universe	
5th %tile	10.8
25th %tile	9.3
Median	8.7
75th %tile	8.2
95th %tile	6.8

Universe	
5th %tile	3.7
25th %tile	8.3
Median	9.7
75th %tile	11.1
95th %tile	12.9

Universe	
5th %tile	2.3
25th %tile	1.0
Median	0.8
75th %tile	0.8
95th %tile	0.7

Universe	
5th %tile	2.3
25th %tile	1.3
Median	1.2
75th %tile	1.0
95th %tile	0.9

Source: Hewitt EnnisKnupp, Universe: Public Funds >\$1B Net

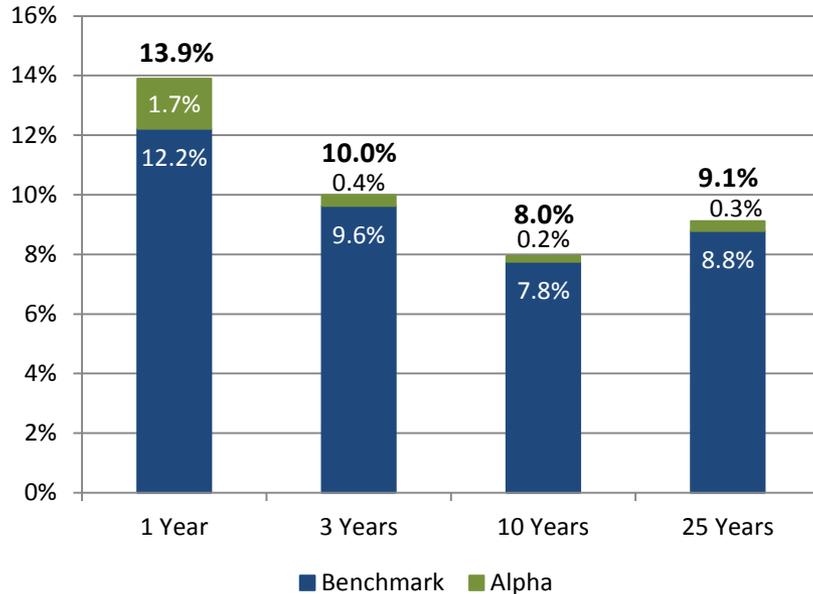
Internal and External Audits and Formal Consulting Projects

- 28 audits over the past four years
- Multiple audit sources
- No significant findings

Investment Policy Statement	Internal Management	External Management	Performance Calculations	Operations & Controls	Portfolio Strategy	2013 Planned
SAO – Ethics Policies for Investment Practices at TRS, ERS & UTIMCo	IA – Actively Managed Portfolio	IA – External Mgr Selection & Monitoring: HF definition	IA – Performance Benchmarks	IA/Huron – Valuation Audit	IA Derivative Use	IA - Investment Selection and Monitoring (EM)
IA- IPS Compliance (quarterly)	Inv Training Consulting Inst (ITCI) – Domestic Equities	Independent Fiduciary Review – Review of Ext Mgrs, Derivatives	IA/Duff & Phelps – Performance Measurement	IA – Soft Dollars	SAO – Derivative Use	IA - Allowances in Asset Management Contracts
IA – Security Testing incl. Bloomberg Access (quarterly)		SAO – Manager Selection	IA - Incentive Calculations	Duff & Phelps – Valuation Policy		IA - TRS-wide Data Backup & Recovery
IA – Inv Risk Mgmt.		SAO – Mgr Monitoring	IA – Inv Accounting	SAO – CAFR (annually)		IA – Derivatives
		IA – Partnership Selection & Monitoring	IA – SSB Compliance Calculations	Grant Thornton – IT Ops (Resource Review)		SAO- Incentive Pay Plans at TRS, ERS & Permanent School Fund
				Grant Thornton – IT Controls		SAO – CAFR
				Grant Thornton – IT Service Level Agreement		Comptroller – Post-Payment Audit (Payroll, Travel & Payables)
				Vito Consulting – Hiring Procedures		
				IA – Records Retention		
				IA – 3 rd Party Paid Travel		

Long Term Results

Trust Annualized Performance



Alpha Contribution

(\$ millions)	vs. Passive	vs. Peers*
1 Year	1,592	340
3 Years	1,117	2,510
10 Years	2,292	2,980
25 Years	12,397	N/A

*TUCS Median, Funds >\$10B

Top 5 Best Large Public Plan

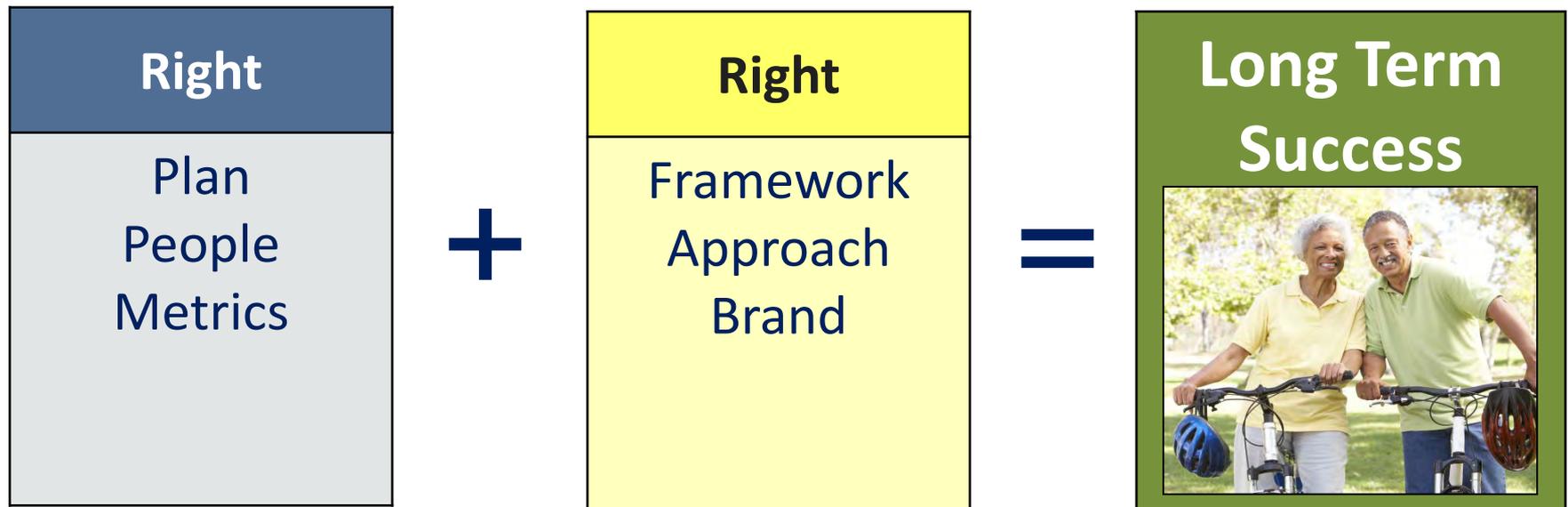
- aiCIO Runner-Up, Best Public Pension Plan >\$15B
- Highest 10 Year Private Equity Return for Plans >\$1B
- PERE North America Institutional Investor of the Year
- Institutional Investor Hedge Fund Industry Awards – Nominated for Large Public Plan of the Year
- TOIGO Innovative Leadership Award
- Private Equity International North American LP of the Year
- HFM Week - #6 Most Influential Investors and Advisors in the Hedge Fund Space

Source: State Street Bank, Wilshire TUCS



Long-Term Success

TRS Investment Management Division



Right Plan

BETA STRUCTURE



TRS Diversification Framework

Category:

Stable Value
18%

Global Equity
62%

Real Return
20%

Asset Class:

Treasuries 13%
Hedge Funds 4%
Cash 1%

Public Equities 50%
Private Equity 12%

US Large Cap 18%
US Small Cap 2%
Non- US Developed 15%
Emerging Market Equities 10%
Directional Hedge Funds 5%
Private Equity 12%

Global TIPS 5%
Commodities 0%
Real Assets 15%

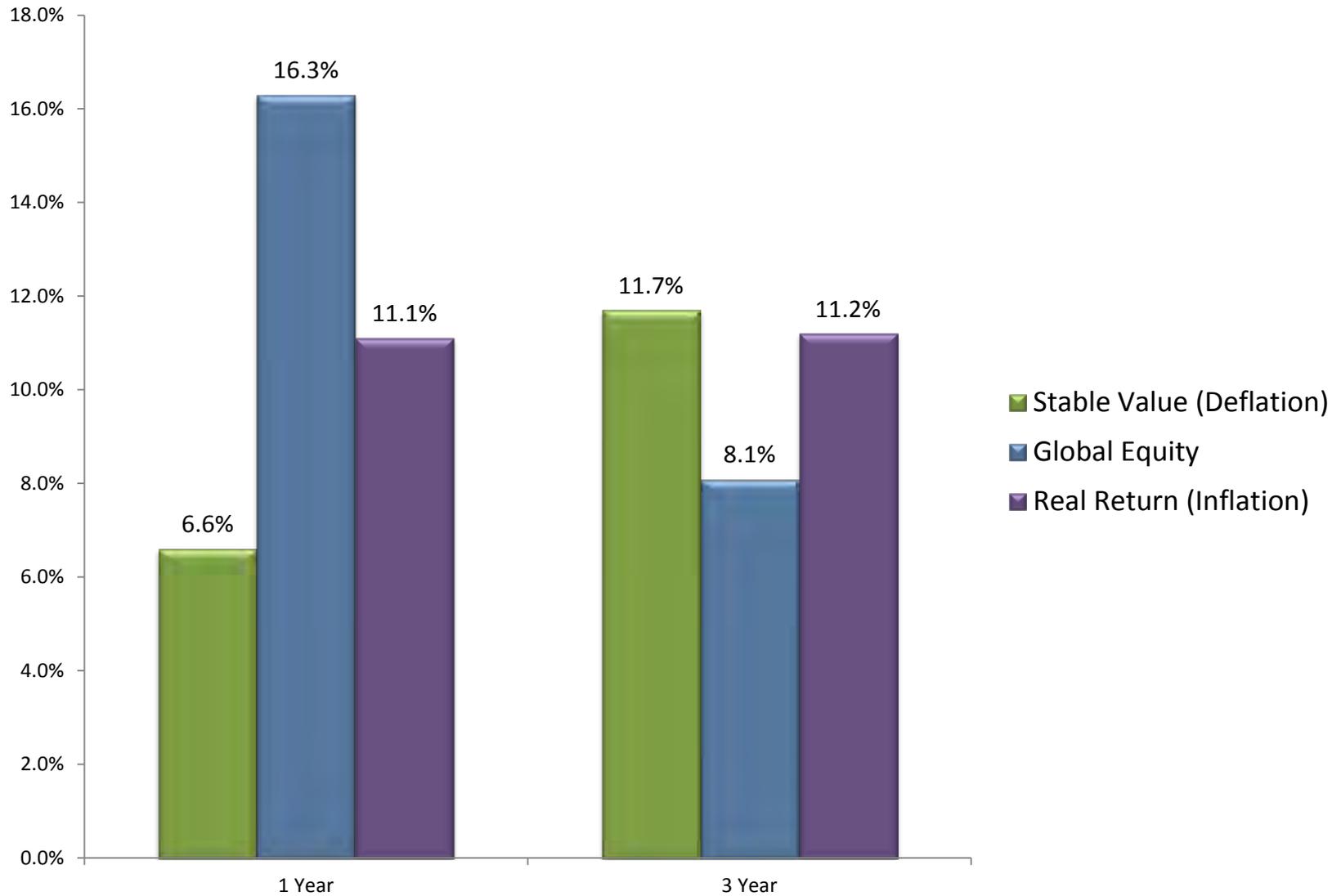
Economic
Conditions:

- GDP surprises are negative
- Inflation surprisingly low with weak demand
- Negative earnings surprises
- Out of line valuations
- Flight to quality

- GDP surprises are positive
- Inflation surprises not dramatic
- Positive earnings surprises
- Reasonable valuations
- Political stability generally exists

- Real GDP growth too low
- Inflation surprises on the high side
- Real earnings too low
- Commodity-oriented demand exceeds supply by an above normal margin

Diversification Effectiveness



GMO vs. JP Morgan Market Return Projections

Current Policy Allocations and Forecasts Used For Most DB Returns In Study					
	Current TRS	Long-Term (JPM)		Intermediate Term (GMO)	
	Policy Allocation (%)	Forecast (%)	Volatility (%)	Forecast (%)	Volatility (%)
Large Cap Value	9.00	9.66	20.75	2.70	20.75
Large Cap Growth	9.00	10.11	20.50	4.10	20.50
Small Cap	2.00	11.21	25.00	1.70	25.00
EAFE Unhedged	15.00	10.42	24.75	8.30	24.75
Emerging Markets	10.00	13.88	30.50	8.90	30.50
Directional Hedge Funds ¹	5.00	8.14	5.90 ⁴	4.30	5.90 ⁴
Private Equity ²	12.00	14.00	17.20	7.90	17.20
Stable Value Hedge Funds ¹	4.00	6.67	4.01 ⁴	3.30	4.01 ⁴
Long Treasuries/US Bonds	13.00	2.66	13.75	0.70	13.75
Cash	1.00	2.00	0.50	2.30	0.50
US Aggregate	0.00	3.07	3.75	2.02	3.75
US TIPS/Index Linked Bonds	5.00	3.74	7.00	0.10	7.00
REITS	0.00	9.90	25.75	0.60	25.75
Commodities	0.00	8.01	18.25	6.00	18.25
Real Assets ²	15.00	8.00	10.40	6.00	10.40
Total	100.0				
Expected Gross Annualized Return⁵		8.43		4.47	

Notes:

¹Hedge fund forecasts are a blend of sub-strategies.

²Private Equity and Real Assets expected returns are based on internal TRS projections. Private Equity volatility is based on 10 year annualized benchmark volatility (SSPEI) and Real Assets volatility is based on since inception annualized benchmark volatility (NCREIF ODCE).

³GMO does not provide forecasts for Hedge Funds, Real Assets, Commodities and the US Aggregate Bond Index. We assume the following intermediate-term expected returns: Directional Hedge Funds are Cash plus 2%. Private Equity is the average of Large Cap Value and Growth plus 4.5%. Stable Value Hedge funds are Cash plus 1%. US Aggregate is the current yield on the index. Commodities and Real Assets are reduced by 2% from JPM forecasts.

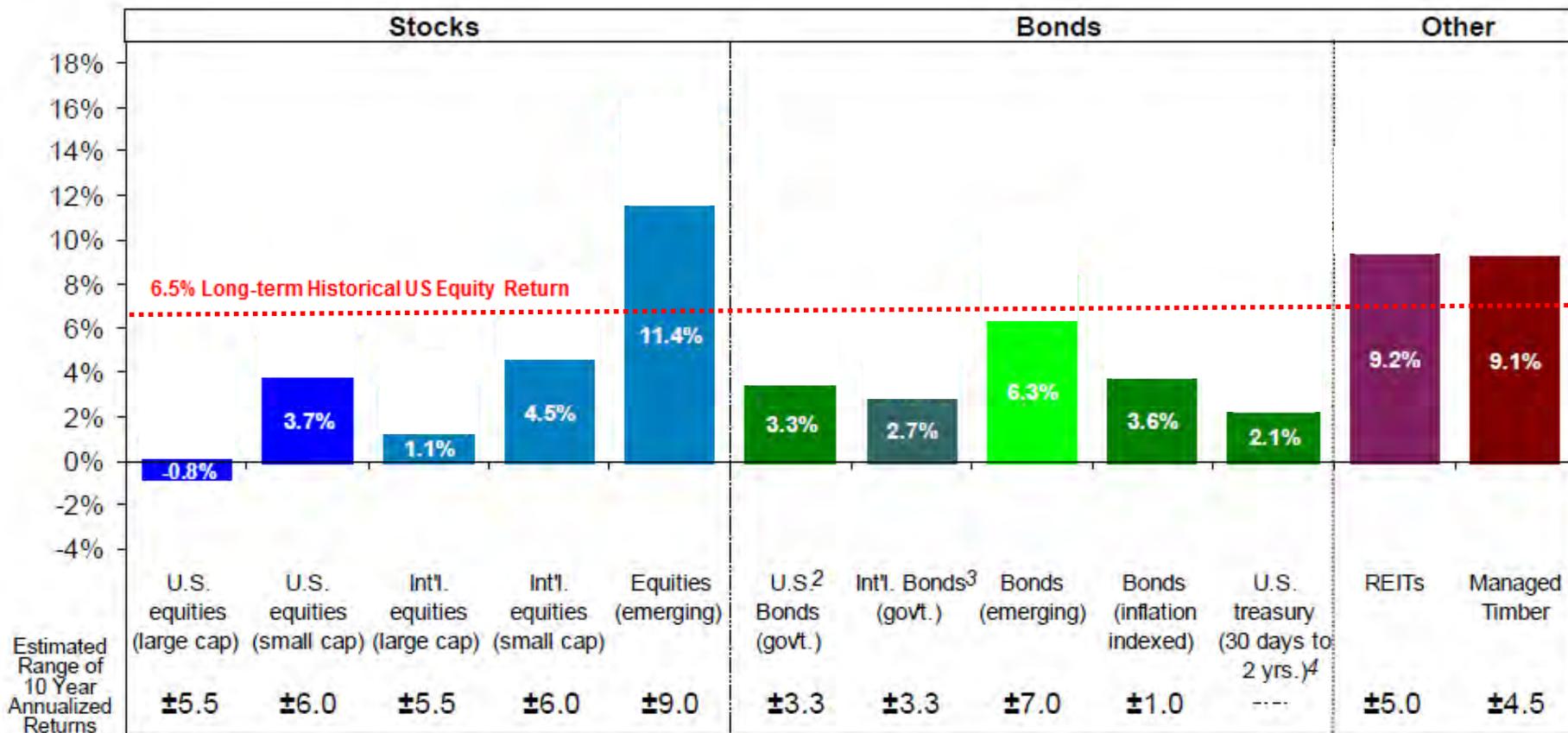
⁴Directional Hedge Fund volatility estimated from monthly return data for the HFRI FOF Composite Index from February 1990 to April 2012. Stable Value Hedge Fund volatility estimated from monthly return data for the HFRI FOF Conservative Index for the same period.

⁵Return forecast includes an assumption of 0.15% of alpha primarily from private asset classes. Target alpha for the current policy allocation is 1%.



GMO Asset Class Return Forecast

As of January 1, 2001



The chart represents real return forecasts¹ for several asset classes and an estimate of value expected to be added from active management. These forecasts do not represent guarantees of future performance and this information is not intended as a forecast of the performance of any GMO mutual fund.

¹ Long-term inflation assumption: 2.2% per year.

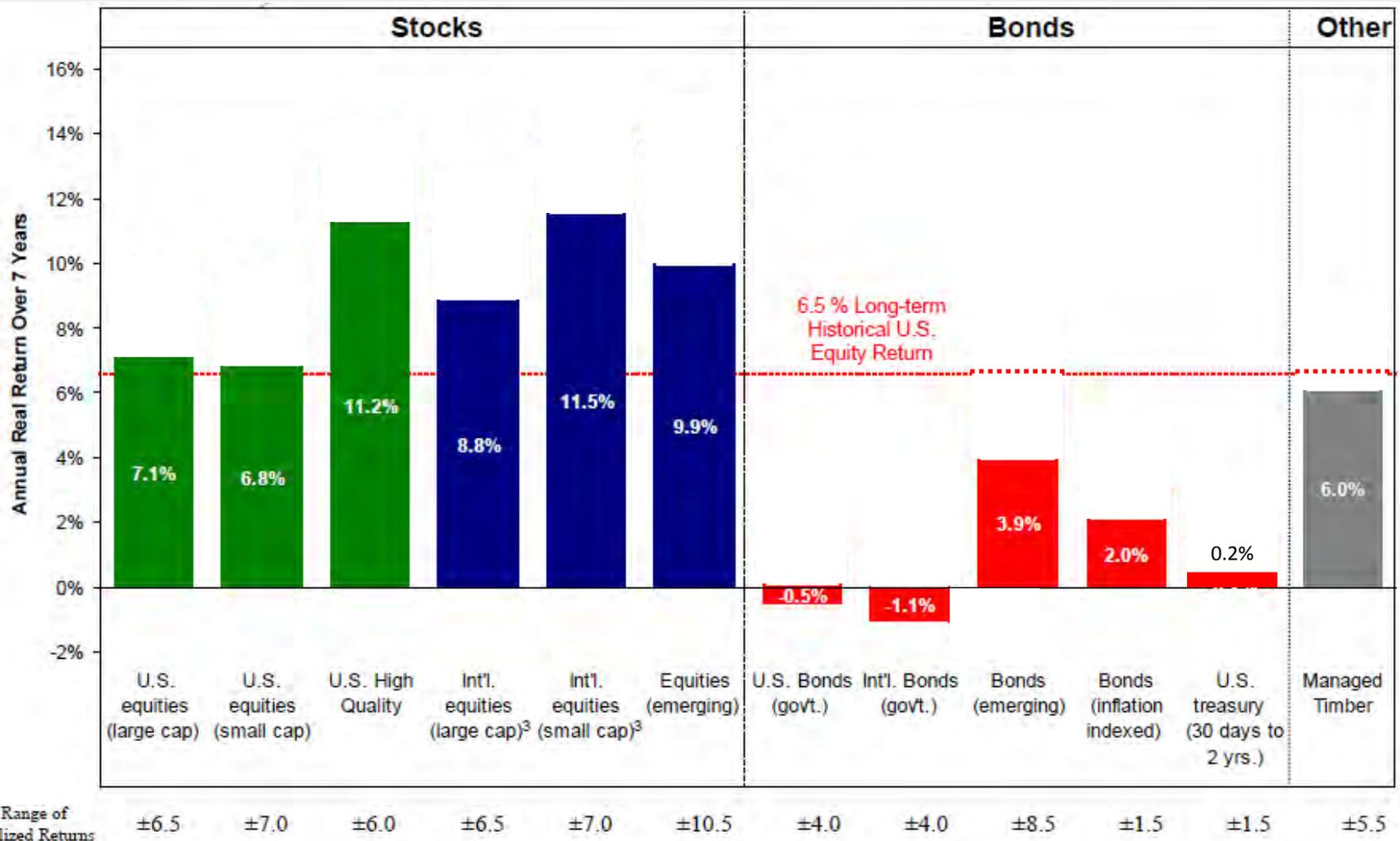
² Bond with same duration as Lehman Brothers Government Bond Index.

³ Bond with same duration as J.P. Morgan Non-U.S. Government Bond Index. Forecast is for unhedged international bond returns. Hedged is 0.2% lower.



GMO Asset Class Return Forecast

As of December 31, 2008



*The chart represents real return forecasts¹ for several asset classes and an estimate of value expected to be added from active management. These forecasts are forward-looking statements based upon the reasonable beliefs of GMO and are not a guarantee of future performance. Actual results may differ materially from the forecasts above.

¹ Long-term inflation assumption: 2.5% per year.

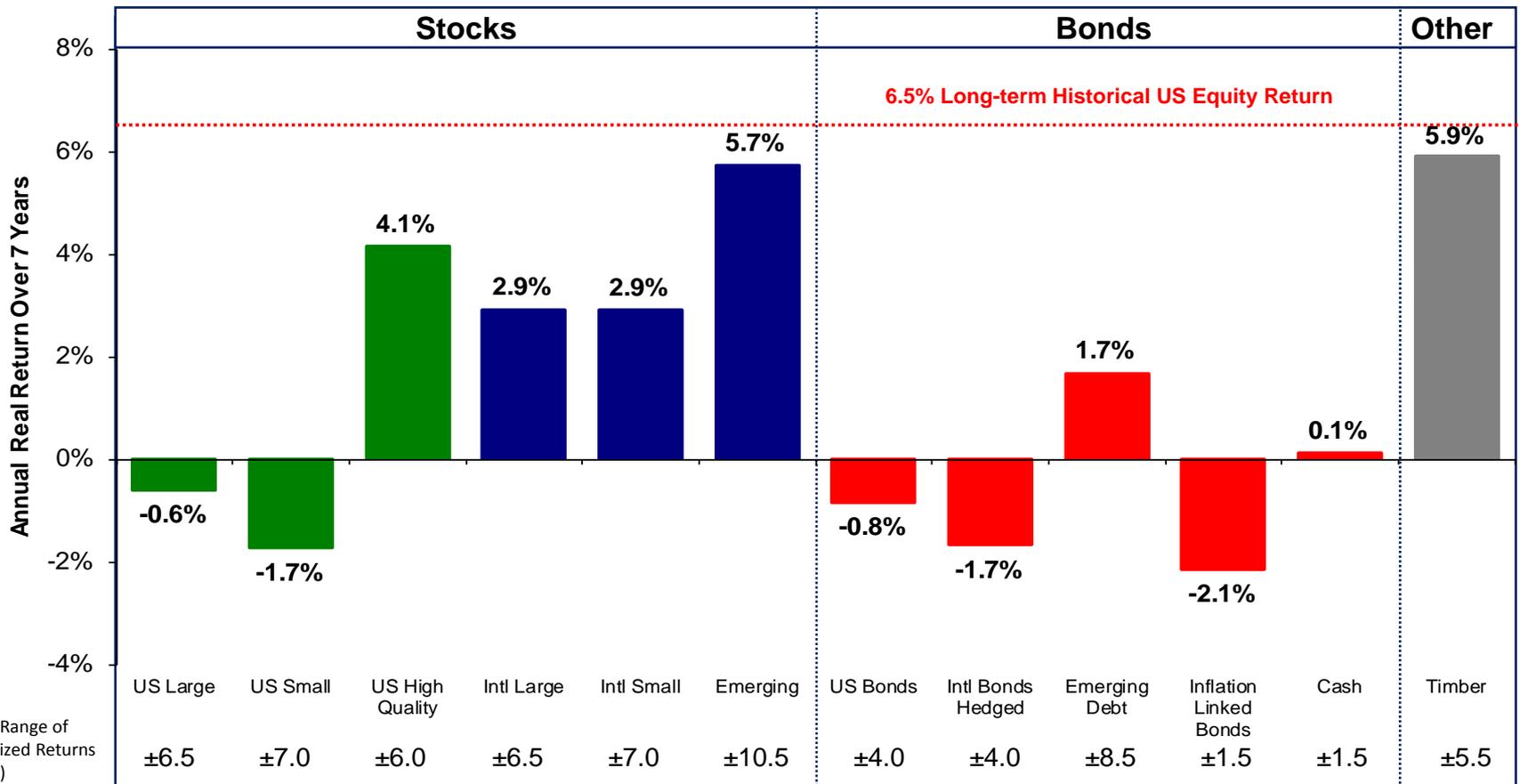
³ Return forecasts for international equities are ex-Japan.



Source: GMO

GMO 7-Year Asset Class Return Forecasts

As of February 28, 2013



*The chart represents real return forecasts for several asset classes and not for any GMO fund or strategy. These forecasts are forward-looking statements based upon the reasonable beliefs of GMO and are not a guarantee of future performance. Forward-looking statements speak only as of the date they are made, and GMO assumes no duty to and does not undertake to update forward-looking statements. Forward-looking statements are subject to numerous assumptions, risks, and uncertainties, which change over time. Actual results may differ materially from those anticipated in forward-looking statements. US inflation is assumed to mean revert to long-term inflation of 2.2% over 15 years.



Source: GMO

Market Expectations & Economic Activity

Market Expectations at the Start of the Decade										
	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010
Discounted Growth	-8.2%	-0.7%	-3.7%	-7.4%	0.3%	3.0%	2.0%	4.3%	6.0%	1.8%
Break-Even Inflation	5.1%	-1.0%	-1.6%	0.8%	0.5%	4.2%	8.1%	4.4%	2.2%	2.2%

Economic Activity and Interest Rates, Average over Each Decade									
	1920's	1930's	1940's	1950's	1960's	1970's	1980's	1990's	2000's
Real Growth	2.7%	1.8%	5.4%	4.0%	4.3%	3.3%	3.1%	3.2%	1.8%
Bill Yield	3.8%	0.5%	0.5%	2.0%	4.1%	6.3%	8.8%	4.8%	3.2%
Bond Yield	4.1%	3.0%	2.3%	3.0%	4.7%	7.6%	10.9%	6.8%	4.5%
Unemployment	4.3%	16.5%	5.1%	4.5%	4.8%	6.2%	7.3%	5.8%	5.5%
Inflation	-1.3%	-2.0%	5.5%	2.2%	2.5%	7.4%	4.9%	2.9%	2.5%

What Markets Are Discounting

Lowest Implied Growth Rates for 100 Years

Real Long-Term Growth Rate Implied By Equity Market	
Pre-crisis	3%
Early 2011	2%
Today	Negative

- Last 18 months: corporate earnings up 20%, bond yields down 1.5%
- Absent the drop in rates, this change in discounted growth rate would equate to a 35% price drop for stocks



Source: Bridgewater

Asset Class Returns

Asset Class Nominal Returns by Decade

	1920's	1930's	1940's	1950's	1960's	1970's	1980's	1990's	2000's
Stocks	17%	-2%	10%	18%	8%	7%	17%	18%	-2%
Bonds (at eq vol)	22%	15%	8%	-1%	4%	10%	14%	10%	12%
Gold	0%	5%	1%	-1%	0%	31%	-3%	-4%	11%
Silver	-9%	-2%	8%	2%	7%	27%	-12%	0%	10%
Commodities	-5%	-4%	6%	0%	2%	10%	-2%	-1%	9%

Starting and ending points of decades are smoothed

Asset Class Real Returns by Decade

	1920's	1930's	1940's	1950's	1960's	1970's	1980's	1990's	2000's
Stocks	18%	0%	4%	16%	5%	-1%	12%	15%	-4%
Bonds (at eq vol)	24%	17%	2%	-3%	1%	2%	9%	7%	9%
Gold	1%	7%	-4%	-3%	-2%	22%	-8%	-6%	8%
Silver	-8%	0%	2%	0%	4%	18%	-17%	-3%	7%
Commodities	-4%	-2%	0%	-2%	-1%	3%	-6%	-4%	6%

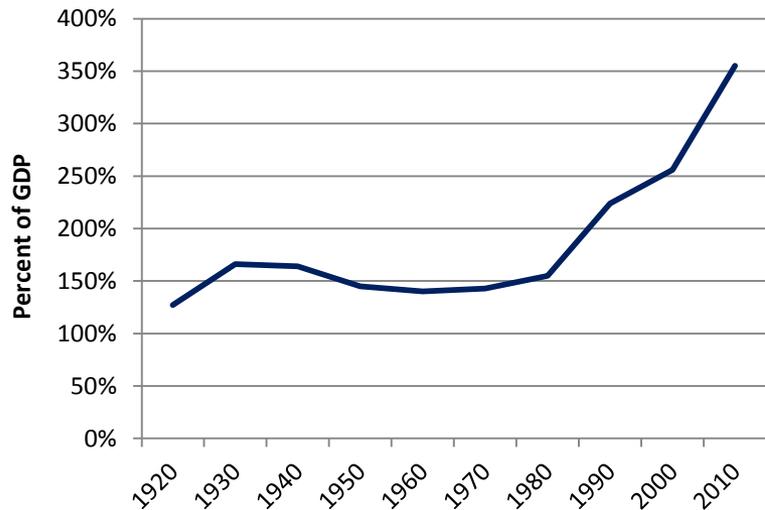
Starting and ending points of decades are smoothed

Money and Interest Expense

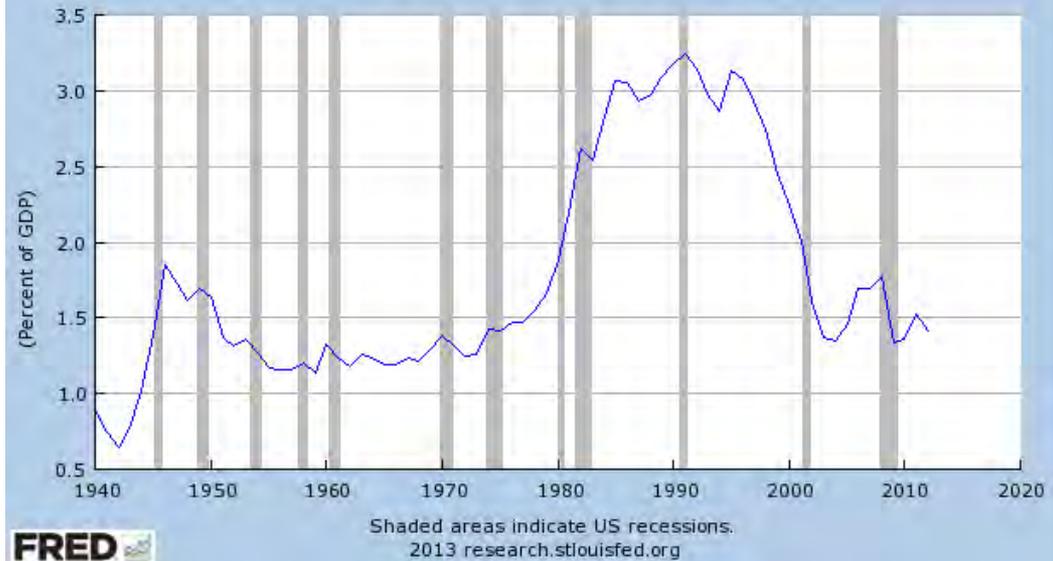
Money and Credit at Beginning of Each Decade

	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010
Total Debt / GDP	127%	166%	164%	145%	140%	143%	155%	224%	256%	355%
Money / GDP	8%	7%	21%	16%	10%	8%	6%	5%	6%	14%

Total Debt / GDP

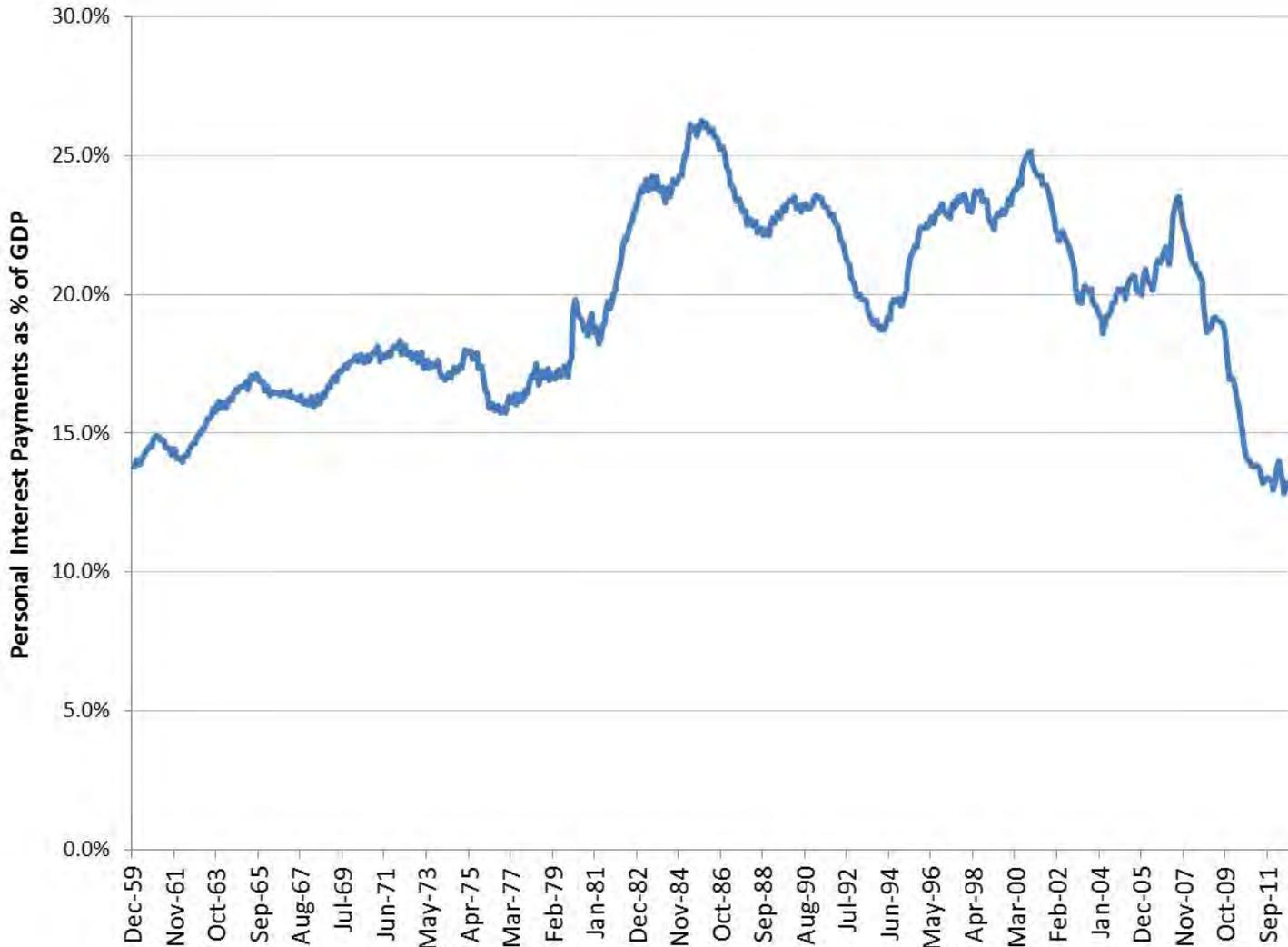


Federal Outlays: Interest as Percent of Gross Domestic Product (FYOIGDA188S)
Source: Federal Reserve Bank of St. Louis



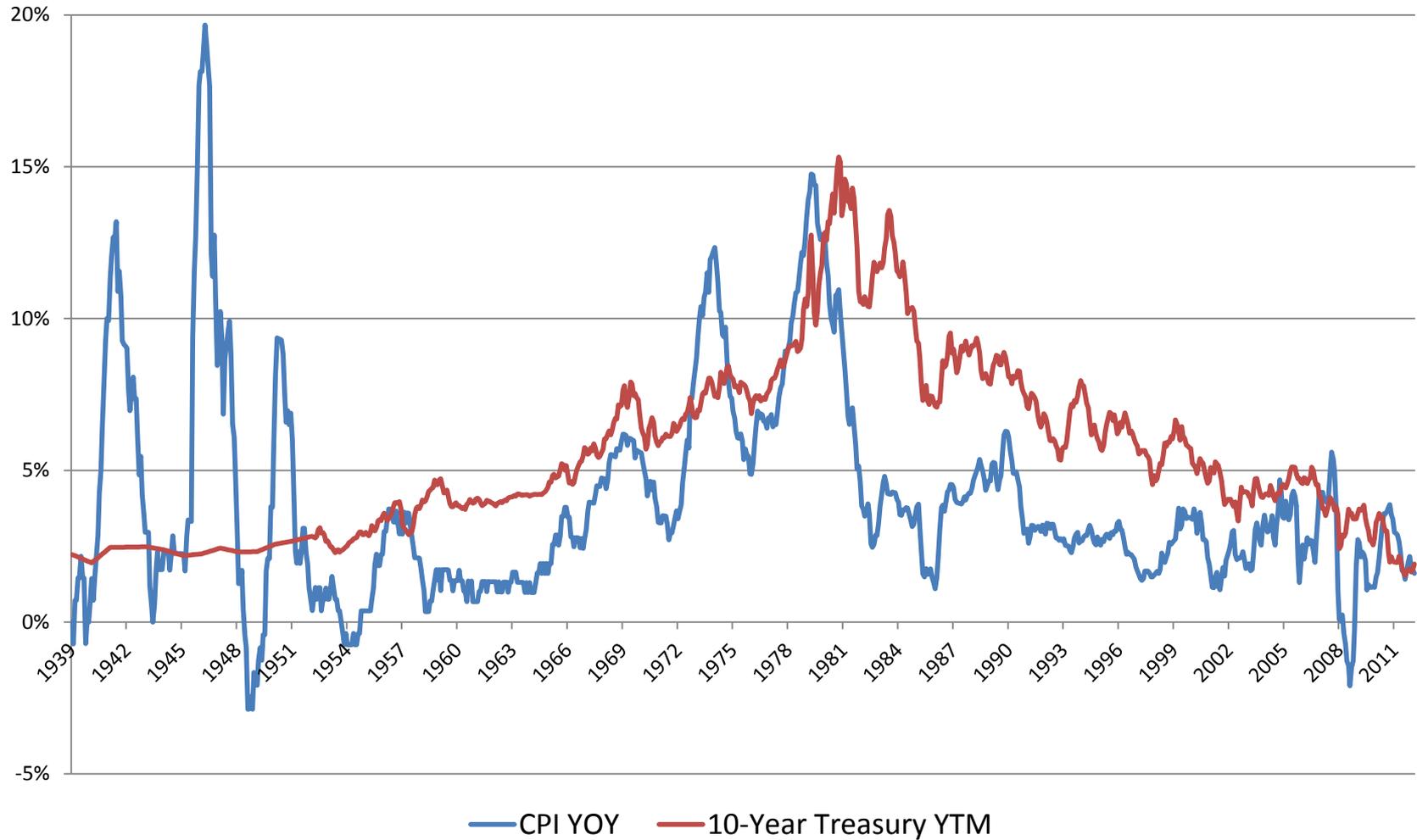
Interest Expense

Personal



Source: Bloomberg

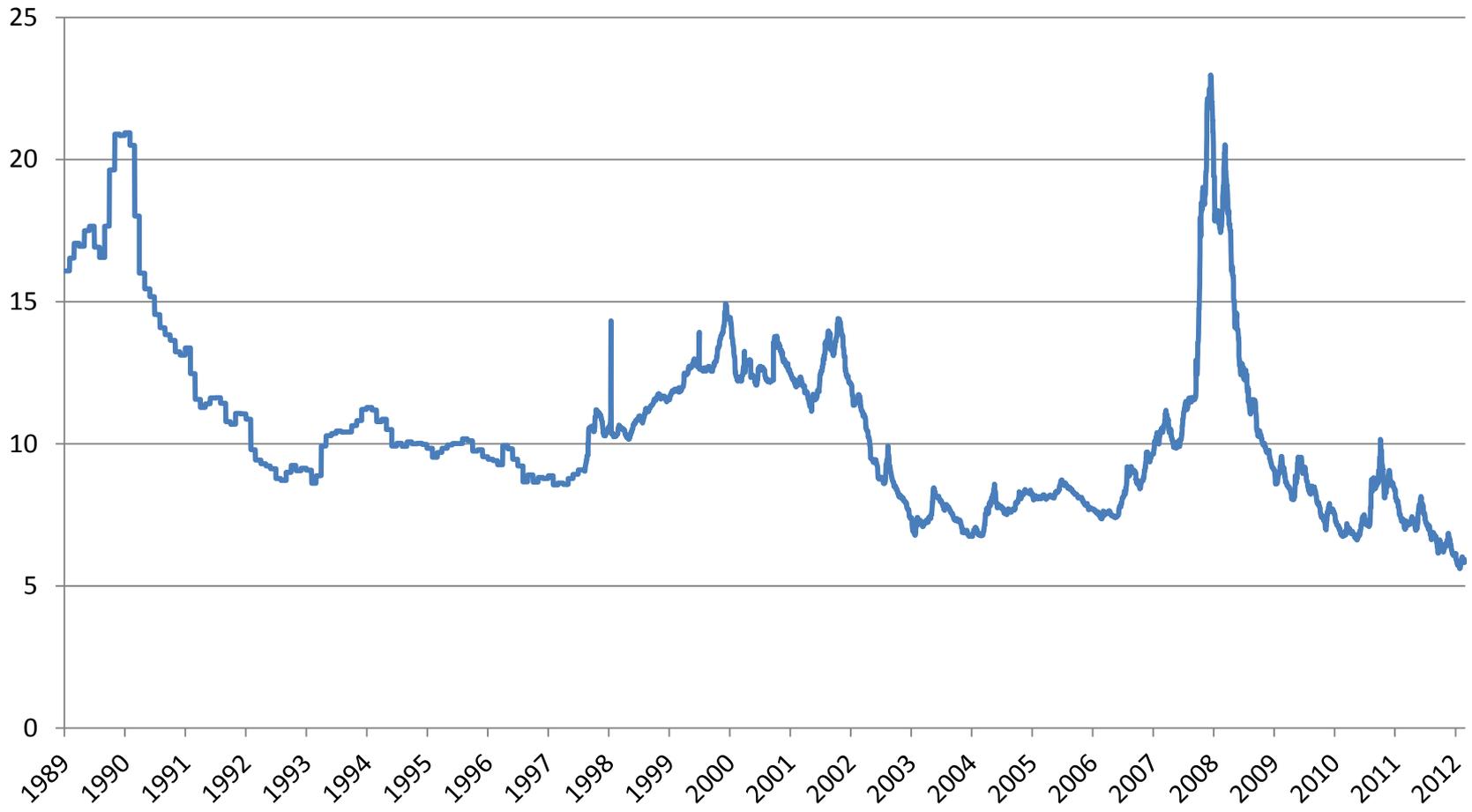
Inflation and Treasury Yield



Source: Bloomberg, Robert Shiller

High Yield

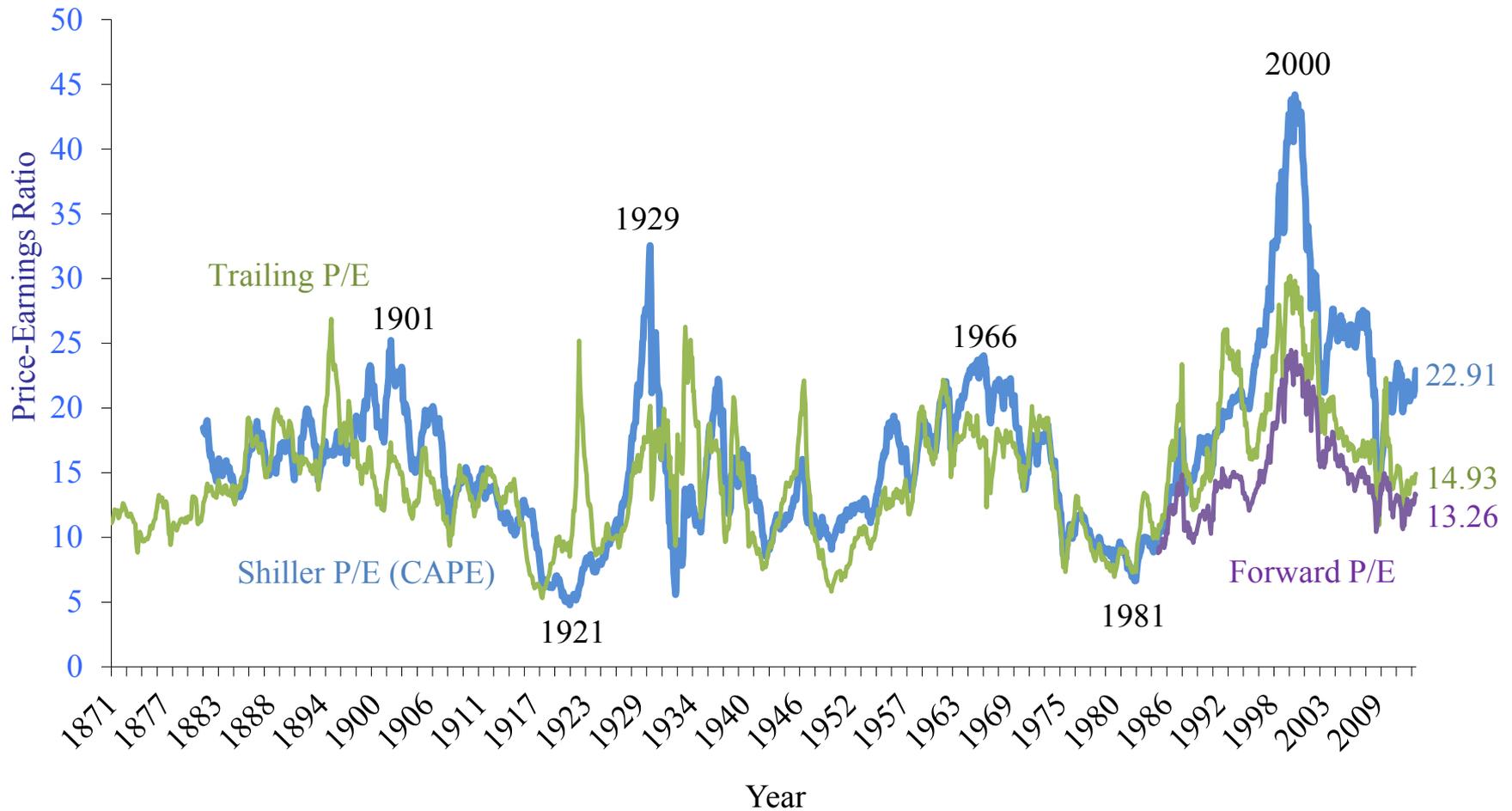
High Yield YTM



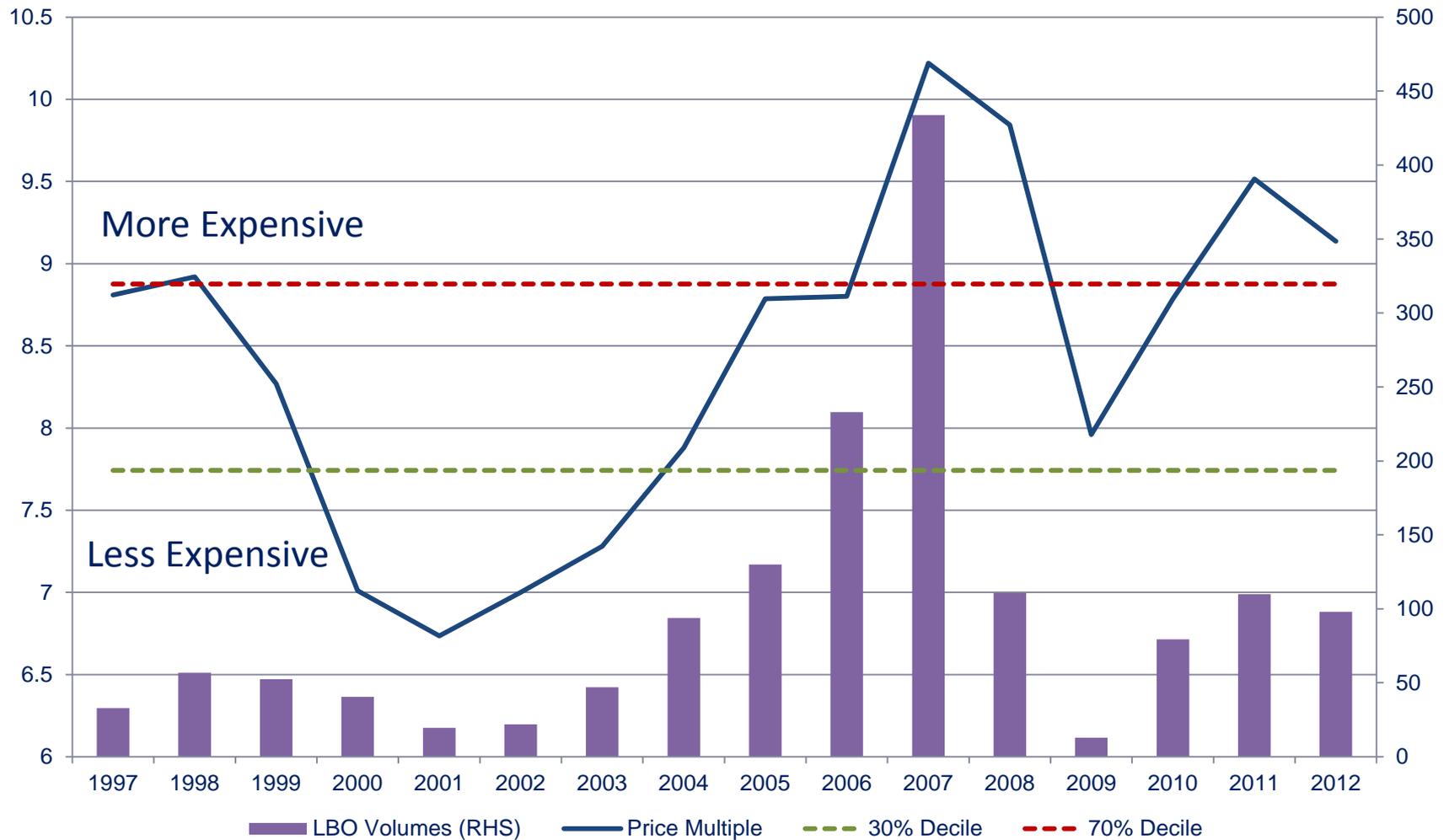
Source: Bloomberg



Shiller P/E Ratio



Private Equity Multiples and Volume

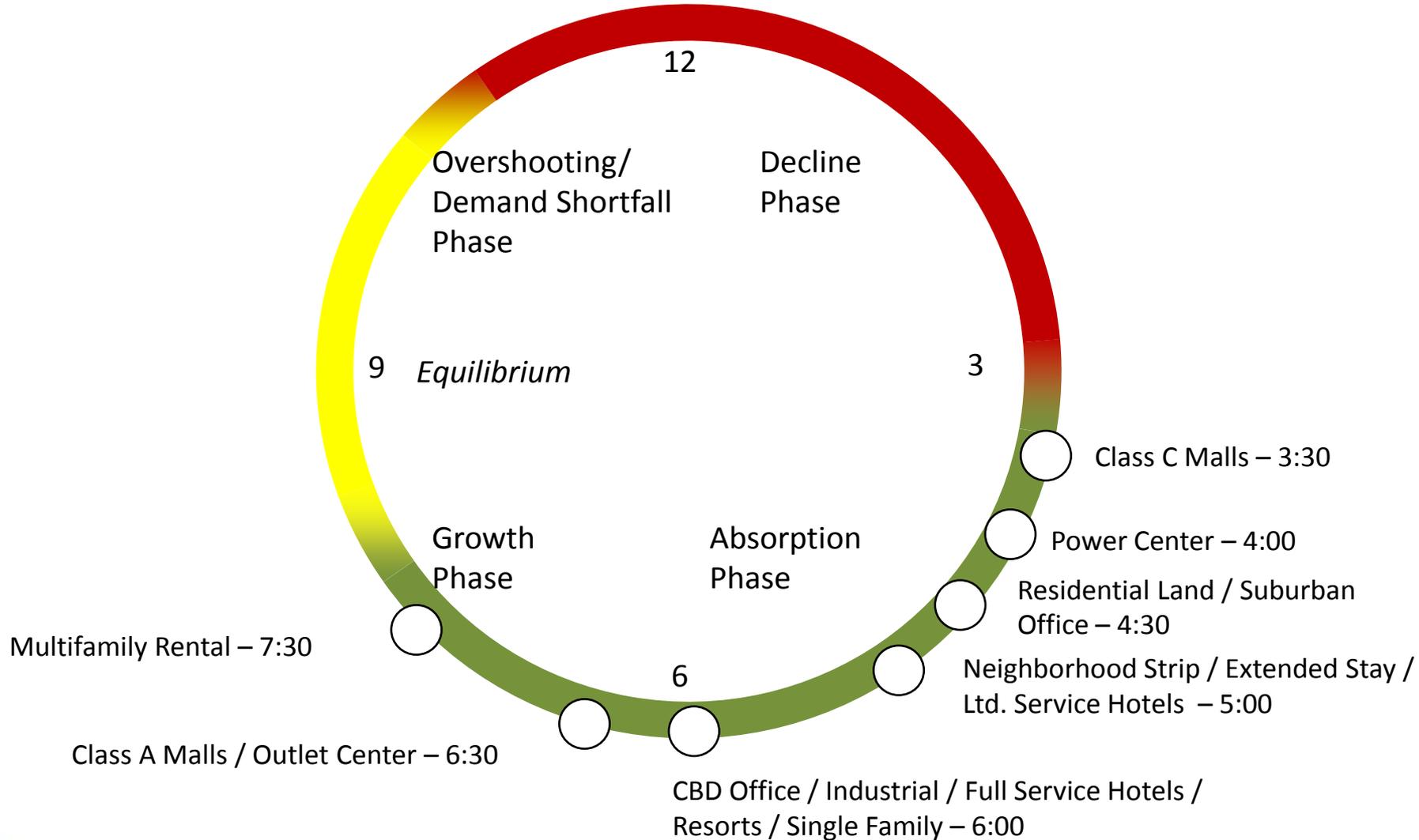


Source: S&P M&A Stats, US Buyouts >\$500mm

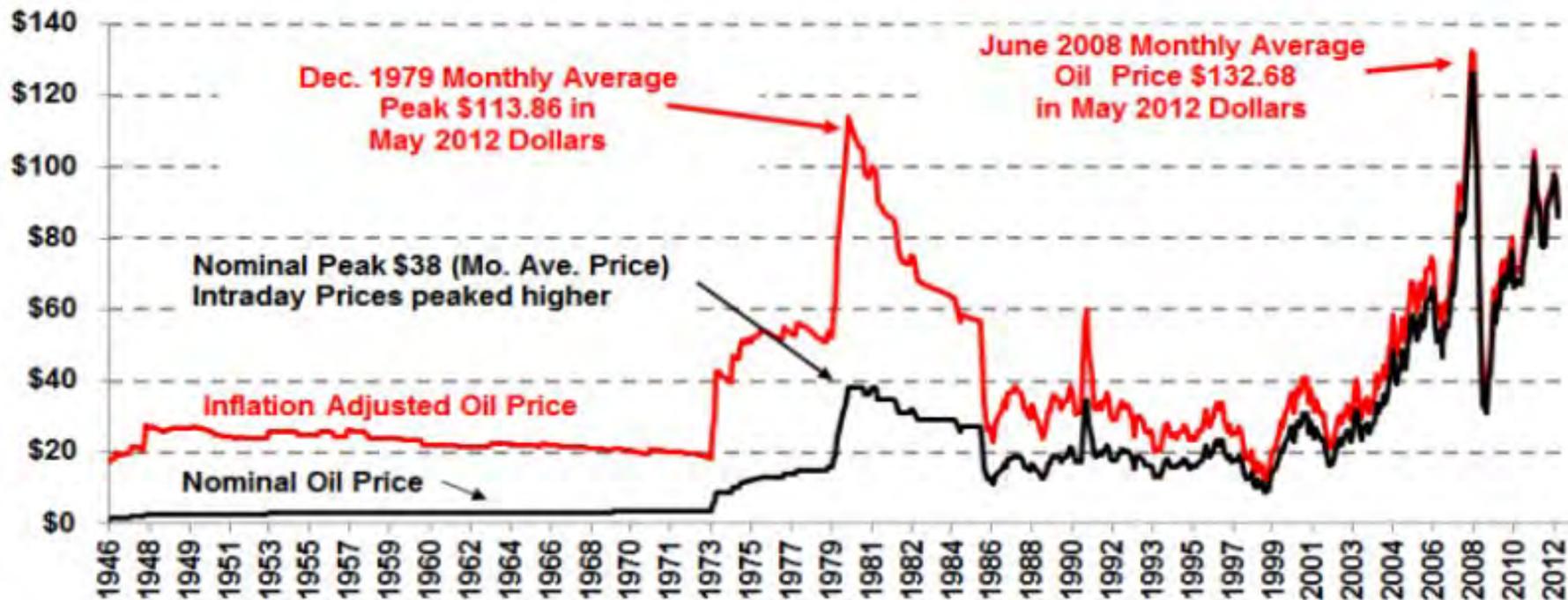


Real Estate Cycle Clock - Fundamentals

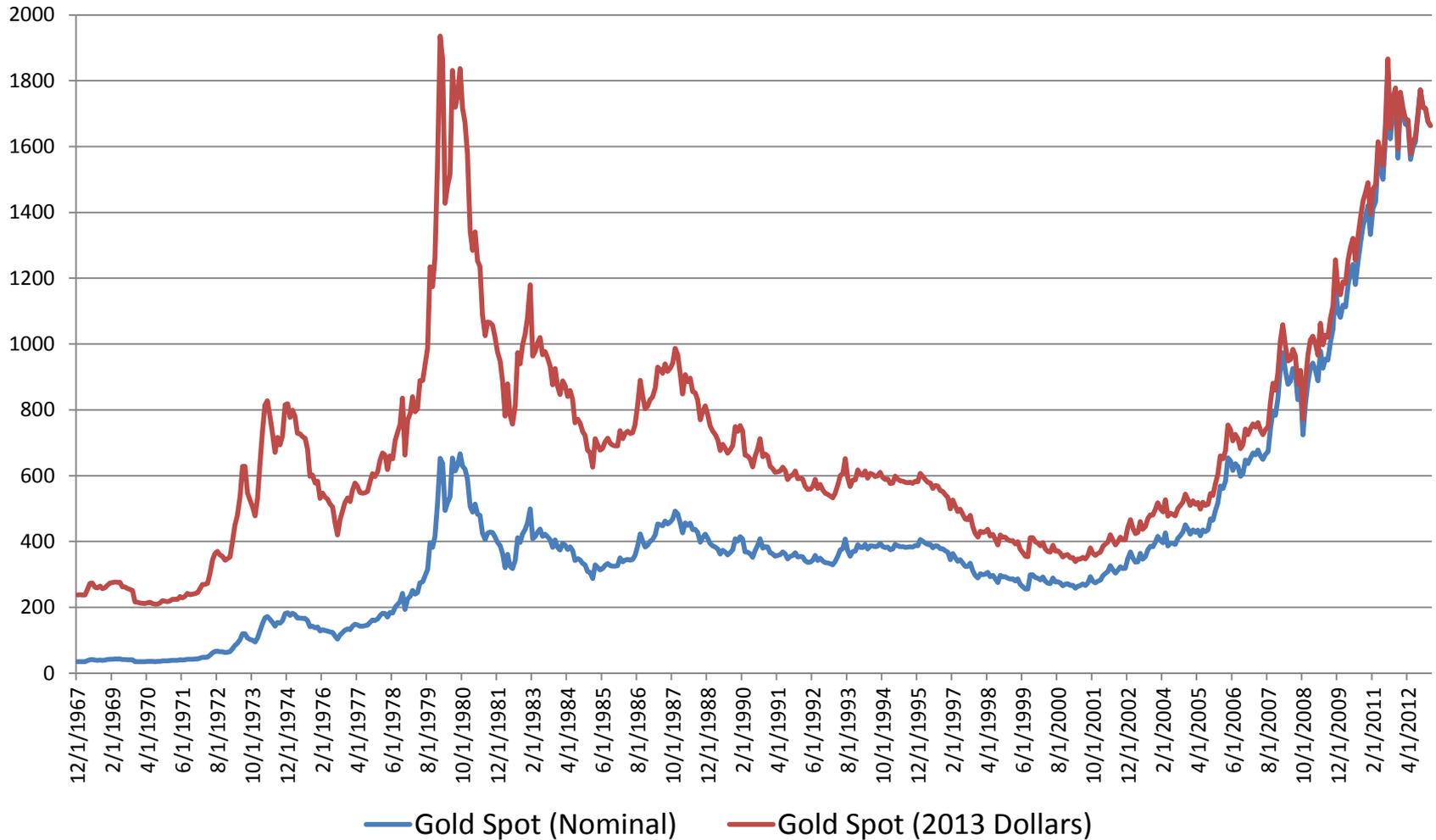
United States as of March 2013



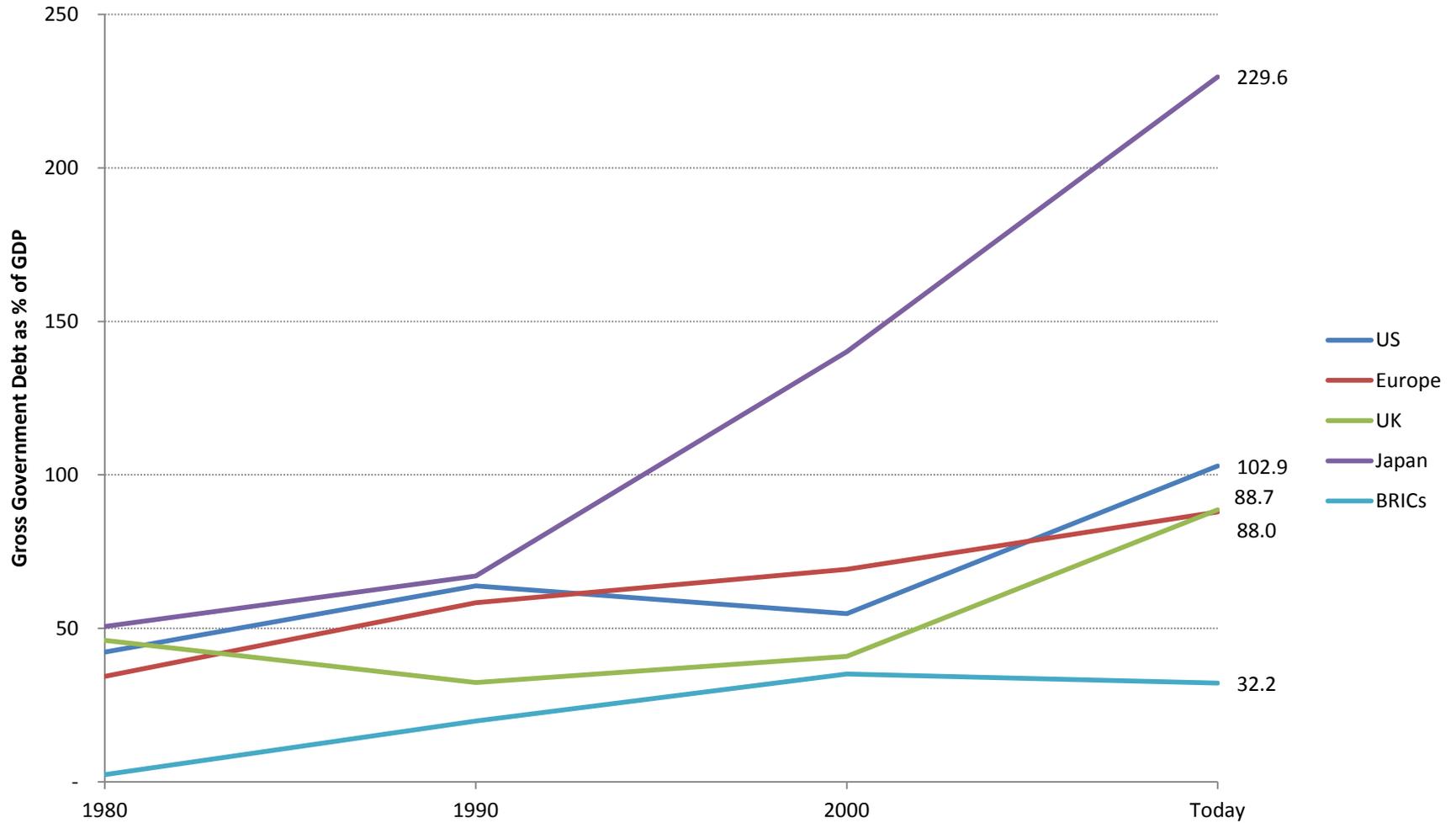
Oil Prices



Gold Prices



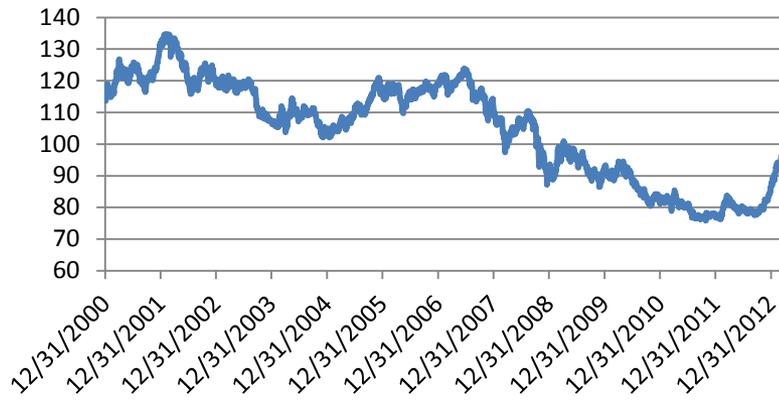
Global Debt



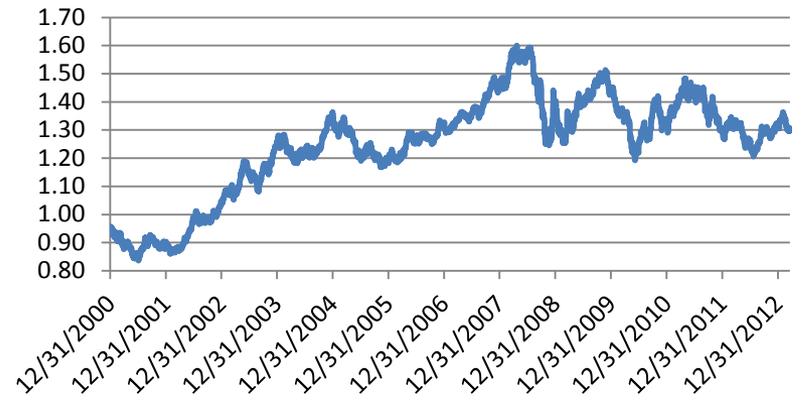
Source: Bloomberg

Currencies

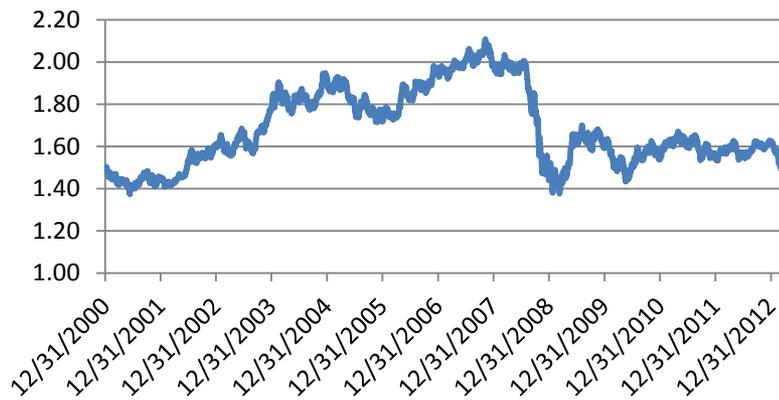
JPY



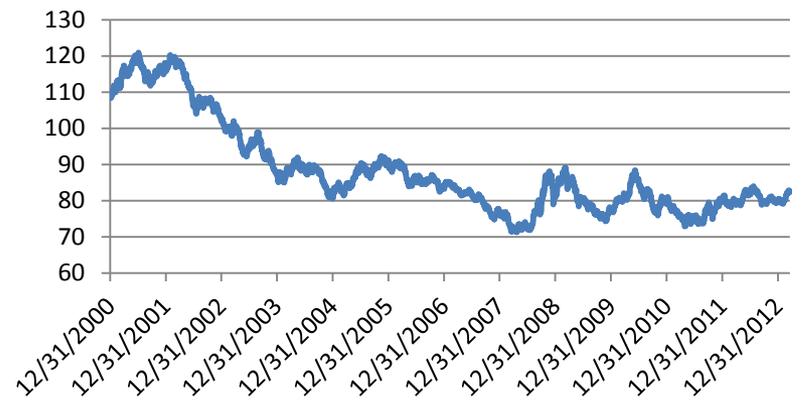
EUR



GBP



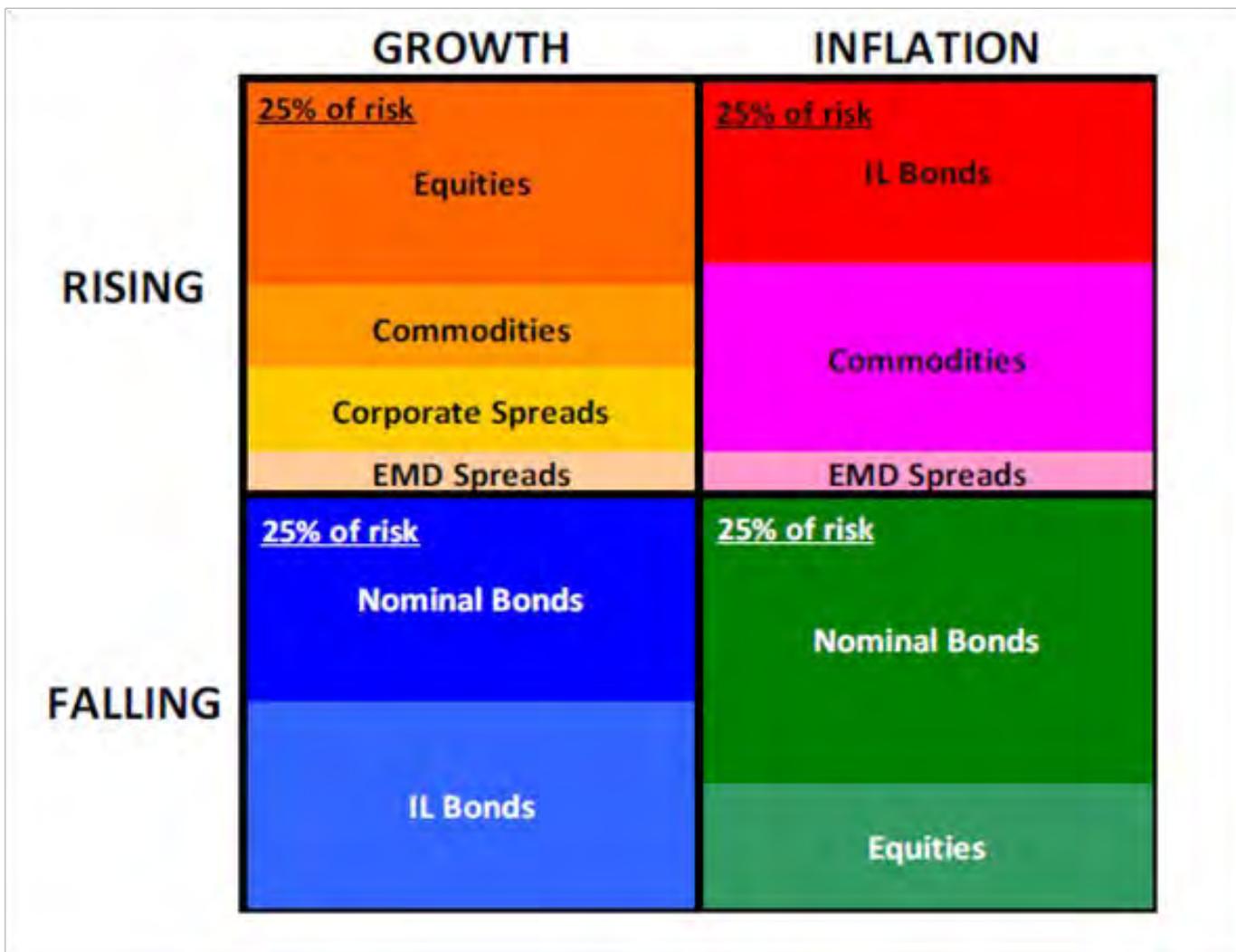
Trade-Weighted USD



Source: Bloomberg

Risk Parity

Another Way

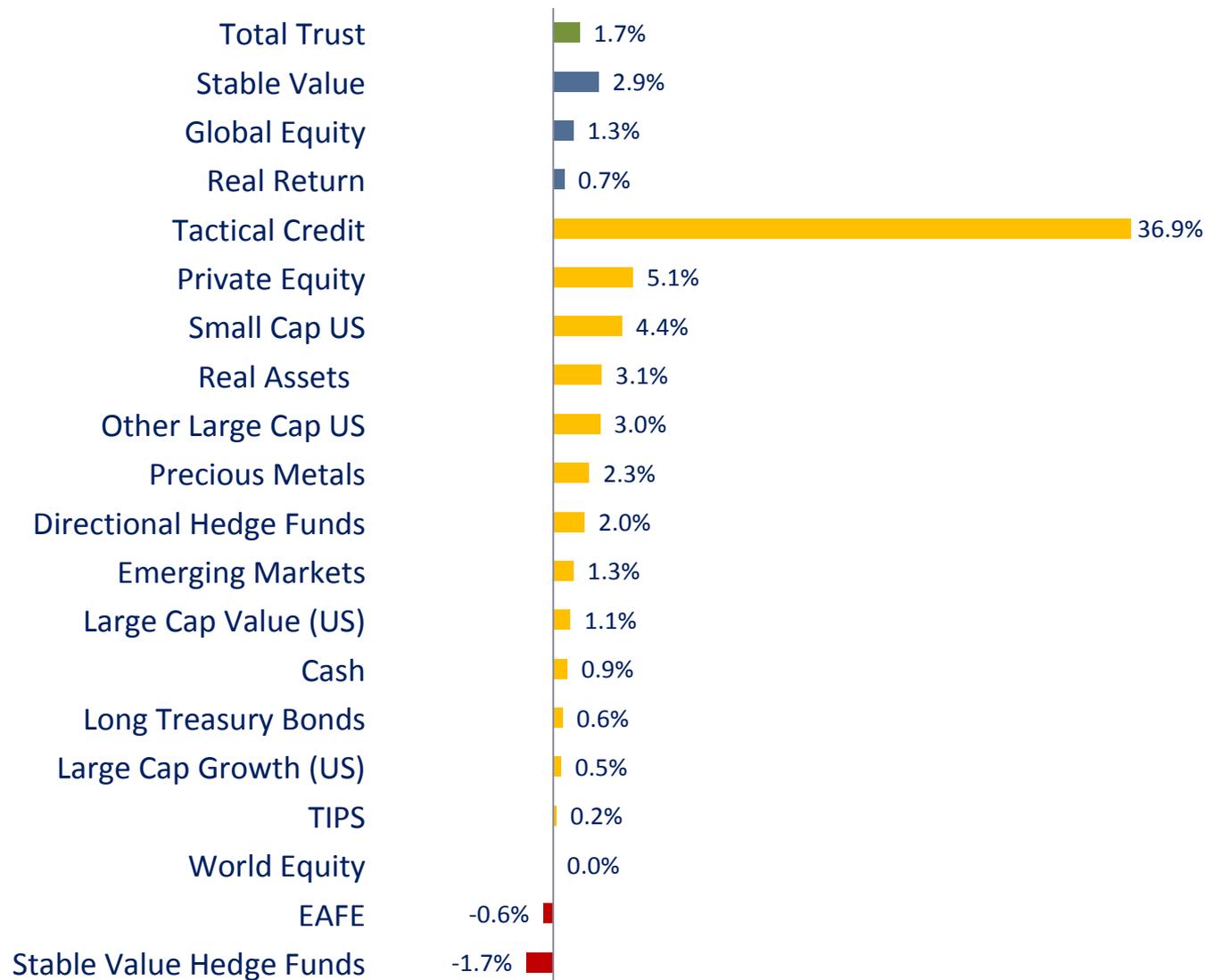


Right Plan

ALPHA STRUCTURE

Value Added Above Market Returns in 2012

Internal Plus External Management



Principal Investments Rationale (Private Transactions)

- The Principal Investment Program has been a source of Alpha for TRS:
 - Principal Investments provide lower fees and costs
 - Principal Investments allow TRS the ability to better manage its portfolio and exposures
 - No two investments are ever the same
 - Private Equity has generated alpha of 9.0% against the SSPEI¹ Benchmark
 - Real Assets has generated alpha of 10.1% against the NCREIF – ODCE Fund Index

The Principal Investment Program

Texas Way in Principal Investments

- The team continues to see a strong pipeline of opportunities
 - Current managers
 - Potential managers
 - Investment bankers and brokers
- Execution has built the Texas Way and generates additional deal flow

Accomplishments

- Achieved goal of 20% of portfolio for Real Assets and – moving toward 20% goal for Private Equity
- Alpha generator for the portfolio

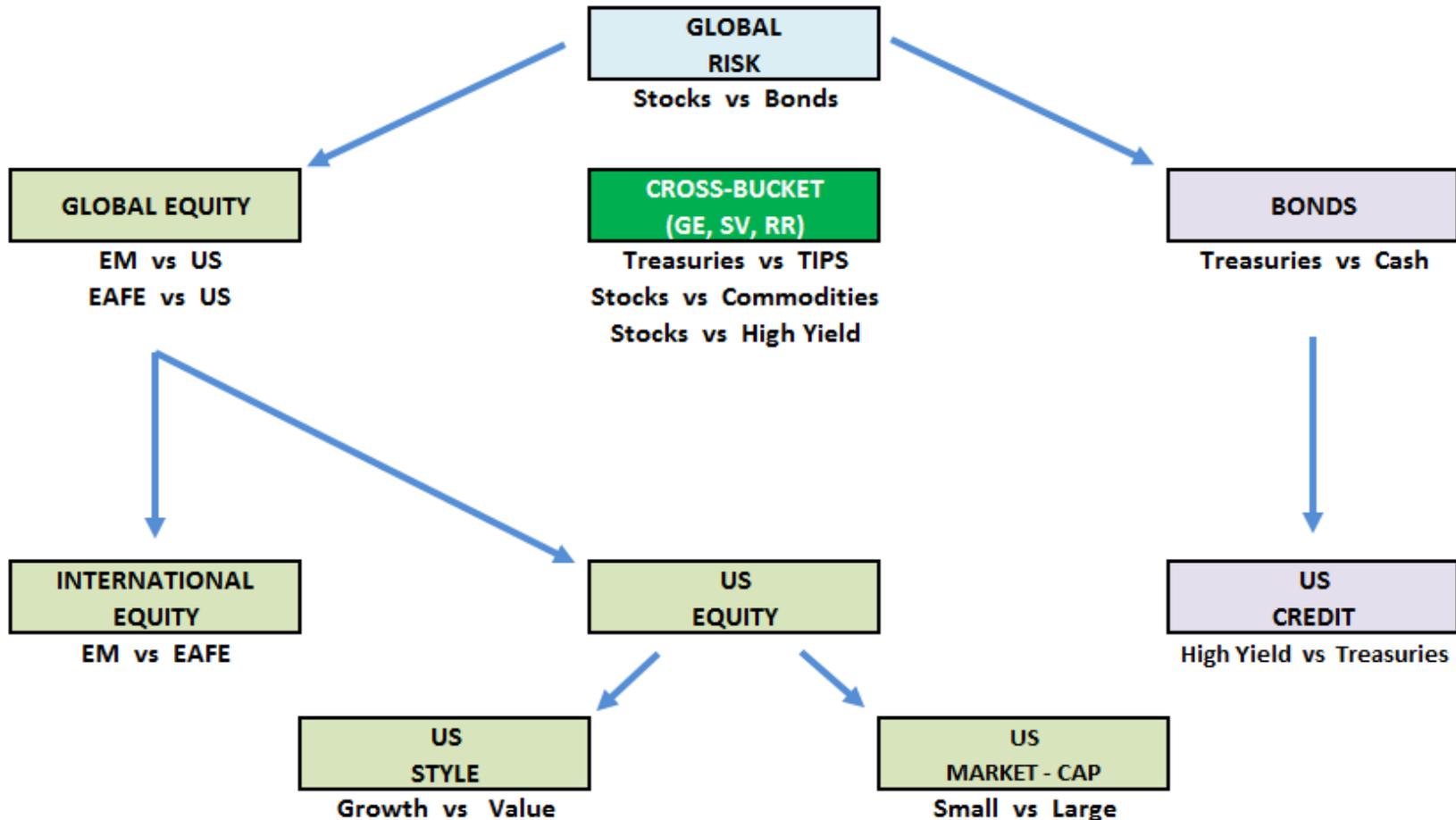
Going Forward

- Private Equity / Real Asset program provides TRS flexibility on structure and size
- Expect a mix of sidecars, traditional co-investments, and tactical single-asset or portfolio opportunities to materialize
- For Private Equity: Co-underwritten / lead underwriter will be the most competitive strategies to pursue .
- For Real Assets: Sidecars will be the most prevalent vehicle in order to control portfolio.
 - Example: 50% of commitment to fund and 50% to sidecar

¹ Since Inception IRR
Source: State Street Bank

Tactical Asset Allocation

Decision Tree



- Eleven Asset Class Pair Models
- Factor-based, updated monthly

Stock Market Cycles

United States

US: Cycles Based on S&P 500 Stock Market Levels							
Previous Peak	Trough	Quarters in Recession	Recovery	Quarters in Recovery	Expansion	Quarters in Expansion	Distance Past Prior Market Peak (Cum.)
Q2 1948	Q2 1949	4	Q4 1949	2	Q4 1952	12	59%
Q4 1952	Q3 1953	3	Q1 1954	2	Q1 1956	8	82%
Q1 1956	Q4 1957	7	Q3 1958	3	Q4 1961	13	48%
Q4 1961	Q2 1962	2	Q3 1963	5	Q4 1965	9	29%
Q4 1965	Q3 1966	3	Q3 1967	4	Q4 1967	1	4%
Q4 1967	Q1 1968	1	Q2 1968	1	Q4 1968	2	8%
Q4 1968	Q2 1970	6	N/A--recovered 97% of prior peak		-	-	-
Q1 1971	Q3 1971	2	Q4 1971	1	Q4 1972	4	18%
Q4 1972	Q3 1974	7	N/A--recovered 85% of prior peak		-	-	-
Q2 1977	Q1 1978	3	Q3 1978	2	Q3 1979	4	9%
Q3 1979	Q1 1980	2	Q2 1980	1	Q1 1981	3	24%
Q1 1981	Q2 1982	5	Q4 1982	2	Q2 1983	2	24%
Q2 1983	Q2 1984	4	Q1 1985	3	Q4 1993	35	177%
Q4 1993	Q2 1994	2	Q1 1995	3	Q1 2000	20	221%
Q1 2000	Q1 2003	12	Q2 2007	17	Q3 2007	1	2%
Q3 2007	Q1 2009	6	Q1 2013 recovered prior quarterly peak on 2/19/2013	16	Q2 2013	?	?
Average		4		4		9	54%
Median		4		3		4	24%

*Recession defined as 2 consecutive quarters negative stock market growth
Average, Medians and Quartiles presented include only complete cycles.

Dislocations

High Yield



S&P 500 P/E



Source: Bloomberg



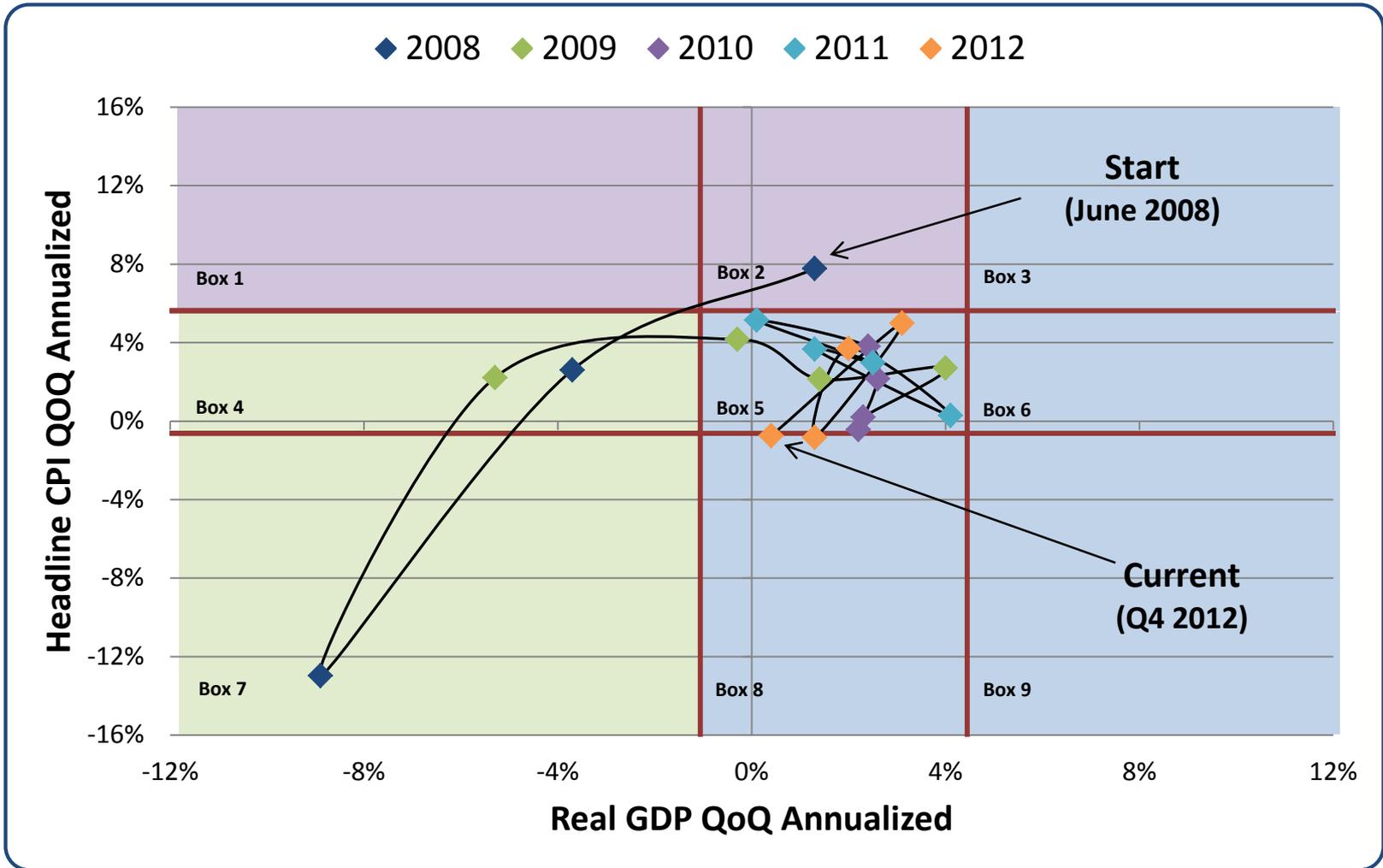
Right Plan

RISK STRUCTURE

Risk Boundaries

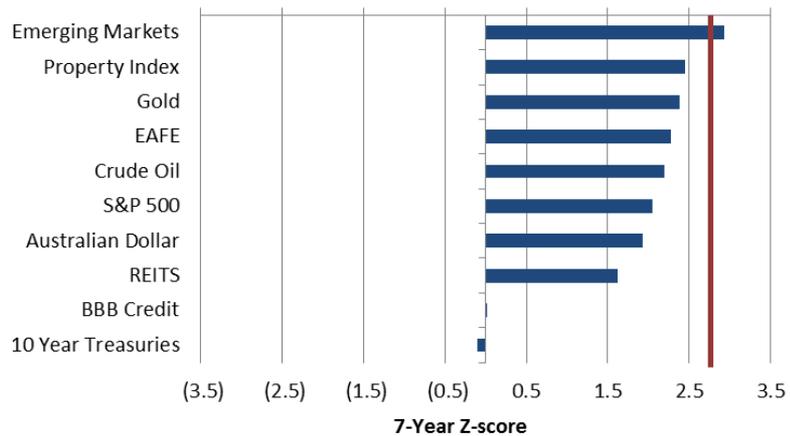
Asset Class	Benchmark	Bloomberg Ticker	Minimum Range	Maximum Range	Target
Global Equity					
US Large Cap	MSCI USA Standard	GDDUUS	13%	23%	18%
US Small Cap	MSCI USA Small Cap	GCUDUS	0%	7%	2%
Non-US Developed	MSCI EAFE and Canada	NDDUEC	10%	20%	15%
Emerging Markets	MSCI EM	NDUEEGF	5%	15%	10%
Directional 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%	USCOTRO3 (plus 2%)	0%	20%	0%
Stable Value Hedge Funds	HFRI Fund of Funds Conservative	HRFIFOFC	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%

US Policy Signal Chart

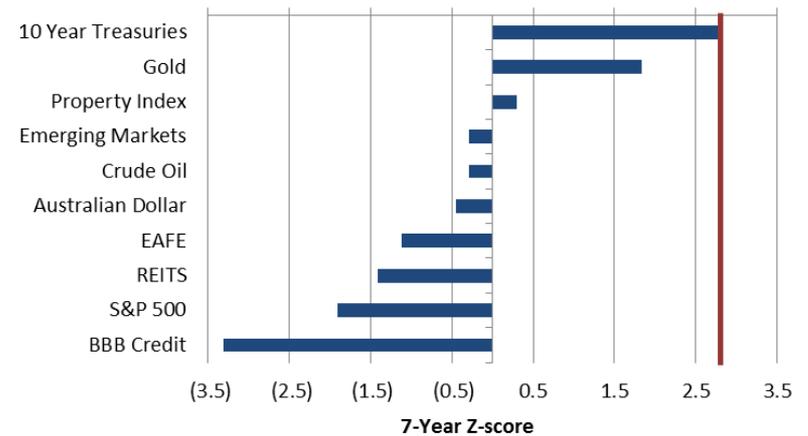


Bubble Monitor

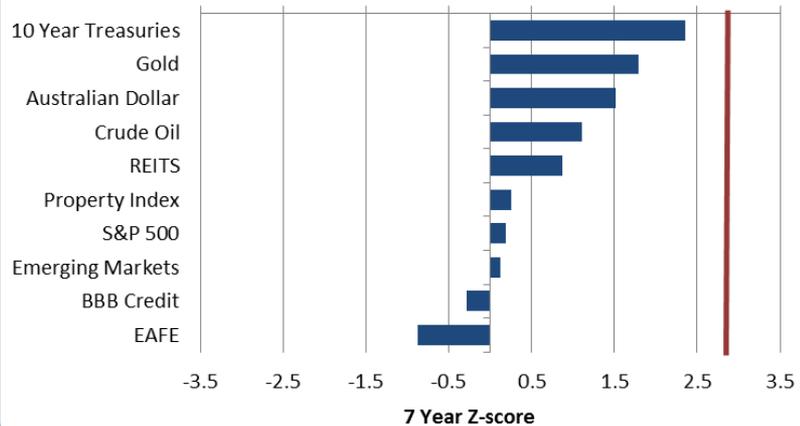
Bubble Level Monitor: September 2007



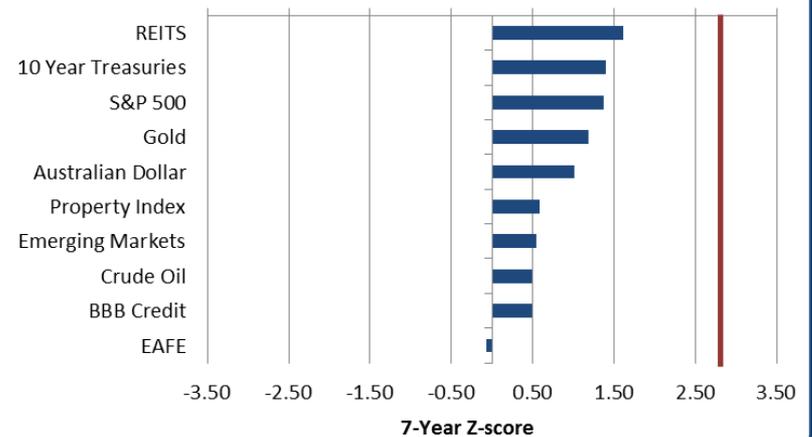
Bubble Level Monitor: March 2009



Bubble Level Monitor: December 2011



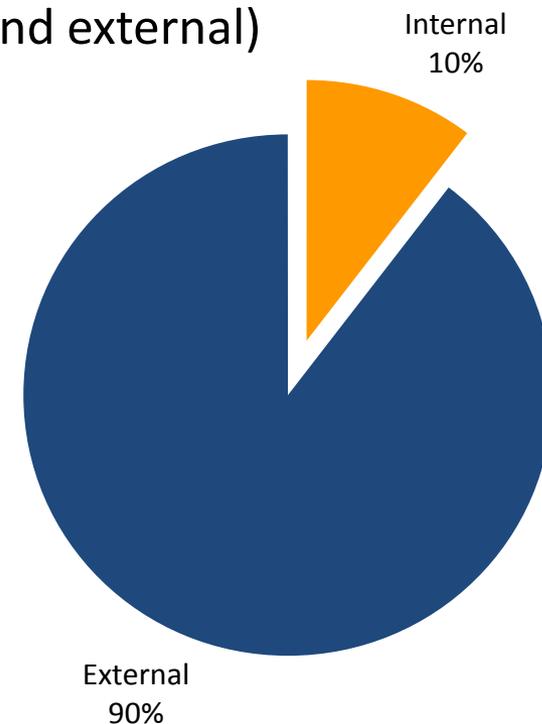
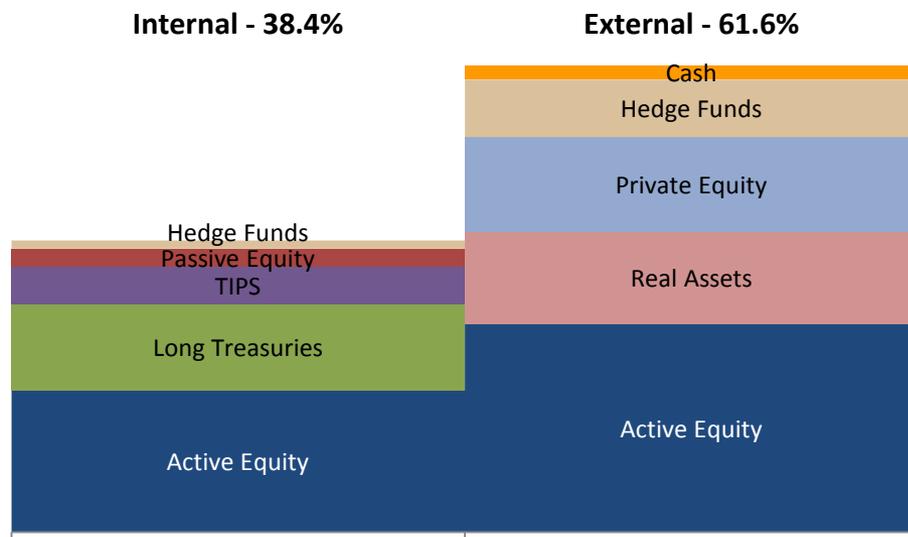
Bubble Level Monitor: February 2013



COST STRUCTURE

IMD Compensation Philosophy

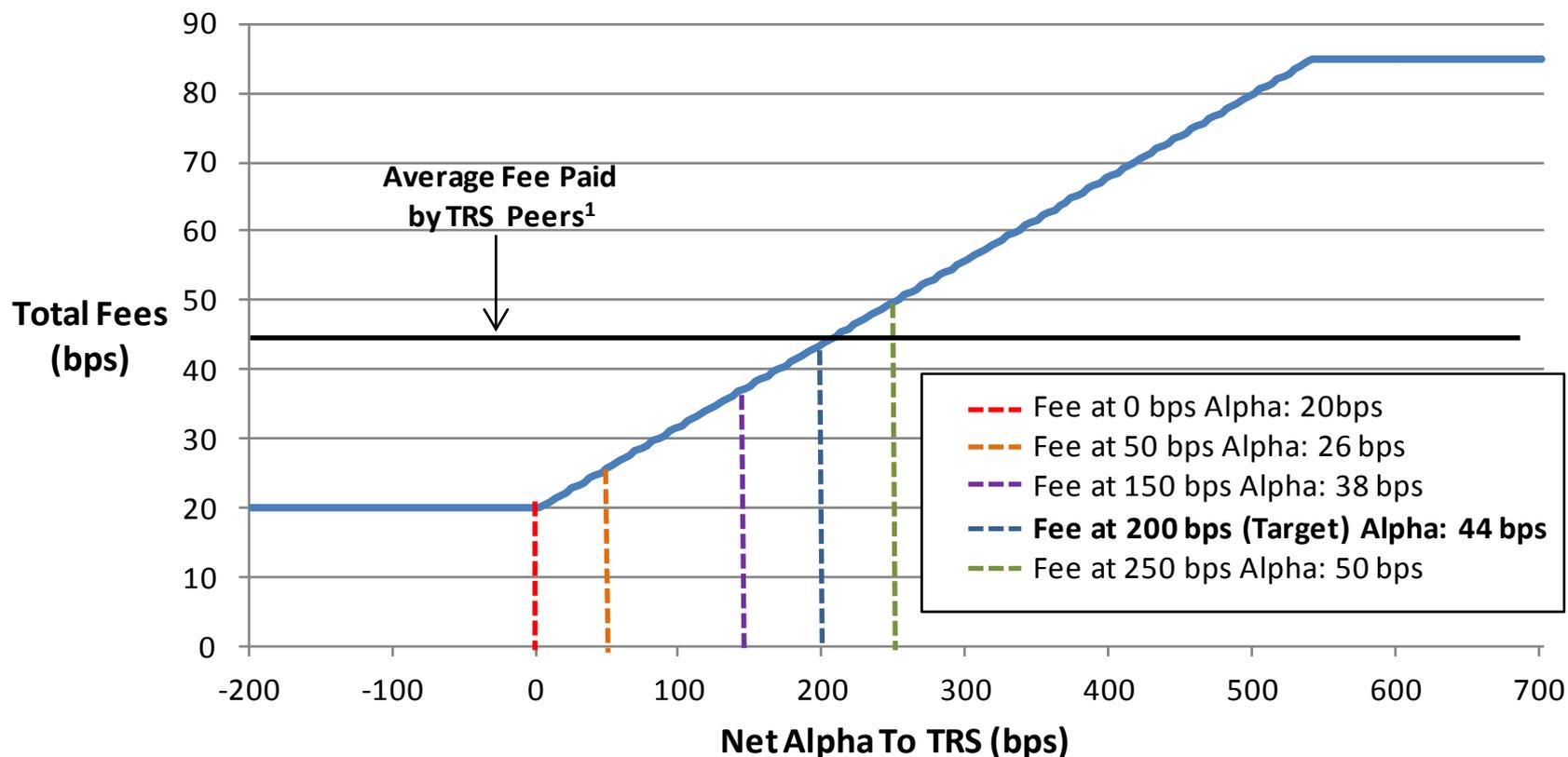
- Use internal management (active and passive)
- Use performance-based fee structures (internal and external)
- Leverage scale and time horizon
- Clearly aligned and mutual impact outcomes
- Use scarce resources well



Costs as Percentage of Trust	
Internal People	2.1 bps
Internal Administrative	2.6 bps
External	40.7 bps

Example of a Performance Payment Schedule

Various Scenarios (Target Alpha: 200 Basis Points)



¹CEM Benchmarking as of December 31, 2010

Alignment

Performance Pay (Internal Investment Team)

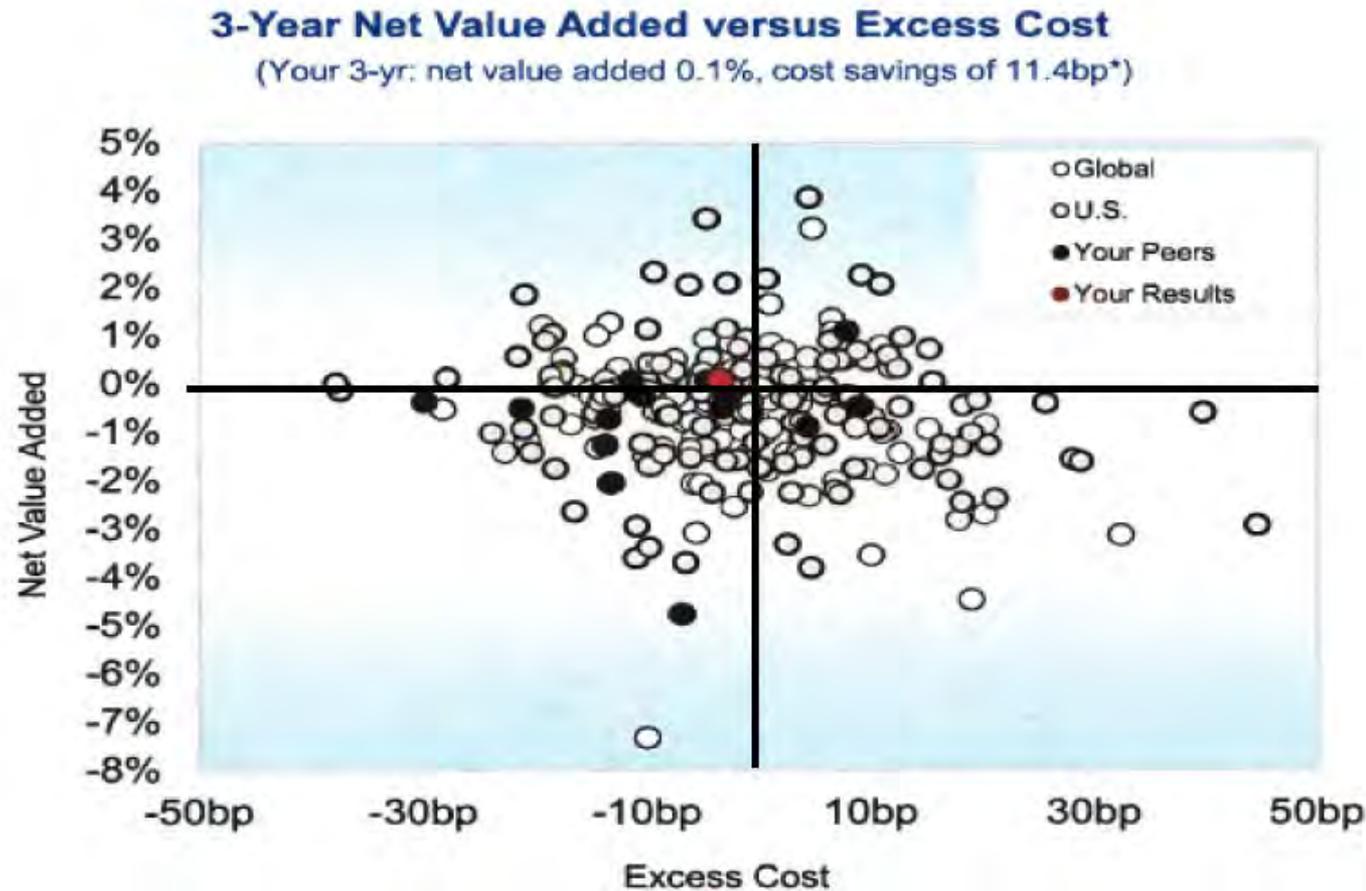
Conditions for payment:

1. Members make money
2. Trust outperforms the market (passive)
3. Trust outperforms the competition
4. No risk violations
5. Rolling one and three year periods

CEM Benchmarking Results

Three Year Performance

- TRS 3-year performance is in the positive value added, low cost quadrant



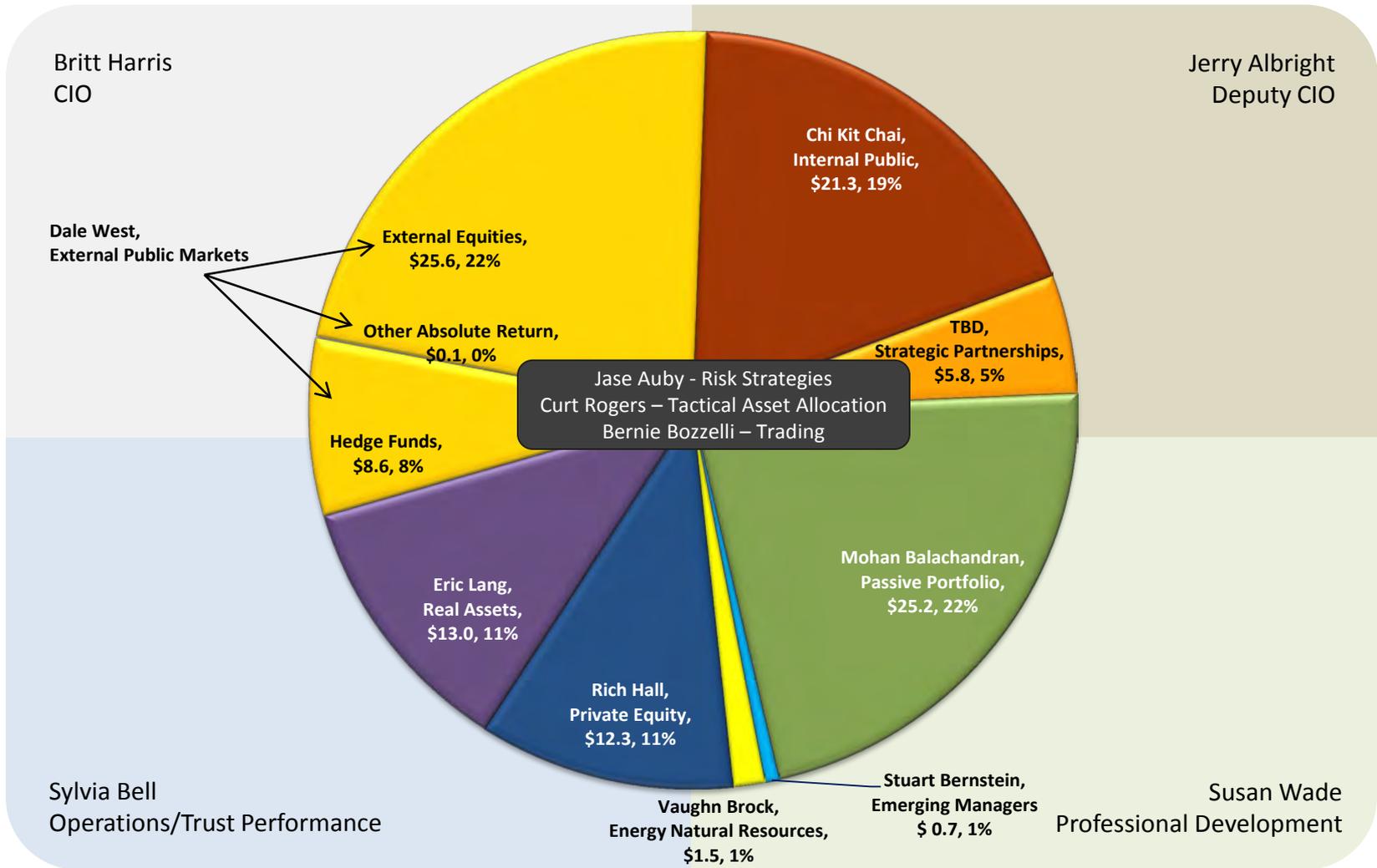
* Your 3-year net value added of 0.1% equals your 3-year 0.5% gross value added minus your 0.4% 3-year average cost.

Source: CEM Benchmarking, Inc. 2011

RIGHT PEOPLE



IMD Organization



IMD Organization

As of March 2013

49 MBAs
30 Other Masters
37 CFAs
4 PhDs
3 JDs

Britt Harris, CIO

Jerry Albright, Deputy CIO

Senior Managing Directors (1)

Chi Kit Chai

Key Positions

1 New Hire/Positions

2 Turnover

0 Transfer

Managing Directors (9)

Jase Auby Mohan Balachandran David DeStefano Rich Hall Janis Hydak Eric Lang Shayne McGuire Curt Rogers Dale West

Senior Directors (5)

Mark Albert Sylvia Bell Bernie Bozzelli Patrick Cosgrove Ralph Linn

Directors (6)

Vaughn Brock Susanne Gealy Brad Gilbert Katy Hoffman Neil Randall John Ritter

Senior Investment Managers (22)

Stuart Bernstein Mark Cassens Tim Jones Kevin Lincoln Allen MacDonell Steven Peterson Corina Scoggins Joe Tannehill Courtney Villalta John Watkins
Tom Cammack Kay Cuclis Michael Lazorik Jaime Llano Scott Moore Michael Pia Wayne Speer KJ Van Ackeren Grant Walker Nathan Zinn
James Nield Demetrius Pope

Investment Managers (14)

Phillip Auth Ashley Baum Grant Birdwell Rich Campbell Marissa Hogan Stacey Peot Marshall Reid Daniel Steinberg Brad Thawley Jennifer Wenzel
John DeMichelle Craig McCullough Scott Ramsower Craig Rochette

Senior Associate (16)

Jeremy Aston Brian Baumhover Patricia Cantu Kendall Courtney Karoline Freeman Jon Hook Jared Morris Komson Silapachai Mark Telschow Susan Wade
David Cox Jingshan Fu Lourdes Llano Kelly Newhall Matt Talbert David Veal

Associate (13)

Lee Carter JB Daumerie Barbara Forssell DC Gunnia Terri Krumnow Jared Simpson Ross Willman Steven Wilson Barbara Woodard
Solomon Gold Matthew Halstead Roy Kurian Daniel Ting

Senior Analyst (5)

Pat Barker Rachel Clark Steven Lambert Krisi Vorce Irma Zavaleta-Castillo

Analyst (8)

Thomas Albright Andrew Cronin Melissa Kleihege Jon Klekman Maribel Nesuda Christopher Pan Molly Rose Stacy Sakoulas

Assistants (7)

Monica Larson Gracie Marsh Hugo Rangel Babette Ruiz Marina Salazar Sharon Toalson Susan White

IMD Culture

• Creative Construction

- Openness (no gossip)
- Meritocracy
- Elimination of bureaucracy
- Continual advancement

• Personal Fulfillment

- Individual genius
- Honorable behavior
- Fully engaged

• Individual Responsibility

- Personal assignments
- Mastery
- Acceptance of accountability

• Teamwork

- One product
- Continuous collaboration
- Self-sacrifice
- Pride

Purpose: Competitive Advantage

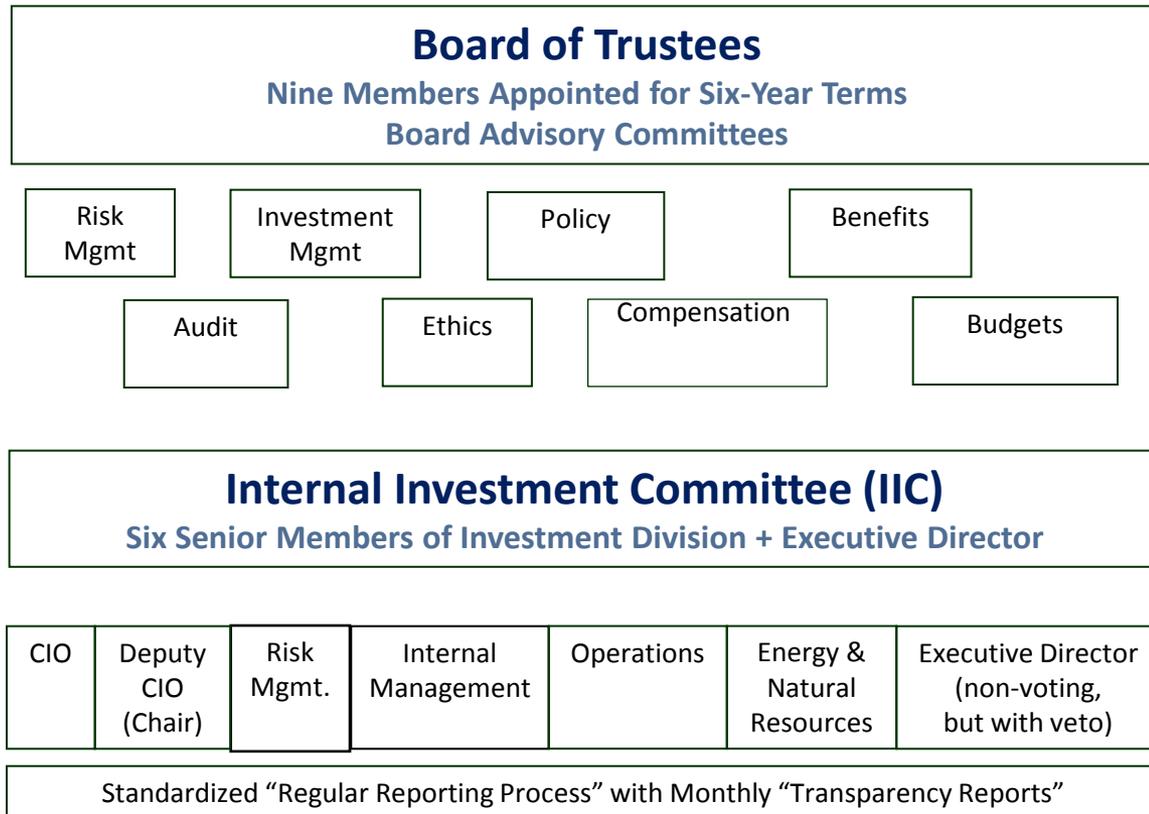
Continual Advancement



Roles of Board of Trustees and the Investment Division

Governance Structure

The TRS Board of Trustees is responsible for administration of the system under provisions of the state constitution and laws. The board is comprised of nine trustees, all of whom are appointed by the governor to staggered six-year terms. Three trustees are direct appointments of the governor. Two trustees are appointed from a list prepared by the State Board of Education. Two trustees are appointed from the three public school district active member candidates who have been nominated for each position by employees of public school districts. One trustee is appointed from the three higher education active member candidates nominated by employees of institutions of higher education. One trustee is appointed from the three retired member candidates who are nominated by TRS retirees. Appointments are subject to confirmation by the Senate. Board member terms expire August 31 of odd numbered years.



Board Fiduciary Obligations

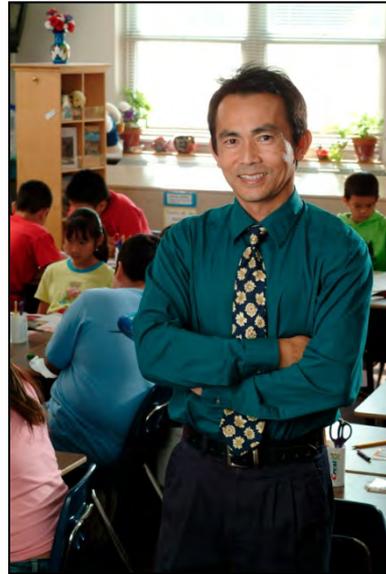
- Establish long-term asset allocation policy
- Approve long-term return targets and risk parameters
- Provide appropriate resources , incentives and establish approved processes
- Establish appropriate reporting standards and metrics
- Comply with relevant laws
- Assure professional audit systems
- Approve budget

IIC Fiduciary Obligations

- Implement investment policies within approved guidelines
- Maximize effectiveness of resources provided
- Deliver Transparent Reporting
- Comply with relevant laws
- Collaborate with audit process
- Collaborate with Board

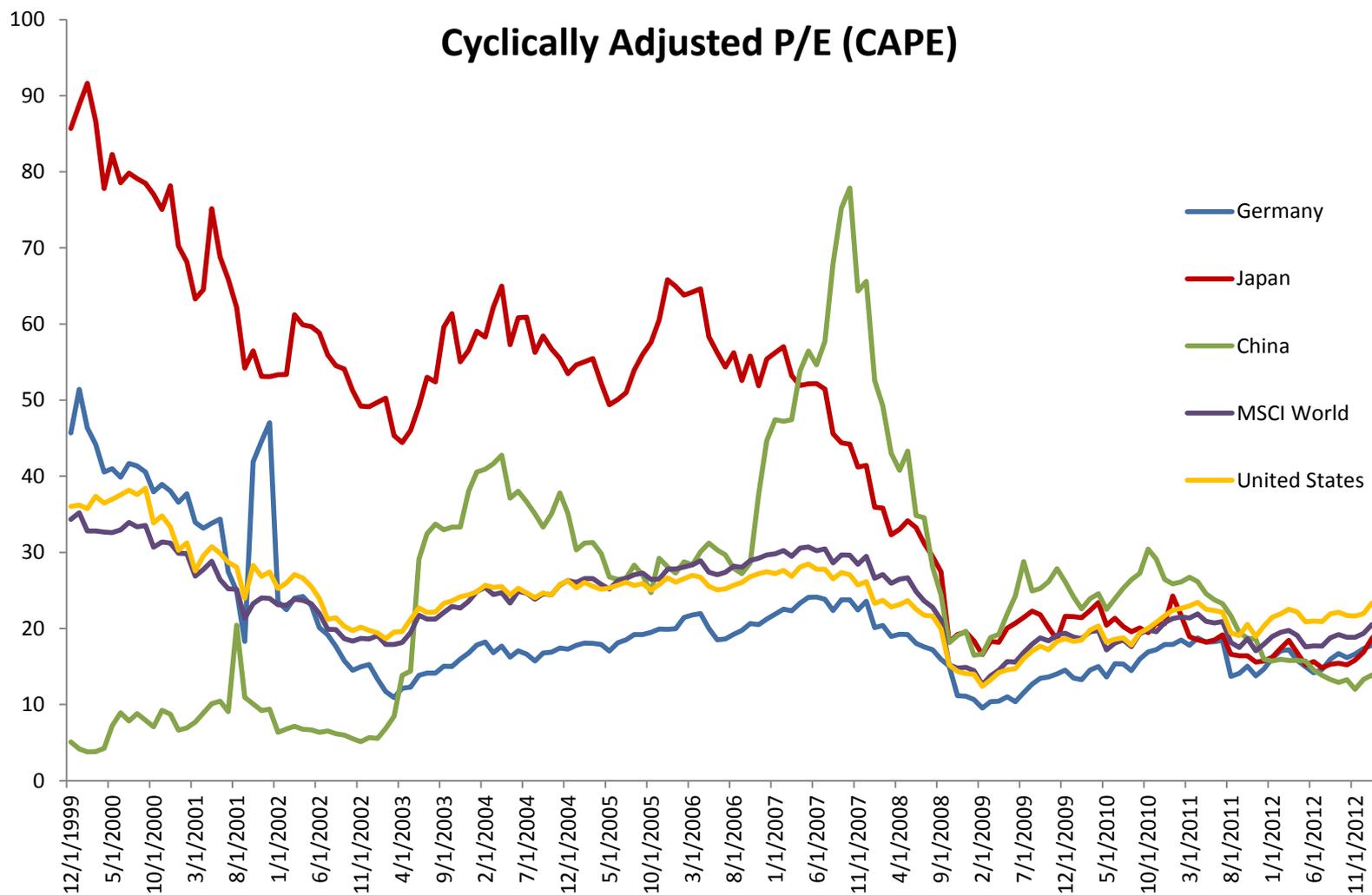
Conclusion

- Right Plan
- Right People
- Right Metrics



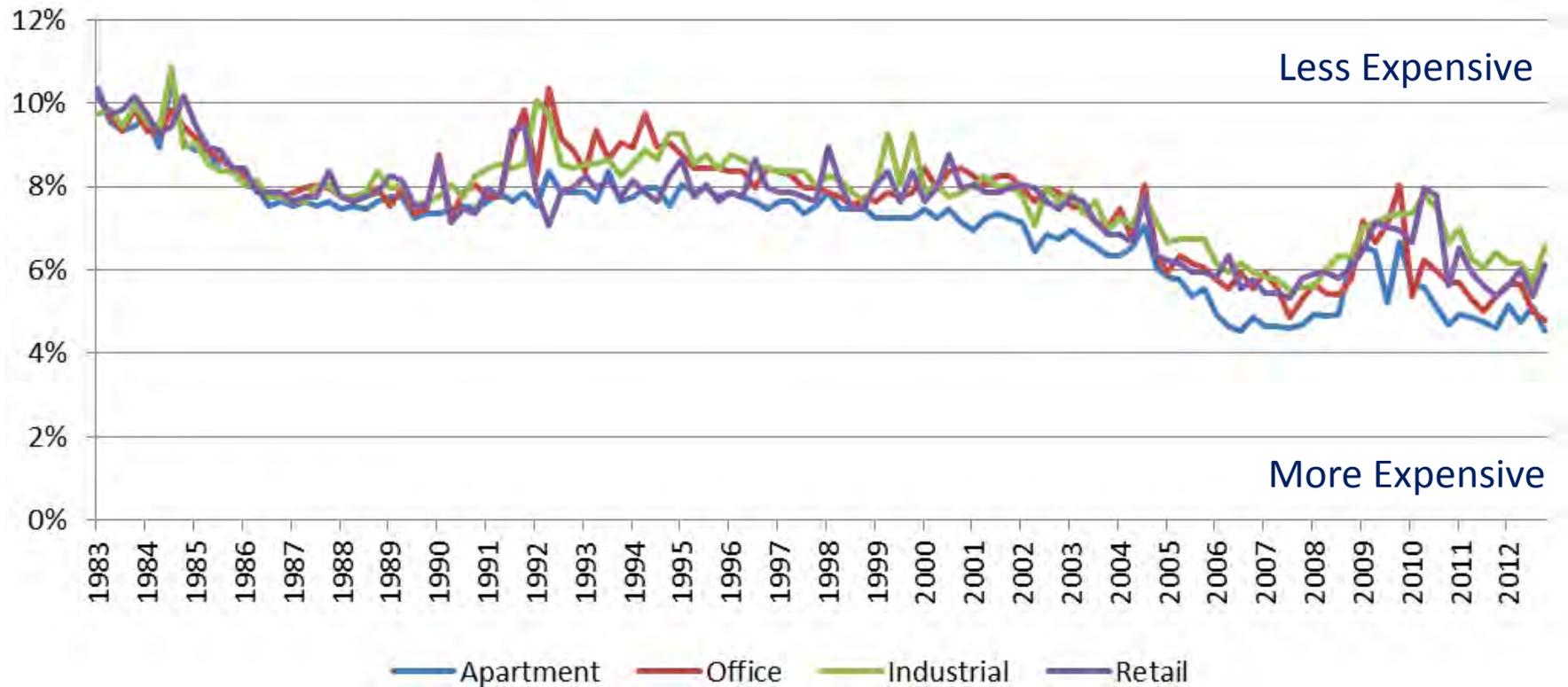
APPENDIX

Global Shiller P/E Ratios

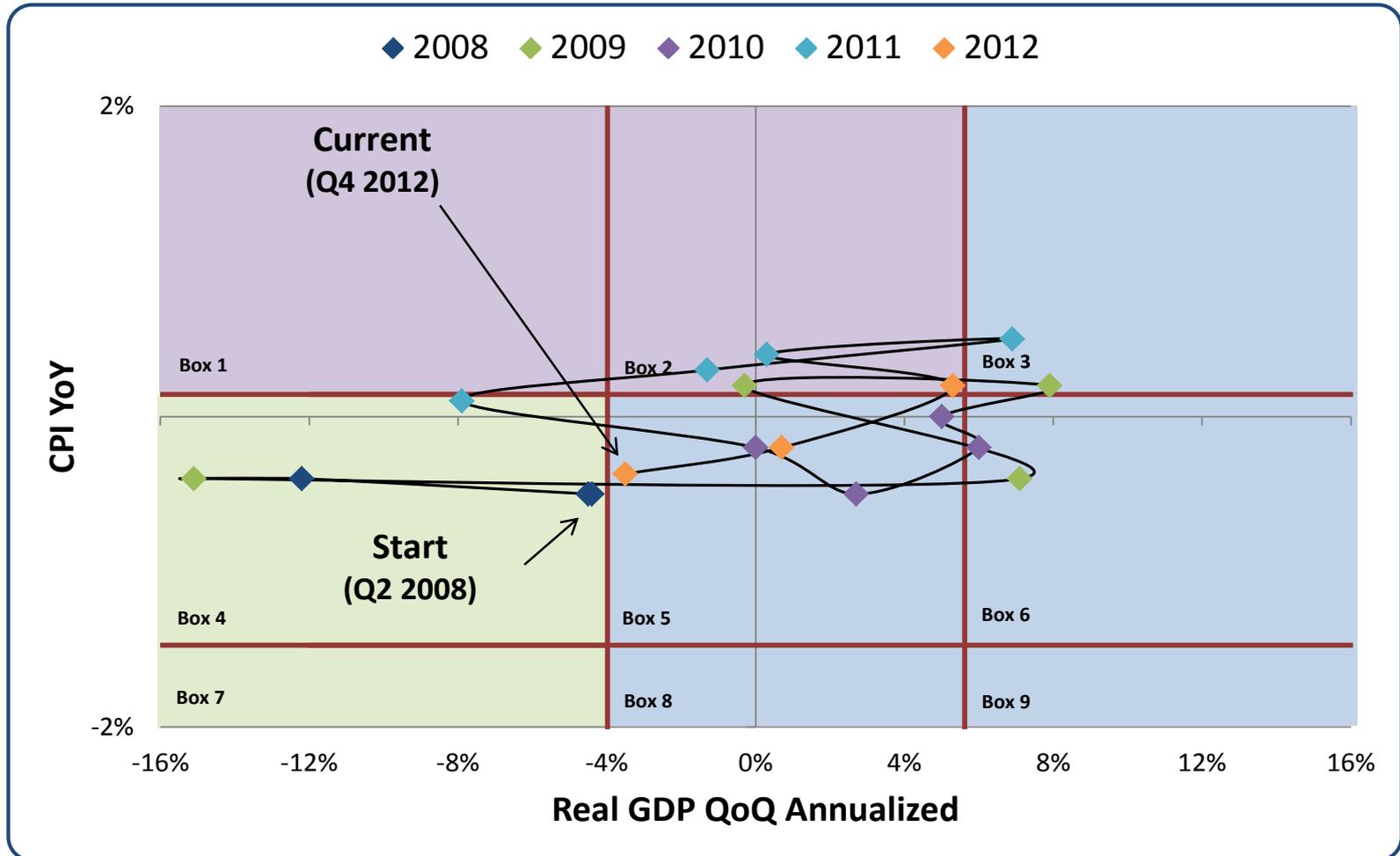


Source: Datastream

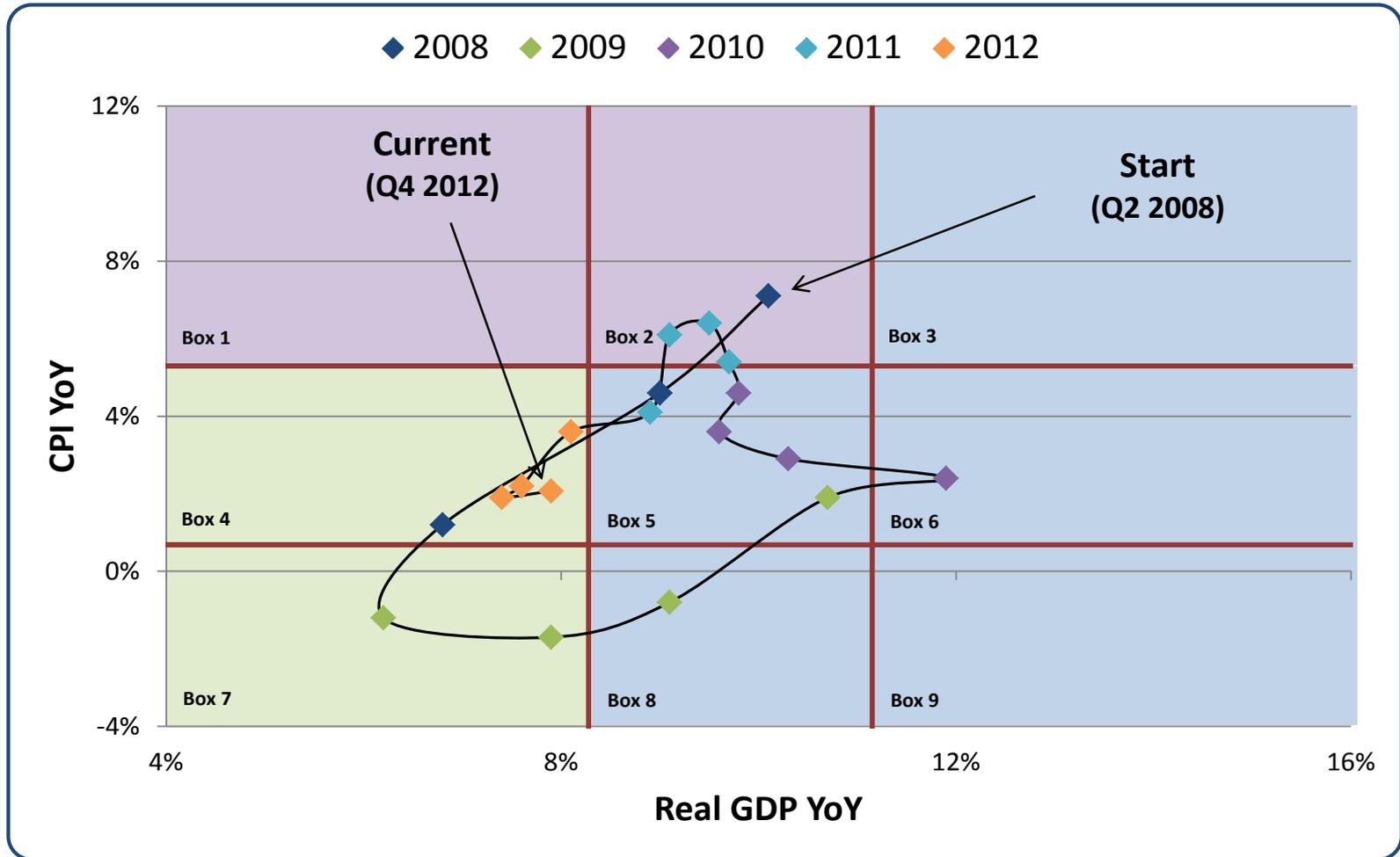
Real Estate Cap Rate History



Japan Policy Signal Chart



China Policy Signal Chart

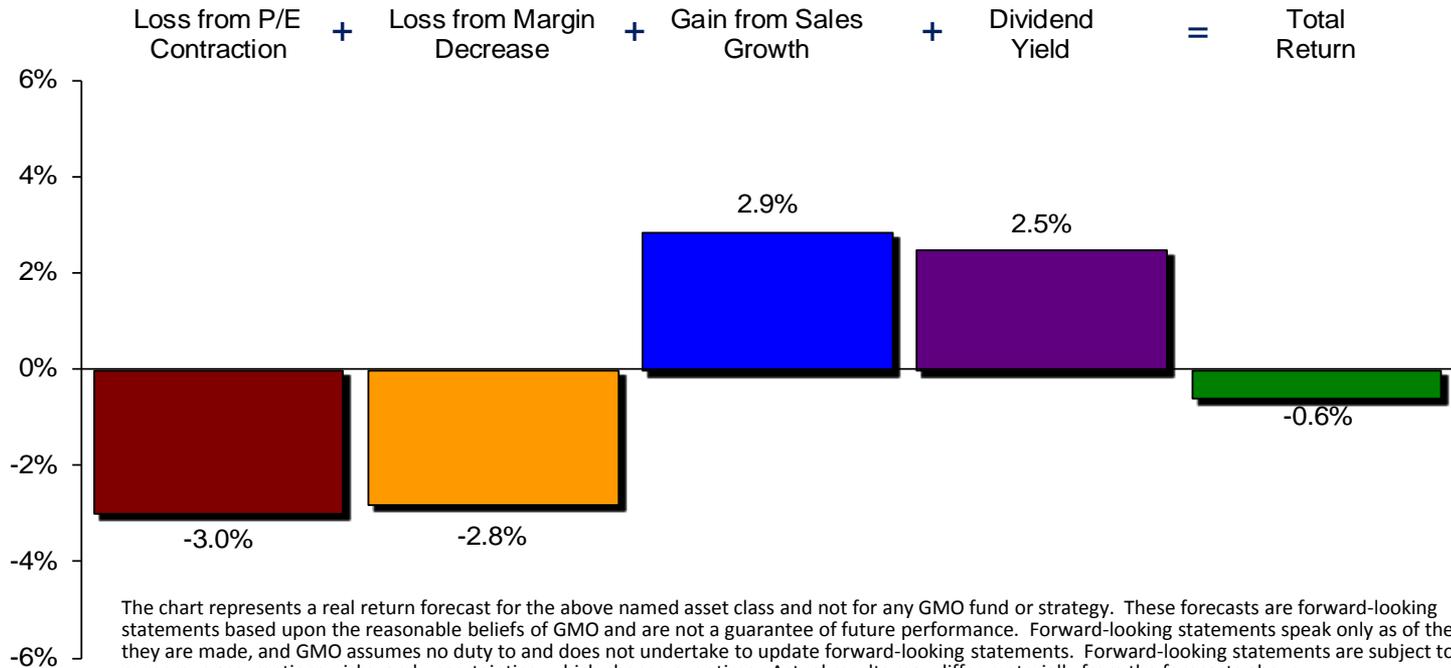


S&P 500

Building a 7-Year Forecast

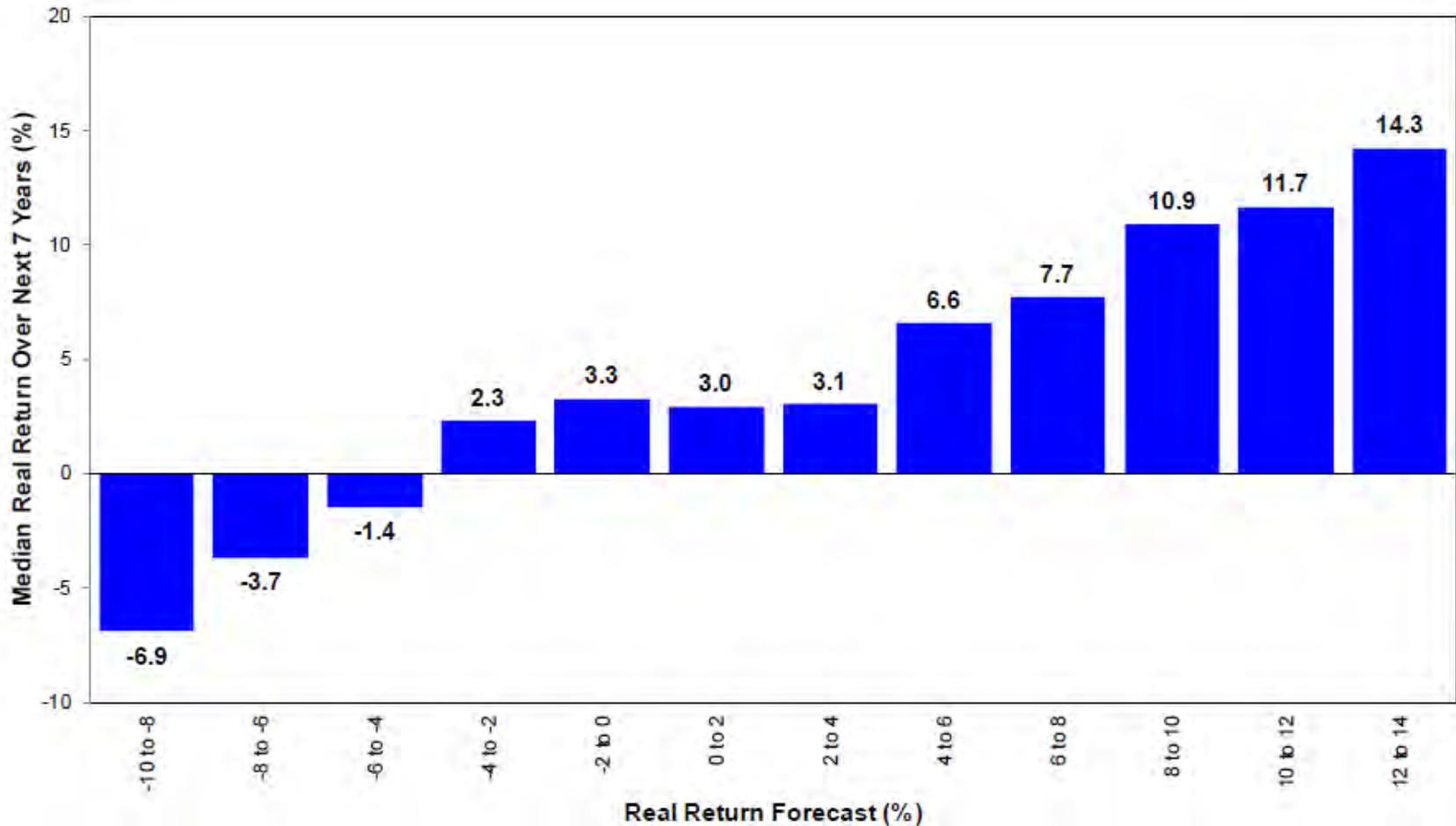
- Components of annual return of S&P 500, with regression over 7 years

	P/E	Profit Margin	Real Sales per Share Growth	Dividend Yield
1926-1999 Averages	14.0	4.9%	1.8%	4.3%
Starting Levels	18.5	7.4%	1.9%	2.2%
Assumption for Next 7 Years	15.0 (Terminal Value)	6.1% (Terminal Value)	2.9%	2.5%



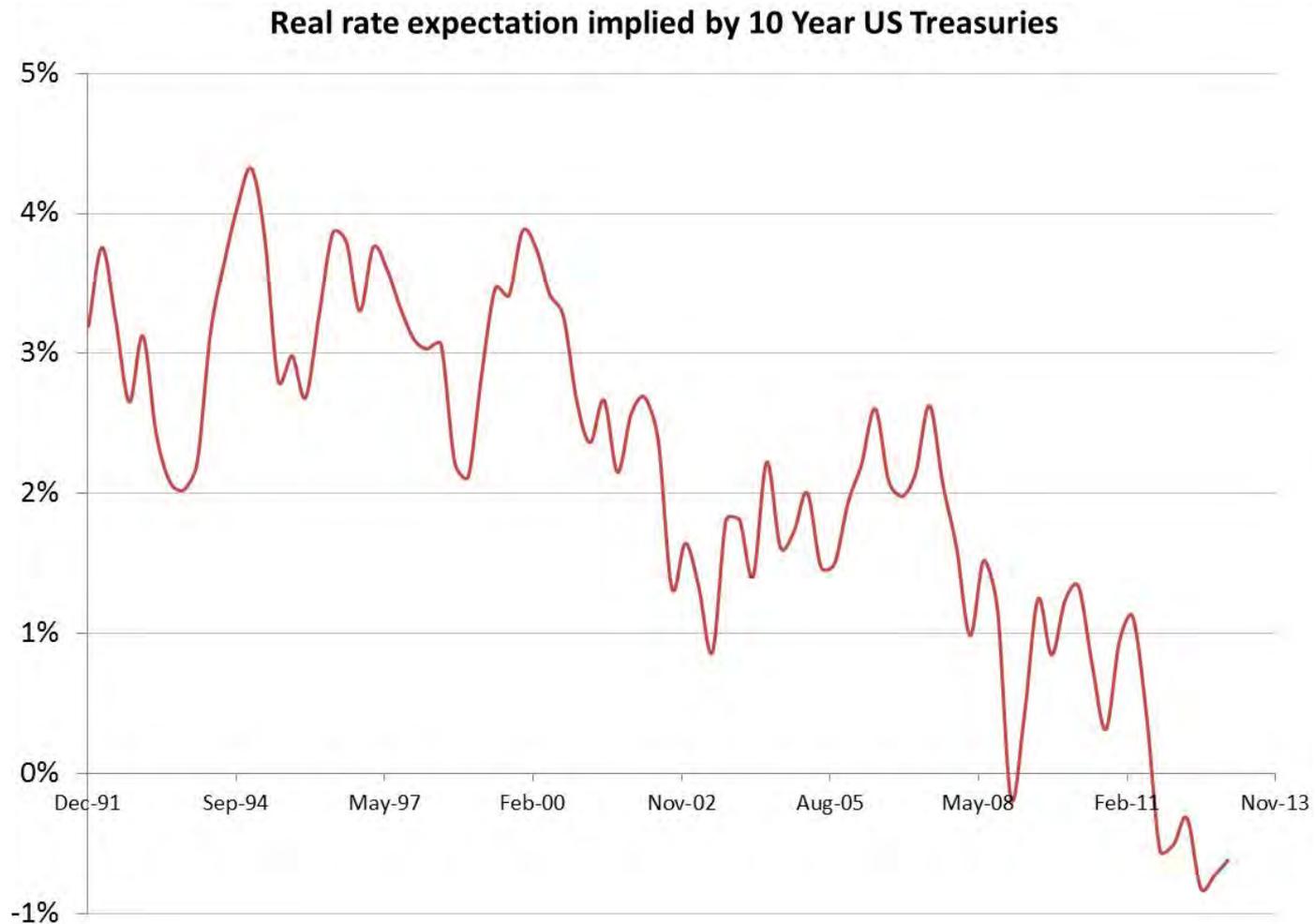
Mean Reversion Drives Everything

- Realized performance of GMO forecasts since June 1994



Analysis uses 7-year GMO asset class forecasts for 18 asset classes from June-1994 until July-2004 (start date is October-1996 for REITS and July-1997 for TIPS). GMO began making 7-year asset class forecasts in 2002 and previously made 10-year asset class forecasts. 10-year asset class forecasts are converted into 7-year forecasts by assuming 3 years of equilibrium returns at the end of the 7-year period. Returns and forecasts are annualized.

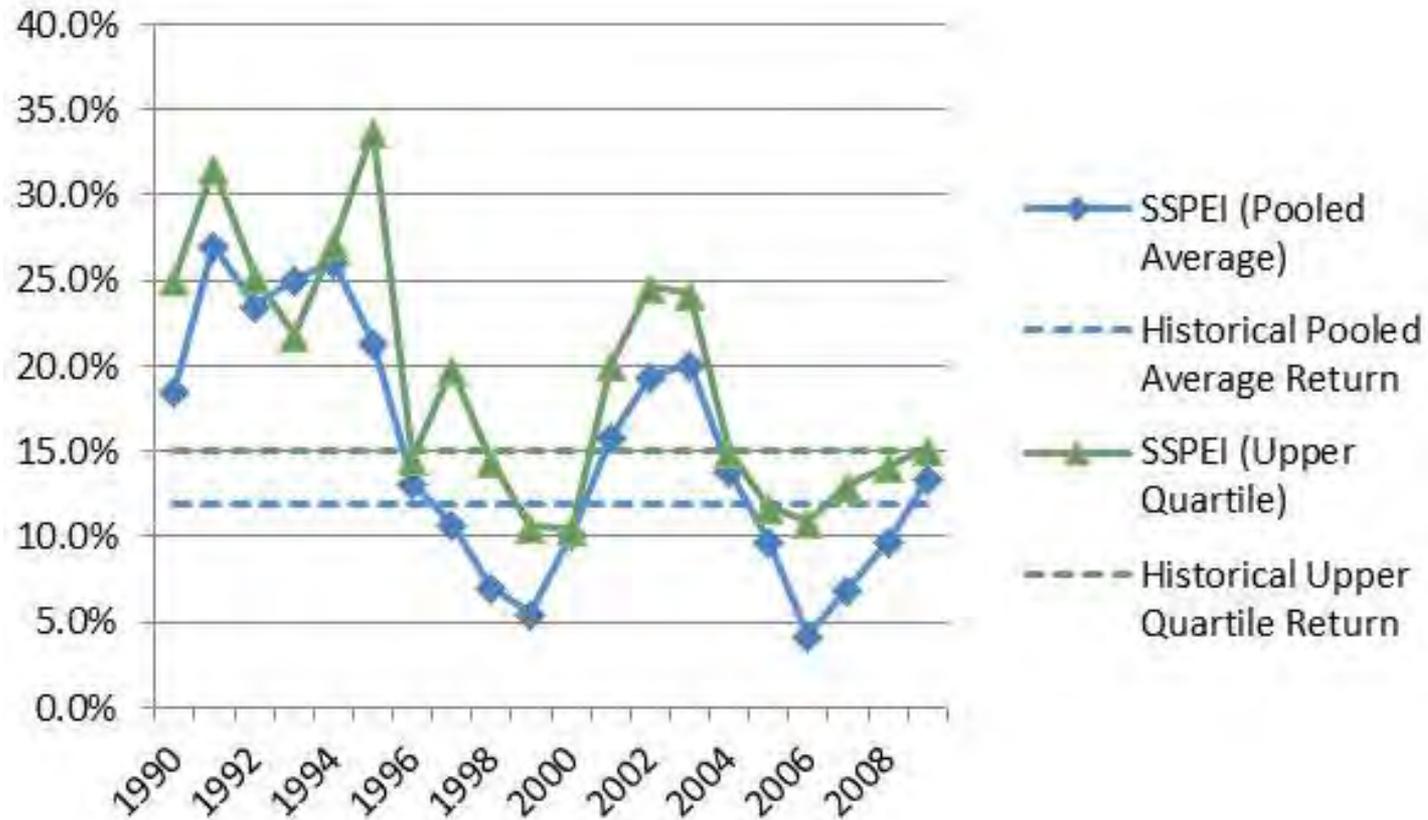
TIPS Implied Real Interest Rates



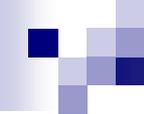
Source: Bloomberg

Private Equity

Vintage Year Returns



Tab 6C



Measuring Investment Performance: A Primer

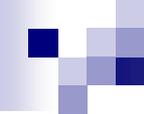
Prepared for:

Board of Trustees
Teacher Retirement System of Texas

Prepared by:

Keith C. Brown
University of Texas

April 18, 2013



Agenda for the Discussion

I. Overview of Performance Measurement in Funds Management

- Fitting Performance Measurement in the Portfolio Management Process
- The “Big Picture” of Performance Measurement
- The Two Questions of Performance Measurement

II. Addressing Performance Measurement Question #1

- Simple Performance Measures
- Traditional Risk-Adjusted Performance Measures

III. Addressing Performance Measurement Question #2

- Attribution Analysis Measures

IV. Appendix

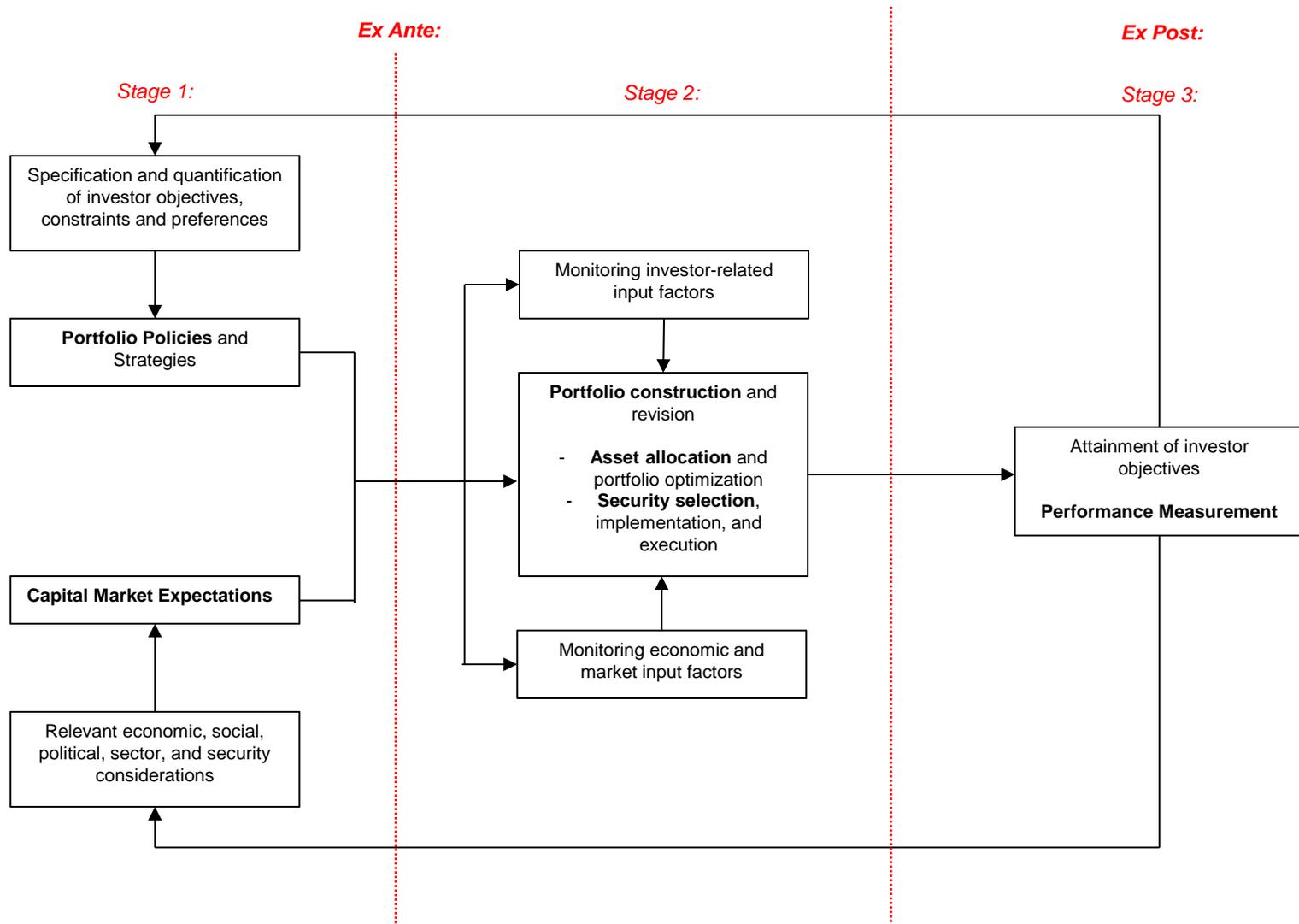
- Tracking Error: Concept and Calculations
- Examples of Performance Measure Calculations

I. An Overview of Performance Measurement in the Portfolio Management Process

- The portfolio management process can be viewed in three steps:
 - Analysis of Capital Market and Investor-Specific Conditions
 - Policy Formation and Market Expectations
 - Formation of Asset Class-Specific Portfolios
 - Strategic Asset Allocation Decision
 - Security Selection Decision
 - Analysis of Investment Performance
 - Performance Measurement Analytics

- The first two of these steps are ***ex ante***; the third is ***ex post***. Thus, performance measurement can be viewed as the “end game” for the portfolio management process, recognizing that the information generated in this evaluation will be used to alter decisions made about the portfolio’s design
 - That is, portfolio management is a *dynamic process*

Illustrating the Role of Performance Measurement in the Portfolio Management Process



A “Big Picture” Look at the Performance Measurement Process

- Generally speaking, assessing the performance of an investment portfolio is an exercise in *comparing* some measure of the *returns* that the fund **actually produced** to a measure of the returns that the fund **should have produced**.
- In estimating the return that the portfolio should have produced over a given investment period, it is necessary to take into account that investors *expect* to be compensated for two functions:
 - (i) committing their financial capital
 - (ii) incurring risk.
- One popular way of making this comparison is to compute the **“alpha”** component of the portfolio’s return as:

$$\text{Alpha} = (\text{Actual Return}) - (\text{Expected Return})$$

“Big Picture” of the Performance Measurement Process (cont.)

- In practice, there are *three primary ways* to estimate expected returns (i.e., what the portfolio’s return should have been):
 - The average contemporaneous return to a **peer group** of comparably managed portfolios
 - The contemporaneous return to an index (or index fund) serving as a **benchmark** for the portfolio
 - The return estimated by a **risk factor model**, such as the CAPM

- Each approach to measuring expected returns has its *advantages and disadvantages*
 - Peer groups and benchmarks are easily observable and often represent plausible alternative investment vehicles, but do not control explicitly for the risk incurred in the actual portfolio
 - Factor models can estimate systematic risk exposures very precisely, but are generally not investible (i.e., they are theoretical concepts).

“Big Picture” of the Performance Measurement Process (cont.)

- One important notion that underlies the performance measurement process is that the portfolio’s expected return should be thought of as the ***opportunity cost*** of investing in the managed portfolio
 - That is, if an investor did not hold the actual portfolio, what would be the return to his or her next best alternative position?
 - In this context, an important consideration is whether the benchmark (or peer group) is *actually an investible alternative* to the actual portfolio.

Benchmark-Adjusted (i.e., "Alpha") Performance at TRS: November 2012

Teacher Retirement System of Texas
As of November 30, 2012

Asset Class	Returns							Alpha						
	1-Month	QTD	YTD	1-Year	3-Year	5-Year	10-Year	1-Month	QTD	YTD	1-Year	3-Year	5-Year	10-Year
GLOBAL EQUITY														
Total Large Cap	0.71	-0.57	15.67	16.66	11.12			0.06	0.59	0.63	0.53	0.45		
<i>MSCI USA Standard</i>	0.65	-1.17	15.04	16.13										
<i>Prior Large Cap Policy Benchmark</i>					10.67									
Total Small Cap	1.87	0.78	19.90	18.89	16.81	5.30		0.46	0.74	4.88	3.81	1.44	1.35	
<i>MSCI USA Small Cap</i>	1.41	0.04	15.01	15.08	15.37									
<i>Prior Small Cap Policy Benchmark</i>					3.96									
Total US	0.81	-0.46	15.83	16.74	11.92	1.76	7.08							
Total Non-US Developed	2.06	2.71	12.96	10.83	3.78	-3.59		-0.04	-0.10	-0.04	-0.94	0.61	0.77	
<i>MSCI EAFE + Canada</i>	2.10	2.82	13.00	11.76	3.17	-4.36								
Total Emerging Markets	1.28	0.98	13.83	11.39	4.48	-1.70		0.01	0.32	1.12	0.04	-0.13	0.09	
<i>MSCI Emerging Markets</i>	1.27	0.65	12.71	11.35	4.35	-1.79								
Total Non-US	1.72	1.93	12.99	10.78	3.96	-2.26	9.97							
Total Directional Hedge Funds	0.57	0.66	5.14	4.58				0.08	0.47	1.52	1.54			
<i>HFRI Fund of Funds Composite Index</i>	0.49	0.18	3.62	3.05										
Total Public Equity	1.23	0.76	13.24	12.43	6.93	-0.96	6.76							
Total Private Equity	2.79	3.67	15.46	14.60	15.01	4.75	16.68	2.79	3.67	6.81	12.50	0.79	0.48	8.50
<i>State Street Private Equity Index</i>	0.00	0.00	8.65	2.10	14.22									
<i>Prior Private Equity Policy Benchmark</i>					4.27	8.19								
Total Global Equity	1.53	1.30	13.84	13.01	8.23	-0.19	7.38	0.54	0.84	1.57	2.31	0.04	0.03	
<i>Global Equity Target Weighted Blended Benchmark</i>	0.99	0.46	12.26	10.70	8.19	-0.22								
STABLE VALUE														
Total Long Treasury	1.37	1.32	6.25	9.59	13.03	11.23		0.04	0.11	0.62	0.68	0.72	1.17	
<i>Barclays Capital Long Treasury Index</i>	1.33	1.22	5.63	8.91	12.31	10.06								
Total Stable Value Hedge Funds	0.39	0.08	1.63	1.80	2.23	-0.16	4.66	0.26	-0.33	-1.34	-0.82	-0.19	-3.19	-0.15
<i>HFRI FOF: Conservative Index</i>	0.13	0.42	2.96	2.62										
<i>Prior Hedge Funds Benchmark</i>					2.43	3.03	4.81							
Total Cash	0.16	0.11	1.00	1.36	-0.32	0.28	1.80	0.15	0.08	0.90	1.27	-0.43	-0.29	-0.01
<i>Citigroup 90 Day US Treasury</i>	0.02	0.03	0.10	0.10	0.11	0.58	1.81							
Total Other Absolute Return	1.42	2.20	36.57	37.39	17.58			1.23	1.82	34.34	34.94	15.21		
<i>3 Month LIBOR + 2%</i>	0.19	0.38	2.23	2.45	2.38									
Total Stable Value	1.10	1.10	7.58	9.77	11.50	8.07	6.93	0.11	0.13	2.73	2.64	1.74	-0.06	
<i>Stable Value Target Weighted Blended Benchmark</i>	0.99	0.97	4.86	7.13	9.76	8.13								
REAL RETURN														
Total Global Inflation Linked Bonds	0.48	1.35	7.76	7.82	8.50	7.27		0.00	0.00	0.08	0.11	0.17	0.81	
<i>BarCap US Treasury TIPS Index</i>	0.48	1.35	7.68	7.72	8.34									
<i>Prior Global Inflation Linked Bonds Policy Benchmark</i>					6.46									
Total Real Assets	1.44	2.15	13.24	14.20	14.13	-0.98		1.44	2.15	5.50	2.90	6.77	0.79	
<i>NCREIF ODCE Index 1 Quarter Lagged</i>	0.00	0.00	7.74	11.30	7.37									
<i>Prior Total Real Assets Policy Benchmark</i>					-1.77									
Total Commodities	-4.18	-7.55	2.56	-7.15	3.31	-4.36		-5.66	-4.90	1.83	-5.76	0.25	-4.36	
<i>Goldman Sachs Commodity Index</i>	1.48	-2.65	0.73	-1.39	3.06	-6.96								
Total Real Return	0.91	1.48	11.18	11.20	10.98	4.03	6.19	0.79	1.14	2.67	-0.16	1.99	0.84	
<i>Real Return Target Weighted Blended Benchmark</i>	0.12	0.34	8.51	11.36	8.98	3.19								
Total Public Markets	1.07	0.76	12.10	12.13	9.18	2.67								
Total Private Markets	2.10	2.90	13.90	13.56	13.65	1.47	13.38							
Total Fund	1.32	1.27	12.54	12.48	9.95	2.76	7.54	0.51	0.74	2.15	2.03	0.77	0.08	0.23
<i>Total Fund Target Weighted Blended Benchmark</i>	0.81	0.53	10.39	10.45	9.18	2.67	7.31							

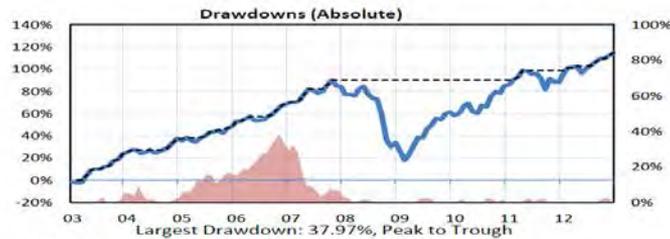
Performance results are based on account level performance and reported net of realized fees. State Street Private Equity Index and NCREIF ODCE Index results are updated on a quarterly basis.

Performance Measurement Reporting for TRS



Total Fund vs. Fund Benchmark Statistical Tracking And Reporting (STAR) Report

Monthly Data from 1/03 to 12/12



Performance by Period (Inception: 1/31/03)

Period	Portfolio	B'mark	VFB	T.E.	I.R.
3-month	2.49%	2.20%	0.30%		
YTD	13.91%	12.23%	1.67%		
1-year	13.91%	12.23%	1.67%	1.73%	0.97
2-year	7.70%	7.99%	(0.28%)	2.22%	(0.13)
3-year	10.00%	9.63%	0.37%	1.92%	0.19
5-year	3.10%	3.08%	0.02%	1.94%	0.01
10-year	7.95%	7.75%	0.20%	1.40%	0.14
Inception	7.95%	7.75%	0.20%	1.40%	0.14

Performance by Year:

Start Date:	Year	Portfolio	B'mark	Excess
1/31/03	2003	23.33%	22.75%	0.58%
	2004	11.44%	11.56%	(0.12%)
	2005	7.96%	6.89%	1.07%
End Date:	2006	13.70%	13.80%	(0.09%)
12/31/12	2007	9.29%	8.76%	0.53%
	2008	(27.21%)	(25.63%)	(1.58%)
	2009	20.25%	18.80%	1.45%
	2010	14.73%	12.98%	1.75%
	2011	1.84%	3.91%	(2.07%)
	2012	13.91%	12.23%	1.67%

Valuation Model: Undervalued Half-Signal since: 07/31/2012
Overall Performance (Since Inception 1/31/03)

Cumulative Performance:

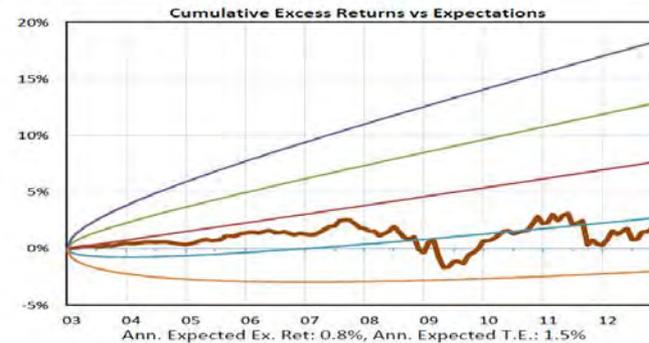
Portfolio	114.8%	Periods	120
Benchmark	110.9%	R-Squared	98.1%
Excess Return	3.9%	Tracking Error	1.4%

Annualized Performance:

	Portfolio	B'mark	Diff	Ex. Ret.	Risk Free
Return	7.95%	7.75%	0.20%	0.18%	1.69%
St. Dev.	10.20%	10.18%	0.02%	1.40%	0.52%
Best Month	6.23%	7.15%	(0.92%)	0.93%	0.49%
Worst Month	(14.12%)	(14.39%)	0.27%	(2.06%)	(0.01%)
Skew	(1.40)	(1.38)		-1.74	
Kurtosis	5.01	5.54		6.87	
Best 12 Mths	35.87%	35.50%			
Worst 12 Mths	(33.42%)	(32.90%)			
Up Capture	30.10%	29.37%			
Down Capture	(24.66%)	(24.26%)			

Risk Summary:

Info. Ratio	0.14	Sharpe	0.61	Hit Rt Up	62%
M2 Premium	7.93%	Treynor	0.06	Hit Rt Dn	66%
Beta	0.99	Sortino	0.26	Hit Rt Tot	63%
Jensen's alpha	0.25%	5% hVar	(0.60%)		



The Two Questions of Performance Measurement

- **How** did the portfolio manager actually do?
 - Simple Performance Measures
 - Peer Group Comparisons
 - Drawdown Analysis
 - Up Capture/Down Capture Analysis
 - Risk-Adjusted Performance Measures
 - Sharpe Ratio
 - Treynor Ratio
 - Information Ratio
 - Sortino Ratio
 - Jensen's Alpha

- **Why** did the portfolio manager do what he or she did?
 - Decomposition of Portfolio Returns
 - Attribution Analysis

II. Performance Measurement Question #1:

1. Simple Performance Measures: Peer Group Comparisons

- Perhaps the most straightforward way to evaluate the investment performance of a particular portfolio manager is a *peer group comparison*. This is accomplished by calculating a portfolio's relative return ranking compared to a collection of similar funds:

$$\% \text{ Ranking} = [1 - (\text{Fund's Absolute Ranking} / \text{Ttl Peer Funds})] \times 100$$

Notice that this measure expresses the *percentile ranking* for a particular fund from best (i.e., 99th percentile) to worst (i.e., 0th percentile)

- The primary advantage of a peer group comparison is that it is relatively simple to produce. The goal is to compare the return generated by a given fund relative to other portfolios that follow the same investment mandate.
 - This comparison can be captured visually by a *boxplot graph*.

Peer Group Comparisons (cont.)

- There are disadvantages to the peer group comparison method of performance evaluation:
 - It requires the designation of a peer group, which may be difficult depending on the degree of specialization for the fund in question
 - It *does not make an explicit adjustment for risk differences* between portfolios in the peer group. Risk adjustment is *implicit* assuming that funds with the same objective should have the same level of risk.

TRS Peer Group Ranking: June 2012

Master Trust Performance Analysis Performance Comparison

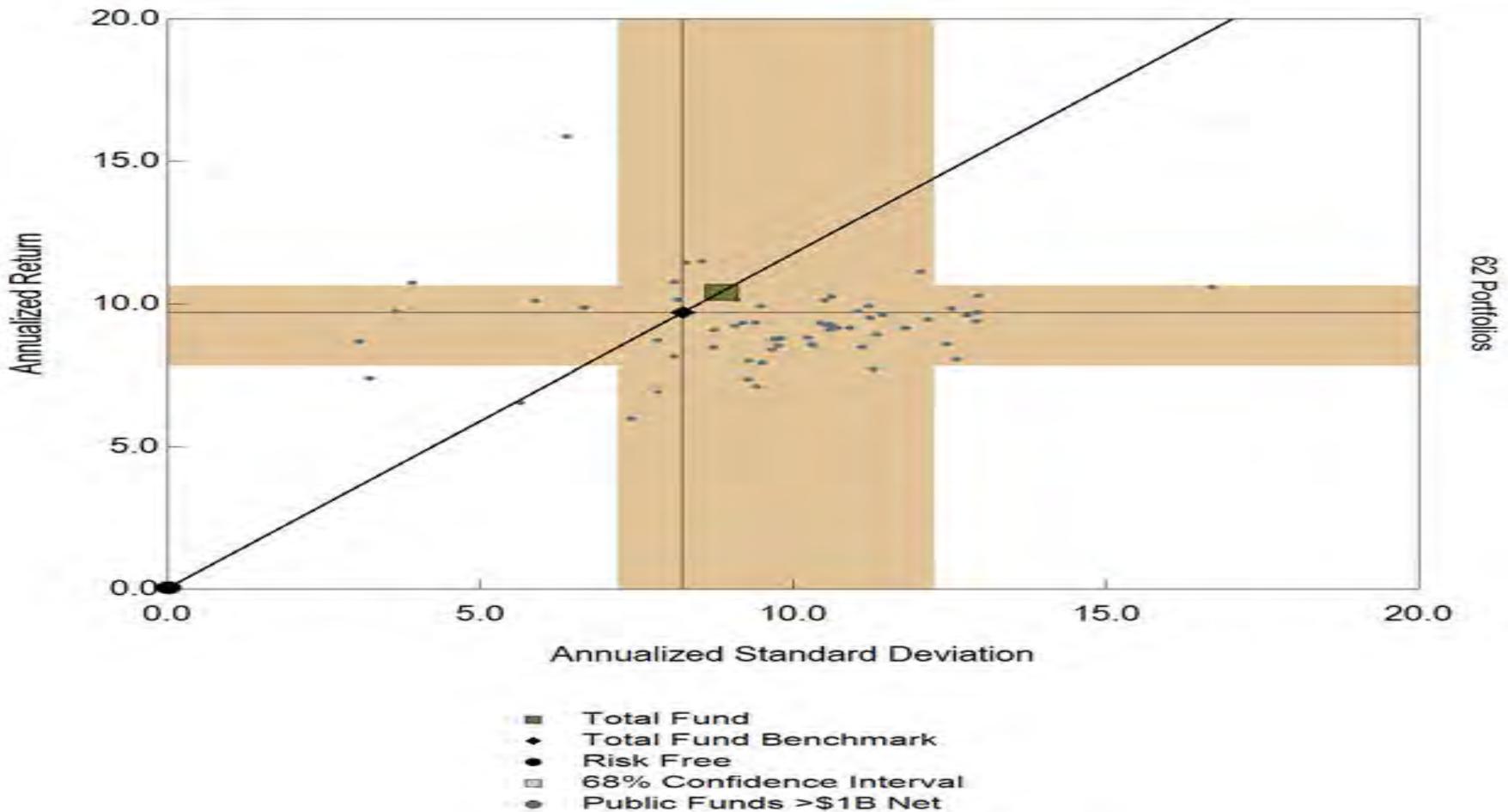
Total Returns of Public Fund Master Trusts > \$10 Billion
Consecutive Time Periods: June 30, 2012



	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
5 th	1.59	9.21	7.29	0.10	2.67	9.60	26.62	16.65	0.21	2.15
25 th	-0.83	8.40	5.49	-7.13	1.84	2.26	23.10	14.30	-16.99	-2.59
50 th	-1.46	7.50	4.35	-8.39	1.62	1.15	22.18	13.37	-19.30	-3.84
75 th	-1.83	6.89	3.81	-9.74	1.23	0.58	20.57	11.75	-21.75	-4.85
95 th	-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)

TRS Fund vs. Peer Group: The Problem With Not Controlling Directly for Risk

Annualized Return vs. Annualized Standard Deviation
3 Years Ending September 30, 2012



2. Simple Performance Measures: Portfolio Drawdown

- At any point in time, the **drawdown** of a portfolio measures its decline in value relative to its historical peak value over some pre-defined past period.
 - Notice that the drawdown statistic attempts to measure one aspect of the *downside risk* that the portfolio has faced historically.
- Consider a series of returns to Portfolio j over the interval from (0, N), or $\{R_{j1}, R_{j2}, \dots, R_{jT}, \dots, R_{jN}\}$.
 - So, the *cumulative value of the portfolio* as of Period T (assuming a \$1 initial level of capitalization) is:

$$(Value)_{jT} = \prod_{t=1}^T (1 + R_{jt})$$

- The drawdown as of Period T, expressed as a percentage of previous peak value, is:

$$DD_{jT} = \text{Min} \left(0, \left[\frac{Value_{jT}}{\text{Max}(Value_{j1}, Value_{j2}, \dots, Value_{jT})} - 1 \right] \right)$$

- The **maximum drawdown** for Portfolio j over the interval (0, N) is then calculated as:

$$(MaxDD)_{jT} = \text{Min}\{DD_{j1}, DD_{j2}, \dots, DD_{jT}, \dots, DD_{jN}\}.$$

Example of Portfolio Drawdown

- As an example, consider the returns to (i) an active portfolio manager and (ii) the benchmark index that manager faces over a 41-month return period.

- Notice that the returns have been converted into cumulative fund value levels, assuming a \$1 initial investment

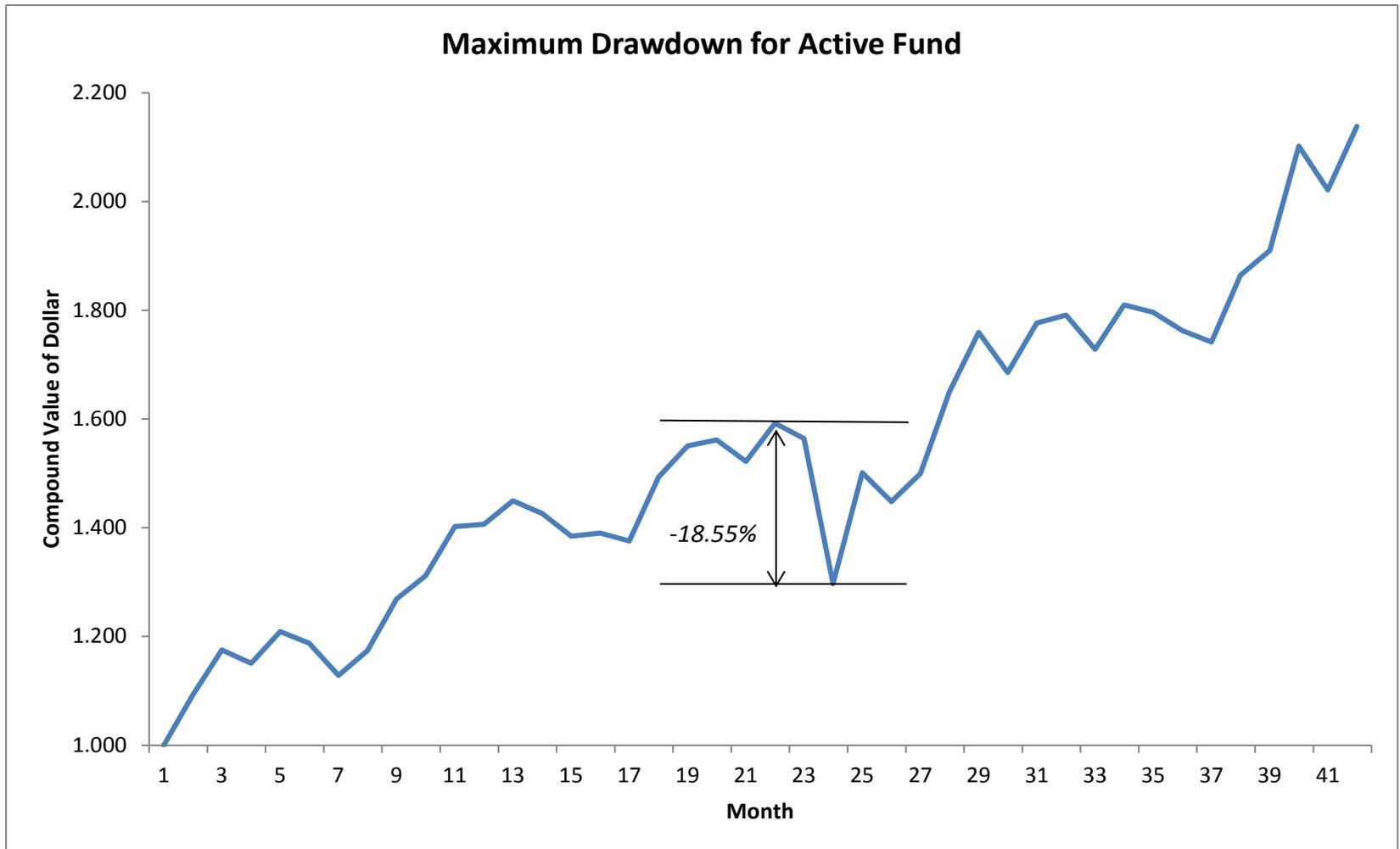
- Drawdown** levels are computed for each month relative to the past sequence of fund values from the initial investment through that period, expressed as a percentage decline from peak value.

- The **Maximum Drawdown** is then the largest absolute decline in value that occurred over the entire investment period.

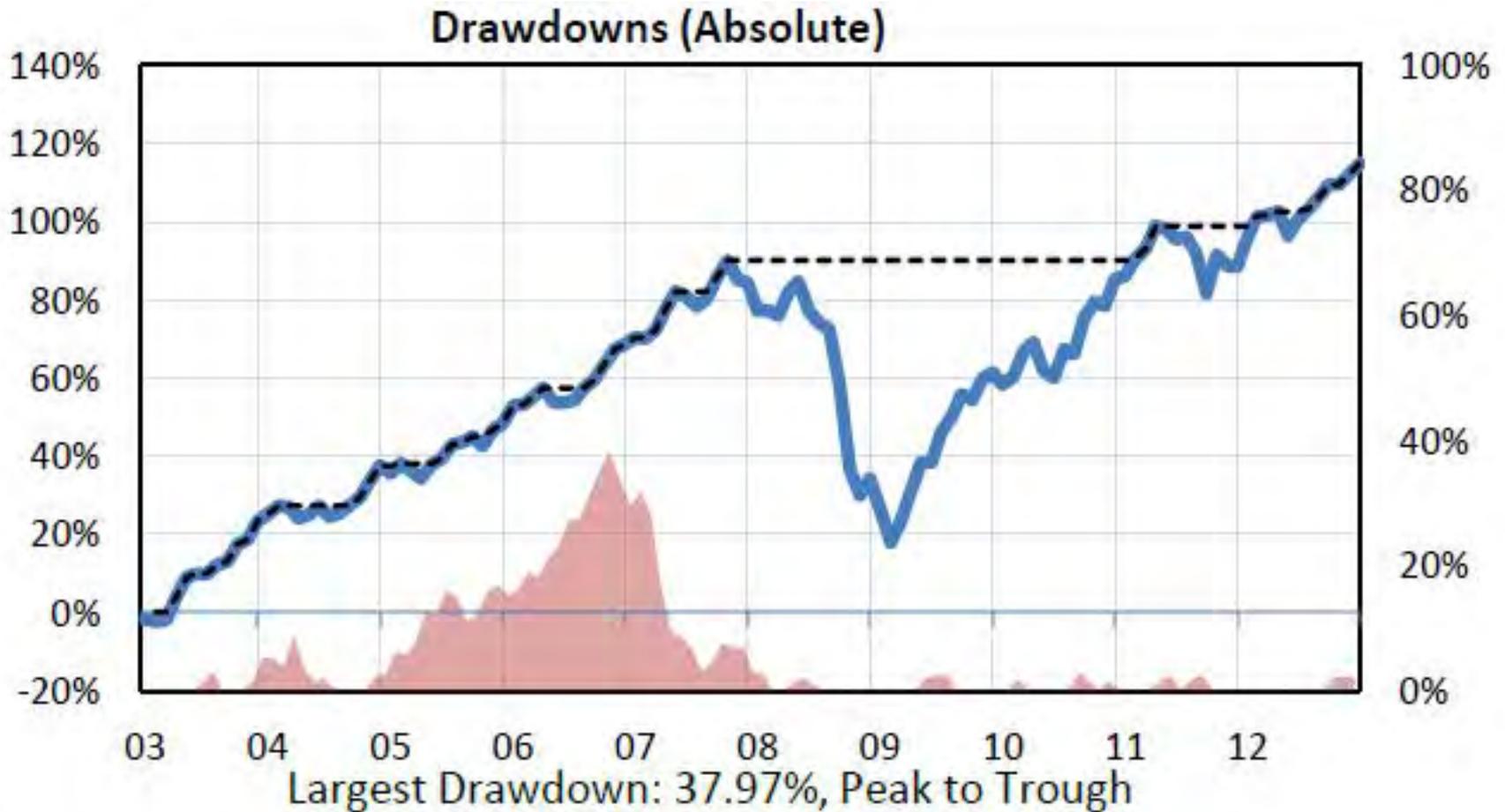
Month	Active Fund Rtn	Active Compound\$	Drawdown	Index Fund Rtn	Index Compound\$	Drawdown
Initial	—	1.000	—	—	1.000	—
1	9.254	1.093	0.00%	2.757	1.028	0.00%
2	7.576	1.175	0.00%	7.552	1.105	0.00%
3	-2.106	1.151	-2.11%	-1.981	1.083	-1.98%
4	5.085	1.209	0.00%	6.244	1.151	0.00%
5	-1.745	1.188	-1.74%	0.785	1.160	0.00%
6	-5.031	1.128	-6.68%	-4.101	1.112	-4.10%
7	4.064	1.174	-2.90%	5.965	1.179	0.00%
8	8.062	1.269	0.00%	6.084	1.250	0.00%
9	3.394	1.312	0.00%	4.478	1.306	0.00%
10	6.900	1.402	0.00%	7.955	1.410	0.00%
11	0.292	1.406	0.00%	-5.597	1.331	-5.60%
12	3.074	1.450	0.00%	5.476	1.404	-0.43%
13	-1.616	1.426	-1.62%	-3.336	1.357	-3.75%
14	-2.932	1.384	-4.50%	4.625	1.420	0.00%
15	0.445	1.391	-4.08%	1.716	1.445	0.00%
16	-1.064	1.376	-5.10%	1.105	1.461	0.00%
17	8.570	1.494	0.00%	7.208	1.566	0.00%
18	3.807	1.550	0.00%	5.117	1.646	0.00%
19	0.732	1.562	0.00%	1.006	1.663	0.00%
20	-2.555	1.522	-2.56%	-1.717	1.634	-1.72%
21	4.641	1.593	0.00%	4.059	1.700	0.00%
22	-1.793	1.564	-1.79%	-1.062	1.682	-1.06%
23	-17.065	1.297	-18.55%	-14.443	1.439	-15.35%
24	15.715	1.501	-5.75%	6.407	1.532	-9.93%
25	-3.536	1.448	-9.08%	8.127	1.656	-2.61%
26	3.582	1.500	-5.83%	6.058	1.756	0.00%
27	10.010	1.650	0.00%	5.759	1.857	0.00%
28	6.630	1.759	0.00%	4.180	1.935	0.00%
29	-4.205	1.686	-4.21%	-3.103	1.875	-3.10%
30	5.430	1.777	0.00%	3.999	1.950	0.00%
31	0.803	1.791	0.00%	3.873	2.026	0.00%
32	-3.520	1.728	-3.52%	-2.358	1.978	-2.36%
33	4.740	1.810	0.00%	5.545	2.067	0.00%
34	-0.759	1.796	-0.76%	-3.115	2.022	-3.11%
35	-1.875	1.763	-2.62%	-0.498	2.012	-3.60%
36	-1.187	1.742	-3.77%	-2.738	1.957	-6.24%
37	7.071	1.865	0.00%	6.326	2.081	-0.31%
38	2.434	1.910	0.00%	2.033	2.123	0.00%
39	10.059	2.102	0.00%	5.886	2.248	0.00%
40	-3.845	2.021	-3.84%	-5.024	2.135	-5.02%
41	5.785	2.138	0.00%	-1.891	2.095	-6.82%
			Max Drawdown:			Max Drawdown:
			-18.55%			-15.35%

Example of Portfolio Drawdown (cont.)

- Graphically, for the actively managed portfolio:



Portfolio Drawdown at TRS Total Fund: January 2003 – December 2012



3. Simple Performance Measurement: “Up Capture” and “Down Capture” Ratios

- “Up Capture” and “Down Capture” ratios are comparisons of the average periodic return to an active portfolio versus the average periodic return to a benchmark portfolio.
- The difference between the two ratios lies in which periodic returns are included in the averaging process:
 - **Up Capture** involves returns from periods during which the *benchmark return was positive* (or zero)
 - **Down Capture** involves returns from periods during which the *benchmark return was negative*
- Specifically, for a series of active portfolio and benchmark returns (i.e., $\{R_{pt}, R_{bt}\}$):
 - Up Capture Ratio = $\text{Avg}[\{R_{pt} \mid R_{bt} \geq 0\}] \div \text{Avg}[\{R_{bt} \mid R_{bt} \geq 0\}]$
 - Down Capture Ratio = $\text{Avg}[\{R_{pt} \mid R_{bt} < 0\}] \div \text{Avg}[\{R_{bt} \mid R_{bt} < 0\}]$

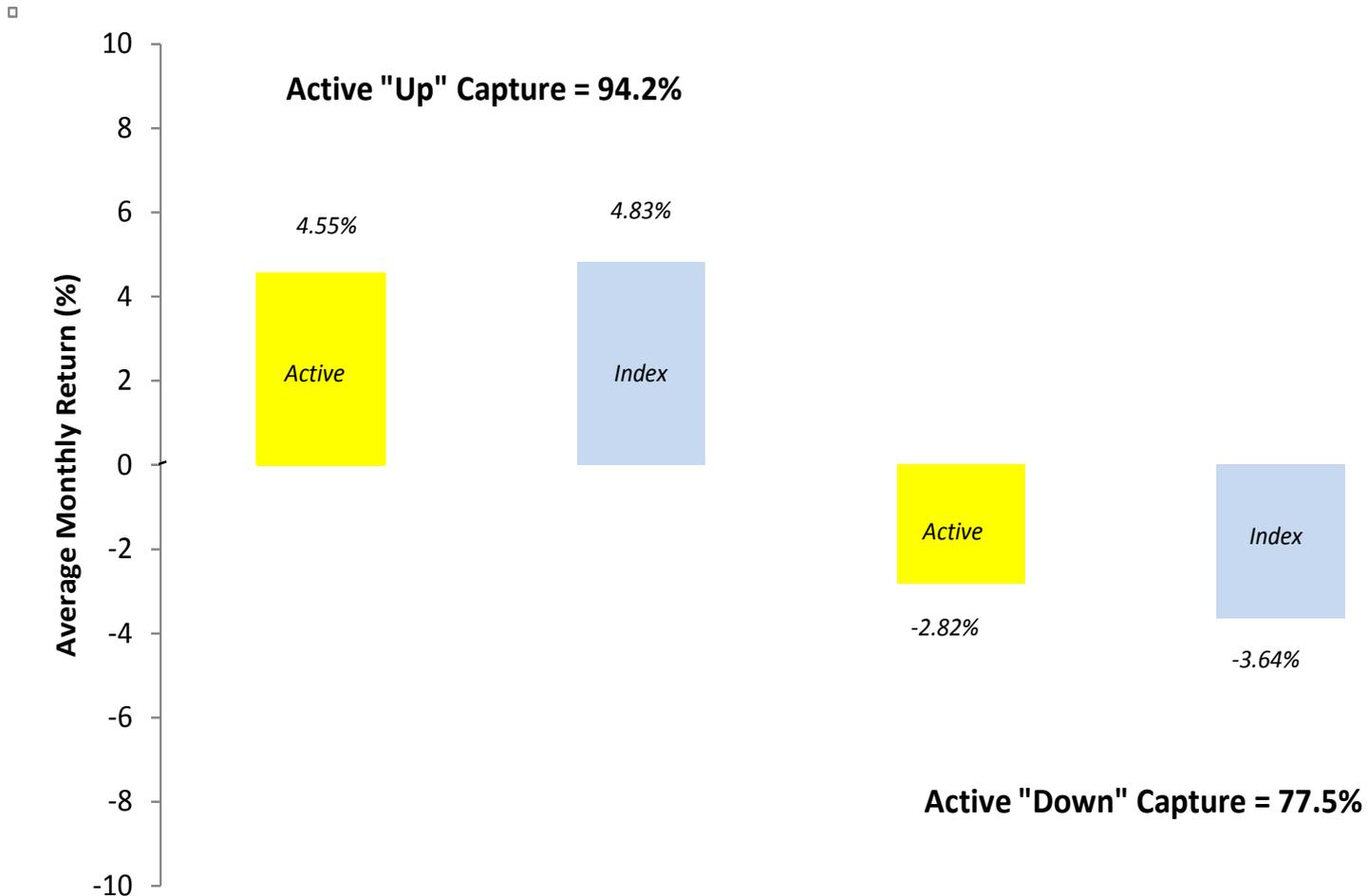
Example of “Up Capture” and “Down Capture” Ratios

- For the active fund data in the last example, the Up Capture and Down Capture ratios (relative to the index fund) are as follows:

<u>Month</u>	<u>Active Fund</u>	<u>Index Fund</u>	<u>Active/Index Up</u>	<u>Index Up</u>	<u>Active/Index Down</u>	<u>Index Down</u>
1	9.254	2.757	9.254	2.757		
2	7.576	7.552	7.576	7.552		
3	-2.106	-1.981			-2.106	-1.981
4	5.085	6.244	5.085	6.244		
5	-1.745	0.785	-1.745	0.785		
6	-5.031	-4.101			-5.031	-4.101
7	4.064	5.965	4.064	5.965		
8	8.062	6.084	8.062	6.084		
9	3.394	4.478	3.394	4.478		
10	6.900	7.955	6.900	7.955		
11	0.292	-5.597			0.292	-5.597
12	3.074	5.476	3.074	5.476		
13	-1.616	-3.336			-1.616	-3.336
14	-2.932	4.625	-2.932	4.625		
15	0.445	1.716	0.445	1.716		
16	-1.064	1.105	-1.064	1.105		
17	8.570	7.208	8.570	7.208		
18	3.807	5.117	3.807	5.117		
19	0.732	1.006	0.732	1.006		
20	-2.555	-1.717			-2.555	-1.717
21	4.641	4.059	4.641	4.059		
22	-1.793	-1.062			-1.793	-1.062
23	-17.065	-14.443			-17.065	-14.443
24	15.715	6.407	15.715	6.407		
25	-3.536	8.127	-3.536	8.127		
26	3.582	6.058	3.582	6.058		
27	10.010	5.759	10.010	5.759		
28	6.630	4.180	6.630	4.180		
29	-4.205	-3.103			-4.205	-3.103
30	5.430	3.999	5.430	3.999		
31	0.803	3.873	0.803	3.873		
32	-3.520	-2.358			-3.520	-2.358
33	4.740	5.545	4.740	5.545		
34	-0.759	-3.115			-0.759	-3.115
35	-1.875	-0.498			-1.875	-0.498
36	-1.187	-2.738			-1.187	-2.738
37	7.071	6.326	7.071	6.326		
38	2.434	2.033	2.434	2.033		
39	10.059	5.886	10.059	5.886		
40	-3.845	-5.024			-3.845	-5.024
41	5.785	-1.891			5.785	-1.891
Up/Down Average:			4.548	4.827	-2.820	-3.640
Up Capture (%):			94.23%			
Down Capture (%):			77.47%			

“Up Capture” and “Down Capture” Ratios Example (cont.)

- Graphically:



Up Capture and Down Capture Ratios for TRS Total Fund: Jan 2003 – Dec 2012

Annualized Performance:

	<u>Portfolio</u>	<u>B'mark</u>	<u>Diff</u>	<u>Ex. Ret.</u>	<u>Risk Free</u>
Return	7.95%	7.75%	0.20%	0.18%	1.69%
St. Dev.	10.20%	10.18%	0.02%	1.40%	0.52%
Best Month	6.23%	7.15%	(0.92%)	0.93%	0.49%
Worst Month	(14.12%)	(14.39%)	0.27%	(2.06%)	(0.01%)
Skew	(1.40)	(1.38)		-1.74	
Kurtosis	5.01	5.54		6.87	
Best 12 Mths	35.87%	35.50%			
Worst 12 Mths	(33.42%)	(32.90%)			
Up Capture	30.10%	29.37%			
Down Capture	(24.66%)	(24.26%)			

- Up Capture Ratio: $(30.10) / (29.37) = 102.49\%$
- Down Capture Ratio: $(-24.66) / (-24.26) = 101.65\%$

II. Performance Measurement Question #1:

Traditional Risk-Adjusted Performance Measures

Simple portfolio performance measures (such as peer group comparisons) are potentially flawed in the sense that they *do not make explicit adjustments* for the risk of the portfolios in the comparison.

To address this shortcoming, there are also several performance measures that do take risk into account when assessing the returns produced by the portfolio manager. In fact, there are five well-established *risk-adjusted* performance measures used widely in practice:

1. Sharpe Ratio
2. Treynor Ratio
3. Information Ratio
4. Sortino Ratio
5. Jensen's Alpha

To understand how these measures are calculated and what they mean, consider the situation you must assess the investment performance of a portfolio manager over a given period of time. In executing this task, you will be using a historical data set consisting of 'N' periodic (e.g., monthly) observations on the following variables:

R_{pt} = the period t return to the p -th portfolio;

R_{mt} = the period t return to a market benchmark portfolio ;

RF_t = the period t return to a risk-free security (i.e., a T-bill).

1. Risk-Adjusted Performance Measures: Sharpe Ratio

This measure ranks investment performance on the basis of the portfolio's **risk premium earned per unit of risk**, where risk is measured by the **standard deviation** of the set of historical returns (i.e., σ_p). That is, for the p-th portfolio calculate:

$$S_p = \frac{(\bar{R}_p - \bar{R}_F)}{\sigma_p}$$

where the numerator is the difference between the historical average periodic returns to the portfolio and the risk-free rate, respectively.

In practice, the denominator can be calculated as either the standard deviation of the actual portfolio returns or as the standard deviation of the *excess portfolio returns* (i.e., the portfolio returns net of the risk-free rate).

The Sharpe ratio is then used to establish a simple ranking of managerial performance by listing the values corresponding to each portfolio from highest to lowest.

Sharpe Ratio (cont.)

An advantage of the Sharpe ratio is that it is relatively easy to compute and *widely used* in practice. In fact, it is arguably the widely used risk-adjusted performance measure reported throughout the funds management industry.

The disadvantages are that it is *difficult to interpret* and does not permit precise statistical comparisons between portfolios. For instance, suppose that two portfolios being compared produce Sharpe ratios of 0.51 and 0.49, respectively. It is:

- (i) not clear exactly what those numbers mean (i.e., the first manager produced 0.51 unit of return in excess of the risk-free rate for every unit of risk, as measured by total portfolio volatility); and
- (ii) whether 0.51 is significantly different than 0.49, or whether the two performance statistics are within the range of rounding and measurement error.

One absolute assessment that can be made with the Sharpe ratio is whether it is a *positive* or a *negative* number. Notice that the Sharpe ratio can only be positive if the manager produced an average return over the measurement period that exceeded the risk-free rate (i.e., the numerator of the statistic is positive). By construction, the standard deviation measure in the denominator of the Sharpe ratio can never be a negative number.

Sharpe Ratios for TRS Total Fund vs. Benchmark: Jan 2003 – Dec 2012

Annualized Performance:

	<u>Portfolio</u>	<u>B'mark</u>	<u>Diff</u>	<u>Ex. Ret.</u>	<u>Risk Free</u>
Return	7.95%	7.75%	0.20%	0.18%	1.69%
St. Dev.	10.20%	10.18%	0.02%	1.40%	0.52%
Best Month	6.23%	7.15%	(0.92%)	0.93%	0.49%
Worst Month	(14.12%)	(14.39%)	0.27%	(2.06%)	(0.01%)
Skew	(1.40)	(1.38)		-1.74	
Kurtosis	5.01	5.54		6.87	
Best 12 Mths	35.87%	35.50%			
Worst 12 Mths	(33.42%)	(32.90%)			
Up Capture	30.10%	29.37%			
Down Capture	(24.66%)	(24.26%)			

Risk Summary:

Info. Ratio	0.14	Sharpe	0.61	Hit Rt Up	62%
M2 Premium	7.93%	Treynor	0.06	Hit Rt Dn	66%
Beta	0.99	Sortino	0.26	Hit Rt Tot	63%
Jensen's alpha	0.25%	5% hVar	(0.60%)		

- TRS Sharpe Ratio: $(0.0795 - .0169) / (0.1020) = \mathbf{0.614}$
- Benchmark Sharpe Ratio: $(0.0775 - .0169) / (0.1018) = \mathbf{0.595}$

2. Risk-Adjusted Performance Measures: Treynor Ratio

Like the Sharpe ratio, the Treynor measure assesses performance on the basis of a ratio of average excess return to risk. The difference is that the Treynor ratio considers only the **systematic** component of a portfolio's risk to be relevant. Letting β_p be the portfolio's beta coefficient, the Treynor ratio is calculated as follows:

$$T_p = \frac{(\bar{R}_p - \bar{R}_F)}{\beta_p}$$

Like the Sharpe measure, T_p produces a simple ranking of performance. (In fact, if all the portfolios being ranked are *fully diversified*, the Sharpe and Treynor indexes will create the *same* ranking.)

The Treynor ratio is not as easy to compute as the Sharpe ratio (i.e., it requires the calculation of the portfolio's beta coefficient) but is based on a widely accepted measure of risk. Similar to S_p , the disadvantages of Treynor's measure are that it is difficult to interpret and does not permit precise statistical comparisons between portfolios.

Treynor Ratios for TRS Total Fund vs. Benchmark: Jan 2003 – Dec 2012

Annualized Performance:

	<u>Portfolio</u>	<u>B'mark</u>	<u>Diff</u>	<u>Ex. Ret.</u>	<u>Risk Free</u>
Return	7.95%	7.75%	0.20%	0.18%	1.69%
St. Dev.	10.20%	10.18%	0.02%	1.40%	0.52%
Best Month	6.23%	7.15%	(0.92%)	0.93%	0.49%
Worst Month	(14.12%)	(14.39%)	0.27%	(2.06%)	(0.01%)
Skew	(1.40)	(1.38)		-1.74	
Kurtosis	5.01	5.54		6.87	
Best 12 Mths	35.87%	35.50%			
Worst 12 Mths	(33.42%)	(32.90%)			
Up Capture	30.10%	29.37%			
Down Capture	(24.66%)	(24.26%)			

Risk Summary:

Info. Ratio	0.14	Sharpe	0.61	Hit Rt Up	62%
M2 Premium	7.93%	Treynor	0.06	Hit Rt Dn	66%
Beta	0.99	Sortino	0.26	Hit Rt Tot	63%
Jensen's alpha	0.25%	5% hVar	(0.60%)		

- TRS Treynor Ratio: $(0.0795 - .0169) / (0.99) = \mathbf{0.063}$
- Benchmark Treynor Ratio: $(0.0775 - .0169) / (1.00) = \mathbf{0.061}$

3. Risk-Adjusted Performance Measures: Information Ratio

Closely related to the risk-adjusted performance statistics just presented (i.e., Sharpe, Treynor) is another widely used performance measure: the **Information Ratio**.

This statistic measures a portfolio's average return in excess of that to a comparison, or **benchmark**, portfolio divided by the standard deviation of this excess return. Formally, the information ratio (IR) is calculated as:

$$IR_p = \frac{\bar{R}_p - \bar{R}_b}{\sigma_{ER}} = \frac{\overline{ER}_p}{\sigma_{ER}}$$

where:

IR_p = the information ratio for portfolio j

\bar{R}_p = the average return for portfolio j during the specified time period

\bar{R}_b = the average return for the benchmark portfolio during the period

σ_{ER} = the standard deviation of the excess return during the period.

3. The Information Ratio (cont.)

To interpret IR, notice that the mean excess return in the numerator represents the manager's ability to use his talent and information to generate a portfolio return that differs from that of the benchmark against which his performance is being measured. As we have seen, this average return differential between the actual portfolio and the benchmark is one way of measuring the portfolio's *Alpha coefficient*.

Conversely, the denominator measures the amount of *residual (unsystematic) risk* that the investor incurred in pursuit of those excess returns. The coefficient σ_{ER} is sometimes called the *Tracking Error* of the investor's portfolio and it is a "cost" of active management in the sense that fluctuations in the periodic ER_j values represent random noise beyond an investor's control that could hurt performance.

Thus, the IR can be viewed as a benefit-to-cost ratio that assesses the quality of the investor's information and skill deflated by incremental risk generated by the active investment process, or:

$$IR_p = (\text{Alpha})_p \div (\text{Tracking Error})_p$$

Information Ratio for TRS Total Fund vs. Benchmark: Jan 2003 – Dec 2012

Cumulative Performance:

Portfolio	114.8%	Periods	120
Benchmark	110.9%	R-Squared	98.1%
Excess Return	3.9%	Tracking Error	1.4%

Annualized Performance:

	<u>Portfolio</u>	<u>B'mark</u>	<u>Diff</u>	<u>Ex. Ret.</u>	<u>Risk Free</u>
Return	7.95%	7.75%	0.20%	0.18%	1.69%
St. Dev.	10.20%	10.18%	0.02%	1.40%	0.52%
Best Month	6.23%	7.15%	(0.92%)	0.93%	0.49%
Worst Month	(14.12%)	(14.39%)	0.27%	(2.06%)	(0.01%)
Skew	(1.40)	(1.38)		-1.74	
Kurtosis	5.01	5.54		6.87	
Best 12 Mths	35.87%	35.50%			
Worst 12 Mths	(33.42%)	(32.90%)			
Up Capture	30.10%	29.37%			
Down Capture	(24.66%)	(24.26%)			

Risk Summary:

Info. Ratio	0.14	Sharpe	0.61	Hit Rt Up	62%
M2 Premium	7.93%	Treynor	0.06	Hit Rt Dn	66%
Beta	0.99	Sortino	0.26	Hit Rt Tot	63%
Jensen's alpha	0.25%	5% hVar	(0.60%)		

- TRS Information Ratio: $(0.0795 - .0775) / (.014) = \mathbf{0.143}$

Tracking Error Risk Budget at TRS: August 2012

Risk Budget Summary

	Asset Allocation		Tracking Error Budget ⁽⁶⁾			Tracking Error		
	\$	%	Lower	Neutral	Upper	3Y Actual	5Y Predict	5Y Contrib
TOTAL	110,974	100.0%				196	66	66
IPM								
GBI	18,762	16.9%	50	100	200	96	89	9
Precious Mtls (vs policy)	736	0.7%	NA	NA	NA	2438	3496	8
US Quality	100	0.1%	NA	NA	NA	1221	869	0
SV / PASSIVE								
US Large Cap Value	1,180	1.1%	0	100	200	(2)	79	0
US Large Cap Growth	204		0	100	200	(2)	79	0
Non-US Developed	1,464	1.3%	0	100	200	(2)	15	0
Emerging Market	1,459	1.3%	0	100	200	(2)	145	0
US Small Cap	317	0.3%	0	100	200	(2)	25	0
Directional HF	1,970	1.8%	0	600	600	(2)	473	0
US Treasury	12,437	11.2%	0	50	200	(2)	9	0
Cash	1,450	1.3%	0	50	200	112	2	0
Inflation Linked	5,129	4.6%	0	50	200	16	29	0
QVF	40	0.0%	700	1000	1300	1203	1262	(4)
EPU								
US Large Cap	8,811	7.2%	150	300	500	243	306	14
Non-US Developed	6,286	6.1%	150	300	500	285	211	4
Emerging Market	6,972	6.1%	150	300	500	260	267	1
US Small Cap	1,684	1.4%	250	500	700	528	344	0
Dislocated Credit	1,009	0.9%	300	600	1000	686	930	1
Directional HF	3,613	3.0%	300	600	800	(2)	272	0
Stable Value HF	3,936	3.7%	200	400	600	347	228	1
EPR								
Private Equity	13,064	11.8%	300	600	900	775	(3)	(4)
Real Assets	13,015	11.7%	250	500	750	351	(3)	(4)
REITS	2,097	1.9%	0	100	200	56	39	0
SPN								
Barclays Capital	531	0.5%	150	250	400	212	300	0
Blackrock	1,232	1.1%	150	250	400	168	193	0
JP Morgan	1,275	1.1%	150	250	400	285	199	0
Morgan Stanley	1,227	1.1%	150	250	400	130	194	-1
Neuberger Berman	1,285	1.2%	150	250	400	209	120	0
TAA (Security Selection)								
	227	0.2%	0	25	50	(2)	16	2
Asset Allocation								
US Large Cap	21,911	18.6%				(4)	21	21
Non-US Developed	17,301	16.5%				169	143	-8
Emerging Markets	10,754	9.1%				129	107	0
US Small Cap	1,174	1.0%				181	213	0
Directional HF	5,583	4.7%				233	585	6
Private Equity	13,064	11.8%				(2)	308	0
US Treasury	13,476	12.2%				775	(3)	1
Stable Value HF	3,936	3.7%				23	15	2
Absolute Return	959	0.4%				211	228	0
Cash	959	2.2%				676	1053	0
Inflation Linked	5,499	5.0%				456	12	0
Real Assets	13,015	11.7%				22	30	0
Commodities	1,155	0.8%				351	(3)	18
REITS	2,188	2.0%				912	2962	3
						58	41	0
OTHER RISK BUDGETS								
Total Public Trust	84,895	76.5%	50	100	300	125	81	(4)
Total TAA (SS + AA)			25	50	75			(4)
EPU World Equity	3,700	3.3%	150	300	500	316	310	5
Trust VaR (Neutral is BM)			6.5%	8.8%	10.4%		8.9%	

(1) Excludes private markets security selection

(2) Need at least twelve months history for realized tracking error

(3) Not modeled due to lack of transparency for the benchmark- private markets proxy under development

(4) Under development

(6) Boxed items are investment policy limits

The Information Ratio: Additional Thoughts

- Goodwin has noted that the *Sharpe ratio is a special case of the IR* where the risk-free asset is the benchmark portfolio, despite the fact that this interpretation violates the spirit of a statistic that should have a value of zero for any passively managed portfolio.
- Recall that the IR statistic can be interpreted as:

$$\mathbf{IR} = (\mathbf{Alpha}) \div (\mathbf{Tracking\ Error})$$

So, if the Information Ratio is used as a policy tool for assessing what an active manager should “deliver”, then we should think of the Tracking Error as the manager’s *risk budget* and the Alpha coefficient of the return produced by spending that risk budget.

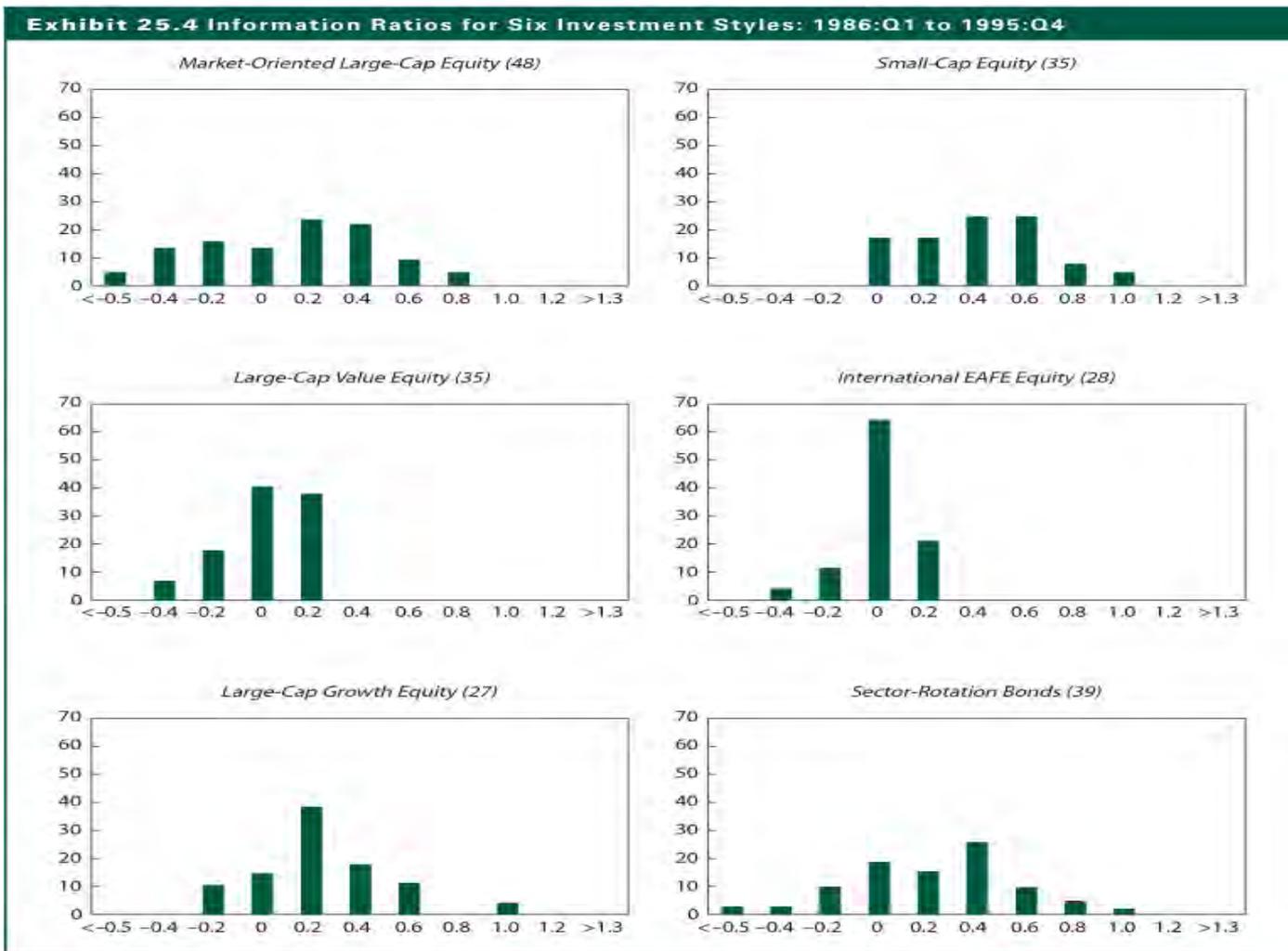
In that context, notice that different combinations of Alpha and Tracking Error can produce the same IR target: An IR statistic of 0.50 can be produced by a combination of [Alpha = 1.00%, TE = 2.00%] or a combination of [Alpha = 2.00%, TE = 4.00%].

The consequence of this is that a manager who is granted a bigger risk budget (i.e., a higher allowable TE) will need to produce a higher level of Alpha to justify his or her activity.

The Information Ratio: Additional Thoughts (cont.)

- There is *no theory* for what is an *acceptable level* of the IR statistic. However, notice that IR will only be positive if the manager's actual return exceeds that of the benchmark (i.e., produces a positive Alpha). By construction, tracking error—which is just calculated as a standard deviation—can never be negative.
- Grinold and Kahn have argued that reasonable information ratio levels *should range from 0.50 to 1.00*, with an investor having an IR of 0.50 being good and one with an IR of 1.00 being exceptional. These, however, appear to be exceptionally difficult hurdles to clear.
- Goodwin studied the performance of more than 200 professional equity and fixed-income portfolio managers with various investment styles over a ten-year period. He found that the IR of the median manager in each style group was positive but that the ratio never exceeded 0.50. Thus, while the average manager appears to add value to investors— α (and hence IR) is greater than zero—she doesn't qualify as “good.” Further, no style group had more than three percent of its managers deliver an IR in excess of 1.00.

The Information Ratio: Goodwin's Fund Comparison



Note: Midpoints of ranges. Information ratios are on the x-axes; relative frequencies, in percentages, are on the y-axes.

Source: Brian D. Singer, Renato Staub, and Kevin Terhaar, "Determining the Appropriate Allocation to Alternative Investments," Hedge Fund Management (Charlottesville, VA: CFA Institute, 2002), 10. Copyright © 2002 CFA Institute. Reproduced and republished from *Financial Management Journal* with permission from the CFA Institute. All Rights Reserved.

4. Risk-Adjusted Performance Measures: Sortino Ratio

The **Sortino measure** is a risk-adjusted investment performance statistic that differs from the Sharpe ratio in two ways:

- (i) the Sortino ratio measures the portfolio's average return in excess of a user-selected *minimum acceptable return (MAR) threshold*; and
- (ii) it focuses on just the **downside risk** in the portfolio.

This measure can be calculated as follows:

$$ST_p = \frac{\bar{R}_i - \tau}{DR_p}$$

where

τ = the minimum acceptable return threshold specified for the time period

DR_p = the downside risk coefficient for Portfolio p during the specified time period.

One of the most popular ways to compute DR is the *semi-deviation*, which uses the portfolio's average (expected) return as the hurdle rate:

$$\text{Semi - Deviation} = \sqrt{\frac{1}{n} \sum_{R < \bar{R}} (R_{it} - \bar{R}_i)^2}$$

where

n = the number of portfolio returns falling below the expected return

Like the Sharpe ratio, higher values of the ST measure indicate superior levels of portfolio management.

Sortino Ratio: An Example

Suppose that over the past ten years, two portfolio managers have produced the following returns:

<u>Year</u>	<u>Portfolio A Return (%)</u>	<u>Portfolio B Return (%)</u>
1	-5	-1
2	-3	-1
3	-2	-1
4	3	-1
5	3	0
6	6	4
7	7	4
8	8	7
9	10	13
10	13	16
Average:	4	4
Std. Dev.:	5.60	5.92

Both portfolios had an average annual return of 4 percent over this horizon, meaning that it will be how their risk is measured that determines which manager performed the best.

Based on the listed standard deviation coefficients, it appears that Portfolio A is the less volatile portfolio. Notice, however, that a substantial amount of the variation for Portfolio B came from two large positive returns, which are included in the computation of total risk. Assuming the average risk-free rate during this period was 2 percent, the Sharpe ratio calculations confirm that Portfolio A outperformed Portfolio B: $S_A = 0.357$ ($= [4 - 2]/5.60$) and $S_B = 0.338$ ($= [4 - 2]/5.92$).

The story changes when just the downside risk of the portfolios is considered. In addition to more extreme positive values, notice that Portfolio B also had losses that were limited to 1 percent in any given year, perhaps as a result of a portfolio insurance strategy the manager is using. Using semi-deviation to compute DR for both portfolios leaves:

$$DR_A = \sqrt{[(-5-4)^2 + (-3-4)^2 + (-2-4)^2 + (3-4)^2 + (3-4)^2] \div 5} = 5.80$$

and

$$DR_B = \sqrt{[(-1-4)^2 + (-1-4)^2 + (-1-4)^2 + (-1-4)^2 + (0-4)^2] \div 5} = 4.82$$

Thus, when only the possibility of receiving a less-than-average return is considered, Portfolio A now appears to be the risky alternative due to the fact it has more extreme negative returns than Portfolio B. Assuming a minimum return threshold of 2 percent to match the Sharpe measure, the Sortino ratios for both portfolios indicate that, by limiting the extent of his downside risk, the manager for Portfolio B was actually the superior performer: $ST_A = 0.345$ ($= [4 - 2]/5.80$) and $ST_B = 0.415$ ($= [4 - 2]/4.82$).

Sortino Ratio for TRS Total Fund vs. Risk-Free Rate: Jan 2003 – Dec 2012

Cumulative Performance:

Portfolio	114.8%	Periods	120
Benchmark	110.9%	R-Squared	98.1%
Excess Return	3.9%	Tracking Error	1.4%

Annualized Performance:

	<u>Portfolio</u>	<u>B'mark</u>	<u>Diff</u>	<u>Ex. Ret.</u>	<u>Risk Free</u>
Return	7.95%	7.75%	0.20%	0.18%	1.69%
St. Dev.	10.20%	10.18%	0.02%	1.40%	0.52%
Best Month	6.23%	7.15%	(0.92%)	0.93%	0.49%
Worst Month	(14.12%)	(14.39%)	0.27%	(2.06%)	(0.01%)
Skew	(1.40)	(1.38)		-1.74	
Kurtosis	5.01	5.54		6.87	
Best 12 Mths	35.87%	35.50%			
Worst 12 Mths	(33.42%)	(32.90%)			
Up Capture	30.10%	29.37%			
Down Capture	(24.66%)	(24.26%)			

Risk Summary:

Info. Ratio	0.14	Sharpe	0.61	Hit Rt Up	62%
M2 Premium	7.93%	Treynor	0.06	Hit Rt Dn	66%
Beta	0.99	Sortino	0.26	Hit Rt Tot	63%
Jensen's alpha	0.25%	5% hVar	(0.60%)		

- TRS Sortino Ratio: $(0.0795 - .0169) / (\text{Semi-Deviation}) = 0.26$

5. Risk-Adjusted Performance Measures: Jensen's Alpha

Unlike the previous risk-adjusted performance measures, which summarize the historical return data by taking simple averages, the Jensen's Alpha procedure estimates the coefficients of the following time-series **regression** for each portfolio relative to a risk factor model. For instance:

$$(R_{pt} - RF_t) = \alpha_p + \beta_p(R_{mt} - RF_t) + \varepsilon_t; t = 1, \dots, N$$

In this procedure, α_p is the performance index. According to the Capital Asset Pricing Model (CAPM), Jensen's alpha should be equal to zero. Thus, if it is significantly above (below) zero, you can conclude that the portfolio manager has significantly outperformed (underperformed) the market, after adjusting for the risk of his or her investment.

There are **three advantages** to Jensen's alpha as a performance measure:

- (i) since it is a byproduct of a regression, its statistical validity can be established directly,
- (ii) it can be interpreted as the level of return that the manager generated in excess (deficient) of what he or she should have earned given the risk of the investment, and
- (iii) it can be adapted to other models of estimating expected returns besides the CAPM (e.g., Fama-French three-factor model).

Jensen's Alpha (cont.)

In particular, when assessing the performance of all-equity portfolios, Jensen's alpha is often calculated using the following versions of the Fama-French multi-factor model:

Three-Factor Model:

$$R_{pt} - RFR_t = \alpha_j + \{[b_{p1}(R_{mt} - RFR_t) + b_{p2}SMB_t + b_{p3}HML_t]\} + e_{pt}$$

Four-Factor Model:

$$R_{pt} - RFR_t = \alpha_j + \{[b_{p1}(R_{mt} - RFR_t) + b_{p2}SMB_t + b_{p3}HML_t] + b_{p4}MOM_t\} + e_{pt}$$

where the risk factors are defined as being related to the general stock market ($R_m - RFR$), firm size (SMB), relative valuation (HML) and return momentum (MOM).

Jensen's Alpha for TRS Total Fund vs. Benchmark: Jan 2003 – Dec 2012

Cumulative Performance:

Portfolio	114.8%	Periods	120
Benchmark	110.9%	R-Squared	98.1%
Excess Return	3.9%	Tracking Error	1.4%

Annualized Performance:

	<u>Portfolio</u>	<u>B'mark</u>	<u>Diff</u>	<u>Ex. Ret.</u>	<u>Risk Free</u>
Return	7.95%	7.75%	0.20%	0.18%	1.69%
St. Dev.	10.20%	10.18%	0.02%	1.40%	0.52%
Best Month	6.23%	7.15%	(0.92%)	0.93%	0.49%
Worst Month	(14.12%)	(14.39%)	0.27%	(2.06%)	(0.01%)
Skew	(1.40)	(1.38)		-1.74	
Kurtosis	5.01	5.54		6.87	
Best 12 Mths	35.87%	35.50%			
Worst 12 Mths	(33.42%)	(32.90%)			
Up Capture	30.10%	29.37%			
Down Capture	(24.66%)	(24.26%)			

Risk Summary:

Info. Ratio	0.14	Sharpe	0.61	Hit Rt Up	62%
M2 Premium	7.93%	Treynor	0.06	Hit Rt Dn	66%
Beta	0.99	Sortino	0.26	Hit Rt Tot	63%
Jensen's alpha	0.25%	5% hVar	(0.60%)		

- TRS Jensen's Alpha: **0.25%** (relative to single-factor market model)

III. Performance Measurement Question #2:

- The risk-adjusted performance measures that we have just discussed are the answer to the first, and most important, question involved in the performance measurement process:
 - *How* did the portfolio manager do relative to the “competition” (i.e., the benchmark, peer group, return-generating model)?

- Once the first question has been answered, the second that should be addressed is:
 - ***Why*** did the portfolio manager perform as he or she did?

- Said differently, the second question seeks to establish which skills or decisions associated with the manager that the investment performance can be attributed. Accordingly, the techniques involved with answering this second question are collectively called ***attribution analysis***.

Attribution Analysis

- Portfolio managers can "add value" to their investors in either of two ways:
 - (i) *selecting superior securities*, or
 - (ii) demonstrating superior *market timing skills* through their allocation of funds to different asset classes or market segments.
- **Attribution analysis** attempts to distinguish which of these factors was the source of the portfolio's overall performance. Specifically, this method compares the total return to the manager's actual investment holdings to the return for a pre-determined benchmark portfolio and decomposes the difference into:
 - (i) an **allocation effect**, and
 - (ii) a **selection effect**.

Attribution Analysis (cont.)

The most straightforward way to measure these two effects is as follows:

$$\text{Allocation Effect} = \sum_i [w_{pi} - w_{bi}] \times [R_{bi} - R_b]$$

and:

$$\text{Selection Effect} = \sum_i [w_{pi}] \times [R_{pi} - R_{bi}]$$

where:

$[w_{pi}, w_{bi}]$ = the investment proportions given to the *i*-th *market segment* (e.g., asset class, industry group) in the manager's actual portfolio and the benchmark portfolio, respectively;

$[R_{pi}, R_{bi}]$ = the investment return to the *i*-th market segment in the manager's actual portfolio and the benchmark portfolio, respectively;

R_b = the total return to the benchmark portfolio.

Attribution Analysis (cont.)

- Computed in this manner, the *allocation effect* measures the decision of the manager to over- or underweight a particular market segment (i.e., $[w_{pi} - w_{bi}]$) in terms of that segment's return performance relative to the overall return to the benchmark (i.e., $[R_{bi} - R_b]$). Good timing skill is therefore a matter of investing more money in those market segments that end up producing greater than average returns.
- The *selection effect* measures the manager's ability to form specific market segment portfolios that generate superior returns relative to the way in which that comparable market segment is defined in the benchmark portfolio (i.e., $[R_{pi} - R_{bi}]$), weighted by the manager's actual market segment investment proportions.
- When constructed in this manner, the manager's *total value-added performance is the sum of the allocation and selection effects*.

Attribution Analysis (cont.)

$$\begin{aligned}\mathbf{Total\ Value-Added} &= (\text{Allocation Effect}) + (\text{Selection Effect}) \\ &= (\text{Total Actual Return}) - (\text{Total Benchmark Return}) \\ &= (R_p - R_b) = \mathbf{Alpha}\end{aligned}$$

This can be seen as follows:

$$\begin{aligned}(\mathbf{Allocation\ Effect}) + (\mathbf{Selection\ Effect}) &= \\ \{ \sum_i [w_{pi} - w_{bi}] \times [R_{bi} - R_b] \} + \{ \sum_i [w_{pi}] \times [R_{pi} - R_{bi}] \} &= \\ \{ \sum_i [w_{pi} R_{bi} - w_{pi} R_b - w_{bi} R_{bi} + w_{bi} R_b] \} + \{ \sum_i [w_{pi} R_{pi} - w_{pi} R_{bi}] \} &= \\ \{ \sum w_{pi} R_{bi} - \sum w_{pi} R_b - \sum w_{bi} R_{bi} + \sum w_{bi} R_b \} + \{ \sum w_{pi} R_{pi} - \sum w_{pi} R_{bi} \} &= \\ [\sum w_{pi} R_{bi} - \sum w_{pi} R_{bi}] + R_b [\sum w_{bi} - \sum w_{pi}] + [\sum w_{pi} R_{pi} - \sum w_{bi} R_{bi}] &= \\ &= \mathbf{(R_p - R_b)}\end{aligned}$$

Attribution Analysis: An Illustrative Example

- Consider an investor whose "top down" portfolio strategy consists of two dimensions. First, he decides on a broad allocation of his investment dollars across three asset classes: *U.S. stocks*; U.S. long-term bonds; and *cash equivalents*, such as U.S. Treasury bills or bank certificates of deposit.
- Once this judgment is made, the investor's second general decision involves choosing which specific *stocks*, *bonds*, and *cash* instruments to buy. As a benchmark for his investment prowess, he selects a hypothetical portfolio with a:
 - 60% allocation to the Standard & Poor's 500 index,
 - 30% investment in the Barclay's U.S. Aggregate Bond index,
 - 10% allocation to three-month Treasury bills.

Attribution Analysis: An Illustrative Example (cont.)

- Suppose that at the start of the investment period, the investor feels that equity values are somewhat inflated and is not optimistic about the near-term performance of the stock market. Compared to the benchmark, he therefore decides to *underweight stocks* and *overweight bonds and cash* in his actual portfolio. The investment proportions he chooses are 50% in equity, 38% in bonds, and 12% in cash.
- Further, instead of selecting a broad-based portfolio of equities, he decides to concentrate on the interest rate sensitive sectors, such as utilities and financial companies, while deemphasizing the technology and consumer durables sectors. Also, he resolves to buy shorter duration bonds of a higher credit quality than are contained in the benchmark bond index and to buy commercial paper rather than Treasury bills.
- Notice in this example that the manager has made *active investment decisions* involving both the *allocation of assets* and the *selection of individual securities*. To determine if either (or both) of these decisions proved to be wise ones, at the end of the investment period he can calculate his overall and segment-specific performance.

Attribution Analysis: An Illustrative Example (cont.)

<u>Asset Class:</u>	<u>Investment Weights:</u>			<u>Returns:</u>		
	<u>Actual</u>	<u>Benchmark</u>	<u>Excess</u>	<u>Actual</u>	<u>Benchmark</u>	<u>Excess</u>
Stock	0.50	0.60	-0.10	9.70%	8.60%	1.10%
Bonds	0.38	0.30	0.08	9.10%	9.20%	-0.10%
Cash	0.12	0.10	0.02	5.60%	5.40%	0.20%

- *Overall Actual Return* = $(0.50 \times 0.097) + (0.38 \times 0.091) + (0.12 \times 0.056) = 8.98\%$

and:

- *Overall Benchmark Return* = $(0.60 \times 0.086) + (0.30 \times 0.092) + (0.10 \times 0.054) = 8.46\%$

so that:

- *Allocation Effect* = $[(-0.10) \times (0.086 - 0.0846)] + [(0.08) \times (0.092 - 0.0846)] + [(0.02) \times (0.054 - 0.0846)] = -0.02\%$

and:

- *Selection Effect* = $[(0.50) \times (0.097 - 0.086)] + [(0.38) \times (0.091 - 0.092)] + [(0.12) \times (0.056 - 0.054)] = 0.54\%$

meaning:

- *Total Value-Added* = (Allocation Effect) + (Selection Effect) = $(-0.02\%) + (0.54\%) = 0.52\%$.

Attribution Analysis at TRS – June 2010

Periods Ending June 30, 2010



Q210	6.8%	-9.5%	1.2%	-3.9%
1 Year	19.1%	16.1%	7.7%	15.6%
Ending Value	\$22.0B	\$53.2B	\$17.1B	\$92.3B
Period	Stable Value	Global Equity	Real Return	Total Trust

TRS Attribution Analysis: June 2010

Assets	Value (\$B)	Average		Total Return	Excess Return	Value Added	NOTES
		% of Fund	+/- weight				
Public Equity	\$45.7	52.2%	-0.3%	14.5%	0.2%	0.3%	
Private Equity	\$7.9	7.1%	-0.6%	24.6%	-9.8%	-0.7%	Excess Return using a PE Benchmark was +3.7%
Global Equity	\$53.6	59.4%	-0.9%	16.1%	-0.7%	-0.4%	Continued strong returns for Global Equity
LT Treasuries	\$11.2	9.9%	-4.3%	12.7%	0.6%	-0.2%	Largest Underweighted Position
Hedge Funds	\$4.0	4.0%	0.0%	7.7%	5.5%	0.2%	
Credit	\$5.2	7.2%	6.5%	34.2%	29.2%	2.2%	Largest Overweighted Position
Cash	\$1.0	1.8%	0.8%	0.6%	0.5%	0.0%	
Stable Value	\$21.4	22.9%	3.1%	19.1%	9.9%	2.1%	Tactical Credit Allocation Beneficial
TIPS	\$8.6	9.2%	0.8%	10.5%	0.0%	0.1%	
Commodities	\$2.1	2.1%	0.2%	-0.1%	5.3%	0.1%	
REITs	\$1.8	2.0%	0.0%	50.7%	-3.0%	-0.2%	
Real Assets	\$4.8	4.4%	-3.1%	-9.0%	6.7%	1.0%	
Real Return	\$17.4	17.8%	-2.2%	7.7%	5.2%	1.0%	Underweight to Real Assets Beneficial
Total Trust	\$92.3	100.0%	0.0%	15.6%	2.7%	2.7%	+15% Total Fund Return
Public Assets	\$79.7	88.5%	3.7%	16.0%	2.6%	2.4%	Exceeded Target Value Added
Private Assets	\$12.7	11.5%	-3.7%	7.0%	-1.1%	0.3%	
Total Trust	\$92.3	100.0%	0.0%	15.6%	2.7%	2.7%	Return and Value Added both positive

TRS Attribution Analysis: June 2010 (cont.)

	Asset Allocation	Security Selection	Total
[Overweight] Credit/ [Underweight] Treasuries	1.8%	0.0%	1.8%
[Underweight] Real Assets/ REITS Allocation	0.6%	0.3%	0.9%
[Overweight] Emerging Market Equity	0.1%	0.1%	0.2%
Hedge Funds	-	0.2%	0.2%
[Overweight] World Equity/ [Underweight] Small Cap	-0.2%	0.2%	0.0%
Private Equity	-0.1%	-0.6%	-0.7%
Other	-0.1%	0.4%	0.3%
Total Fund	2.1%	0.6%	2.7%

TRS Attribution Analysis: September 2012 Update

	Market Value (\$ in millions) as of 9/30/2012		Policy Target	Relative Allocation to Policy Target	Ranges
	(\$)	(%)			
Total Fund	\$112,432	100%	100%	—	—
U.S. Large	\$25,052	22.3%	18%	+4.3%	13-23%
U.S. Small	\$1,600	1.4%	2%	-0.6%	0-7%
Non-U.S. Developed	\$14,499	12.9%	15%	-2.1%	10-20%
Emerging Markets	\$12,048	10.7%	10%	+0.7%	5-15%
Directional Hedge Funds	\$5,720	5.1%	5%	+0.1%	0-10%
Private Equity	\$13,043	11.6%	12%	-0.4%	7-17%
Global Equity	\$71,962	64.0%	62%	+2.0%	55-69%
Long Treasuries	\$12,032	10.7%	13%	-2.3%	0-20%
Stable Value Hedge Funds	\$3,984	3.5%	4%	-0.5%	0-10%
Absolute Return (including OAR)	\$1,979	1.8%	0%	+1.8%	0-20%
Cash	\$2,256	2.0%	1%	+1.0%	0-5%
Stable Value	\$20,251	18.0%	18%	0.0%	13-23%
TIPS	\$5,276	4.7%	5%	-0.3%	0-10%
Real Assets	\$13,367	11.9%	13%	-1.1%	5-20%
REITS	\$712	0.6%	2%	-1.4%	0-5%
Commodities	\$864	0.8%	0%	+0.8%	0-5%
Real Return	\$20,219	18.0%	20%	-2.0%	15-25%

TRS Attribution Analysis: September 2012 Update (cont.)

TOTAL FUND ATTRIBUTION ANALYSIS
3 MONTHS ENDING 9/30/12



Asset Class	Allocation Effect (in bps)
U.S. Large Cap	5
U.S. Small Cap	-2
Non-U.S. Developed	1
Emerging Markets	-1
Directional Hedge Funds	0
Private Equity	1
Long Treasuries	2
Stable Value Hedge Funds	1
Cash Equivalents	-2
Other Absolute Return	-3
U.S. TIPS	0
Real Assets	2
REITS	0
Commodities	6
Total Allocation Effect	10

IV. Appendix

1. The Notion of Tracking Error: Concept and Calculation

- One way to evaluate how closely any managed investment fund matches its intended benchmark is to calculate the fund's **tracking error**.
- Tracking error can be computed as the standard deviation of the *difference in returns* between the managed portfolio (i.e., either active or passive) and the underlying benchmark.
- Let $\Delta_t = (R_{\text{MgdPort}} - R_{\text{Bench}})_t$. Then, using a total of T return periods, *periodic tracking error* equals:

$$\sigma_{\Delta} = \sqrt{\frac{\sum_{t=1}^T (\Delta_t - \bar{\Delta})^2}{(T-1)}}$$

Notion of Tracking Error (cont.)

- For P return periods in a year (e.g., P = 12 for monthly returns) *annualized tracking error* is then:

$$TE = \sigma_{\Delta} \sqrt{P}$$

- Generally speaking, managed portfolios can be separated into the following categories by the level of their annualized tracking errors:
 - *Passive* (i.e., Indexed): $TE < 1.0\%$ (Note: $TE < 0.5\%$ is normal)
 - *Structured* (i.e., Enhanced Index): $1.0\% \leq TE \leq 3\%$
 - *Active*: $TE > 3\%$ (Note: $TE > 5\%$ is normal for some active managers)

Tracking Error Example: “Large Blend” Active Manager vs. Index Funds

DGAGX US \$ NAV **45.19** -.08 Purch Prc 45.19

..... On 14 Jan

DGAGX US Equity		99 Feedback	Page 1/4	Description: Profile
1) Profile		2) Performance		3) Holdings
				4) Organizational

DREYFUS APPRECIATION FD INC

Objective Growth-Large Cap

Dreyfus Appreciation Fund, Inc. is an open-end fund incorporated in the USA. The Fund's objective is long-term capital growth consistent with the preservation of capital. Its secondary goal is current income. The Fund invests at least 80% of its net assets in the common stock of U.S. and foreign blue-chip companies of market capitalization of more than \$5 billion. [BBGID BBG000BBW0L3]

6) Current Data (COMP)



Bloomberg Classification

Fund Type	Open-End Fund
Asset Class	Equity
Geo. Focus.	Global
Style	Growth
Size	Large-cap

7) NAV (GP)

USD 45.19

Assets 01/14/13

USD 5.61B

Performance	Return	Percentile
1 Month	2.75%	1
YTD	2.87%	22
1 Year	12.59%	21
3 Year	11.11%	78
5 Year	3.46%	70

Fund Info

Inception Date	01/18/84
Share Class	Retail
Min Investment	USD 2500
Min Subsequent	USD 100.00
Min IRA	USD 750
Expense Ratio	.97%

Fees

Front Load	.00%
Back Load	.00%
Early Withdrawal	.00%
Current Mgmt Fee	.55%
Performance Fee	N.A.
12b1 Fee	.00%

Px Source

NASDAQ

Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2013 Bloomberg Finance L.P.
SN 335716 CST GMT-6:00 6819-2832-0 15-Jan-2013 12:17:16

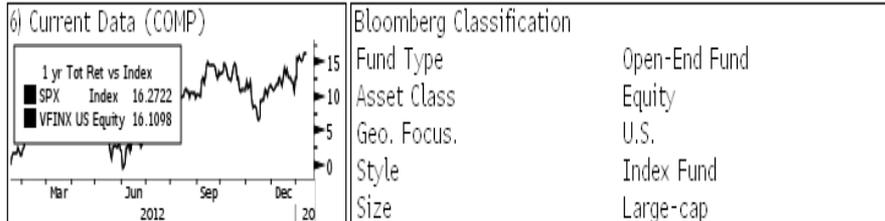
Index Fund (VFINX) and Exchange-Traded Fund (SPY)

VFINX US \$ NAV **135.56** -.12 Purch Prc 135.56

.... On 14 Jan

VFINX US Equity	99 Feedback	Page 1/4	Description: Profile
1) Profile	2) Performance	3) Holdings	4) Organizational

VANGUARD 500 INDEX FUND-INV Objective Index Fund-Large Cap
 Vanguard 500 Index Fund is an open-end fund incorporated in the USA. The Fund aims to track the performance of the Standard & Poor's 500 Index, which is dominated by the stocks of large U.S. companies. The Fund invests substantially all of its assets in the stocks that make up the Index. [BBGID BBG000BHTMY2]



7) NAV (GP) USD 135.56
 Assets 12/31/12 USD 111.88B

Performance	Return	Percentile	Fund Info	Fees
1 Month	4.18%	60	Inception Date 08/31/76	Front Load .00%
YTD	3.19%	56	Share Class Investor	Back Load .00%
1 Year	16.52%	73	Min Investment USD 3000	Early Withdrawal .00%
3 Year	10.75%	72	Min Subsequent USD 100.00	Current Mgmt Fee .14%
5 Year	2.94%	75	Min IRA N.A.	Performance Fee N.A.
Px Source	NASDAQ		Expense Ratio .17%	12b1 Fee .00%

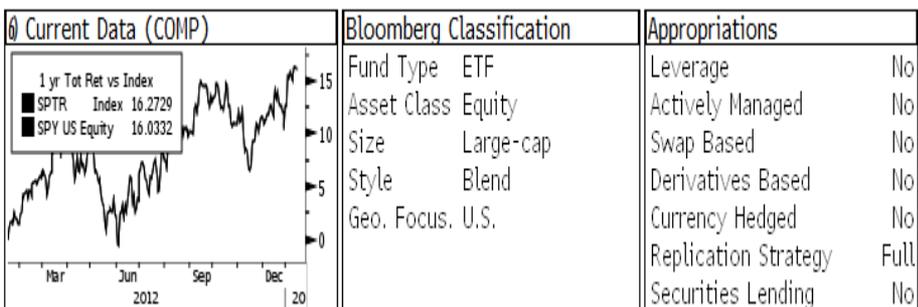
Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2013 Bloomberg Finance L.P.
 SN 335716 CST GMT-6:00 6819-2832-0 15-Jan-2013 12:21:48

SPY US \$ ↑ **146.83** -.14 P146.82/146.83H 340x348

... At 12:10 d Vol 44,224,351 0 146.29X H 146.9315D L 146.20T Val 6.479B

SPY US Equity	99 Feedback	Page 1/5	Description: Profile	
1) Profile	2) Performance	3) Holdings	4) Allocations	5) Organizational

SPDR S&P 500 ETF TRUST Objective Blend - Large Cap
 SPDR S&P 500 ETF Trust is a unit investment trust incorporated in the United States. The Trust consists of a portfolio representing all 500 stocks in the S&P 500 Index. [BBGID BBG000BDTBL9]



7) Price (GP)	USD 146.82	Trading Data	Characteristics
8) NAV(NAV)	USD 146.93	Bid Ask Spread 0.010	Und. Index 10) SPX
INAV	USD 146.82	30D Avg Volume 137.9M	Index Weight Market Cap
Fund Percent Premium	0.000%	Implied Liquidity 61.7M	Px Track. Error .314
52 Wk H 09/14/12	USD 148.11	Market Cap USD 126.70B	NAV Track. Error .042
52 Wk L 06/04/12	USD 127.135	Shares Out 862.9M	Inception Date 01/22/93
9) Options(OMON)	Yes	Total Assets USD 126.79B	Expense Ratio .095%

Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2013 Bloomberg Finance L.P.
 SN 335716 CST GMT-6:00 6819-2832-0 15-Jan-2013 12:25:53

Tracking Errors for VFINX, SPY, DGAGX

Period	Return to <u>VFINX</u>	Return to <u>SPY</u>	Return to <u>DGAGX</u>	Return to <u>SPX</u>	<u>Δvfinx</u>	<u>Δspy</u>	<u>Δdgagx</u>
2012	15.82	15.99	10.18	16.00	-0.18	-0.01	-5.82
2011	1.97	1.89	7.62	2.11	-0.14	-0.22	5.51
2010	14.91	15.06	15.26	15.06	-0.15	0.00	0.20
2009	26.49	26.37	21.01	26.46	0.03	-0.09	-5.45
2008	-37.02	-36.81	-32.37	-37.00	-0.02	0.19	4.63
2007	5.82	5.14	6.54	5.49	0.33	-0.35	1.05
2006	15.64	15.85	16.26	15.79	-0.15	0.06	0.47
2005	4.77	4.83	4.14	4.91	-0.14	-0.08	-0.77
2004	10.74	10.70	5.57	10.88	-0.14	-0.18	-5.31
2003	<u>28.50</u>	<u>28.18</u>	<u>20.39</u>	<u>28.68</u>	<u>-0.18</u>	<u>-0.50</u>	<u>-8.29</u>
Average (%):	8.76	8.72	7.46	8.84	-0.07	-0.12	-1.38
Periodic Tracking Error (%):					0.16	0.20	4.66
Period/Yr:					1.00	1.00	1.00
Annual Tracking Error (%):					0.16	0.20	4.66

Tracking Error Example: Calculations

- TE for VFINX:

$$\sqrt{\frac{[-0.18 - (-0.07)]^2 + [-0.14 - (-0.07)]^2 + \dots + [-0.18 - (-0.07)]^2}{(10-1)}} = 0.16$$

- TE for SPY:

$$\sqrt{\frac{[-0.01 - (-0.12)]^2 + [-0.22 - (-0.12)]^2 + \dots + [-0.50 - (-0.12)]^2}{(10-1)}} = 0.20$$

- TE for DGAGX:

$$\sqrt{\frac{[-5.82 - (-1.38)]^2 + [5.51 - (-1.38)]^2 + \dots + [-8.29 - (-1.38)]^2}{(10-1)}} = 4.66$$

2. Examples of Risk-Adjusted Performance Measure Calculations

- Consider the monthly returns over a 41-month historical period to the following:
 - An actively managed investment fund
 - The market benchmark the actively managed fund uses
 - The risk-free rate
 - Three Fama-French risk Factors: Excess Market, SMB, HML

Month	% Returns to:			% Returns to F-F Factors:		
	Active Fund Rtn	Mkt Index Rtn	1-mo RF	Excess Mkt Rtn	SMB	HML
1	9.254	2.757	0.42	0.97	-4.03	4.62
2	7.576	7.552	0.41	6.16	-3.46	0.09
3	-2.106	-1.981	0.46	-1.60	3.14	1.08
4	5.085	6.244	0.45	4.85	-1.58	-2.54
5	-1.745	0.785	0.39	-0.48	-2.54	4.83
6	-5.031	-4.101	0.43	-4.87	-0.32	3.85
7	4.064	5.965	0.43	3.82	-5.14	-1.20
8	8.062	6.084	0.49	6.64	4.62	-4.09
9	3.394	4.478	0.37	4.05	1.36	0.83
10	6.900	7.955	0.43	7.20	-2.37	-0.69
11	0.292	-5.597	0.41	-4.06	7.44	0.90
12	3.074	5.476	0.44	5.36	2.58	-0.38
13	-1.616	-3.336	0.42	-3.83	-0.93	2.53
14	-2.932	4.625	0.39	2.72	-5.05	1.05
15	0.445	1.716	0.48	1.32	-2.33	3.60
16	-1.064	1.105	0.43	0.01	-1.01	-1.67
17	8.570	7.208	0.39	6.89	0.29	-1.23
18	3.807	5.117	0.39	4.75	-1.45	1.92
19	0.732	1.006	0.43	0.66	0.41	0.22
20	-2.555	-1.717	0.40	-2.95	-3.62	4.29
21	4.641	4.059	0.41	2.86	-3.40	-1.54
22	-1.793	-1.062	0.40	-2.72	-4.51	-1.79
23	-17.065	-14.443	0.43	-16.11	-5.92	5.69
24	15.715	6.407	0.46	5.95	0.02	-3.76
25	-3.536	8.127	0.32	7.11	-3.36	-2.85
26	3.582	6.058	0.31	5.86	1.36	-3.68
27	10.010	5.759	0.38	5.94	-0.31	-4.95
28	6.630	4.180	0.35	3.47	1.15	-6.16
29	-4.205	-3.103	0.35	-4.15	-5.59	1.66
30	5.430	3.999	0.43	3.32	-3.82	-3.04
31	0.803	3.873	0.37	4.47	2.89	2.80
32	-3.520	-2.358	0.34	-2.39	3.46	3.08
33	4.740	5.545	0.40	4.72	3.42	-4.33
34	-0.759	-3.115	0.38	-3.45	2.01	0.70
35	-1.875	-0.498	0.39	-1.35	-1.16	-1.26
36	-1.187	-2.738	0.39	-2.68	3.23	-3.18
37	7.071	6.326	0.39	5.80	-6.53	-3.19
38	2.434	2.033	0.36	3.20	7.71	-8.09
39	10.059	5.886	0.44	7.83	6.98	-9.05
40	-3.845	-5.024	0.41	-4.43	4.08	-0.16
41	5.785	-1.891	0.43	2.55	21.49	-12.03

Sharpe Ratio

Month	% Returns to:			% Excess Returns to:	
	Active Fund Rtn	Mkt Index Rtn	1-mo RF	Active Fund Rtn - RF	Mkt Index Rtn - RF
1	9.254	2.757	0.42	8.834	2.337
2	7.576	7.552	0.41	7.166	7.142
3	-2.106	-1.981	0.46	-2.566	-2.441
4	5.085	6.244	0.45	4.635	5.794
5	-1.745	0.785	0.39	-2.135	0.395
6	-5.031	-4.101	0.43	-5.461	-4.531
7	4.064	5.965	0.43	3.634	5.535
8	8.062	6.084	0.49	7.572	5.594
9	3.394	4.478	0.37	3.024	4.108
10	6.900	7.955	0.43	6.470	7.525
11	0.292	-5.597	0.41	-0.118	-6.007
12	3.074	5.476	0.44	2.634	5.036
13	-1.616	-3.336	0.42	-2.036	-3.756
14	-2.932	4.625	0.39	-3.322	4.235
15	0.445	1.716	0.48	-0.035	1.236
16	-1.064	1.105	0.43	-1.494	0.675
17	8.570	7.208	0.39	8.180	6.818
18	3.807	5.117	0.39	3.417	4.727
19	0.732	1.006	0.43	0.302	0.576
20	-2.555	-1.717	0.40	-2.955	-2.117
21	4.641	4.059	0.41	4.231	3.649
22	-1.793	-1.062	0.40	-2.193	-1.462
23	-17.065	-14.443	0.43	-17.495	-14.873
24	15.715	6.407	0.46	15.255	5.947
25	-3.536	8.127	0.32	-3.856	7.807
26	3.582	6.058	0.31	3.272	5.748
27	10.010	5.759	0.38	9.630	5.379
28	6.630	-4.180	0.35	6.280	-3.830
29	-4.205	-3.103	0.35	-4.555	-3.453
30	5.430	3.999	0.43	5.000	3.569
31	0.903	3.873	0.37	0.433	3.503
32	-3.520	-2.358	0.34	-3.860	-2.698
33	4.740	5.545	0.40	4.340	5.145
34	-0.759	-3.115	0.38	-1.139	-3.495
35	-1.875	-0.498	0.39	-2.265	-0.888
36	-1.187	-2.738	0.39	-1.577	-3.128
37	7.071	6.326	0.39	6.681	5.936
38	2.434	2.033	0.36	2.074	1.673
39	10.059	5.886	0.44	9.619	5.446
40	-3.845	-5.024	0.41	-4.255	-5.434
41	5.785	-1.891	0.43	5.355	-2.321
Average:				1.627	1.531
Std. Dev:				5.729	4.824
Sharpe:				0.284	0.317

■ Active Fund Sharpe: $(1.627\%) / (5.729\%) = 0.284$

■ Market Index Sharpe: $(1.531\%) / (4.824\%) = 0.317$

Treynor Ratio

Month	% Returns to:			% Excess Returns to:	
	Active Fund Rtn	Mkt Index Rtn	1-mo RF	Active Fund Rtn - RF	Mkt Index Rtn - RF
1	9.254	2.757	0.42	8.834	2.337
2	7.576	7.552	0.41	7.166	7.142
3	-2.108	-1.981	0.46	-2.566	-2.441
4	5.085	6.244	0.45	4.635	5.794
5	-1.745	0.785	0.39	-2.135	0.395
6	-5.031	-4.101	0.43	-5.461	-4.531
7	4.064	5.985	0.43	3.634	5.535
8	8.062	6.084	0.49	7.572	5.594
9	3.394	4.478	0.37	3.024	4.108
10	6.900	7.955	0.43	6.470	7.525
11	0.292	-5.597	0.41	-0.118	-6.007
12	3.074	5.478	0.44	2.634	5.036
13	-1.618	-3.336	0.42	-2.036	-3.756
14	-2.932	4.625	0.39	-3.322	4.235
15	0.445	1.716	0.48	-0.035	1.236
16	-1.064	1.105	0.43	-1.494	0.675
17	8.570	7.208	0.39	8.180	6.818
18	3.807	5.117	0.39	3.417	4.727
19	0.732	1.006	0.43	0.302	0.576
20	-2.555	-1.717	0.40	-2.955	-2.117
21	4.641	4.059	0.41	4.231	3.649
22	-1.793	-1.062	0.40	-2.193	-1.462
23	-17.065	-14.443	0.43	-17.495	-14.873
24	15.715	6.407	0.46	15.255	5.947
25	-3.536	8.127	0.32	-3.856	7.807
26	3.582	6.058	0.31	3.272	5.748
27	10.010	5.759	0.38	9.630	5.379
28	6.630	4.180	0.35	6.280	3.830
29	-4.205	-3.103	0.35	-4.555	-3.453
30	5.430	3.999	0.43	5.000	3.569
31	0.803	3.873	0.37	0.433	3.503
32	-3.520	-2.358	0.34	-3.860	-2.698
33	-4.740	5.545	0.40	-4.340	5.145
34	-0.759	-3.115	0.38	-1.139	-3.495
35	-1.875	-0.498	0.39	-2.265	-0.888
36	-1.187	-2.738	0.39	-1.577	-3.128
37	7.071	6.326	0.39	6.681	5.936
38	2.434	2.033	0.36	2.074	1.673
39	10.059	5.886	0.44	9.619	5.446
40	-3.845	-5.024	0.41	-4.255	-5.434
41	5.785	-1.891	0.43	5.355	-2.321
Average:				1.627	1.531
Beta:				0.918	1.000
Treynor:				1.773	1.531

■ Active Fund Treynor: $(1.627\%) / (0.918) = 1.773$

■ Market Index Treynor: $(1.531\%) / (1.000) = 1.531$

Information Ratio

Month	% Returns to:			% Excess Returns to:		
	Active Fund Rtn	Mkt Index Rtn	1-mo RF	Active Fund Rtn - RF	Mkt Index Rtn - RF	% (Active-Index) Rtn Diff
1	9.254	2.757	0.42	6.834	2.337	6.497
2	7.576	7.552	0.41	7.166	7.142	0.024
3	-2.106	-1.981	0.46	-2.566	-2.441	-0.125
4	5.085	6.244	0.45	4.635	5.794	-1.159
5	-1.745	0.785	0.39	-2.135	0.395	-2.530
6	-5.031	-4.101	0.43	-5.461	-4.531	-0.930
7	4.064	5.965	0.43	3.634	5.535	-1.901
8	6.062	6.084	0.49	7.572	5.594	1.978
9	3.394	4.478	0.37	3.024	4.108	-1.083
10	6.900	7.955	0.43	6.470	7.525	-1.055
11	0.292	-5.597	0.41	-0.118	-6.007	5.690
12	3.074	5.476	0.44	2.634	5.036	-2.403
13	-1.616	-3.336	0.42	-2.036	-3.756	1.720
14	-2.932	4.625	0.39	-3.322	4.235	-7.558
15	0.445	1.716	0.48	-0.035	1.236	-1.271
16	-1.064	1.105	0.43	-1.494	0.675	-2.169
17	8.570	7.208	0.39	8.180	6.818	1.362
18	3.807	5.117	0.39	3.417	4.727	-1.310
19	0.732	1.006	0.43	0.302	0.576	-0.273
20	-2.555	-1.717	0.40	-2.955	-2.117	-0.839
21	4.641	4.059	0.41	4.231	3.649	0.582
22	-1.793	-1.062	0.40	-2.193	-1.462	-0.731
23	-17.065	-14.443	0.43	-17.495	-14.873	-2.622
24	15.715	6.407	0.46	15.255	5.947	9.308
25	-3.536	8.127	0.32	-3.656	7.807	-11.663
26	3.562	6.058	0.31	3.272	5.748	-2.476
27	10.010	5.759	0.38	9.630	5.379	4.250
28	6.630	4.180	0.35	6.280	3.830	2.450
29	-4.205	-3.103	0.35	-4.555	-3.453	-1.102
30	5.430	3.999	0.43	5.000	3.569	1.430
31	0.803	3.873	0.37	0.433	3.503	-3.069
32	-3.520	-2.358	0.34	-3.860	-2.698	-1.162
33	4.740	5.545	0.40	4.340	5.145	-0.805
34	-0.759	-3.115	0.38	-1.139	-3.495	2.356
35	-1.875	-0.498	0.39	-2.265	-0.888	-1.377
36	-1.167	-2.738	0.39	-1.577	-3.128	1.552
37	7.071	6.326	0.39	6.681	5.936	0.746
38	2.434	2.033	0.36	2.074	1.673	0.401
39	10.059	5.885	0.44	9.619	5.446	4.173
40	-3.845	-5.024	0.41	-4.255	-5.434	1.179
41	5.785	-1.691	0.43	5.355	-2.321	7.676
Average (Mthly Alpha):						0.097
Std. Dev. (Mthly TE):						3.657
Annual Alpha:						1.159
Annual TE:						12.669
Annual IR:						0.092

- Active Fund IR (Annual): $(1.159\%) / (12.669) = [(0.097\%) / (3.657)] \times \sqrt{12} = \mathbf{0.092}$

Jensen's Alpha: Single Market Index Risk Factor Model

SUMMARY OUTPUT FOR ONE-FACTOR REGRESSION

<i>Regression Statistics</i>	
Multiple R	0.773
R Square	0.597
Adjusted R Square	0.587
Standard Error	3.682
Observations	41

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	783.907	783.907	57.823	0.000
Residual	39	528.726	13.557		
Total	40	1312.634			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.223	0.604	0.369	0.714	-0.999	1.444	-0.999	1.444
(Mkt Indx Rtn - RF)	0.918	0.121	7.604	0.000	0.674	1.162	0.674	1.162

Alpha (Monthly): 0.223%
 (t-stat) (0.37)
 Beta: 0.918
 (t-stat) (7.60)
 R-Squared: 59.72%

- Active Fund One-Factor Model Alpha (Monthly): **0.223%** (*t-stat: 0.37*)

Jensen's Alpha: Fama-French Three Risk Factor Model

SUMMARY OUTPUT FOR THREE-FACTOR REGRESSION

<i>Regression Statistics</i>	
Multiple R	0.835
R Square	0.697
Adjusted R Square	0.672
Standard Error	3.281
Observations	41

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	3	914.294	304.765	28.308	0.000
Residual	37	398.340	10.766		
Total	40	1312.634			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.072	0.540	0.134	0.894	-1.023	1.167	-1.023	1.167
Excess Market	0.894	0.132	6.767	0.000	0.626	1.162	0.626	1.162
SMB	0.044	0.130	0.339	0.737	-0.219	0.307	-0.219	0.307
HML	-0.179	0.199	-0.900	0.374	-0.582	0.224	-0.582	0.224

Alpha (Monthly): 0.072%
 (t-stat) (0.13)
Beta:
 Excess Mkt 0.894
 (t-stat) (6.77)
 SMB 0.044
 (t-stat) (0.34)
 HML -0.179
 (t-stat) (-0.90)
R-Squared: 69.65%

- Active Fund Three-Factor Model Alpha (Monthly): **0.072%** (*t-stat: 0.13*)

Tab 7A

RESOLUTION
DESIGNATING PERSONS AUTHORIZED TO SIGN TRS VOUCHERS

April 18, 2013

WHEREAS, In accordance with section 825.104 of the Texas Government Code, the Board of Trustees (the "Board") of the Teacher Retirement System of Texas ("TRS") has previously granted authority to certain persons to approve and sign vouchers for payment from accounts of TRS; and

WHEREAS, The Board desires to re-designate those persons to whom this authority has been granted and to add Janie Duarte as Assistant Manager of General Accounting and Budgeting as an additional authorized designee; now, therefore, be it

RESOLVED, That the Board designates the following persons to approve and sign vouchers for payment from accounts of TRS from and after April 18, 2013, and until the designated person separates from employment with TRS, is no longer employed in any capacity for which authority is granted under this resolution, or is not re-designated by the Board, whichever occurs first:

Brian K. Guthrie	Executive Director
Ken Welch	Deputy Director
Don Green	Chief Financial Officer
Jamie Michels	Manager of General Accounting
Scot Leith	Manager of Investment Accounting
Janie Duarte	Assistant Manager of General Accounting & Budgeting
Cindy Haley	Team Leader of Financial Reporting
Martha Rivera	Team Leader of Employee Payroll & Benefits
Vicki Garcia	Team Leader of Investment Accounting

ATTESTED:

Signed: _____
R. David Kelly, Board Chairman

Date: April 18, 2013

Signed: _____
Brian K. Guthrie, Executive Director

Date: April 18, 2013

Tab 7B



Memorandum

TO: Policy Committee and the Board of Trustees
From: Timothy Wei, Assistant General Counsel

Copy: Brian Guthrie, Executive Director
Ken Welch, Deputy Director
Dennis Gold, Interim General Counsel
Rebecca Merrill, Special Advisor to the Executive Director and Manager of Special Projects

Date: April 1, 2013

Re: Amendments to TRS Code of Ethics Rules §§ 23.7 & 23.8

REQUESTED ACTION

At the December 2012 meeting, the TRS Policy Committee authorized public-comment publication of proposed amendments to rules § 23.7, relating to the Code of Ethics for Contractors (“Code”), and § 23.8 relating to expenditure reporting by contractors. The proposed amendments update the rules to reflect the board’s most recent adoptions. The proposed amendments were published for public comment in the February 8, 2013 issue of the *Texas Register* (38 TexReg 633), and therefore were published at least thirty days before being considered for adoption. As of the date of this memorandum, TRS had received no comments on the proposed amendments, which are ready for adoption.

At the April 2013 meeting, the Policy Committee will consider recommending to the board the adoption of the proposed amendments to rules §§ 23.7 and 23.8.

WHY THE ACTION IS REQUESTED

The proposed amendments would update the rules to reflect the current versions of the Code adopted by the board and the related memorandum from the executive director to contractors explaining reporting requirements under the Code.

BACKGROUND OF THE REQUESTED ACTION

Rule § 23.7. Government Code § 825.212(e) requires the board to adopt by rule standards of conduct applicable to TRS consultants and advisors (contractors) who likely will be paid over \$10,000 in a year or who provide important investment advice. Rule § 23.7 adopts the Code by reference. In April 2012, the board adopted a revised Code. The proposed rule amendments update Rule 23.7 to reflect the current version of the Code. Other minor changes would clarify references to the revised Code and the terms used in it.

Rule § 23.8. Texas Government Code § 825.212(g) requires the board by rule to require consultants and advisors to the retirement system and brokers (contractors) to file with the system a report detailing any expenditure of more than \$50 made on behalf of a trustee or employee of the system. The board adopts the form used by contractors to report such expenditures. The executive director provides an explanatory memorandum addressed to contractors to accompany the reporting form. Rule § 23.8 adopts by reference the board's reporting form, the Expenditure Reporting Form for Contractors, and the executive director's memorandum, the Expenditure Reporting Memorandum. In September 2010, the board adopted a revised reporting form. In December 2012, the executive director approved a revised memorandum. The proposed amendments to rule § 23.8 would adopt by reference the latest version of the executive director's memorandum. Other minor changes clarify the reporting requirements for Contractors under the updated Code adopted by reference in rule § 23.7.

PROPOSED RULE TEXTS (showing changes)

§23.7. Code of Ethics for Contractors.

~~Any Consultant, Agent, Financial Advisor, or Financial Services Provider doing business with~~The Code of Ethics for Contractors (the Code) sets forth the ethical responsibilities and requirements of Contractors, as that term is defined in the Code, in performing services for the Teacher Retirement System of Texas (TRS), ~~or Broker approved to do business with TRS, must comply with TRS' Code of Ethics for Contractors (the Code of Ethics).~~ The Board of Trustees of TRS ~~(the board)~~ adopts by reference the Code ~~of Ethics~~ as most recently revised and adopted to be effective ~~September 17, 2010~~April 20, 2012. ~~Capitalized words appearing in this section have the same meaning assigned to them in the Code of Ethics.~~ A copy of the most recently revised Code ~~of Ethics~~ has been filed with the Office of the Secretary of State in Austin. Copies of the Code ~~of Ethics~~ are available from TRS at 1000 Red River Street, Austin, Texas 78701-2698, (512) 542-6400. Also, a copy of the Code ~~of Ethics~~ can be found on and printed from the TRS website, www.trs.state.tx.us, in the information regarding TRS Ethics.

§23.8. Expenditure Reporting by ~~Consultants, Agents, Financial Advisors, Financial Services Providers, and Brokers~~Certain Contractors.

Under 23.7 of this title (relating to Code of Ethics for Contractors) and the Code of Ethics for Contractors (the Code) adopted by the Board of Trustees of the Teacher Retirement System of Texas (TRS), each Contractor, as that term is defined in the Code, must annually file an expenditure report on the prescribed TRS form. The Contractor must include in the report itemized, reasonably detailed lists of expenditures of more than \$50 per day made by or on

~~behalf of the Contractor with respect to or for the benefit of each TRS Trustee or Employee. Each Contractor must comply with TRS rules governing the filing of and requirements for the expenditure reporting form promulgated by TRS, including Consultants, Agents, Financial Advisors, and Financial Services Providers doing business with the Teacher Retirement System of Texas (TRS), and Brokers approved to do business with TRS, must report expenditures made of more than \$50 on behalf of any one trustee or employee of TRS and must file any other report required by the Code of Ethics for Contractors (Code of Ethics), which is adopted by reference in §23.7 of this title (relating to Code of Ethics for Contractors). The reports must be filed no later than April 15 of each year with the Executive Director and must comply with the Code of Ethics and the Expenditure Reporting Memorandum (reporting memorandum), and the Expenditure Reporting Form for Contractors (reporting form) as promulgated and applicable under the Code of Ethics for Contractors and revised from time to time. TRS adopts by reference the reporting memorandum as most recently revised ~~November 2, 2010~~ December 15, 2012 and the reporting form as most recently revised September 17, 2010. Capitalized words appearing in this section have the same meaning assigned to them in the Code of Ethics, as revised from time to time. Copies of the most recently revised reporting memorandum and reporting form have been filed with the Office of the Secretary of State in Austin. Copies of the reporting memorandum and the reporting form are available from TRS at 1000 Red River Street, Austin, Texas 78701-2698, (512) 542-6400. Also, copies of the reporting memorandum and the reporting form can be found on and printed from the TRS website, www.trs.state.tx.us, in the information regarding TRS Ethics.~~

BOARD RESOLUTION

**Adopting Amended TRS Rule 34 Tex. Admin. Code § 23.7,
Relating to Code of Ethics for Contractors**

April 18-19, 2013

Whereas, Section 825.212(e) of the Texas Government Code requires the board to adopt by rule standards of conduct applicable to TRS consultants and advisors who may reasonably be expected to receive more than \$10,000 compensation from TRS for a fiscal year or who render important investment advice to TRS;

Whereas, The board previously adopted Rule § 23.7 to implement this requirement under section 825.212(e), which rule adopted by reference TRS' Code of Ethics for Contractors ("Code");

Whereas, In April 2012, the board adopted a revised Code;

Whereas, Staff has recommended amendments to Rule § 23.7 to adopt the April 2012 revisions to the Code;

Whereas, Pursuant to the authority granted by the policy committee at its December 2012 meeting, TRS published proposed amendments to Rule § 23.7 for public comment in the February 8, 2013 issue of the *Texas Register* (38 TexReg 633), and the public had at least 30 days' notice of TRS' intention to adopt the proposed amendments before the board considered their adoption, and TRS received no comments; and

Whereas, The Policy Committee has recommended that the board adopt the proposed amendments to Rule § 23.7 without changes to the text of the proposed rule as published in the *Texas Register*; now therefore, be it

Resolved, That the board hereby:

- 1) Adopts amended rule 34 TEX. ADMIN. CODE § 23.7, without changes to the text of the proposed rule as published in the February 8, 2013 issue of the *Texas Register* (38 TexReg 633);
- 2) Incorporates by reference into this Resolution, as though fully set out in it, the applicable policy committee and board meeting materials, discussions, and actions, including the approved rule text and reasoned justification for its adoption as presented in those meeting materials, discussions and actions;
- 3) Grants the TRS staff authority to prepare and to file all documents required by this Resolution, to work with the Office of the Secretary of State in preparing and filings such documents, and to make any technical changes required for publication of the adopted rule; and
- 4) Grants the board chairman authority to sign an order showing the action of the board.

BOARD RESOLUTION

**Adopting Amended TRS Rule 34 Tex. Admin. Code § 23.8,
Relating to Expenditure Reporting by Certain Contractors**

April 18-19, 2013

Whereas, Section 825.212(g) of the Texas Government Code requires the board by rule to require consultants and advisors to TRS and brokers to file regularly with TRS a report detailing any expenditure of more than \$50 made on behalf of a trustee or employee of TRS;

Whereas, The board previously adopted Rule § 23.8 to implement this requirement under section 825.212(e), which rule adopted by reference certain documents, including an expenditure reporting memorandum;

Whereas, In December 2012, the executive director issued a revised expenditure reporting memorandum;

Whereas, Staff has recommended amendments to Rule § 23.8 to adopt the December 2012 revisions to the expenditure reporting memorandum;

Whereas, Pursuant to the authority granted by the policy committee at its December 2012 meeting, TRS published proposed amendments to Rule § 23.8 for public comment in the February 8, 2013 issue of the *Texas Register* (38 TexReg 633), and the public had at least 30 days' notice of TRS' intention to adopt the proposed amendments before the board considered their adoption, and TRS received no comments; and

Whereas, The Policy Committee recommends that the board adopt the proposed amendments to Rule § 23.8 without changes to the text of the proposed rule as published in the *Texas Register*; now therefore, be it

Resolved, That the board hereby:

- 1) Adopts amended rule 34 TEX. ADMIN. CODE § 23.8, without changes to the text of the proposed rule as published in the February 8, 2013 issue of the *Texas Register* (38 TexReg 633);
- 2) Incorporates by reference into this Resolution, as though fully set out in it, the applicable policy committee and board meeting materials, discussions, and actions, including the approved amended rule text and reasoned justification for its adoption as presented in those meeting materials, discussions and actions;
- 3) Grants the TRS staff authority to prepare and to file all documents required by this Resolution, to work with the Office of the Secretary of State in preparing and filings such documents, and to make any technical changes required for publication of the adopted rule; and
- 4) Grants the board chairman authority to sign an order showing the action of the board.

Tab 7C

MEMORANDUM

To: Policy Committee and the Board of Trustees

From: Rebecca M. Smith, Assistant General Counsel

Copy: Brian Guthrie, Executive Director
Ken Welch, Deputy Director
Dennis Gold, Interim General Counsel
Rebecca Merrill, Special Advisor to the Executive Director and Manager of Special Projects

Date: April 1, 2013

Re: Proposed Amendments to Chapter 25, relating to Membership Credit

REQUESTED ACTION

At its December 2012 meeting, the Policy Committee authorized publication for public comment proposed amendments to six rules in Chapter 25 regarding membership eligibility, creditable compensation, and out-of-state service credit. Specifically, the Policy Committee authorized publication of staff-proposed amendments to the following rules: §25.1, relating to Full-time Service; §25.6, relating to Part-time or Temporary Employment; §25.21, relating to Compensation Subject to Deposit and Credit; §25.43 relating to Cost for Unreported Service or Compensation; §25.47, relating to Deadline for Verification; and §25.81, relating to Out-of-State Service Eligible for Credit. The proposed amendments were published and no comments were received at the time of submission of this memorandum. If comments are received prior to the meeting of the Policy Committee, staff will address them at the meeting. The proposed amendments are before the committee now for a recommendation to the Board of Trustees regarding adoption.

WHY THE ACTION IS REQUESTED

The proposed rule changes address how employment in an institution of higher education that is expressed in terms of the number of courses or semester hours taught is considered in determining eligibility for TRS membership. This change would establish the same standard for workloads expressed in course credits or semester hours for determining membership eligibility that is used for one-half time employment for retirees. The proposed amendment regarding temporary employment will clarify how employment on a semester-by-semester basis should be considered in determining membership eligibility. The proposed amendments regarding workers compensation paid as temporary wage replacement pay will clarify and provide notice of how

TRS credits workers compensation in determining benefits. The proposed amendments to the rule regarding establishing out-of-state service credit reflect the 90-day standard for a creditable year of service credit that was adopted for crediting service beginning with the 2011-2012 school year.

BACKGROUND OF THE REQUESTED ACTION

Section 25.1. The standards for membership eligibility in TRS are established in §25.1: employment for one-half or more of the standard full-time work load, for a period of four and one-half months or more, with pay at a rate comparable to the rate of compensation for other persons employed in similar positions. Consistent application of this standard is difficult when the work load is expressed in terms of the number of semester hours or course credits taught, as is the common practice for faculty employed in institutions of higher education, rather than clock hours. The proposed rule amendments establish the same ratio for converting semester hours or course credits to clock hours for the purpose of determining eligibility for membership as that used for the purpose of determining the number of hours worked by a retiree under the one-half time exception: two clock hours for every hour of instruction in the classroom or lab. This conversion ratio reflects the instructional time as well as preparation, grading, and other time typically associated with one hour of instruction. Providing the same conversion ratio for membership eligibility and employment after retirement will reduce confusion, ease communication, and improve consistent administration of the standard. The proposed amendments also clarify that employment in an institution of higher education is “regular” employment if it is *expected* to continue more than one full semester in the same school year or if it continues for more than one full semester in a school year.

Section 25.6. The proposed amendment incorporates the current administrative interpretation of temporary employment for purposes of determining eligibility for membership in TRS for employees of institutions of higher education. Amending the rule to specifically define temporary employment for faculty in higher education will further the consistent application of the eligibility requirements and simplify communication regarding the standard for temporary employment.

Section 25.21. Proposed amendments to this rule regard the eligibility of workers compensation paid as temporary wage replacement pay for credit with TRS. Currently, there is no reference to workers compensation in the TRS rule regarding creditable compensation. However, the current practice is to credit workers compensation for any month that the member also receives creditable compensation from the employer. Because workers compensation is not paid directly by the employer, the member must verify the workers compensation to TRS after the fact and make deposits on the amount of workers compensation paid. With the change in the cost of unreported service increasing to the actuarial cost of the increased benefits associated with the additional compensation credit or service credit, staff recommends that the rule provide notice of how the temporary wage replacement benefit will be credited by TRS. The proposed amendment provides that workers compensation is creditable compensation if the compensation is reported or verified to TRS by the end of the school year following the year in which it was paid. This amendment will allow a member sufficient time to verify the compensation and pay the member contributions before the cost increases.

Section 25.43. The proposed changes to this rule address the amount that must be paid to TRS to receive not only compensation credit for workers compensation but also service credit associated with the workers compensation. If the workers compensation is reported or verified to TRS no later than the last day of the school year following the school year in which the workers compensation was paid, the cost to establish the compensation and associated service credit is the amount of member contributions owed on the compensation. The cost of the compensation and associated service credit must be paid in a lump sum no later than the last day of the school year following the year in which the workers compensation was paid. If the compensation and associated service credit are not verified or reported and/or the member contributions not paid by the end of the school year following the school year in which the workers compensation was paid, the cost of establishing the compensation and/or service credit is the actuarial cost of unreported service or compensation.

Section 25.47. The proposed amendment to this rule clarifies that workers compensation paid as temporary wage replacement pay is not unreported compensation until after the end of the school year following the school year in which the compensation was paid.

Section 25.81. The proposed amendment to this rule updates the rule to reflect the new 90 day standard for the amount of time that a member must have worked in an otherwise eligible position in an out-of-state school in order to purchase the service credit.

RECOMMENDATION

Staff recommends the Policy Committee of the Board of Trustees consider recommending to the Board of Trustees the adoption of the amendments to the rules in Chapter 25 as outlined herein and without changes to the text as published in the *Texas Register* for public comment.

RULE §25.1 Full-time Service.

(a) (No change.)

(b) (No change.)

(c) (No change.)

(d) (No change.)

(e) (No change.)

(1)-(2) (No change.)

(f) (No change.)

(1)-(3) (No change.)

(g) For purposes of subsection (a) of this section, regular employment is employment that is expected to continue for four and one-half months or more. Employment with an institution of higher education (including community and junior colleges) is regular employment if it is expected to continue for more than one full semester or continues for more than one full semester in the same school year. Employment that is expected to continue for less than four and one-half months or for no more than one full semester in a school year is temporary employment and is not eligible for membership.

(h) (No change.)

(i) For purposes of this section, employment in institutions of higher education (including community and junior colleges) measured or expressed in terms of the number of courses; semester or course hours/credits; instructional units; or other units of time representing class or instructional time must be converted to clock hours and counted as a minimum of two clock hours for each clock hour of instruction or time in the classroom or lab in order to reflect instructional time as well as preparation, grading, and other time typically associated with one hour of instruction. If the employer has established a greater amount of preparation time for each hour in the classroom or lab, the employer's standard will be used to determine the number of clock hours scheduled for work.

RULE §25.6 Part-time or Temporary Employment.

Part-time (employment that is less than one-half the standard work load), irregular, seasonal, or temporary employment (employment for a definite period of less than four and 1/2 months or for employment with an institution of higher education, the employment is for no more than one semester in a school year) is eligible only if such employment, when combined with other employment in Texas public educational institutions during the same school year, qualifies as service eligible for membership or if such other employment in itself qualifies as service eligible for membership.

RULE §25.21 Compensation Subject to Deposit and Credit

(a) (No change.)

(b) (No change.)

(1)-(3) (No change.)

(c)

(1)-(8) (No change.)

(9) amounts deducted from regular pay for a qualified transportation benefit under Texas Government Code §659.202; ~~and~~

(10) compensation designated as health care supplementation by an employee under Subchapter D ~~of~~, Chapter 22, Education Code; and

(11) workers' compensation paid as temporary wage replacement pay and reported or verified to TRS and with member contributions paid on the amount of workers' compensation, by the end of the school year following the year in which it was paid. Workers' compensation paid as temporary wage replacement pay and not reported or verified to TRS with member contributions paid on the workers' compensation in the time period provided may be verified and purchased as provided in §25.45 of this title (relating to Verification of Unreported Compensation or Service) and §25.43 of this title (relating to Cost for Unreported Service or Compensation) no later than the end of the fifth year following the school year in which it may be reported or verified under this paragraph.

(d) (No change.)

(1)-(16) (No change.)

(e) (No change.)

(f) (No change.)

RULE §25.43 Cost for Unreported Service or Compensation.

(a) Except as provided by subsections (e), ~~and~~ (f), and (g) of this section, the cost of establishing unreported service or compensation credit is the actuarial cost, as determined by TRS, of the additional standard annuity retirement benefits that would be attributable to the unreported service or compensation credit purchased under this subchapter.

(b) (No change.)

(c) (No change.)

(d) (No change.)

(e) (No change.)

(1)-(3) (No change.)

(f) (No change.)

(g) For purposes of this section, workers' compensation paid as temporary wage replacement pay may be reported or verified to TRS until the end of the school year following the school year in which it is paid. If the workers' compensation is reported or verified to TRS no later than the end of the school year following the school year in which it is paid, member contributions on the workers' compensation paid are required to establish the compensation and service credit associated with the workers' compensation. The member contributions on the worker's compensation must be paid in full in a lump sum by the end of the school year following the year in which the workers' compensation was paid. If the workers' compensation is not reported or verified and member contributions are not paid by the end of the school year following the year in which the workers' compensation is paid, the member may establish the service and compensation as unreported compensation as provided in this section.

RULE §25.47 Deadline for Verification.

(a) (No change.)

(b) (No change.)

(c) (No change.)

(d) For purposes of this section, workers' compensation paid as temporary wage replacement pay is not unreported compensation until after the end of the school year following the school year in which the compensation was paid.

RULE §25.81 Out-of-State Service Eligible for Credit.

A member may obtain out-of-state service credit for qualified employment in public educational institutions which are maintained in whole or in part by one of the states in the United States of America; by a commonwealth, territory, or possession of the United States of America; or by the United States government. Public educational institutions of the United States government must have been maintained for the primary purpose of educating the children of United States citizens either in foreign countries or in locations within the United States where state and local government have not provided public educational facilities. The service in eligible institutions must satisfy the requirements for membership in the Teacher Retirement System of Texas, except for the requirement that the employment be in Texas. Further, the service must have been for at least 4 1/2 months of the school year, or for at least a full semester of more than four calendar months, or for at least 90 days of a school year as a substitute in a position otherwise eligible for out-of-state service. For service rendered in the 2011-2012 school year and after, a member must have worked or received paid leave for at least 90 days in a school year in a position otherwise eligible for out-of-state service or worked for at least 90 days in a school year as a substitute in a position otherwise eligible for out-of-state service. A member may satisfy any of these requirements by combining the out-of-state service with employment in the Texas public schools that occurred in the same school year and for which deposits are maintained in the member's account. A member eligible to establish normal membership service credit for a school year may not obtain out-of-state credit for that year.

Teacher Retirement System of Texas

BOARD RESOLUTION

**Adopting Amended TRS Rules 34 TAC §§25.1, 25.6, 25.21,
25.43, 25.47, and 25.81**

April 18-19, 2013

Whereas, Section 825.102 of the Texas Government Code authorizes the Board of Trustees (board) of the Teacher Retirement System of Texas (TRS) to adopt rules regarding eligibility for membership, the administration of the funds of the system, and the transaction of the business of the board;

Whereas, The standards for membership eligibility in TRS are established in TRS rule §25.1 and provide that employment for one-half or more of the standard full-time work load, for a period of four and one-half months or more, with pay at a rate comparable to the rate of compensation for other persons employed in similar positions is eligible for membership and consistent application of this standard is difficult when the work load is expressed in terms of the number of semester hours or course credits taught by faculty employed in institutions of higher education rather than in clock hours;

Whereas, The proposed rule amendments establish the same ratio for converting semester hours or course credits to clock hours for the purpose of determining eligibility for membership as that used for the purpose of determining the number of hours worked by a retiree under the one-half time exception to employment after retirement and the conversion ratio of two clock hours for every hour of instruction in the classroom or lab reflects the instructional time as well as preparation, grading, and other time typically associated with one hour of instruction;

Whereas, Providing the same conversion ratio for membership eligibility and employment after retirement will reduce confusion, ease communication, and improve consistent administration of the standard and will also clarify that employment in an institution of higher education is "regular" employment if it is *expected* to continue more than one full semester in the same school year or if it continues for more than one full semester in a school year;

Whereas, The proposed amendment in TRS rule §25.6 incorporates the current administrative interpretation of temporary employment for purposes of determining eligibility for membership for employees of institutions of higher education and amending the rule to specifically define temporary employment for faculty in higher education as employment for no more than one semester in a school year will further the consistent application of the eligibility requirements and simplify communication regarding the standard for temporary employment; and

Whereas, The proposed amendments to TRS rule §25.21 regard the eligibility of workers compensation paid as temporary wage replacement pay for credit with TRS which is not currently addressed in TRS rules and the proposed amendments provide that workers compensation is creditable compensation provided that the compensation is reported or verified to TRS by the end of the school year following the year in which it was paid, which will give a member sufficient time to verify the compensation and pay the member contributions before the cost increases;

Whereas, The proposed changes to TRS rule §25.43 address the amount that must be paid to TRS to receive not only compensation credit for workers compensation but also service credit associated with the workers compensation and provide if the workers compensation is reported or verified to TRS no later than the last day of the school year following the school year in which the workers compensation is paid, the cost to establish the compensation and associated service credit is the amount of member contributions owed on the compensation and the cost of the compensation and associated service credit must be paid in a lump sum no later than the last day of the school year following the year in which the workers compensation was paid or be purchased as unreported compensation;

Whereas, The proposed amendment to TRS rule §25.47 clarifies that workers compensation paid as temporary wage replacement pay is not unreported compensation until after the end of the school year following the school year in which the compensation was paid;

Whereas, The proposed amendments to TRS rule §25.81 reflect the new 90-day standard for the amount of time that a member must have worked in an otherwise eligible position in an out-of-state school in order to purchase the service credit;

Whereas, Pursuant to the authority granted by the Policy Committee of the board at its December 2012 meeting, TRS published proposed changes to the rules in Chapter 25 for public comment in the March 15, 2013 issue of the *Texas Register*, and the public had at least 30 days' notice of TRS' intention to adopt the proposed amendments before the board considered their adoption and TRS received no comments; and

Whereas, The board's policy committee has recommended that the board adopt the proposed amendments, and the board desires to adopt the proposed amendments without changes to the published texts of the proposed rule; now, therefore, be it

Resolved, That the board hereby:

- 1) Adopts amended TRS rule 34 TEX. ADMIN. CODE §25.1, 25.5, 25.21, 25.43, 25.47, and 25.81 as published in the March 15, 2013 issue of the *Texas Register* (38 TexReg 1844-47);
- 2) Incorporates by reference into this Resolution, as though fully set out in it, the applicable policy committee and board meeting materials, discussions and

actions, including the approved rule text and reasoned justification for its adoption as presented in those meeting materials, discussions and actions;

- 3) Grants the TRS staff authority to prepare and to file all documents required by this Resolution, to work with the Office of the Secretary of State in preparing and filing such documents, and to make any technical changes required for publication of the adopted rule; and
- 4) Grants the board chairman the authority to sign an order showing the action of the board.

Tab 7D

MEMORANDUM

To: Policy Committee and the Board of Trustees

From: Rebecca M. Smith, Assistant General Counsel

Copy: Brian Guthrie, Executive Director
Ken Welch, Deputy Director
Dennis Gold, Interim General Counsel
Rebecca Merrill, Special Advisor to the Executive Director and Manager of Special Projects

Date: April 1, 2013

Re: Proposed Amendments to Chapter 31, relating to Employment After Retirement

REQUESTED ACTION

At its December 2012 meeting, the Policy Committee authorized publication for public comment proposed amendments to two rules in Chapter 31 regarding employment after retirement and the employer pension surcharge. Specifically, staff proposed amendments to §31.14, relating to One-half Time Employment, and §31.41, relating to Return to Work Employer Pension Surcharge. The proposed amendments were published and no comments were received at the time of submission of this memorandum. If comments are received prior to the meeting of the Policy Committee, staff will address them at the meeting. The proposed amendments are before the committee now for a recommendation to the Board of Trustees regarding adoption.

WHY THE ACTION IS REQUESTED

The proposed rule changes to §31.14 address how employment in an institution of higher education that is expressed in terms of the number of courses or semester hours taught is considered in determining the number of clock hours that can be worked under the limits for one-half time employment by a retiree. The most recent prior changes made to this rule provided a new standard for one-half time employment. The new standard for retirees working for TRS-covered employers allowed a retiree to work the equivalent of four (4) clock hours for every work day in the month without forfeiting the annuity payable for that month. Experience with the rule and the conversion ratio in the rule indicate that further refinement is needed to ensure consistent application of the rule. Similarly, experience with the new standard for one-half time employment for retirees reflects the confusion that occurs when the standard for payment of the pension surcharge is different than the standard for one-half time employment without loss of annuity. The proposed amendments to §31.41 incorporate the same standard for triggering

payment of the pension surcharge and the loss of annuity for exceeding one-half time employment.

BACKGROUND OF THE REQUESTED ACTION

Section 31.14. Recent changes to this rule created one standard for all service retirees working for TRS-covered employers after retirement. In the absence of a twelve full, consecutive calendar month break in service from employment with a TRS-covered employer, retirees who retired after January 1, 2011 are limited to working no more than one-half time without forfeiting the monthly annuity. One-half time means working no more than the equivalent of four clock hours for each work day in that calendar month. A conversion ratio was also added to the rule that required work expressed in the number of course or semester hours taught to be converted to clock hours. The ratio was two clock hours for each course or semester hour.

Experience with the new language revealed a need for further clarification in the ratio language, an improvement that is addressed in the current proposed amendments. Rather than converting semester hours or course credits to clock hours, the proposed amendments direct that the number of hours of instruction in the classroom or lab be converted to clock hours using the conversion ratio. The conversion ratio takes into account not only the amount of time spent instructing students, but also the amount of preparation time, time spent grading work and submitting grades, and similar work related to the classroom instruction. This amendment is recommended to eliminate the need to specifically include the many different terms used by employers to describe the amount of work performed by faculty by using a single standard of the amount of time in the classroom or lab to ensure consistent application of the limit.

Section 31.41. The proposed amendments to this rule address the requirements for triggering payment of the pension surcharge. Currently, a pension surcharge is owed by the employer who employs a retiree who retired September 1, 2005 or after and is working in a TRS-eligible position. Experience with using two different one-half time standards to evaluate the employment of a retiree highlighted the confusion experienced by employers, the difficulty in communicating the two standards to employers and retirees, and the unanticipated cost to both parties when the work triggered the surcharges. The standard for one-half time employment that avoids loss of the monthly annuity is working no more than the equivalent of 4 clock hours for each work day in the calendar month and the standard for triggering the surcharge is working at least one-half the full-time load for a period of four and one-half months or more. The proposed amendments establish the same standard for triggering payment of the surcharge and the loss of annuity for exceeding one-half time employment.

RECOMMENDATION

Staff recommends the Policy Committee of the Board of Trustees consider recommending to the Board of Trustees the adoption of the amendments to the rules in Chapter 31 as outlined herein and without changes to the text as published in the *Texas Register* for public comment.

RULE §31.14 One-half Time Employment.

(a) (No change.)

(b) (No change.)

(c) (No change.)

(d) For the purpose of this section, actual course or lab instruction with an institution of higher education in state-supported colleges (including community and junior colleges), ~~and universities~~ that is expressed measured in terms of number of courses; course or semester hours/credits; instructional units; or other units of time representing class or instructional time shall be counted as a minimum of two clock hours for each clock hour of instruction or time in the classroom or lab per one course or semester hour in order to reflect instructional time as well as preparation, grading, and other time typically associated with one ~~course~~-hour of instruction. If the employer has established a greater amount of preparation time for each ~~course or semester~~-hour in the classroom or lab, the employer's established standard will be used to determine the number of courses or labs or semester hours a retiree may teach under the exception to loss of annuity provided by this section. The equivalent clock hours computed under this subsection may not be greater than the number of work hours authorized in subsection (a) of this section.

(e) This exception and the exception for substitute service may be used during the same calendar month without forfeiting the annuity only if the total amount of time that the retiree works in those positions in that month does not exceed the amount of time per month for work on a one-half time basis. Beginning September 1, 2011 and thereafter, the exception for one-half time employment under this section and the exception for substitute service under §31.13 of this ~~chapter title~~ (relating to Substitute Service) may be used during the same calendar month without forfeiting the annuity only if the total number of days that the retiree works in those positions in that month does not exceed one-half the number of days available for that month for work.

(f) A person working under the exception described in this section is not separated from service with all Texas public educational institutions for the purpose of the required 12 full consecutive month break described in §31.15 of this ~~chapter title~~ (relating to Full-time Employment after 12 - Consecutive -Month Break in Service).

(g) (No change.)

RULE §31.41 Return to Work Employer Pension Surcharge.

(a) For school years prior to the 2013-2014 school year, for each report month a retiree who retired September 1, 2005 or after is working for a TRS-covered employer (employer) or third party entity in a position eligible for membership in TRS, the employer that reports the retiree on the Employment of Retired Members Reports shall pay the Teacher Retirement System of Texas (TRS) the surcharge described in this section. ~~(ab) Beginning September 1, 2013, f~~For each report month a retiree is working for an in a TRS-covered position employer or third party entity for more than the equivalent of four clock hours for each work day in that calendar month ~~and reported on the Employment of Retired Members Report~~, the employer that reports the retiree on the Employment of Retired Members Report shall pay to ~~the Teacher Retirement System of Texas (TRS)~~ a surcharge based on the retiree's salary paid that report month. For purposes of this section, the employer is the reporting entity that reports the employment of the retiree and the criteria used to determine if the retiree is working more than the equivalent of four clock hours for each work day in that calendar month ~~in a TRS-covered position~~ are the same as the criteria

for determining one-half time employment under §31.14 of this title (relating to One-half Time Employment) eligible for TRS membership, ~~except that. A~~ a retiree reported as a substitute must meet the requirements of §31.1(b) of this title (relating to Definitions) for the surcharge not to apply.

~~(bc)~~ The surcharge amount that must be paid by the employer for each retiree working more than the equivalent of four clock hours for each work day in that calendar month ~~in a TRS-covered position~~ is an amount that is derived by applying a percentage to the retiree's salary. The percentage applied to the retiree's salary is an amount set by the Board of Trustees and is based on member contribution rate and the state pension contribution rate.

~~(de)~~ The surcharge is due from each employer that reports a retiree as working as described in this section on or after September 1, 2005, beginning with the report month for September 2005.

~~(ed)~~ The surcharge is not owed by the employer for any retiree ~~employed~~ who retired from the retirement system before September 1, 2005.

~~(fe)~~ The surcharge is not owed by the employer for a retiree that is reported as working under the exception for Substitute Service as provided in §31.13 of this title (relating to Substitute Service) unless that retiree combines Substitute Service under §31.13 of this title with other ~~TRS-covered~~ employment with the same or another employer or third party entity in the same calendar month. For each calendar month that the retiree combines substitute service and other ~~TRS-covered~~ employment as described so that the work exceeds one-half time as described in §31.14(e) of this title, the surcharge is owed on all compensation paid to the retiree, including compensation paid for substitute service. If the employment is with more than one employer, the surcharge is owed by each employer on the compensation paid by that employer ~~by the employer that reports the retiree on all compensation earned by the retiree, including compensation for the substitute service.~~

~~(gf)~~ The surcharge is owed by the employer on any retiree who is working for a third party entity and performing duties or providing services on behalf of the employer for more than the equivalent of four clock hours for each work day in that calendar month ~~but serving in a TRS-covered position~~ and who is considered an employee of that employer under §824.601(d) of the Government Code.

~~(hg)~~ Except as provided in subsection (f) of this section relating to combining substitute service with other employment, ~~if~~ a retiree is employed concurrently in more than one position ~~that is not eligible for TRS membership~~, the surcharge is owed if the combined employment is for more than the equivalent of four clock hours for each work day in that calendar month ~~eligible for membership under §25.6 of this title (relating to Part-time or Temporary Employment)~~. If the employment is with more than one employer, the surcharge is owed by each employer.

~~(i)~~ For school years prior to the 2013-2014 school year, if a retiree is employed concurrently in more than one position that is not eligible for membership, the surcharge is owed if the combined employment is eligible for membership under §25.6 of this title (relating to Part-time or Temporary Employment). If the employment is with more than one employer, the surcharge is owed by each employer.

~~(hj)~~ For school years prior to the 2013-2014 school year, ~~if~~ a retiree is employed concurrently in more than one position and one of the positions is eligible for TRS membership and one is not, the surcharge is owed on the combined employment. If the employment is with more than one employer, the surcharge is owed by each employer.

| ~~(k)~~ [For school years prior to the 2013-2014 school year,](#) if a retiree is employed in a position eligible for TRS membership, the surcharge is owed by each employer on all subsequent employment with a TRS-covered employer for the same school year.

Teacher Retirement System of Texas

BOARD RESOLUTION

Adopting Amended TRS Rules 34 TAC §31.14 and §31.41

April 18-19, 2013

Whereas, Section 824.601 of the Texas Government Code authorizes the Board of Trustees (board) of the Teacher Retirement System of Texas (TRS) to adopt rules to implement the limits on employment after retirement and §825.102 of the Texas Government Code authorizes the board to adopt rules regarding eligibility for membership, the administration of the funds of the system, and the transaction of the business of the board;

Whereas, Recent changes to §31.14 created one standard for one-half time employment for all service retirees working for TRS-covered employers that allows each retiree to work the equivalent of four clock hours for each work day in that calendar month without forfeiting the annuity for that month and a conversion ratio was also added to the rule that required work expressed in the number of course or semester hours taught to be converted to clock hours with each course or semester hour counted as two clock hours;

Whereas, Experience with the new standard revealed a further need for clarification in the conversion ratio language to eliminate the need to include the many different terms used to describe the amount of work performed by faculty by using a single standard of the amount of time in the classroom or lab to ensure consistent application and the proposed amendments provide a conversion ratio of 2 clock hours for every hour of instruction or time in the classroom or lab that takes into account not only the amount of time spent instructing students, but also the amount of preparation time, time spent grading work and submitting grades, and similar work related to the classroom instruction;

Whereas, The proposed amendments to §31.41 address the requirements for triggering payment of the pension surcharge which currently require that a pension surcharge be paid when a retiree is employed for one-half or more of the full-time load but the limit on one-half time employment for the retiree utilizes a standard of working no more than the equivalent of 4 clock hours for each working day in the month;

Whereas, Experience with using two different one-half time standards to evaluate the employment of a retiree highlighted the confusion experienced by employers, the difficulty in communicating the two standards to employers and retirees, and the unanticipated cost to both parties when the work triggered the surcharges and the proposed amendments will establish the same standard for triggering payment of the surcharge and the loss of annuity for exceeding one-half time employment; and

Whereas, Pursuant to the authority granted by the Policy Committee of the board at its December 2012 meeting, TRS published proposed changes to the rules in Chapter 31 for public comment in the March 15, 2013 issue of the *Texas Register*, and the public had at least 30 days' notice of TRS' intention to adopt the proposed amendments before the board considered their adoption and TRS received no comments; and

Whereas, The board's policy committee has recommended that the board adopt the proposed amendments, and the board desires to adopt the proposed amendments without changes to the published texts of the proposed rule; now, therefore, be it

Resolved, That the board hereby:

- 1) Adopts amended TRS rule 34 TEX. ADMIN. CODE §31.14 and §31.41 as published in the March 15, 2013 issue of the *Texas Register* (38 TexReg 1848);
- 2) Incorporates by reference into this Resolution, as though fully set out in it, the applicable Policy Committee and board meeting materials, discussions and actions, including the approved rule text and reasoned justification for its adoption as presented in those meeting materials, discussions and actions;
- 3) Grants the TRS staff authority to prepare and to file all documents required by this Resolution, to work with the Office of the Secretary of State in preparing and filing such documents, and to make any technical changes required for publication of the adopted rule; and
- 4) Grants the board chairman the authority to sign an order showing the action of the board.

Tab 7E

M E M O R A N D U M

To: Policy Committee and the Board of Trustees

From: Rebecca M. Smith, Assistant General Counsel

Copy: Brian Guthrie, Executive Director
Ken Welch, Deputy Director
Dennis Gold, Interim General Counsel
Rebecca Merrill, Special Advisor to the Executive Director and Manager of Special Projects
Clarke Howard, Assistant General Counsel

Date: April 1, 2013

Re: Proposed Amendments to Chapter 41, relating to Health Care and Insurance Programs

REQUESTED ACTION

At its December 2012 meeting, the Policy Committee authorized publication for public comment proposed amendments to one rule in Chapter 41 regarding TRS-Care and the health benefit surcharge owed by employers when retirees are employed. Specifically, staff proposed amendments to §41.4, relating to Employer Health Benefit Surcharge. The proposed amendments were published and no comments were received at the time of submission of this memorandum. If comments are received prior to the meeting of the Policy Committee, staff will address them at the meeting. The proposed amendments are before the committee now for a recommendation to the Board of Trustees regarding adoption.

WHY THE ACTION IS REQUESTED

The proposed changes to §41.4 establish a new standard for triggering payment of the health benefit surcharge. Prior changes made to §31.14, relating to One-half Time Employment, established a new standard for one-half time employment after retirement. Under the revised standard, service retirees can work the equivalent of four (4) clock hours for each work day in the calendar month without forfeiting the annuity for the month. A ratio for converting the number of course credits or semester hours taught to clock hours was also established. However, payment of the health benefit surcharge is required when the retiree is hired in a position eligible for membership in TRS and membership is authorized when the employee is working one-half or more of the full-time load for a period of four and one-half months or more. Experience with the revised language of the rule reflected confusion with the different standards used to trigger

payment of the health benefit surcharge and for loss of annuity for exceeding one-half time employment. The proposed amendments to §41.4 incorporate the same standard for triggering payment of the health benefit surcharge as the limit on one-half time employment that results in loss of the monthly annuity and tracks the standard used for triggering payment of the pension surcharge.

BACKGROUND OF THE REQUESTED ACTION

Section 41.4. The proposed amendments to this rule address the requirements for triggering payment of the health benefit surcharge. Currently, a health benefit surcharge is owed by the employer who employs a retiree who retired September 1, 2005 or after and who is working in a TRS-eligible position. Experience with using the new standard for one-half time employment for retirees (equivalent of 4 clock hours for each work day in the calendar month) and the standard for one-half time employment eligible for membership (one-half the full-time load) to trigger payment of the health benefit surcharge revealed confusion on the part of employers, difficulty in communicating the two standards to the employers and retirees, and unanticipated cost to both when the retiree worked one-half time. The proposed amendments establish the same standard for triggering payment of the surcharge and loss of annuity for exceeding one-half time employment.

RECOMMENDATION

Staff recommends the Policy Committee of the Board of Trustees consider recommending to the Board of Trustees the adoption of the amendments to the rule in Chapter 41 as outlined herein and without changes to the text as published in the *Texas Register* for public comment.

RULE §41.4 Health Benefit Surcharge.

(a) When used in this section, the term "employer" has the meaning given in §821.001(7), Government Code.

(b) For school years prior to the 2013-2014 school year, for each report month a retiree is enrolled in the health benefits program (TRS-Care) provided pursuant to the Texas Public School Retired Employees Group Benefits Act and working for an employer or a third party entity as defined in §824.601, Government Code, in a position eligible for membership in TRS, the employer that reports the retiree on the Employment of Retired Members Report shall pay the monthly surcharge described in this section to the Retired School Employees Group Insurance Fund (the Fund).

~~(b)~~ Beginning September 1, 2013, for each report month a retiree is enrolled in the health benefits program ("TRS-Care") provided pursuant to the Texas Public School Retired Employees Group Benefits Act, and is working for an employer in a TRS-covered position for more than the equivalent of four clock hours for each work day in that calendar month, the employer that reports the employment of the retiree and is reported on the Employment of Retired Members Report to the Teacher Retirement System of Texas ("TRS"), the employer that reports the retiree shall pay monthly to the Retired School Employees Group Insurance Fund (the "Fund") a surcharge established by the Board of Trustees of TRS.

~~(c)~~ The criteria used to determine if the retiree is working more than the equivalent of four clock hours for each work day in that calendar month in a TRS-covered position are the same as the criteria for determining one-half time employment under §31.14 of this title (relating to One-half Time Employment) eligible for TRS membership.

~~(d)~~ The surcharge is also owed by the employer on any retiree who is enrolled in TRS-Care, is working for a third party entity but is working for more than the equivalent of four clock hours for each work day in that calendar month serving in a TRS-covered position, and who is considered an employee of that employer under §824.601(d) of the Government Code.

~~(e)~~ The surcharge under subsection (b) of this section is not owed:

(1) by an employer for any retiree employed by that employer who retired from TRS before September 1, 2005; or

~~(2)~~ by an employer for a retiree reported as working under the exception for Substitute Service as provided in §31.13 of this title (relating to Substitute Service) unless that retiree combines Substitute Service under §31.13 of this title with other TRS-covered employment with the same or another employer or third party entity in the same calendar month. For each calendar month that the retiree combines substitute service and other TRS-covered employment as described so that the work exceeds one-half time as described in §31.14(e) of this title, the surcharge is owed by each employer as provided in this section.

~~(f)~~ A retiree who is enrolled in TRS-Care, is working for an in a TRS-covered employer or third party entity for more than the equivalent of four clock hours for each work day in that calendar month position, and is reported on the Employment of Retired Members Report to TRS shall inform the employer of the identification of all employers of the retiree and all employers of any other retiree enrolled under the same account identification number. An employer who reports to TRS the employment of a retiree who is enrolled in TRS-Care and is working more than the equivalent of four clock hours for each work day in that calendar month in a TRS-covered position shall inform TRS as soon as possible in writing of the name, address, and telephone number of any other employer that employs the retiree or any other retiree who is also enrolled under the same account identification number.

~~(g)~~ If more than one employer reports the employment of a retiree who is enrolled in TRS-Care to TRS during any part of a month, the surcharge under subsection (b) of this section required to be paid into the Fund by each reporting employer for that month is the total amount of the surcharge due that month divided by the number of reporting employers. The pro rata share owed by each employer is not

based on the number of hours respectively worked ~~each week~~ by the retiree for each employer, nor is it based on the number of days respectively worked during the month by the retiree for each employer.

(hi) If a retiree who is enrolled in TRS-Care is employed concurrently by one or more employers in more than one position ~~that is not eligible for TRS membership~~, the surcharge is owed if the combined employment is for more than the equivalent of four clock hours for each work day in that calendar month eligible for membership under §25.6 of this title. If the employment is with more than one employer, the surcharge will be paid according to subsection (hg) of this section by each employer.

(ij) For school years prior to the 2013-2014 school year, if a retiree who is enrolled in TRS-Care is employed concurrently in more than one position and one of the positions is eligible for TRS membership and one is not, the surcharge is owed on the combined employment. If the employment is with more than one employer, the surcharge will be paid according to subsection (hg) of this section by each employer.

(kj) For school years prior to the 2013-2014 school year, if a retiree who is enrolled in TRS-Care is employed in a position eligible for TRS membership, the surcharge will be paid according to subsection (hg) of this section by each employer on all subsequent employment, whether eligible for membership or not, with a TRS-covered employer for the same school year.

(lk) The employer shall maintain the confidentiality of any information provided to the employer under this section and shall use the information only as needed to carry out the purposes stated in this section and related applicable rules or statutes.

Teacher Retirement System of Texas

BOARD RESOLUTION

Adopting Amended TRS Rule 34 TAC §41. 4

April 18-19, 2013

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

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, Section 1575.052, Insurance Code, authorizes the TRS Board of Trustees ("board") to adopt rules it considers necessary to implement and administer the TRS-Care program;

Whereas, Recent changes to TRS rule §31.14, relating to one-half time employment, establish a new standard for one-half time employment after retirement and establish a ratio for converting course credits or semester hours to clock hours;

Whereas, The proposed amendments to TRS rule §41.4, relating to the return-to-work employer health benefit surcharge, establish a new standard for triggering payment of the monthly employer health benefit surcharge by incorporating the same standard used for triggering payment of the pension surcharge;

Whereas, Pursuant to the authority granted by the Policy Committee of the board at its December 2012 meeting, TRS published proposed changes to §41.4 for public comment in the March 15, 2013 issue of the *Texas Register*, and the public had at least 30 days' notice of TRS' intention to adopt the proposed amendments before the board considered their adoption and TRS received no comments; and

Whereas, The board's policy committee has recommended that the board adopt the proposed amendments, and the board desires to adopt the proposed amendments without changes to the published texts of the proposed rule; now, therefore, be it

Resolved, That the board hereby:

- 1) Adopts amended TRS rule 34 TEX. ADMIN. CODE §41. 4 as published in the March 15, 2013 issue of the *Texas Register* (38 TexReg 1851);

- 2) Incorporates by reference into this Resolution, as though fully set out in it, the applicable policy committee and board meeting materials, discussions and actions, including the approved rule text and reasoned justification for its adoption as presented in those meeting materials, discussions and actions;
- 3) Grants the TRS staff authority to prepare and to file all documents required by this Resolution, to work with the Office of the Secretary of State in preparing and filing such documents, and to make any technical changes required for publication of the adopted rule; and
- 4) Grants the board chairman the authority to sign an order showing the action of the board.

Tab 7F

MEMORANDUM

To: Policy Committee and the Board of Trustees

From: Rebecca M. Smith, Assistant General Counsel

Copy: Brian Guthrie, Executive Director
Ken Welch, Deputy Director
Dennis Gold, Interim General Counsel
Rebecca Merrill, Special Advisor to the Executive Director and Manager of Special Projects

Date: April 1, 2013

Re: Proposed Amendments to Chapter 47, relating to Qualified Domestic Relations Orders

REQUESTED ACTION

At its December 2012 meeting, the Policy Committee authorized publication for public comment proposed amendments to one rule in Chapter 47 regarding qualified domestic relations orders. Specifically, staff proposes amendments to §47.10, relating to Determination of Whether an Order is a Qualified Domestic Relations Order. The proposed amendments were published and no comments were received at the time of submission of this memorandum. If comments are received prior to the meeting of the Policy Committee, staff will address them at the meeting. The proposed amendments are before the committee now for a recommendation to the Board of Trustees regarding adoption.

WHY THE ACTION IS REQUESTED

The proposed rule changes to §47.10 establish a requirement that domestic relations orders entered by a court September 1, 2013 or after must be in a form prescribed by TRS. Currently, TRS provides a model order to aid parties in drafting a domestic relations order that meets all of the plan requirements in order to be a qualified order. Although most orders are based in large part on the model order, many parties include limiting language or additional requirements that are difficult for TRS to administer and/or require manual administration. TRS received statutory authorization in the last legislative session to require use of a prescribed form or model. The proposed changes to §47.10 implement the statutory authority to require that parties use a prescribed model for an order to be approved by TRS as a qualified order.

BACKGROUND OF THE REQUESTED ACTION

Section 47.10. TRS was given authority in 1991 to administer qualified domestic relations orders. A domestic relations order is any judgment, decree, or order, including approval of a property settlement agreement, which relates to the provision of child support, alimony payments, or marital property rights to a spouse, former spouse, child, or other dependent of a member or retiree, and is made pursuant to a domestic relations law, including a community property law of the State of Texas or another state.

A court enters the domestic relations order that directs TRS to pay an alternate payee a part or all of the benefits owed on behalf of the participant and TRS must review the order and determine if it is a qualified order. The Legal-Benefits Team in the Legal Services Department performs this review on behalf of the Executive Director. The parties are notified by TRS if the order is approved and the requirements of the order are set up in the alternate payment system (ALTP) for administration. If the order does not meet the statutory requirements, the parties are provided a written determination that the order is not a qualified order that includes the basis for the rejection of the order. The parties may then either return to court to obtain an amended order or may appeal the determination to district court in Travis County after a request to the Executive Director for reconsideration.

TRS developed the first model domestic relations order in 1992 and continues to use a revised version of the original model order. However, in the absence of a requirement to use the model order, courts make revisions to the order that must be evaluated for compliance with the plan's terms. A determination must also be made that it is possible for TRS to administer the order programmatically. For example, one party may owe the other a sum of money or an equal division of the assets cannot be achieved. The court may order the amount owed to be deducted from the benefits to be received from TRS or may order a disproportionate share of one type of benefit to be awarded to the former spouse. The responsibility for tracking the payments and administering the division introduces the possibility of human error and can become a liability for the trust fund. By having the requirement that the parties use a form or model prescribed by TRS, programming can be developed to ensure the accurate administration of the order and reduce the amount of staff time required to manually track payments. Also, the amount of staff time required to review and approve or reject orders will also be reduced by the requirement to use a prescribed form.

RECOMMENDATION

Staff recommends the Policy Committee of the Board of Trustees consider recommending to the Board of Trustees the adoption of the amendments to the rule in Chapter 47 as outlined herein and without changes to the text as published in the *Texas Register* for public comment.

RULE §47.10 Determination of Whether an Order is a Qualified Domestic Relations Order

(a) A domestic relations order entered by a court of competent jurisdiction September 1, 2013 or after must be in a form prescribed by TRS. The form prescribed by TRS must ensure compliance with the requirements in subsection (b) of this section.

(b) For domestic relations orders entered by a court of competent jurisdiction before September 1, 2013, TRS shall apply the statutory criteria to determine whether an order is a QDRO. The following provisions shall also be used in making the determination.

(1) The order must provide for each possible distribution by the retirement system for the member or retiree. This requirement may be met by a provision that:

(A) awards a specified or clearly determinable percentage, rather than an amount, of each distribution by TRS based on the participant's account; or

(B) awards all benefits not specified to the participant to be paid in accordance with plan provisions.

(2) The order must provide for reducing the amount awarded in the event of reduction of the benefit based on the age of the participant, each reduction to be in proportion to the factors used to reduce the standard annuity on the basis of the participant's age below normal retirement age.

This requirement shall not apply if:

(A) the order awards a percentage of whatever monthly benefit is payable after all elections have been made by the member, or in the event of death benefits, by the designated beneficiary;

(B) the member or retiree has reached normal retirement age and, if a retiree, has retired without any reduction for early age retirement at the time of the determination as to whether the order is a QDRO; or

(C) the order reflects that the retiree is, or will be receiving, retirement benefits reduced for early age retirement and the award to the alternate payee has considered the reduced amount of the retiree's annuity payments.

(3) The order may not:

(A) purport to require the designation by the participant of a particular person as the recipient of benefits in the event of a member's or annuitant's death;

(B) purport to require the selection of a particular payment plan or benefit option;

(C) require any action on the part of the retirement system contrary to its governing statutes or plan provisions other than the direct payment of the benefit awarded to an alternate payee; or

(D) award any interest in distributions by the retirement system contingent on any condition other than those conditions resulting in the liability of the retirement system for payment under its plan provision.

(4) A QDRO may not provide for the award of a specific amount of a benefit, rather than a percentage of this benefit, to an alternate payee unless the order also provides for a reduction of the amount awarded in the event that the benefits available to the retiree or member are reduced by law. This requirement shall not apply to benefit waivers executed by the participant.

(5) If the order intends to award the participant the full amount of any future benefit increases that are provided or required by the legislature, the order must explicitly state such. TRS, its board of trustees, and its officers and employees shall not be liable for making payment of part of any future benefit increases to any person if the order so requires or if the order awards a percentage of benefits payable and does not explicitly state that future benefit increases are awarded solely and completely to the plan participant.

- (6) An order that purports to give to someone other than a member the right to designate a beneficiary or choose any retirement plan available from TRS is one that requires an action contrary to TRS' governing statute and plan provisions and therefore is not a QDRO.
- (7) An order that attaches a lien to any part of amounts payable with respect to a member or retiree is one that requires an action contrary to TRS' governing statute and plan provisions and therefore is not a qualified domestic relations order.
- (8) An order that awards an alternate payee a portion of the benefits payable with respect to a member or retiree under TRS and that purports to require TRS to make a lump sum payment of the awarded portion of the benefits to the alternate payee that are not payable in a lump sum is one that requires action contrary to TRS' governing statute and plan provisions and therefore is not a QDRO.
- (9) An order shall specify the date of the marriage.
- (10) An order that allocates the participant's investment in contract in a manner not in compliance with any requirements of the Internal Revenue Code and applicable regulations is not a QDRO. An order that does not allocate a participant's investment in contract may be determined to be a QDRO if it provides sufficient information for TRS to make the allocation in accordance with applicable laws and regulations.
- (11) An order that purports to require a member to terminate employment, to withdraw contributions, or to apply for retirement, is not a QDRO.
- (12) The order must satisfy the requirements of Internal Revenue Code §414(p)(1)(A)(i) and §414(p)(1)(B).
- (13) The order may contain provisions consistent with [Government Code](#) §824.1012; ~~Government Code~~, or §824.1013, ~~Government Code~~, and TRS may rely on the provisions of the order as though the provisions were included in the decree of divorce or order accepting a property settlement.
- (14) The order may specify an alternative method for the parties to verify their Social Security numbers to TRS, if the court finds that omission of the numbers in the order is necessary to reduce the risk of identity theft. The order is not a QDRO if TRS finds that the method of verification is insufficient for the purpose of payment of benefits or reporting of income for tax purposes.

Teacher Retirement System of Texas

BOARD RESOLUTION

Adopting Amended TRS Rule 34 TAC §47.10

April 18-19, 2013

Whereas, Section 804.003(n) of the Texas Government Code authorizes the Board of Trustees (board) of the Teacher Retirement System of Texas (TRS) to adopt rules to implement the provisions for payments to an alternate payee under the terms of a qualified domestic relations order, and §825.102 of the Texas Government Code authorizes the board to adopt rules regarding eligibility for membership, the administration of the funds of the system, and the transaction of the business of the board;

Whereas, TRS first developed a model domestic relations order in 1992 to assist parties and their attorneys in drafting an order that meets all of the plan's requirements for a qualified order;

Whereas, Experience with the model order reflects that, in the absence of a requirement to use the model order, many parties revise the order, making changes that must be evaluated for compliance with the plan's terms and often require manual administration of the order, a process which introduces the possibility of human error and liability for the trust fund;

Whereas, Recent changes to §804.003(g) of the Texas Government Code authorize TRS to reject a domestic relations order as a qualified order unless the order conforms to a model order;

Whereas, Requiring the parties to use a model order prescribed by TRS will reduce the amount of staff time required to review the orders and manually track payments, will allow TRS to develop programming to ensure accurate administration of the order, and will reduce liability for the trust fund;

Whereas, The proposed amendment to TRS rule §47.10 implements the statutory authority to require use of a prescribed form in order for the domestic relations order to be approved by TRS as a qualified order;

Whereas, Pursuant to the authority granted by the Policy Committee of the board at its December 2012 meeting, TRS published proposed changes to the rule in Chapter 47 for public comment in the March 15, 2013 issue of the *Texas Register*, and the public had at least 30 days notice of TRS' intention to adopt the proposed amendments before the board considered their adoption and TRS received no comments; and

Whereas, The board's policy committee has recommended that the board adopt the proposed amendments, and the board desires to adopt the proposed amendments without changes to the published text of the proposed rule; now, therefore, be it

Resolved, That the board hereby:

- 1) Adopts amended TRS rule 34 TEX. ADMIN. CODE §47.10 as published in the March 15, 2013 issue of the *Texas Register* (38 TexReg 1853);
- 2) Incorporates by reference into this Resolution, as though fully set out in it, the applicable policy committee and board meeting materials, discussions and actions, including the approved rule text and reasoned justification for its adoption as presented in those meeting materials, discussions and actions;
- 3) Grants the TRS staff authority to prepare and to file all documents required by this Resolution, to work with the Office of the Secretary of State in preparing and filing such documents, and to make any technical changes required for publication of the adopted rule; and
- 4) Grants the board chairman the authority to sign an order showing the action of the board.

Tab 10

Executive Assessment Overview

C-Suite Evaluations

Teacher Retirement System of Texas

April 19, 2013

Prepared by:
Focus Consulting Group



FCG C-Suite Assessment

TRS PROCESS REVIEW MAP:

1 Determine "Who and How"

1. Assessment will be for: Brian Guthrie, Britt Harris and Amy Barrett
2. TRS Board overview presentation (**April 19**)
3. Discuss and agree on transparency level in the process

2 Refine the Criteria

1. Determine the performance goals being assessed for each candidate
2. Determine the specific competencies to be assessed (**Complete**)
3. Customize the FCG system

3 Assess the Individual(s)

1. Implement the FCG 360 process for assessment
2. Implement the Enneagram leadership personality tool (**Complete**)
3. Interview TRS Board members to obtain performance feedback

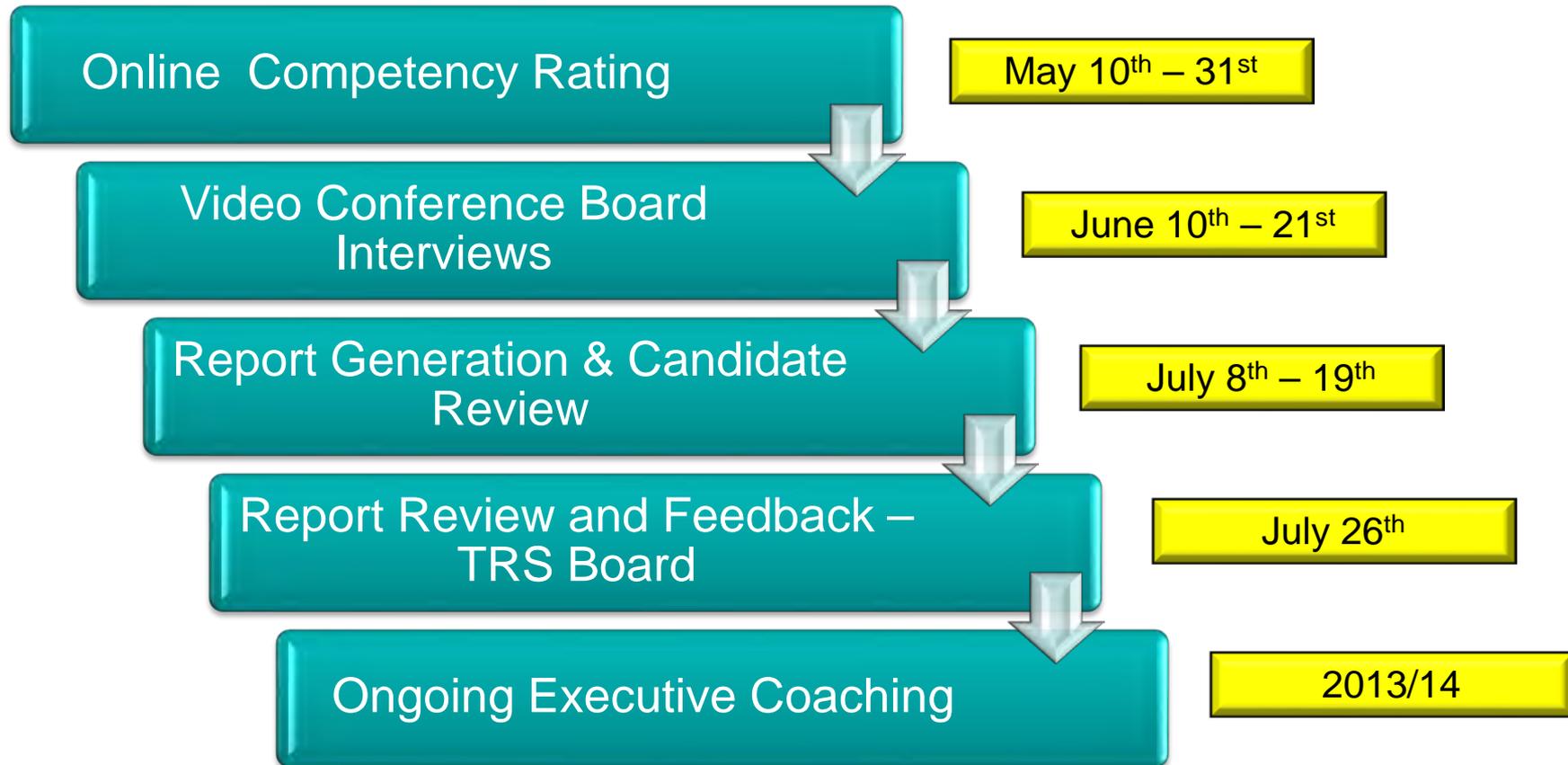
4 Review the Data

1. Prepare the final feedback reports
2. Review the feedback with each individual assessed
3. Review the summary feedback reports with the TRS Board

5 Prepare Next Steps

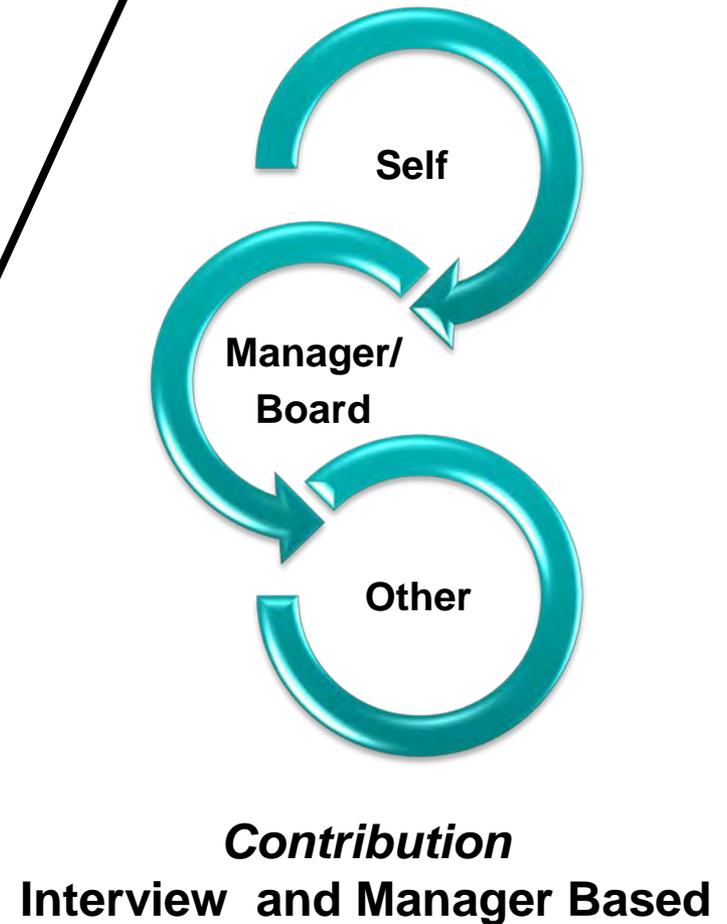
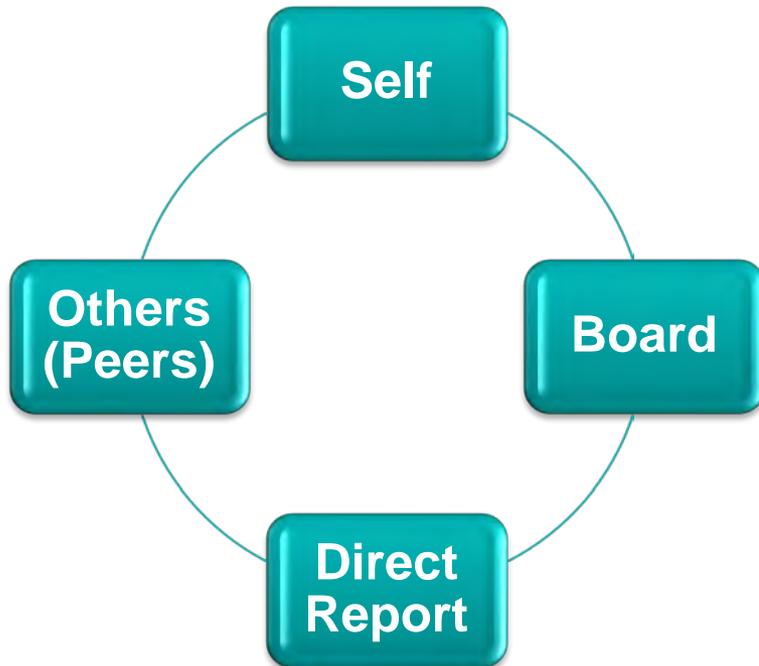
1. Prepare development plans with individual assessed
2. Prepare performance goals and objectives for next year
3. Ratify goals and development with the TRS Board

TRS Leadership Assessment Process Steps & Timeline



TRS Leadership Assessments - Input

Competency Online 360 Degree Assessment



TRS Leadership Rating Scales - Input

Scale	Competency <i>“Candidate demonstrates this behavior...”</i>	Contribution <i>“On this goal candidate...”</i>
5	To a very great extent	Far Exceeded expectations
4	To a great extent	Exceeded expectations
3	To some extent	Met expectations
2	To a little extent	Partially met expectations
1	Not at all	Did not meet expectations

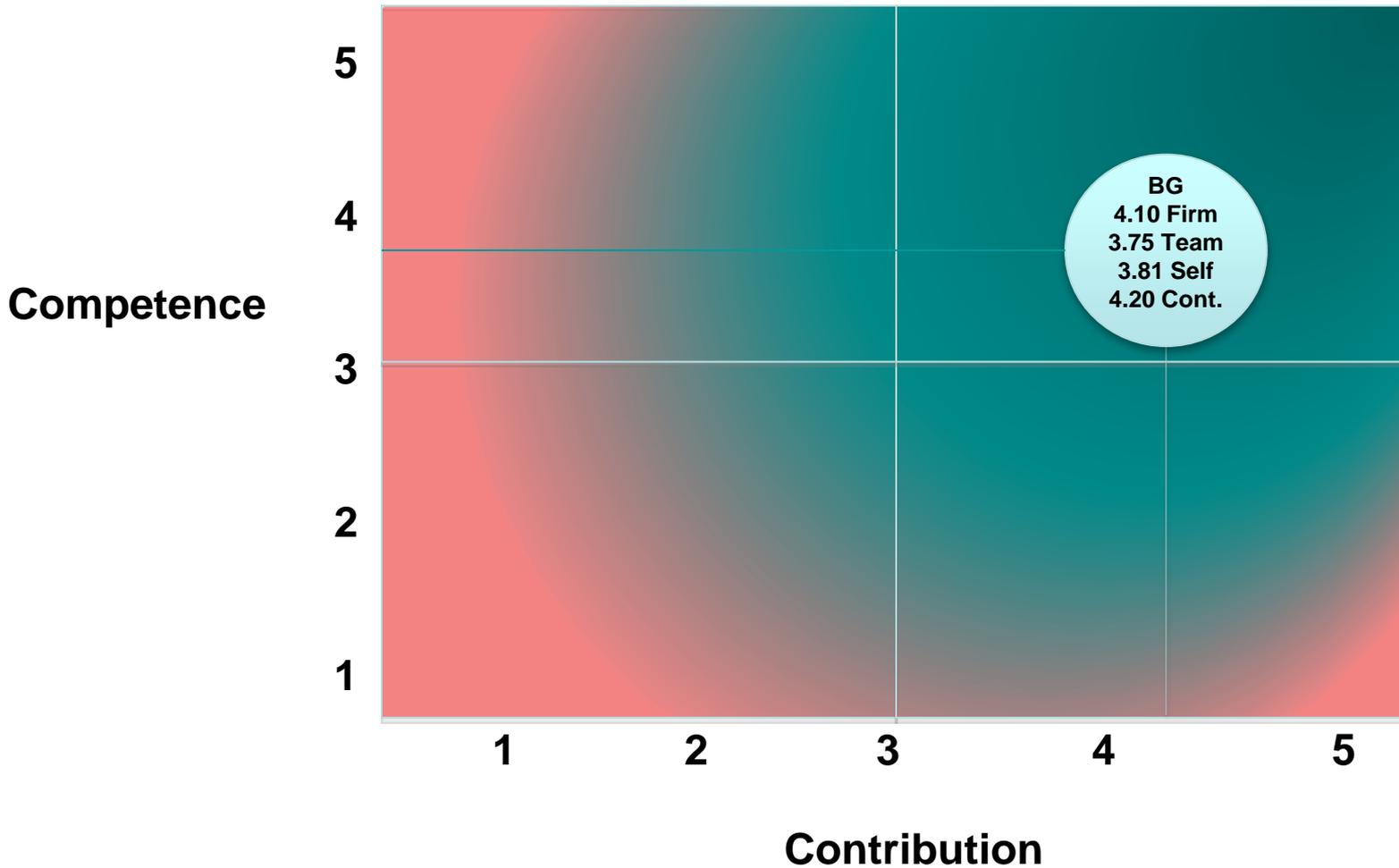
TRS Leadership Contribution – Executive Director Input Sample

Contribution Goals	Score
Develop and finalize TRS agency core values: communicate and integrate them into key processes for management of TRS human resources by 12/31/2013.	
Comments:	
Attract and retain a new General Counsel by (06/30/2013)	
Comments:	
Develop and deliver agency wide communication plan to continue to drive agency performance.	
Comments:	

TRS Leadership Competencies – Executive Director Input

Leads the Firm	Leads the Team	Leads the Self
Servant Leadership	Builds Collaboration	Ethical Leadership
Client Focus	Reading People	Candor
Strategic Thinking	Provides Direction	Integrity and Trust
Effective Decision Making	Priority Setting	Learning Agility
Drives Firm Vision	Conflict Resolution	Self-Awareness
Builds Firm Talent		Listens Actively

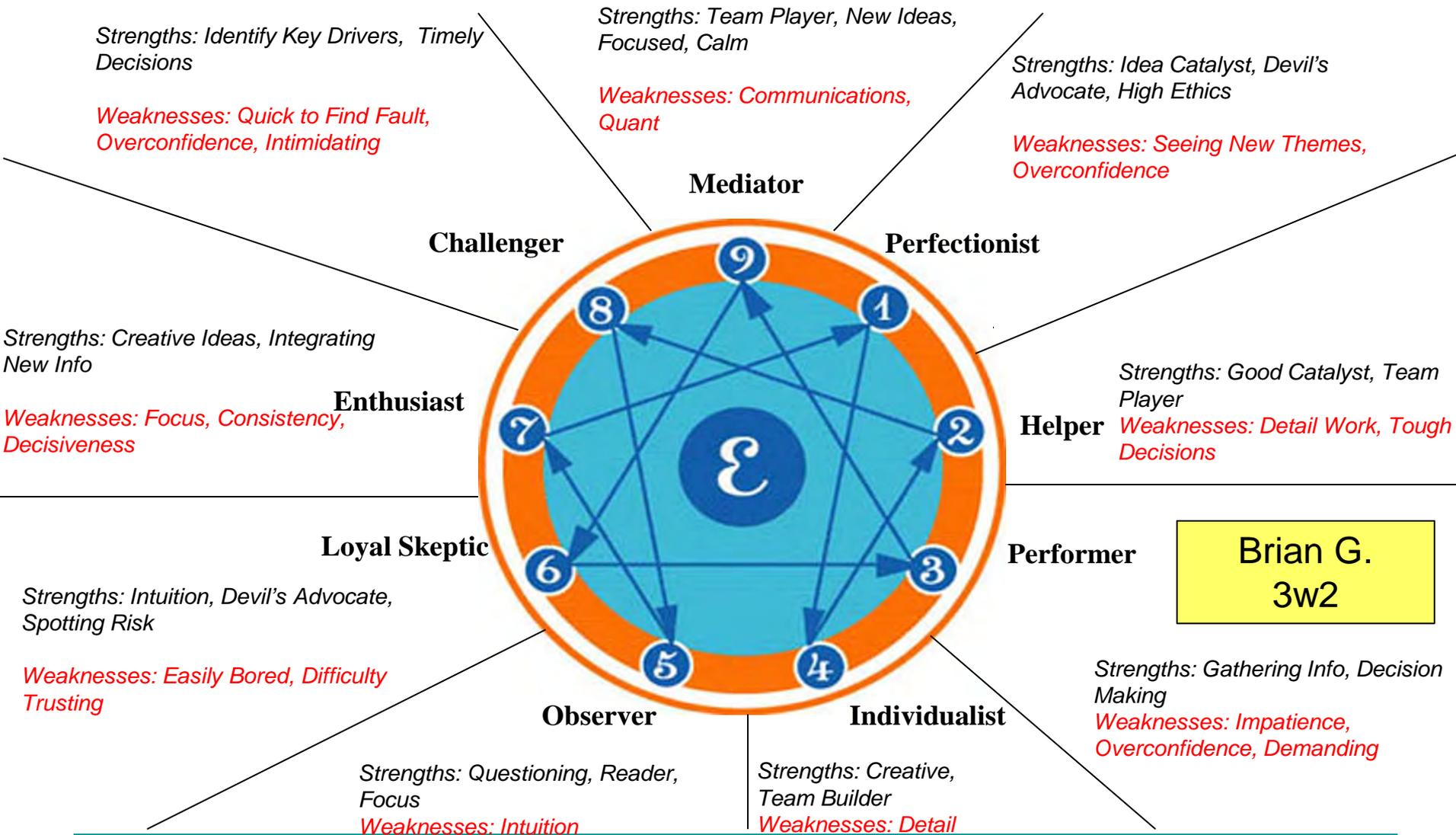
Leadership Summary Map – Output Sample



TRS Leadership Assessments – Output Sample Summary

Name	Competency			Contribution
Brian Guthrie	Leads Self	Leads Team	Leads Firm	Performance Goals
Overall Avg	3.81	3.75	4.10	4.20
CEO/ED Peer comparison	3.41	3.75	4.00	N/A
Self Evaluation	4.00	3.88	4.20	4.10
Board Evaluation	4.10	3.78	4.25	4.30
Direct Reports Evaluation	3.83	4.00	4.10	N/A
Other Evaluation	3.84	3.65	3.90	N/A

Leadership Personality – Output Sample



Brian G.
3w2

Questions & Comments

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Tab 11

Teacher Retirement System of Texas

**TEAM Program:
Independent Program Assessment**

Board Presentation

April 19, 2013



- Independent Program Assessment (IPA):
 - Provide independent reporting and oversight to the TRS Board and Executive Director or designee regarding critical risks related to the TRS Enterprise Application Modernization (TEAM) Program to enable informed decision-making.

 - Critical Risks Focus:
 - Failure to meet TEAM objectives
 - Lack of user acceptance
 - Program substantially delayed
 - Program substantially over budget

TEAM Program IPA Observations – Strengths

- 1) Strong and effective Core Management Team (CMT)
Cohesive team working well together. All details discussed and evaluated - decisions are openly discussed.

- 2) Organized Reporting Entity Outreach and Business Rules Project Management
Strong project managers, detailed and updated project documentation.

- 3) Good collaboration between CMT and Risk Management Department
They are working together to identify risks and related mitigation approaches.

TEAM IPA Scorecard

TEAM Program Governance	Prior Score	Current Score	Comments
1. Program/Project Management		2	Project charter, status, schedules and Project interdependencies
2. Risk Management		1	
3. Issues Management and Tracking		1	
4. Program Communication		1	
5. Change Management		2	
6. Staffing and Organization		2	
7. Budget Tracking		1	
TEAM Projects			
1. LOB System Selection & Implementation		1	Contingency plan and project charter Project milestones, schedule and project charter (team info) OCM Scope, change management roles and responsibilities
2. FSR Implementation		2	
3. Data Management		2	
4. Reporting Entity Outreach		1	
5. Organizational Change Management		2	
6. Business Rules Development		1	
7. Business Process and Training		NA	
8. Legacy System Decommissioning		NA	
9. External Website Redesign		NA	
10. Maintenance and Enhancement of LOB		N/A	

Legend

- 1 = LOW
- 2 = GUARDED
- 3 = CAUTION
- 4 = ELEVATED
- 5 = SEVERE



N/A= Project not started, rating is not applicable at this time

TEAM IPA Summary Observations

ID #	Date	Observation	Management Responses
1	1/2013	Re-engineering of internal controls has not yet been addressed within the TEAM Program	In Progress Change control processes were already in place. Changes were made to the repository to make access to those processes easier. Business Process Managers reviewed the Line Of Business and Financial System Replacement requirements to ensure that controls are included and clearly identified. The TRS Internal Audit team is also reviewing these items. <i>Due Date: May 15, 2013</i>
2	1/2013	Approach not formalized and timely for hiring and retention of high tech IT staff	In Progress This observation validates TRS staff observations and this is currently being addressed. <i>Due Date: December 31, 2013</i>

TEAM IPA Summary Observations

ID #	Date	Observation	Management Responses
3	2/2013	Project plan inconsistent with project reporting	<p>In Progress</p> <p>The Project Plans are currently being updated on the projects that are in process. The Organizational Change Management and the Financial System Replacement will be updated when the Statement of Work is finalized and a vendor has been selected. The Data Management Project Plan updates should be complete by the due date.</p> <p><i>Due Date: April 30, 2013</i></p>
4	2/2013	TEAM Program and project staffing plan is not detailed enough	<p>In Progress</p> <p>This observation is closely related to Observation 2 noted previously. Core Management Team presented a detailed staffing plan for TEAM Program needs throughout the anticipated timeline of the project. Project Plans are in the process of being updated to include specific roles.</p> <p><i>Due Date: December 31, 2013</i></p>

TEAM IPA Summary Observations



ID #	Date	Observation	Management Responses
5	2/2013	Project interdependencies have not been documented	<p>In Progress</p> <p>This observation validates TRS staff observations and is currently being addressed. Provaliant has been holding project interdependency meetings, which look at the cross-project interdependencies such as schedule and staffing.</p> <p><i>Due Date: December 31, 2013</i></p>
6	2/2013	Financial System Replacement (FSR) contingency plan has not been developed	<p>In Progress</p> <p>The FSR Team restructured the vendor's proposed methodology to mitigate the risk of not having control of the overall scope and the resulting cost. The result of the phase will be Go/No-Go decisions after TRS performs cost benefit analysis for each.</p> <p><i>Due Date: October 31, 2013</i></p>

TEAM IPA Summary Observations

ID#	Date	Observation	Management Responses
7	2/2013	Organizational Change Management (OCM) project scope and plan have not been clearly identified	<p>In Progress</p> <p>Core Management Team (CMT) placed responsibility for TEAM Program communications under the CMT Communications Sub-Team . HR representative was added to the CMT as a non-voting member representing the OCM Project as the Project Sponsor. Revised Charter that further defines the scope: under review. SOW: being revised to further define the project scope. Project Plan: vendor will finalize as a deliverable.</p> <p><i>Due Date: April 30, 2013 (Charter and SOW)</i> <i>July 31, 2013 (Finalized Project Plan)</i></p>
8	2/2013	Change Management and Quality Control Procedures have not been finalized and published	<p>TRS IT has change control procedures in place at the contract change level as well as the process change level. These procedures are based on the IT Governance Document and other change management policies defined for the TEAM Program. All TEAM Projects will use these procedures going forward.</p> <p><i>Completed.</i></p>

IPA Activities - Completed Summary

1. Reviewed OCM Requirements and provided feedback to OCM Project Lead
2. Attended weekly ESC and CMT meetings and Project Team Meetings including Data Management and FSR projects
3. Completed baseline project management assessment and identified specific observations and associated risks
 - Conducted additional interviews and follow-up meetings with Provaliant, Risk Management and various Project Sponsors, Leads and Managers
 - Provided status updates and solicited feedback on IPA work from three ESC members
 - Reviewed program and project level documentation, including organizational charts, project charters, project plans and status reporting
 - Reviewed updated Data Management Deliverables documentation.
4. Reviewed LOB Selection criteria and vendor response evaluation approach, and attended LOB vendors Pre-Offer conference
5. Presented baseline assessment observations, identified risks and recommendations

IPA Activities - Next Steps Summary

1. Continue attending ESC, CMT and specific project meetings as needed for monitoring progress
2. Review updated project plan/schedule for Data Management Project and verify that Project schedule includes new milestone dates
3. Evaluate Financial System Replacement (FSR) vendor statement of work document (when finalized) and provide feedback
4. Monitor staffing and resource allocation plans, including strategic planning for high tech IT staffing needs
5. Review and evaluate project level risk logs and provide feedback to Risk Management
6. Continue to review current TEAM vendor contracts in place and vendor payment schedules

** Note: The IPA quarterly budget and hours will be reported starting next Board Meeting in June 2013*

TEAM IPA Observations – Jan 2013



1. Re-engineering of internal controls has not yet been addressed within the TEAM Program

Risks:

- Inadequate internal control environment
- Increased cost to design post go-live

Recommendations:

Incorporate internal controls assessment and design into applicable project plans (e.g., LOB, FSR)

Management Response:

Business Process Managers have reviewed the commitments in the LOB RFO and identified the internal controls that are listed for the new LOB. The list of controls was sent to the ESC and Internal Audit for review on 3/8/2013.

On 3/21/2013 the Business Process Managers were asked by a member of the CMT to perform a similar activity by reviewing the requirements for the Financial System Replacement and identifying the internal controls. These internal controls will already have been collected in a spreadsheet. On 3/22/2013 a draft of these internal controls were provided to the requestor from the CMT. These internal controls were reviewed on 3/25/2013. These internal controls will be sent to the CMT and then to the ESC and Internal Audit for review. The submission of this list of internal controls for the Financial System Replacement to the ESC and Internal Audit should occur on or before 4/2/2013.

TEAM IPA Observations – Jan 2013

2. Approach not formalized and timely for hiring and retention of high tech IT staff for TEAM implementation and ongoing, sustainable support

Risks:

- Inadequate investment in IT staffing to accomplish TEAM objectives and ongoing sustainability

Recommendations:

Consider possible approaches, including cost/benefit analysis:

- Hire new graduates and train/develop; Train and develop existing selected staff; Hire experienced people; Outsource or Combination of the above

Management Response:

This observation validates TRS staff observations and this is currently being addressed. TRS IT is currently providing training for existing staff for development and will continue to do so. Knowledge of the technology used by the LOB and FSR vendors will help TRS IT more precisely identify training needs. TRS IT does currently utilize the Intern program and recently promoted an intern to a full-time employee. TRS IT typically hires experienced candidates and has not hired new graduates recently. TRS IT is utilizing outsourcing by hiring contractors for specific technical needs and roles within TRS. The new technology will determine the skill set needed for IT staff, which cannot be fully identified until the LOB and the FSR Vendors have been selected.

The OCM Project will also assist in providing skills assessment, identifying development needs, and updating job descriptions for these new positions.

TEAM IPA Observations

3. Project Plan and Reporting inconsistencies:

- Project Schedules (MS Project Server) are not consistently being updated for projects currently in progress (Data Management, Organizational Change Management, Financial Systems Replacement)
- Status Reporting: Dashboard Milestones and Board report Milestones not reported at the same level of detail
- Business Process Mapping activities are not tracked within any of the project schedules

Risks:

- Incomplete or inaccurate project plan
- Delays in projects may not be accurately reported

Recommendations:

- Update project schedules for all projects currently in-progress (DM, OCM, FSR) with tasks and milestones. If needed, provide guidance to Project Managers with this process.
- Consider adding Business Process Mapping activities (tasks and milestones) to the LOB project implementation plan, requirements definition phase.

TEAM IPA Observations

3. Project Plan and Reporting: - continued

Management Response:

Data Management Project Plan is being updated to reflect accurate milestones.

FSR Project Plan has not been finalized and will not be finalized until the vendor has been selected, which will occur after the SOW has been finalized.

OCM Project schedule is current through SOW. The project plan will be updated and finalized once the SOW has been finalized and the vendor has been selected.

TEAM IPA Observations

4. TEAM program and project staffing plan is not detailed enough:
- Project Team resources specific roles and responsibilities have not been clearly identified.
 - Consolidated resource allocation has not yet been clearly documented.

Risks:

- Inadequate investment in staffing to accomplish TEAM objectives and ongoing sustainability

Recommendations:

- Update project plans to include detail roles and responsibilities by each team member, including PMO and Vendor roles, and authority levels where applicable.
- Develop a detailed staffing matrix for all TEAM projects and resource management plan within MS Project.

Management Response:

CMT presented a detailed staffing plan for TEAM Program needs throughout the anticipated timeline of the project. Project Plans are in the process of being updated to include specific roles.

TEAM IPA Observations

5. Project interdependencies have not been documented:

- Interdependencies between related projects have not been clearly documented or communicated. For example: Data conversion in LOB and FSR will depend on data being cleansed and identified, thus dependency between Data Management Project and LOB or Business Rules and LOB
- Routine Project Manager and Business Process Manager level cross communication has not been established. (TEAM level meetings)

Risks:

- Data source may not be cleansed in time for LOB and FSR
- Program Management structure may not operate effectively
- Lack of resources or conflicts in staffing allocation to projects

Recommendations:

- Develop a consolidated MS Project Plan with interdependencies identified at a high level.
- Establish Monthly Project Interdependency meetings including Project Managers, BPMs and key project team members.

Management Response:

This observation validates TRS staff observations and is currently being addressed. Provaliant has been holding project interdependency meetings, which look at the cross-project interdependencies such as schedule and staffing.

TEAM IPA Observations

6. FSR Contingency plan has not been developed and Project Charter has not been updated:
- Contingency plan or cost/benefit analysis requirements have not been included within the FSR Project Plan or Charter to facilitate the Go/No-Go decision following the Envisioning phase
 - Project Charter documentation has not been updated, finalized or published in SharePoint (FSR draft dated 6/29/2012).

Risks:

- New Financial Systems may not be implemented within TEAM program on time and/or within budget

Recommendations:

- Recommend developing a contingency plan with cost/benefit analysis to facilitate Go/No-Go decision at the end of Envisioning
- Project management documentation and schedule should be updated to reflect current project direction.

Management Responses:

The FSR Team restructured the vendor's proposed methodology to mitigate the risk of not having control of the overall scope and the resulting cost. The result of the phase will be Go/No-Go decisions after TRS performs cost benefit analysis for each.

TEAM IPA Observations

7. Organizational Change Management (OCM) project scope and plan have not been clearly identified:
- The relationship between HR, OCM, Communications Sub-Team and the "Business Procedures and Training (BPT)" projects have not been clarified
 - OCM scope, roles and responsibilities not defined

Risks:

- Communication may not be clear
- Lack of staff acceptance
- Lack of clarity as to who has the overall responsibility for organizational readiness

Recommendations:

- Clarify roles and responsibilities between HR, OCM, TEAM Communications Sub-Team and the "Business Procedures and Training" projects
- Consider adding HR representation to the CMT and aligning Communication and End User Training under Organizational Change Management Project

Management Response:

The CMT placed responsibility for TEAM Program communications under the CMT Communications Sub-Team. Cindy Yarbrough was added to the CMT as a non-voting member representing the OCM Project as the Project Sponsor. The full scope of the relationship will be developed as TRS gets closer to starting the BPT project.

TEAM IPA Observations

8. Change Management and Quality Control Procedures have not been finalized and published:
- Change Management Procedures for TEAM Program changes, excluding contract changes, have not been finalized, approved and published.
 - Additionally, TEAM Program Quality Control procedures and responsibilities have not been defined.

Risks:

- Lack of visibility and appropriate authorization to changes that impact scope, schedule and/or cost

Recommendations:

- Recommend detailed Change Management procedures be developed, approved and published.
- Procedures should identify project baseline, workflow, responsibilities, prioritization process, approval procedures, and QA process.

Management Response:

TRS IT has change control procedures in place at the contract change level as well as the process change level. These procedures are based on the IT Governance Document and other change management policies defined for the TEAM Program. All TEAM Projects will use these procedures going forward.

Tab 12

Teacher Retirement System of Texas



TEAM Program Update

April 2013



Agenda

- **Vision of the future**
- **Defining the future**
- **Examples**
- **TEAM Program Progress**
- **Milestones**

Vision of the Future

The vision for the future provides for expanded member self-service, reduced manual processes, improved data quality, and easily modified components.

Developing Our Vision

- Site visits – Lessons Learned
- Roadmap
- Information Technology Plan

Defining the Future

The Process

- Development of a Request for Offer for the Pension Administration Line of Business (LOB) System Replacement
- Development of a Statement of Work for the Financial System Replacement (FSR)
- Commitment Gathering for LOB
- Requirements Gathering for FSR
- Current Functionality Assessment (CFA) Visits - LOB

Defining the Future

Request for Offer Development - Pension Administration Line of Business (LOB) System Replacement

- Over 120 commitment gathering sessions
- Over 100 TRS staff members involved
- 1,751 commitments in final RFO
- Non-confidential portion – 367 pages
- Confidential portion – 73 pages

Examples of Commitments for the Future - LOB

- Commitments are high level.
- They define what TRS wants the new system to do.
- Detailed requirements will be defined once the selected vendor is on-site.
- These are examples of commitments in the RFO.
- The actual implementation of these commitments will be determined during the requirements gathering process.



TEAM PROGRAM

Examples of Commitments for the Future - LOB

Participant Searches

Current: We can search by Social Security Number, XR#, and last name. Members are hesitant to give out SSN over the phone or on written correspondence.

LOB Commitment: General LOB – Shall provide the ability to search by any demographic information (e.g., name (combination of, wildcard, and soundex), location, SSN, or TRS ID, or phone number) to find a member's record.

Outcome: Timely processing; enhanced service.

Examples of Commitments for the Future - LOB

Beneficiary Designations

Current: Beneficiary designations must be mailed to TRS on a TRS prescribed form and contain the original signature of the participant.

LOB Commitment: Web Self-Service - Shall provide the ability to view, add, and update beneficiary information (e.g., retired, active)

Outcome: Enhanced service for our membership.

Examples of Commitments for the Future - LOB

Requesting refunds through web self-service

Current: A request for refund must be mailed to TRS on a TRS prescribed form and contain the original signature of the participant. Additional forms may be required depending on the situation.

LOB Commitment: Web Self-Service - Shall provide the ability to request a refund.

Outcome: Enhanced service to our membership.

Examples of Commitments for the Future - LOB

Required minimum distribution processing - refunds

Current: Due to IRS regulations, TRS must calculate required minimum distributions (RMD) for members that are age 70 or older and request a refund rollover. RMDs are not rollover eligible. An Excel spreadsheet is used to calculate the RMD which is then manually entered into the refund system.

LOB Commitment: Refunds – Shall apply IRS required minimum distribution rules to rollovers.

Outcome: Elimination of manual process; reduction of errors.

Examples of Commitments for the Future - LOB

Requesting Refunds Outside of Normal Schedule

Current: Occasionally, TRS must issue a refund outside of our normal processing schedule. This process is totally manual. Excel spreadsheets are used to calculate the refund and produce the payment voucher. General Accounting must then manually enter the information into the Comptroller's system.

LOB Commitment: Refunds – Shall provide the ability to allow an unscheduled refund payment outside the normal schedule

Outcome: Use of workflow to coordinate work; Elimination of manual process; reduction of errors.

Examples of Commitments for the Future - LOB

Requesting Refunds for Ineligible Contributions

Current: If TRS determines that an individual is not eligible for membership, we must refund the contributions to the individual. The process is manual and requires multiple signatures and reviews.

LOB Commitment: Refunds – Shall provide the ability to refund contributions and cancel service for member ineligible contributions submitted by reporting entity.

Outcome: Elimination of manual process; reduction of errors.

Examples of Commitments for the Future - LOB

Disability Certification Process

Current: PDF packets containing disability information are shared with the TRS Medical Board using a secure server; however, a paper certification form must be signed by each Medical Board member and returned to TRS for processing.

LOB Commitment: Web Self-Service: Shall provide the ability for TRS Medical Board to certify disability benefits.

Outcome: Elimination of data entry; faster turnaround.

Examples of Commitments for the Future - LOB

Workflows

Current: Work items are pulled by staff or manually pushed by management. Management must rely on reports to determine the aging and status of work items. The new system will push work items to staff.

LOB Commitment: Workflow: Shall provide the ability to auto-assign or notify a supervisor if a user has not logged in after a TRS-defined timeframe and has a task assigned.

Outcome: Timely processing; staff accountability.

Examples of Requirements for the Future - FSR

Benefit Payments and Other Transactions

Current: Many types of transactions are not interfaced between systems.

FSR Requirement/Objective: All inter-system or module activity will be automatically interfaced and associated workflows will progress with electronic approvals.

Outcome: Elimination of manual process; reduction of errors.

Examples of Requirements for the Future - FSR

Reporting

Current Constraint: Data is held in multiple systems and spreadsheets, handled numerous times and requires extensive quality control efforts.

FSR Requirement/Objective: Capable of generating camera-ready copy directly from the database on ad-hoc or regularly scheduled basis without extensive reconciliation

Outcome: Elimination of manual process; faster turn-around, enhanced availability of real-time data.

Examples of Requirements for the Future - FSR

Reconciliations

Current: General Accounting manually prepares approximately 35 reconciliations on a monthly basis by re-keying data from various system reports into spreadsheets.

FSR Requirement/Objective: Reconciliations are automated or eliminated because no longer necessary.

Outcome: Elimination of manual process; improved synchronization of data.

Examples of Requirements for the Future - FSR

Accounts Payable

Current: Accounts Payable staff required to manually perform three-way matching.

Travel requisitions and payment processing requires multiple forms with manual workflow.

FSR Requirement/Objective: The new system will consolidate forms, streamline the process through standardized workflows and three-way matching will be done on an automated basis.

Outcome: Elimination of manual process; improved efficiency.

Examples of Requirements for the Future - FSR

Time Keeping and Leave Accounting

Current Constraint: The Time Keeping and Leave Accounting processes require that data be manually re-keyed and verified multiple times.

FSR Requirement/Objective: The new system will have online entry from the employee with electronic workflow providing real-time leave data for employee and managerial use.

Outcome: Elimination of manual process; availability of real-time data.

Examples of Requirements for the Future - FSR

Procurement and Contract Management

Current Constraint: Purchase requisitions must be entered into multiple systems and Excel for tracking and accounting purposes and to create multiple documents. Thus, reporting the data requires it be manually gathered from multiple locations.

FSR Requirement/Objective: The new system will eliminate duplicate entry and consolidate data for ease of reporting.

Outcome: Elimination of manual process; enhanced availability of real-time data.

Examples of Requirements for the Future - FSR

Investment Accounting

Current Constraint: Manually reconciles the monthly investment ledgers from the custodian bank to the detailed subsidiary ledgers maintained within multiple systems and Excel for tracking, accounting and reporting purposes.

FSR Requirement/Objective: The new system will eliminate manual entry, simplify reconciliation and consolidate data for ease of reporting.

Outcome: Elimination of manual process; enhanced availability of real-time data.

Examples of Requirements for the Future - FSR

Human Resources

Current Constraint: Texas Comptroller's Uniform Statewide Payroll/Personnel System (USPS), Family Medical Leave (FMLA), Sick Leave, and other data are all manually entered and maintained on separate, non-integrated databases and Excel spreadsheets.

FSR Requirement/Objective: The new system will reduce manual entry, simplify tracking and integrate personnel, performance and payroll data for vastly improved managerial access.

Outcome: Elimination of manual process, enhanced
22 availability of real-time data.



TEAM PROGRAM

TRUST - The Future

Teacher Retirement Unified System for Technology



TRUST - The Future

**One integrated system
instead of a collection of disparate systems**

- **Better data on front end one system of record**– rely less on staff intervention at the time of a benefit request; consolidated view of member information
- **Rely less on reports and Excel spreadsheets** – automation of manual processes; use of workflows to drive efficiency
- **Integration** less manual work between systems (e.g. contact management – information reused across teams/departments; reduced manual reconciliations)



TEAM PROGRAM

TRUST - The Future



Teacher Retirement System of Texas



TEAM Program Management Update

Provaliant

April 2013





TEAM PROGRAM

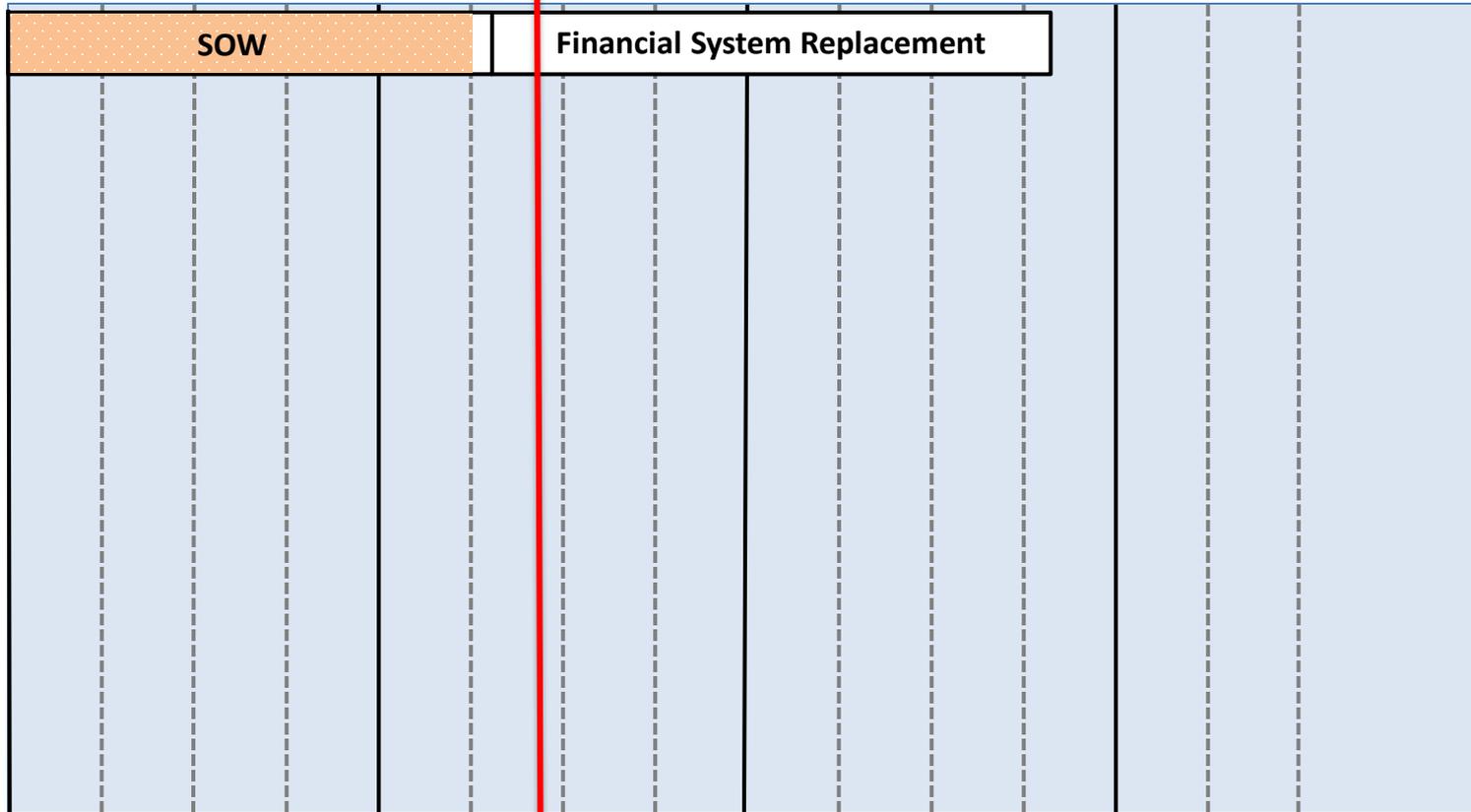
FY2012

FY2013

FY2014

FY2015

FY201?



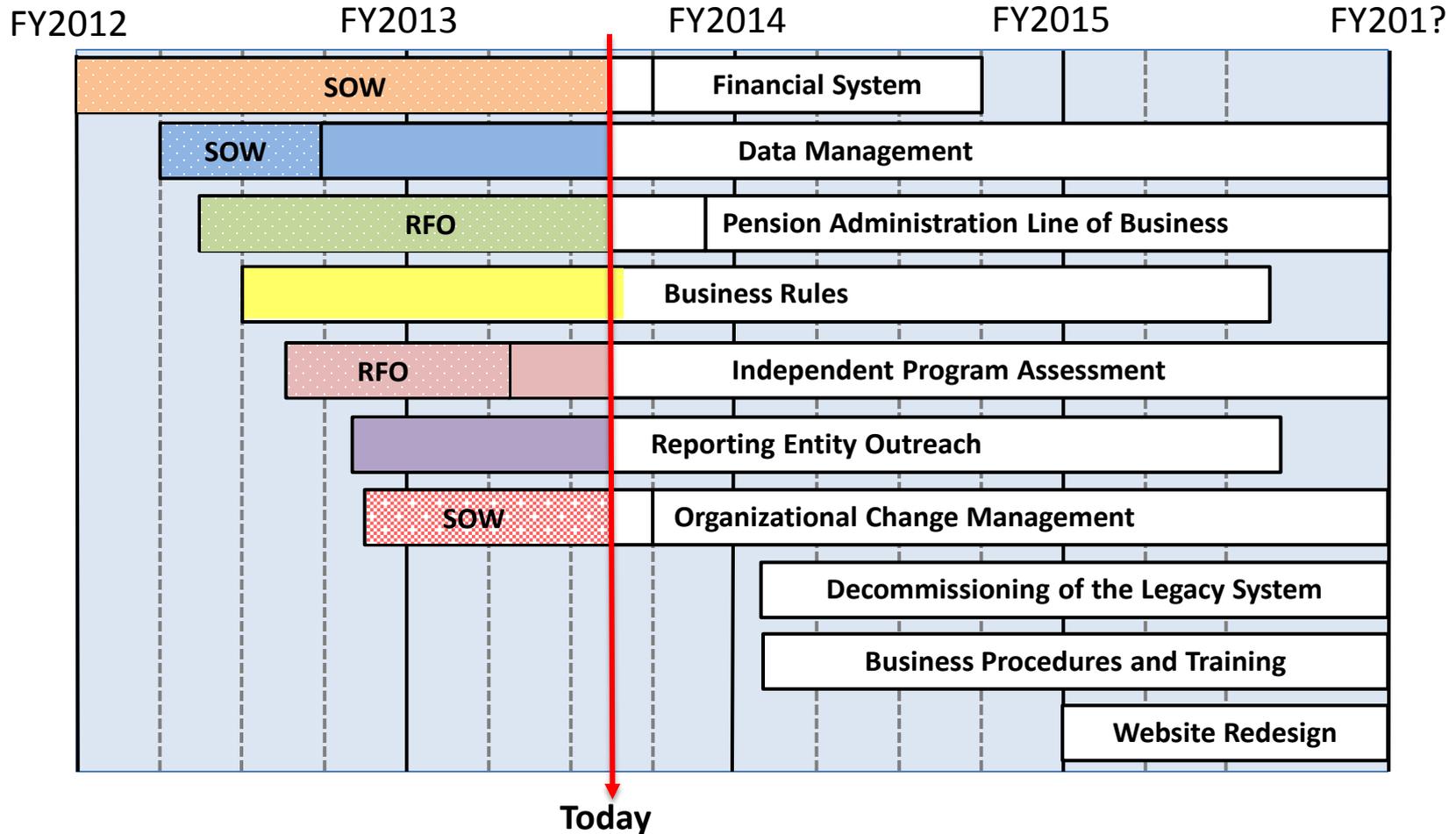
Today

SOW = Statement of Work

RFO = Request for Offer



TEAM PROGRAM



SOW = Statement of Work
 RFO = Request for Offer

TRUST Upcoming Activities

Pension Administration Line of Business (LOB) System Replacement

- Receive Vendor Proposals
- Current Functionality Assessment (CFA) Visits
- Receive Detailed Price Responses
- Scoring RFO Responses
- Finalists Will Be Notified

TRUST Upcoming Activities

Current Functionality Assessment (CFA) Visits

- Must meet minimum qualifications
- Visit to Red River campus to review current TRS functionality
- Two groups – business and technical
- Emphasis on functionality that is unique to TRS
 - Customer Relationship Management
 - Health Insurance
- Allows respondent to appropriately price out the commitment that preserves current functionality

TRUST Upcoming Activities

Financial System Replacement (FSR)

- Development of the Statement Of Work (SOW)
- Start Negotiations
- Award Contract and Start Project

Major Milestones

The milestones have been restructured to better align with internal status reporting and milestone tracking and reporting to the TRS Board of Trustees. In addition, various planning and procurement milestones that have been completed have been moved off the milestone list.

Milestones flagged with an asterisk and highlighted in yellow represent a date change from the last report. Milestones highlighted in green represent that the milestone has been completed since the last report.

Major Milestones

Project Milestones	Planned Start Date	Actual Start Date	Planned Finish Date	Actual Finish Date	Percentage Complete
Independent Program Assessment					
Oversight for Line of Business Vendor Selection (Independent Program Assessment)	10/22/2012	10/22/2012	12/30/2012	12/14/2012	100%
Pension LOB					
Requirements Gathering	3/1/2012	3/1/2012	11/30/2012	7/31/2012	100%
RFO Development	6/1/2012	5/15/2012	2/28/2013	1/23/2013	100%
RFO Current Functionality Assessment	3/1/2013	3/1/2013	5/16/2013		30%
RFO Scoring	4/29/2013		6/3/2013		
RFO Presentation and Demonstrations	6/24/2013		6/28/2013		
Proof of Concept	7/31/2013		9/27/2013		
Vendor Negotiations	8/22/2013		10/21/2013		
Phase 1 Implementation	10/1/2013		2/28/2016		
Phase 2 Implementation	5/1/2016		8/31/2018		
TEAM Program Report	7/1/2018		8/31/2018		

Major Milestones

Project Milestones	Planned Start Date	Actual Start Date	Planned Finish Date	Actual Finish Date	Percentage Complete
Reporting Entity Outreach					
Reporting Entity Outreach Project	7/2/2012	7/2/2012	5/30/2016		<10%
Business Rules					
Phase 1 Priority A Rules Completed	6/1/2012	6/1/2012	2/1/2013	1/15/2013	100%
Phase 1 Priority B Rules Completed	2/1/2013	2/1/2013	2/12/2014		25%
Phase 2 Priority A Rules Completed	2/19/2014		12/3/2014		
Phase 2 Priority B Rules Completed	12/10/2014		4/15/2015		
Website Redesign					
Planning and Research Complete	9/1/2014	3/1/2013	10/23/2013		<10%
LOB Sequencing Decision Made	12/19/2013		3/19/2014		
Procurement	3/19/2014		10/3/2014		
Design Implementation and Testing	10/10/2014		6/8/2015		



TEAM PROGRAM

Major Milestones

Project Milestones	Planned Start Date	Actual Start Date	Planned Finish Date	Actual Finish Date	Percentage Complete
Data Management					
Data Level 1 Assessment	07/10/2012	7/10/2012	6/30/2013		75%
Data Level 2 Assessment	08/21/2012	8/21/2012	4/30/2013		50%
Data Level 3 Assessment	02/11/2013		2/28/2014		<10%
Data Level 4 Assessment	05/14/2013		2/28/2014		
Data Level 5 Assessment	01/07/2014		1/31/2015		
Data Level 6 Assessment	04/19/2014		5/31/2015		
Data Level 7 Assessment	07/28/2014		7/31/2014		
Data Level 8 Assessment	09/26/2013		4/30/2015		

Major Milestones

Project Milestones	Planned Start Date	Actual Start Date	Planned Finish Date	Actual Finish Date	Percentage Complete
Data Management (continued)					
Data Level 1 Conditioned	10/16/2012		5/31/2014		<10%
Data Level 2 Conditioned	04/24/2013		9/30/2014		
Data Level 3 Conditioned	07/17/2013		5/31/2015		
Data Level 4 Conditioned	09/19/2013		9/30/2015		
Data Level 5 Conditioned	01/28/2014		11/30/2015		
Data Level 6 Conditioned	10/30/2014		1/31/2016		
Data Level 7 Conditioned	02/16/2015		1/31/2015		
Data Level 8 Conditioned	03/11/2014		9/30/2015		
Organizational Change Management					
Organizational Change Management (Previously reported as Change Management)	8/1/2012	8/1/2012	8/31/2018		<10%

Major Milestones

Project Milestones	Planned Start Date	Actual Start Date	Planned Finish Date	Actual Finish Date	Percentage Complete
Pension LOB Business Procedures and Training					
Business Procedures and Training	10/1/2013		8/31/2018		
Legacy System Decommissioning	10/1/2013		8/31/2018		
Financial System Replacement					
Vendor Demonstrations	3/1/2012	5/11/2012	7/31/2012	7/31/2012	100%
Requirements Gathering	10/1/2011	11/15/2011	5/31/2012	4/30/2012	100%
Package Selection	3/1/2012	4/16/2012	5/1/2013*		90%
Consolidated Envision Phase	5/1/2013*		10/31/2013		
Build Phase	10/1/2013		2/28/2014		
Achieve Phase	3/1/2014		5/31/2014		
Post Implementation Phase	6/1/2014		8/31/2014		

Tab 13

Teacher Retirement System of Texas

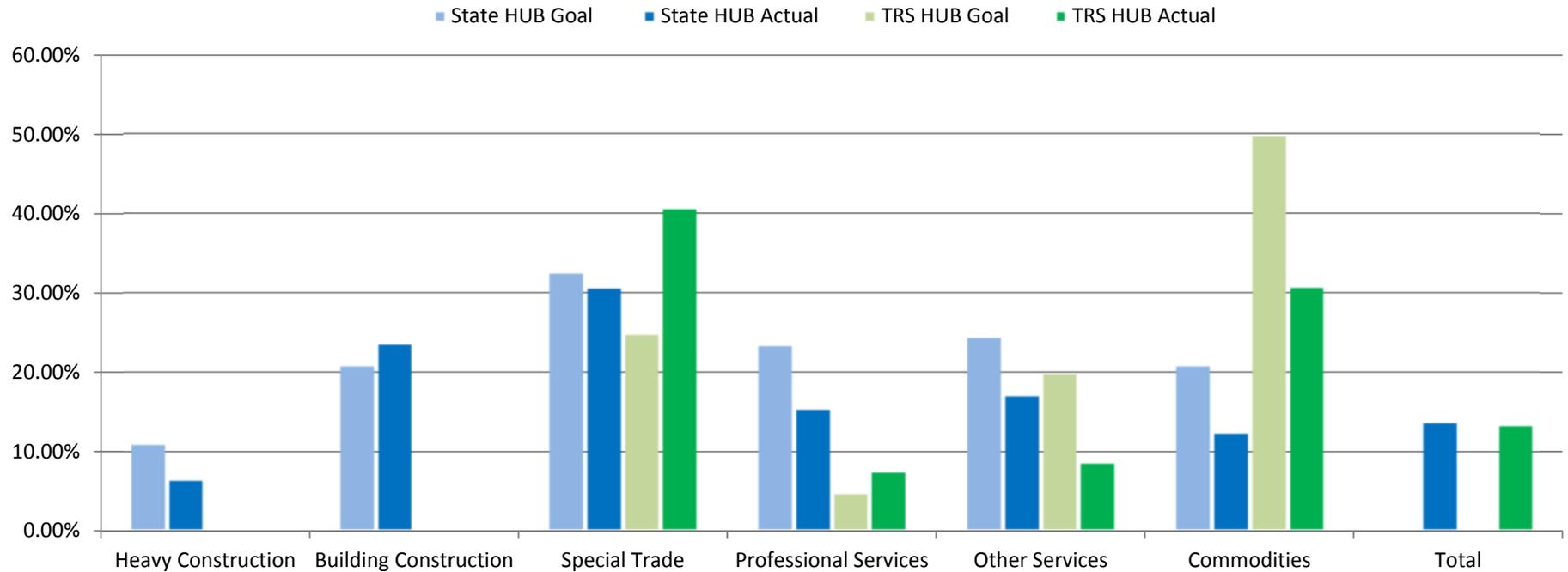


Historically Underutilized Business (HUB) Program

Annual Status Report - Fiscal Year 2012



TRS 2012 Comparison with State of Texas by HUB Category



	Heavy Construction	Building Construction	Special Trade	Professional Services	Other Services	Commodities	Total
State HUB Goal	11.20%	21.10%	32.70%	23.60%	24.60%	21.00%	
State HUB Actual	6.66%	23.79%	30.83%	15.58%	17.32%	12.61%	13.87%
TRS HUB Goal	0.00%	0.00%	25.00%	5.00%	20.00%	50.00%	
TRS HUB Actual	0.00%	0.00%	40.84%	7.65%	8.85%	30.95%	13.50%



TRS HUB Expenditure Comparison FY2011 and FY2012

FY2011							
	Total Expenditures	Non-HUB Expenditures	Non-HUB %	HUB Expenditures	HUB %	TRS Goal %	State Annual Procurement Goal %
Heavy Construction	\$ -	\$ -		\$ -			11.90%
Building Construction	\$ -	\$ -		\$ -			26.10%
Special Trade	\$ 508,256.00	\$ 395,393.00	77.79%	\$ 112,862.00	22.21%	25.00%	57.20%
Professional Services	\$ 1,735,338.00	\$ 1,585,338.00	91.36%	\$ 150,000.00	8.64%	5.00%	20.00%
Other Services	\$ 8,196,601.00	\$ 7,322,317.00	89.33%	\$ 874,284.00	10.67%	20.00%	33.00%
Commodity Purchasing	\$ 2,450,096.00	\$ 1,226,516.00	50.06%	\$ 1,223,580.00	49.94%	50.00%	12.60%
Total:	\$ 12,890,291.00	\$ 10,529,564.00	81.69%	\$ 2,360,726.00	18.31%		
FY2012							
	Total Expenditures	Non-HUB Expenditures	Non-HUB %	HUB Expenditures	HUB %	TRS Goal %	State Annual Procurement Goal %
Heavy Construction	\$ -	\$ -		\$ -			11.20%
Building Construction	\$ 4,081.00	\$ 4,081.00	100.00%	\$ -	0.00%		21.10%
Special Trade	\$ 450,393.00	\$ 266,450.00	59.16%	\$ 183,943.00	40.84%	25.00%	32.70%
Professional Services	\$ 1,684,100.00	\$ 1,555,210.00	92.35%	\$ 128,890.00	7.65%	5.00%	23.60%
Other Services	\$ 11,234,438.00	\$ 10,240,129.00	91.15%	\$ 994,308.00	8.85%	20.00%	24.60%
Commodity Purchasing	\$ 2,852,947.00	\$ 1,970,039.00	69.05%	\$ 882,908.00	30.95%	50.00%	21.00%
Total:	\$ 16,225,959.00	\$ 14,035,909.00	86.50%	\$ 2,190,049.00	13.50%		



Analysis of Net Decline in Total HUB Program Expenditures from FY2011 to FY2012

Number of Contracts Awarded to HUBs

FY2011	56	\$ 2,360,726.00
FY2012	51	\$ 2,190,049.00
% Change	-8.93%	-7.23%

Total Expenditures in HUB-Reportable Categories

FY2011	\$ 12,890,290.00
FY2012	\$ 16,225,958.00
% Change	25.88%

HUB Expenditures			
Percentage Analysis by Category			
	FY2011 % HUB	FY2012 % HUB	Net % Change
Heavy Construction	0.00%	0.00%	0.00%
Building Construction	0.00%	0.00%	0.00%
Special Trade	22.21%	40.84%	18.63%
Professional Services	8.64%	7.65%	-0.99%
Other Services	10.67%	8.85%	-1.82%
Commodity Purchasing	49.94%	30.95%	-18.99%
Overall	18.31%	13.50%	-4.82%

Non-HUB Expenditures			
Percentage Analysis by Category			
	FY2011 % Non-HUB	FY2012 % Non-HUB	Net % Change
Heavy Construction	0.00%	0.00%	0.00%
Building Construction	0.00%	100.00%	100.00%
Special Trade	77.79%	59.16%	-18.63%
Professional Services	91.36%	92.35%	0.99%
Other Services	89.33%	91.15%	1.82%
Commodity Purchasing	50.06%	69.05%	18.99%
Overall	81.69%	86.50%	4.82%

Dollar Analysis by Category			
	FY2011 \$ HUB	FY2012 \$ HUB	Net % Change
Heavy Construction	\$ -	\$ -	0.00%
Building Construction	\$ -	\$ -	0.00%
Special Trade	\$ 112,862.00	\$ 183,943.00	62.98%
Professional Services	\$ 150,000.00	\$ 128,890.00	-14.07%
Other Services	\$ 874,284.00	\$ 994,308.00	13.73%
Commodity Purchasing	\$ 1,223,580.00	\$ 882,908.00	-27.84%
Total	\$ 2,360,726.00	\$ 2,190,049.00	-7.23%

Dollar Analysis by Category			
	FY2011 \$ Non-HUB	FY2012 \$ Non-HUB	Net % Change
Heavy Construction	\$ -	\$ -	0.00%
Building Construction	\$ -	\$ 4,081.00	-
Special Trade	\$ 395,393.00	\$ 266,450.00	-32.61%
Professional Services	\$ 1,585,338.00	\$ 1,555,210.00	-1.90%
Other Services	\$ 7,322,317.00	\$ 10,240,129.00	39.85%
Commodity Purchasing	\$ 1,226,516.00	\$ 1,970,039.00	60.62%
Total	\$ 10,529,564.00	\$ 14,035,909.00	33.30%

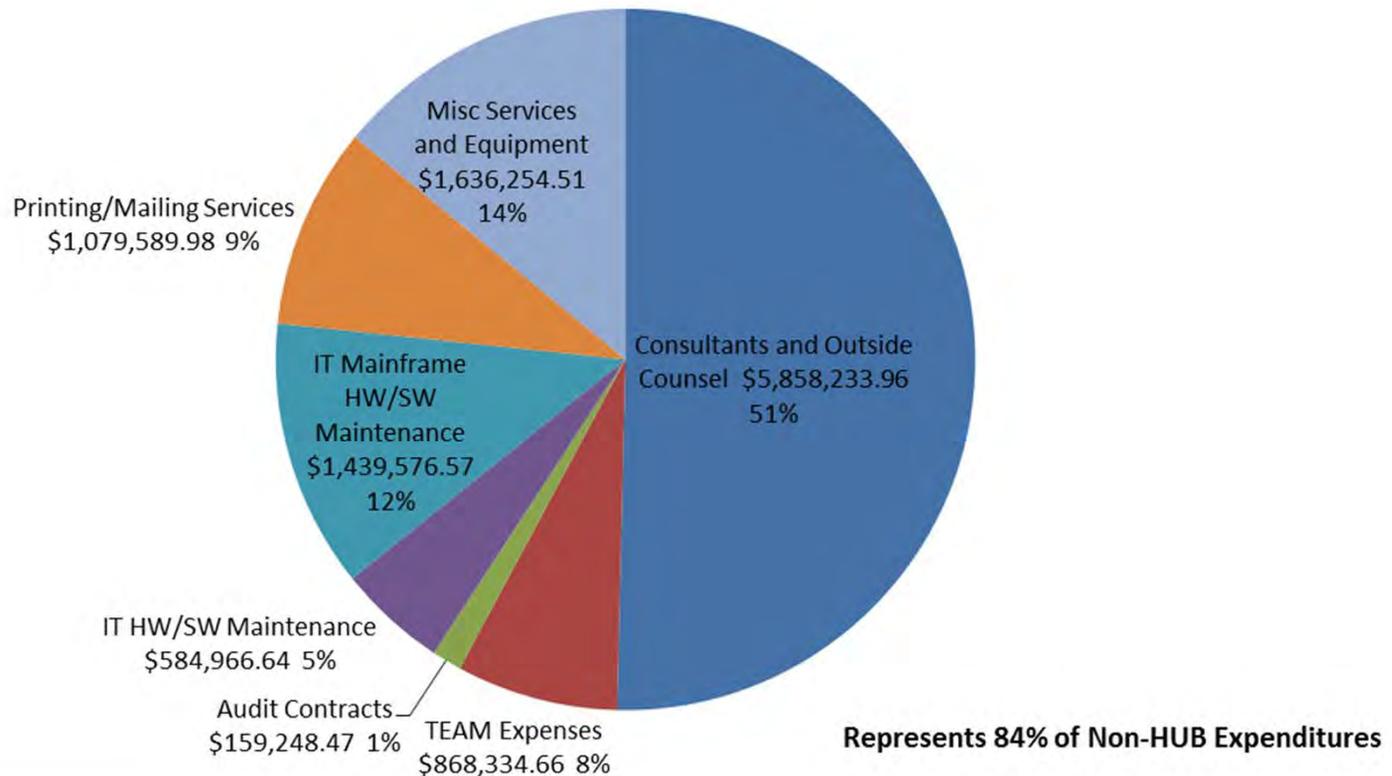
Notes:

In FY2012, there were a number of large dollar non-HUB purchases for IT hardware/software infrastructure in preparation of TEAM. Provaliant TEAM Program Management started in FY2012 and \$656,292 was expended in FY2012.

With the TEAM projects, a downward trend in our HUB utilization percentage is anticipated to continue.

Primary Non-HUB Contracting Categories

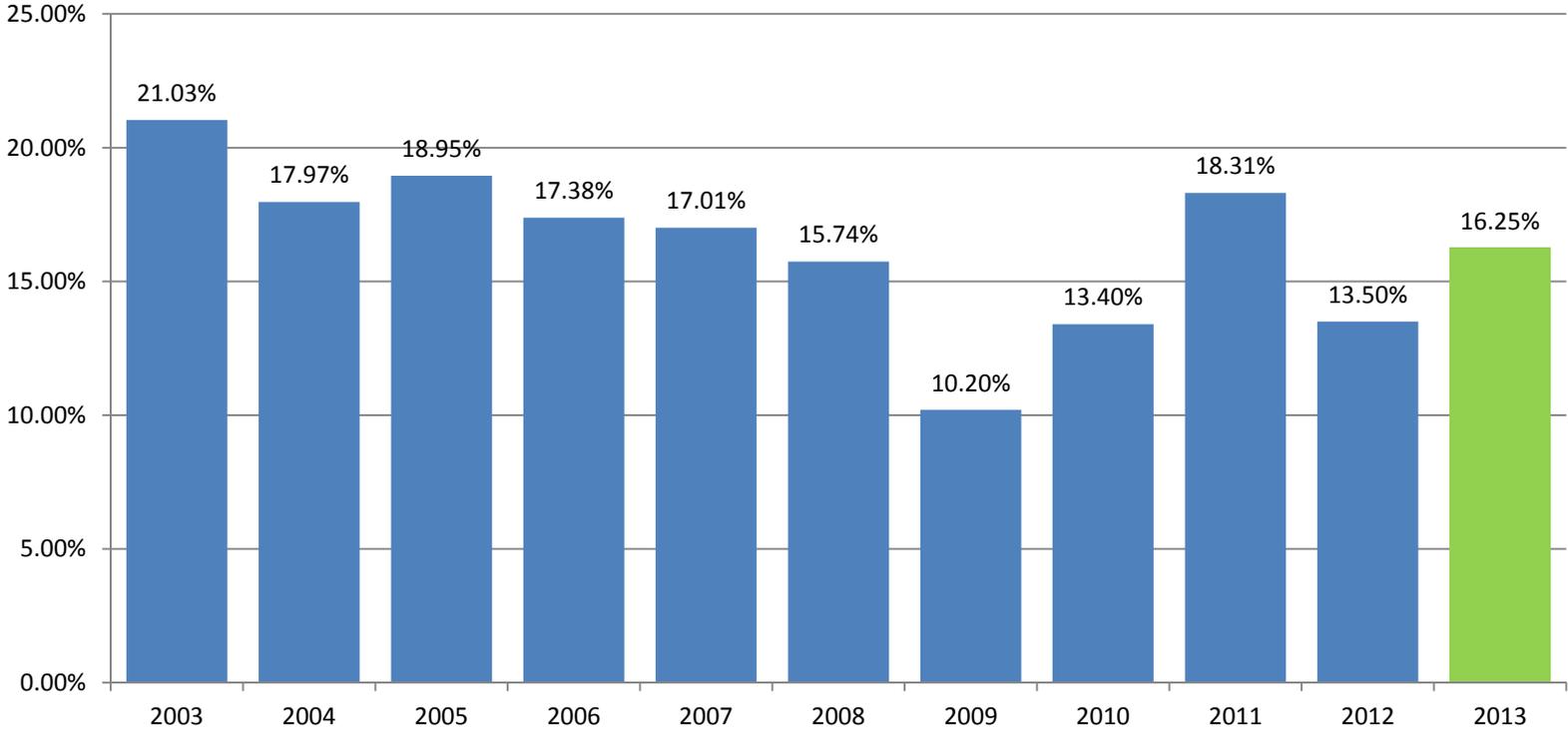
FY2012 Non-HUB Expenditures in Contracts Over \$50,000





Historical Perspective

TRS HUB Utilization 2003-2013



Note: FY 2013 Data is from Semi-Annual HUB Report



TRS Accomplishments

The following initiatives were accomplished during FY 2012 to increase procurement opportunities with HUB vendors:

- Co-hosted the 12th Annual HUB Forum with the Texas Workforce Commission February 7, 2012 with 25 Texas state agencies and 102 vendor representatives in attendance.
- Attended 4 additional forums in FY 2012; mentored HUB vendors on business opportunities with TRS and finding opportunities with other State agencies; and provided information to assist HUBs with certifications and renewals.
- TRS staff met one-on-one with 9 HUB vendors to discuss business opportunities with TRS, possible opportunities with other State agencies, and how best to find opportunities with the State.
- Paid \$1.4 million to certified Texas HUBs via subcontracting on contracts with non-reportable expenditure codes.



Future Initiatives

TRS will continue to:

- Support and implement responsibilities as determined by Texas Comptroller of Public Accounts (CPA)
- Host HUB Forums with other agencies and participate in local and selected statewide HUB events including CPA Forums
- Conduct one-on-one meetings with HUB vendors and assist with identifying business opportunities with TRS and other State agencies and assist vendors in becoming certified or re-certified as a Texas HUB
- Encourage vendor participation in the Mentor-Protégé Program
- Support and enhance the Emerging Managers program initiated by the Investments Division

While TRS' initiatives, including subcontracting and attendance of HUB Economic Opportunity Forums, have been successful, TRS is committed to improving its outreach to HUBs to increase their utilization and success.



Conclusion

- Since the inception of the HUB Program, TRS' HUB utilization percentages have fluctuated from 1.25% in FY 1992 up to a high point of 25.83% in FY 2000. The FY 2012 percentage is 13.5%.
- TRS' overall HUB utilization performance is in-line with the overall State of Texas performance.
- TRS recognizes the importance of the HUB program and develops initiatives to promote and increase HUB opportunities. TRS is committed to achieving established goals and making a good faith effort in all areas.



Appendix A – HUB Definition

A HUB is defined as a corporation, sole proprietorship, partnership or joint venture formed for the purpose of making a profit in which the principal place of business is in the State of Texas and at least 51% is owned, operated, and actively controlled and managed by one or more persons who are members of the following economically disadvantaged groups:

- Black Americans
- Hispanic Americans
- Asian Pacific Americans
- Native Americans
- American Women



Appendix B

Secrets of Selling To The State

Secrets of Selling to the State is a presentation created in order to provide vendors a better understanding of the State's and TRS' contracting processes, the resources and tools readily available for use by vendors to identify and earn contracting opportunities, and instructions on how to use those resources and tools. These are methods that vendors can use at no cost and with a minimum investment of time.

The presentation contains sections specific to those vendors seeking opportunities as prime contractors and those seeking opportunities as subcontractors.

This was first presented at the 10th Annual TRS-TWC HUB Forum and is available on TRS' website at:

http://www.trs.state.tx.us/info.jsp?submenu=procurement&page_id=/procurement/selling_to_state



Appendix C

TRS' 12 Tips for Contracting with State Agencies

TRS' 12 Tips for Contracting with State Agencies is a two page handout that covers all the basic information for any vendor that wants to do business with the State. This was the first document of its kind to provide this essential information in such a concise and easily understood format. It is provided to vendors at Economic Opportunity Forums, one-on-one meetings, and anytime a vendor contacts us about how to do business with TRS.

Multiple other State agencies have adopted this document for their own use.

This document is also available on the TRS web site at:

http://www.trs.state.tx.us/info.jsp?submenu=procurement&page_id=/procurement/contracting_tips



Questions?





Resolution

Whereas, TRS staff met on March 26, 2013 and reviewed the report of the Texas Comptroller of Public Accounts on TRS HUB expenditures for fiscal year 2012 and discussed the 2012 HUB Program Annual Status Report to be presented to the TRS Board of Trustees (Board);

Whereas, TRS staff developed proposed HUB goals for fiscal year 2013 for the Board to consider; and

Whereas, The Board has received and discussed the HUB expenditure reports, and the Board desires to adopt TRS' HUB goals for fiscal year 2013; now, therefore, be it

Resolved, That the Board hereby adopts the following HUB expenditure goals for fiscal year 2013:

Category	TRS FY12 Goals	TRS FY12 Actual	TRS FY13 Goals
Special Trade	25%	40.84%	25%
Professional Services	5%	7.65%	5%
Other Services	20%	8.85%	20%
Commodity Purchases	50%	30.95%	50%

Tab 14

**TEACHER RETIREMENT SYSTEM OF TEXAS
BOARD OF TRUSTEES
AUDIT COMMITTEE**

MEETING AGENDA

**April 19, 2013 – 8:00 a.m.
TRS East Building – 5th Floor, Boardroom**

The Audit Committee will meet at 8:00 a.m. on Friday, April 19, 2013, in the 5th Floor Boardroom and conclude at approximately 9:15 a.m.

The following reports will be presented:

- Ethics Policies Follow-Up Audit by the State Auditor's Office
- Employee Ethics Survey by Internal Audit
- Audit of TRS-ActiveCare Service Providers by Sagebrush Solutions, LLC
- Audit of Derivatives by Internal Audit and Protiviti Inc.
- Quarterly Investment Testing by Internal Audit
- Audit of Backup and Recovery by Myers and Stauffer LC
- Audit of the Telephone Counseling Center Performance Measures by Myers and Stauffer LC
- Semi-Annual Testing of Benefit Payments by Internal Audit
- Status of Prior Audit and Consulting Recommendations by Internal Audit
- Quarterly Internal Audit Status Reports by Internal Audit

Tab 15A

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TEACHER RETIREMENT SYSTEM OF TEXAS
BOARD REPORT
SUMMARY OF DISBURSEMENTS

PAGE 1

	December 1, 2012 through February 28, 2013		
	NUMBER OF PAYMENTS	GROSS PAYMENT TOTAL	AVERAGE PAYMENT
Service Retirees	3,647	7,097,949.97	1,946.24
Disability Retirees	171	184,506.23	1,078.98
Survivor Benefits	226	56,800.00	251.32
Survivor Benefit Lump Sum Payment	2,288	13,918,839.21	6,083.40
Life Annuity as Death Settlement	39	82,281.89	2,109.79
60 Monthly Payments as Death Settlement	43	69,268.44	1,610.89
Refund of Deposit as Death Settlement	110	2,141,771.64	19,470.65
Twice Annual Salary as Death Settlement	224	8,071,662.66	36,034.20
Lump Sum DROP Member Payment	3	474,634.27	158,211.42
5 Annual DROP Member Payments			
10 Annual DROP Member Payments	2	59,281.78	29,640.89
60 Monthly DROP Member Payments			
120 Monthly DROP Member Payments	5	9,607.50	1,921.50
DROP Payments to Beneficiary of Active Member			
12 Month Partial Lump Sum Option Payment	332	9,437,559.96	28,426.38
24 Month Partial Lump Sum Option Payment	208	12,182,169.60	58,568.12
36 Month Partial Lump Sum Option Payment	491	41,485,648.62	84,492.15
Totals:	7,789	95,271,981.77	12,231.60
Total Refunds:	47,266	363,623,126.52	7,693.12

SUMMARY OF DISBURSEMENTS
Glossary

The Summary of Disbursements on the preceding page provides data related to annuitants added to the payroll during the quarter. Specifically, for each category listed, the data includes: (1) the number of new payment inceptions, (2) the gross total of all new payments, and (3) the average of all payments. The categories are defined as follows:

Service Retirees: Members who have met the eligibility requirements and applied for a monthly service retirement annuity.

Disability Retirees: Members who have met the eligibility requirements, applied and been approved for a monthly disability retirement annuity.

Survivor Benefits: Monthly survivor benefits paid to eligible beneficiaries of deceased active members and retirees.

Survivor Benefit Lump Sum Payment: Single lump-sum survivor benefit, or reduced lump-sum in conjunction with monthly survivor benefit, paid to eligible beneficiaries of deceased active members and retirees.

Life Annuity as Death Settlement: Actuarially reduced monthly life annuity payment to eligible beneficiary of deceased active member. (One of several options which may be payable upon the death of an active member.)

60 Monthly Payments as Death Settlement: Monthly standard annuity payment, for a period of 60 months, to eligible beneficiary of deceased active member.

Refund of Deposit as Death Settlement: Payment of accumulated contributions and interest to beneficiary of deceased active member.

Twice Annual Salary as Death Settlement: Lump-sum payment equal to twice the member's annual salary rate, not to exceed \$80,000, paid to beneficiary of deceased active member.

Lump Sum DROP Member Payment: One-time, lump-sum distribution, at retirement, of member's DROP account balance. (One of several DROP distribution options that may be elected by a retiree.)

5 Annual DROP Member Payments: Initial or subsequent annual DROP payment under this DROP distribution election.

10 Annual DROP Member Payments: Initial or subsequent annual DROP payment under this DROP distribution election.

60 Monthly DROP Member Payments: Initial or subsequent monthly DROP payment under this DROP distribution election.

120 Monthly DROP Member Payments: Initial or subsequent monthly DROP payment under this DROP distribution election.

DROP Payments to Beneficiary of Active Member: Lump-sum distribution of DROP account balance to beneficiary of deceased active member who participated in DROP prior to death.

12 Month Partial Lump Sum Option Payment: Lump-sum payment to retiree who elected a partial lump-sum option (PLSO) distribution equal to 12 months of standard annuity.

24 Month Partial Lump Sum Option Payment: Lump-sum payment to retiree who elected a partial lump-sum option (PLSO) distribution equal to 24 months of standard annuity.

36 Month Partial Lump Sum Option Payment: Lump-sum payment to retiree who elected a partial lump-sum option (PLSO) distribution equal to 36 months of standard annuity.

Total Refunds: Number, gross total, and average amount of all refunds of terminated member accounts.

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TEACHER RETIREMENT SYSTEM OF TEXAS
BOARD REPORT
SUMMARY OF DISBURSEMENTS

	September 1, 2012 through	November 30, 2012	
	NUMBER OF	GROSS	AVERAGE
	PAYMENTS	PAYMENT TOTAL	PAYMENT

Service Retirees	6,151	13,582,837.81	2,208.23
Disability Retirees	268	303,870.04	1,133.84
Survivor Benefits	250	62,625.00	250.50
Survivor Benefit Lump Sum Payment	2,548	15,151,724.18	5,946.51
Life Annuity as Death Settlement	33	45,235.44	1,370.77
60 Monthly Payments as Death Settlement	36	46,549.32	1,293.03
Refund of Deposit as Death Settlement	148	2,206,674.62	14,909.96
Twice Annual Salary as Death Settlement	295	10,730,987.55	36,376.22
Lump Sum DROP Member Payment	14	2,333,345.94	166,667.56
5 Annual DROP Member Payments			
10 Annual DROP Member Payments	1	29,571.62	29,571.62
60 Monthly DROP Member Payments			
120 Monthly DROP Member Payments	4	6,817.48	1,704.37
DROP Payments to Beneficiary of Active Member			
12 Month Partial Lump Sum Option Payment	533	17,289,779.04	32,438.60
24 Month Partial Lump Sum Option Payment	307	18,833,299.56	61,346.25
36 Month Partial Lump Sum Option Payment	831	78,407,172.72	94,352.79
Totals:	11,419	159,030,490.32	13,926.83
Total Refunds:	56,736	478,715,430.42	8,437.59

SUMMARY OF DISBURSEMENTS
Glossary

The Summary of Disbursements on the preceding page provides data related to annuitants added to the payroll during the quarter. Specifically, for each category listed, the data includes: (1) the number of new payment inceptions, (2) the gross total of all new payments, and (3) the average of all payments. The categories are defined as follows:

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24 Month Partial Lump Sum Option Payment: Lump-sum payment to retiree who elected a partial lump-sum option (PLSO) distribution equal to 24 months of standard annuity.

36 Month Partial Lump Sum Option Payment: Lump-sum payment to retiree who elected a partial lump-sum option (PLSO) distribution equal to 36 months of standard annuity.

Total Refunds: Number, gross total, and average amount of all refunds of terminated member accounts.

Tab 15B

**TEACHER RETIREMENT SYSTEM OF TEXAS
MEDICAL BOARD MEETING
OPEN SESSION AGENDA
January 8, 2013**

The Medical Board of the Teacher Retirement System of Texas met at 12:00 p.m. Tuesday, January 8, 2013 in the TRS offices.

The following members were present:

Dr. Alice Cox, Fredericksburg
Dr. James Allen Reinartz, Austin
Dr. Larry Wilson, Austin

Others present:

Ms. Marianne Woods Wiley, Chief Benefit Officer, TRS
Ms. Beckie Smith, Legal Services, TRS
Ms. Kirsten Morgan, Legal Services, TRS
Mr. Mike Rehling, Manager, Benefit Processing, TRS
Mr. Adam Fambrough, Assistant Manager, Benefit Processing, TRS
Ms. Denise Hope, Benefit Consultant, Benefit Processing, TRS

Dr. Wilson called the meeting to order at 12:29 p.m.

1. REVIEW OF MINUTES FROM THE NOVEMBER 13, 2012 MEETING.

The minutes of the November 13, 2012 meeting were reviewed and approved.

2. CONSIDERATION OF FILES OF TRS MEMBERS WHO ARE CURRENTLY APPLYING FOR DISABILITY RETIREMENT AND THE FILES OF DISABILITY RETIREES WHO ARE DUE A RE-EXAMINATION REPORT.

Dr. Wilson announced that the Medical Board would enter into Executive Session, as provided by section 551.078 of the Texas Government Code, to deliberate medical information of individual members and retirees.

The Board entered into closed session at 12:33 p.m.
The meeting was re-opened at 12:51 p.m.

3. REVIEW OF DISABILITY STATISTICS.

**PG. 2 TRS Medical Board Minutes
January 8, 2013**

4. DISCUSSION OF ITEMS TO BE PLACED ON FUTURE AGENDAS.

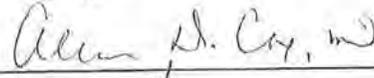
The agenda for January will have no new items.

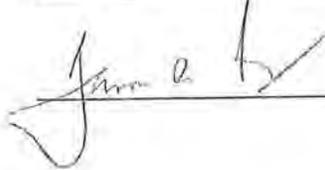
5. DISCUSSION OF THE DATE OF NEXT BOARD MEETING.

The next Medical Board meeting was scheduled for March 19, 2013.
The meeting was adjourned at 1:11p.m.

**Dr. Larry Wilson, Chairman
TRS Medical Board**







Attest:



Denise Hope

**TEACHER RETIREMENT SYSTEM OF TEXAS
MEDICAL BOARD MEETING
OPEN SESSION AGENDA
November 13, 2012**

The Medical Board of the Teacher Retirement System of Texas met at 12:00 p.m. Tuesday, November 13, 2012 in the TRS offices.

The following members were present:

Dr. Alice Cox, Fredericksburg
Dr. James Allen Reinartz, Austin
Dr. Larry Wilson, Austin

Others present:

Ms. Beckie Smith, Legal Services, TRS
Ms. Kirsten Morgan, Legal Services, TRS
Mr. Mike Rehling, Manager, TRS
Mr. Adam Fambrough, Assistant Manager, TRS
Ms. Denise Hope, Benefit Consultant, TRS

Dr. Wilson called the meeting to order at 12:07 p.m.

1. REVIEW OF MINUTES FROM THE SEPTEMBER 11, 2012 MEETING.

The minutes of the September 11, 2012 meeting were reviewed and approved.

2. CONSIDERATION OF FILES OF TRS MEMBERS WHO ARE CURRENTLY APPLYING FOR DISABILITY RETIREMENT AND THE FILES OF DISABILITY RETIREES WHO ARE DUE A RE-EXAMINATION REPORT.

Dr. Wilson announced that the Medical Board would enter into Executive Session, as provided by section 551.078 of the Texas Government Code, to deliberate medical information of individual members and retirees.

The Board entered into closed session at 12:19 p.m.
The meeting was re-opened at 12:50 p.m.

3. REVIEW OF DISABILITY STATISTICS.

PG. 2 TRS Medical Board Minutes
November 13, 2012

4. DISCUSSION OF ITEMS TO BE PLACED ON FUTURE AGENDAS.

The agenda for January will have no new items.

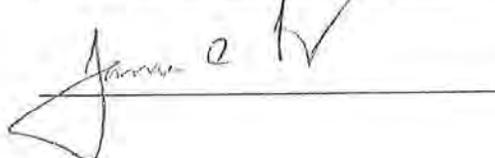
5. DISCUSSION OF THE DATE OF NEXT BOARD MEETING.

The next Medical Board meeting was scheduled for January 8, 2013.
The meeting was adjourned at 1:04 p.m.

Dr. Larry Wilson, Chairman
TRS Medical Board







Attest:



Denise Hope

**TEACHER RETIREMENT SYSTEM OF TEXAS
MEDICAL BOARD MEETING
OPEN SESSION AGENDA
September 11, 2012**

The Medical Board of the Teacher Retirement System of Texas met at 12:00 p.m. Tuesday, September 11, 2012 in the TRS offices.

The following members were present:

Dr. Alice Cox, Fredericksburg
Dr. James Allen Reinartz, Austin
Dr. Larry Wilson, Austin

Others present:

Ms. Marianne Woods Wiley, Chief Benefit Officer, TRS
Ms. Beckie Smith, Legal Services, TRS
Ms. Kristen Morgan, Legal Services, TRS
Mr. Mike Rehling, Manager, TRS
Mr. Adam Fambrough, Assistant Manager, TRS
Ms. Denise Hope, Benefit Consultant, TRS

Dr. Wilson called the meeting to order at 12:09 p.m.

1. REVIEW OF MINUTES FROM THE JULY 10, 2012 MEETING.

The minutes of the July 10, 2012 meeting were reviewed and approved.

2. CONSIDERATION OF FILES OF TRS MEMBERS WHO ARE CURRENTLY APPLYING FOR DISABILITY RETIREMENT AND THE FILES OF DISABILITY RETIREES WHO ARE DUE A RE-EXAMINATION REPORT.

Dr. Wilson announced that the Medical Board would enter into Executive Session, as provided by section 551.078 of the Texas Government Code, to deliberate medical information of individual members and retirees.

The Board entered into closed session at 12:16 p.m.
The meeting was re-opened at 12:37 p.m.

3. REVIEW OF DISABILITY STATISTICS.

**PG. 2 TRS Medical Board Minutes
September 11, 2012**

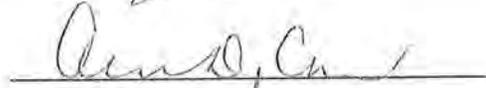
4. DISCUSSION OF ITEMS TO BE PLACED ON FUTURE AGENDAS.

The agenda for November will have no new items.

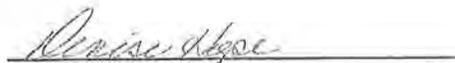
5. DISCUSSION OF THE DATE OF NEXT BOARD MEETING.

The next Medical Board meeting was scheduled for November 13, 2012.
The meeting was adjourned at 12:48 p.m.

**Dr. Larry Wilson, Chairman
TRS Medical Board**



Attest:


Denise Hope

Tab 16

Teacher Retirement System of Texas



Financial Statements Second Quarter as of February 28, 2013

Don Green, Chief Financial Officer

Board of Trustees Meeting
April 19, 2013





Financial Statements

Second Quarter

January and February 2013 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: April 4, 2013

Section 825.314(b) of the Texas Government Code requires the staff of the retirement system to report to the board at each board meeting the amounts and uses since the preceding board meeting of any money expended by the system 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 8, 2012, the board approved the Administrative Operations budget for fiscal year 2013.

Total Administrative Expenses (excluding TEAM program) of \$13.3 million were disbursed in January, 2013. *Salaries and Other Personnel Costs* were \$11.1 million, which includes \$6.9 million for annual performance incentive compensation, *Professional Fees* were \$0.4 million, *Capital Projects* were \$0.6 million, and *Other Operating Expenses* were \$1.2 million. Items of interest include payments of \$129 thousand for investment counsel, \$222 thousand for postage and mailing, \$116 thousand for insurance premiums, and \$219 thousand in software purchases and maintenance.

Total Administrative Expenses (excluding TEAM Program) of \$5.2 million were disbursed in February, 2013. *Salaries and Other Personnel Costs* were \$3.9 million, *Professional Fees* were \$0.4 million, and *Other Operating Expenses* were \$0.9 million. Items of interest include payments of \$133 thousand for investment counsel, \$311 thousand for postage and mailing, and \$116 thousand for insurance premiums.

TEAM Program Expenses of \$319 thousand were disbursed in January, 2013. *Salaries and Other Personnel Costs* were \$255 thousand, *Professional Fees* were \$59 thousand, and *Other Operating Expenses* were \$5 thousand.

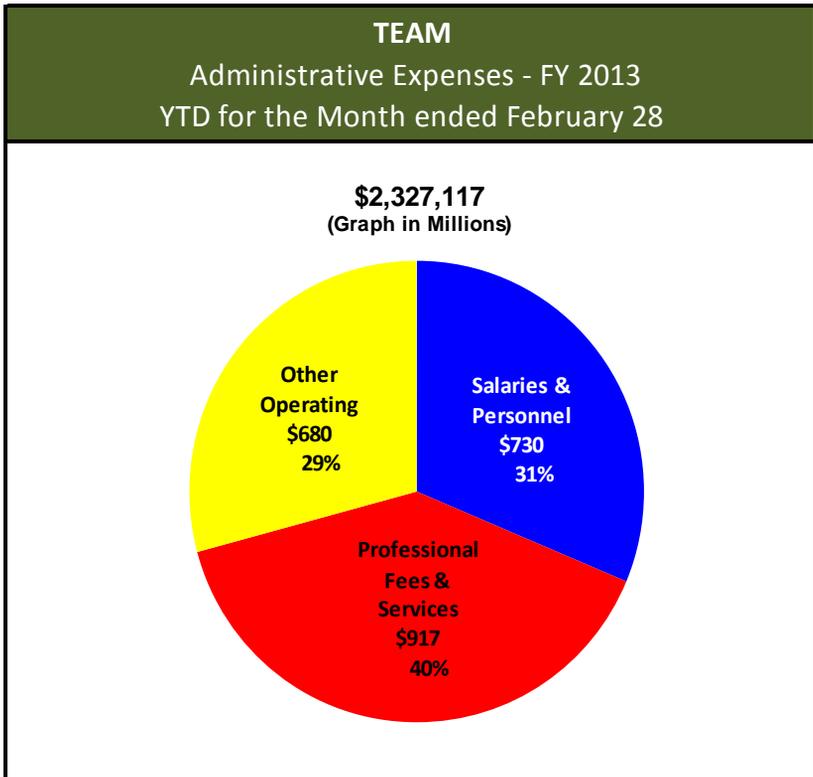
TEAM Program Expenses of \$256 thousand were disbursed in February, 2013. *Salaries and Other Personnel Costs* were \$119 thousand, *Professional Fees* were \$90 thousand, and *Other Operating Expenses* were \$47 thousand.



Financial Statements Second Quarter

Pension Trust Fund			
Cash Disbursements - FY 2013			
YTD for the Month Ended February 28			
	<u>2013</u>		<u>2012</u>
September	\$ 6,956,188		\$ 6,793,546
October	7,527,488		6,450,857
November	7,342,717		4,929,626
December	5,384,514		5,984,486
January	13,588,764 (a)		12,409,354
February	5,410,553		5,413,959
Totals	<u>\$ 46,210,224</u> (b)		<u>\$ 41,981,828</u> (c)

(a) Includes \$6.9 million in incentive compensation pay.
 (b) Includes reimbursements of \$17,364
 (c) Cash Disbursements totaled \$74,094,530 at August 31, 2012.





Financial Statements Second Quarter

Financial Report for the Second Quarter Ended February 28, 2013 Pension Trust Fund

To: TRS Board of Trustees
Brian Guthrie, Executive Director
Ken Welch, Deputy Director

From: Don Green, Chief Financial Officer

Date: April 4, 2013

Net Assets Held in Trust for Pension Benefits:

For the second quarter ended February 28, 2013, *Net Assets Held in Trust for Pension Benefits* were \$116.5 billion, an increase of \$2.8 billion over the first quarter and an increase of \$5.1 billion over the \$111.4 billion at August 31, 2012. *Total Additions* excluding Net Appreciation in Fair Value of Investments were \$1.5 billion, a decrease of \$75 million from the first quarter. Interest, dividend, and securities lending income totaled \$350.5 million, a decrease of \$103.3 million from the first quarter. *Total Deductions* were \$2.1 billion including external manager fees of \$43.5 million. Benefit payments account for 93% of all deductions.

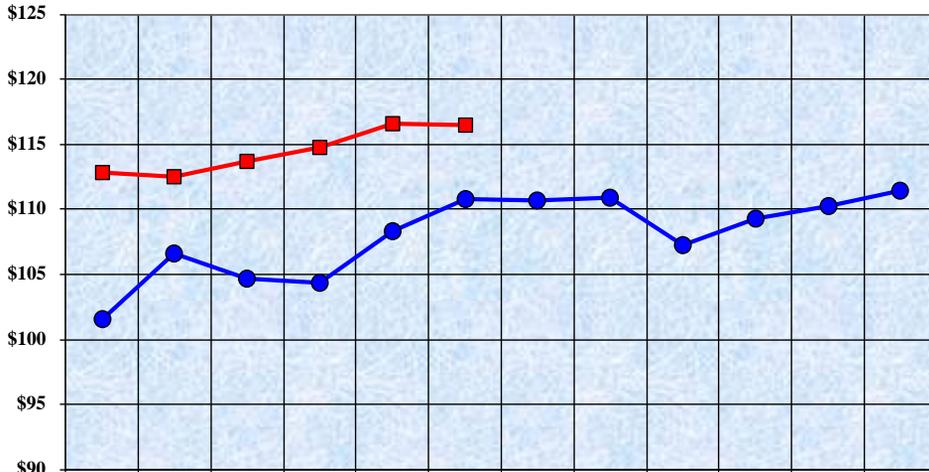
Administrative Operations:

Total Administrative Expenses were \$22.6 million of which \$4.8 million was for December, \$12.6 million for January, and \$5.2 million for February. *Salaries and Other Personnel Costs* were \$19.1 million which included the annual performance incentive compensation, *Professional Fees and Services* were \$975 thousand, *Other Operating Expenses* were \$2.5 million, and *Capital Expenses* were \$5 thousand. At the end of the second quarter 52% of the total funds budgeted were remaining.

Financial Statements Second Quarter

Pension Trust Fund Net Assets - FY 2013 YTD and FY 2012

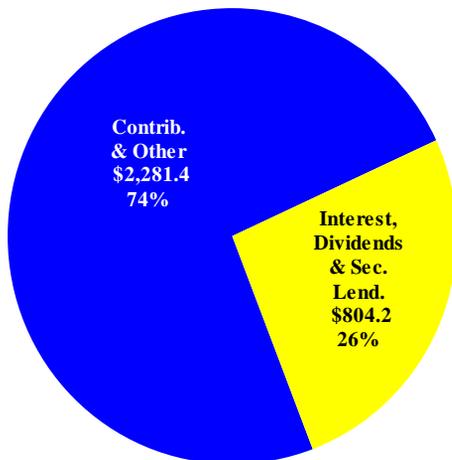
Billions



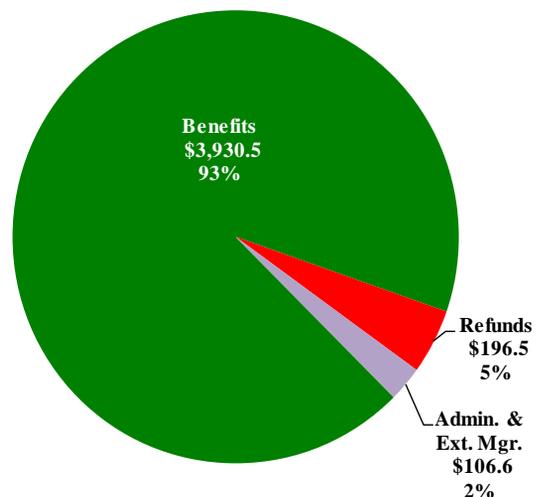
	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.
FY 2013	112.8	112.5	113.7	114.8	116.6	116.5						
FY 2012	101.6	106.6	104.7	104.4	108.3	110.8	110.7	110.9	107.3	109.3	110.3	111.4

Additions and Deductions - FY 2013 YTD for the Second Quarter Ended February 28

Additions
\$3,085,641,633
(Graph in Millions)



Deductions
\$4,233,564,572
(Graph in Millions)



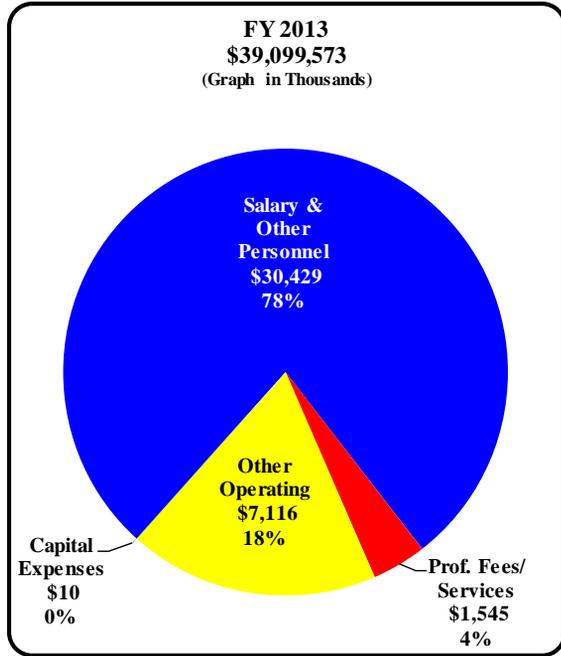
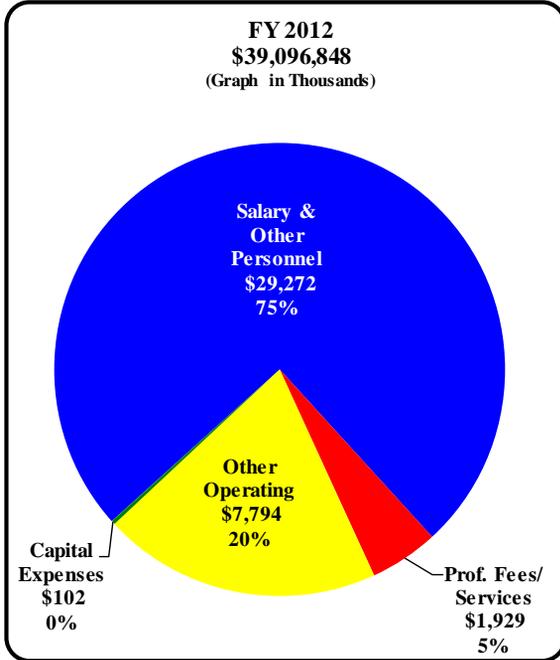
Financial Statements

Second Quarter

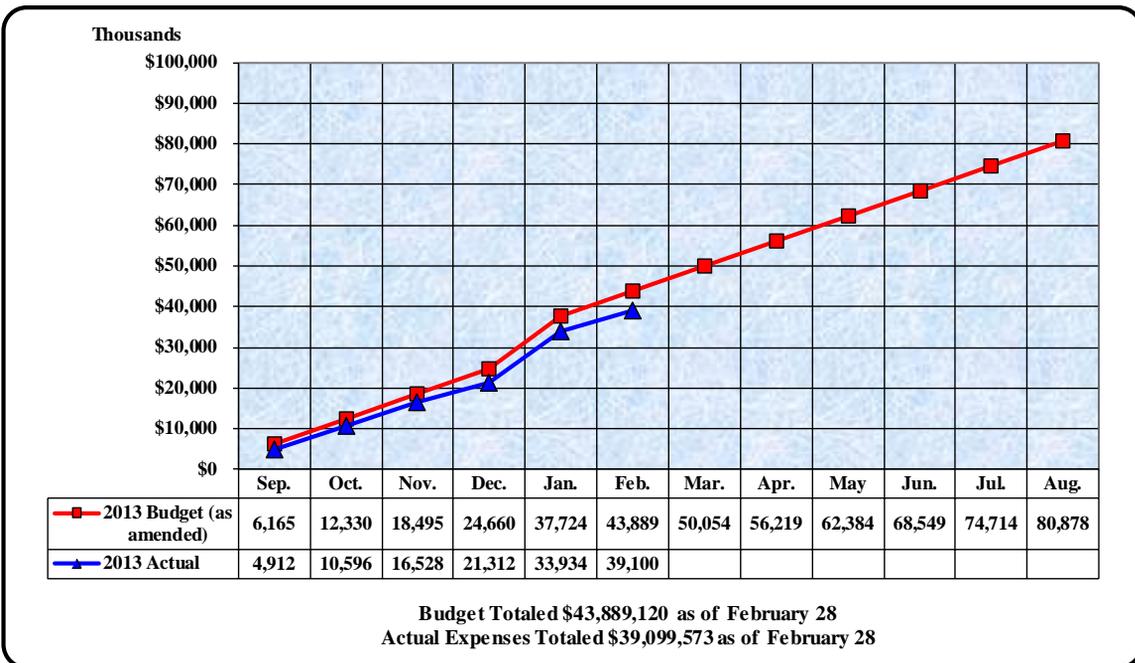
Pension Trust Fund (excludes TEAM)

Administrative Expenses

YTD for the Second Quarter Ended February 28 - FY 2012 and FY 2013



Budget to YTD Actual - FY 2013 (Excluding TEAM and Encumbered Funds)



Financial Statements

Second Quarter

Pension Trust Fund (Excludes TEAM)

FY 2013 Budget Basis Administrative Expenses

	Actual YTD February 28, 2013	Encumbered YTD February 28, 2013	Annual Budget Amount	Remaining Budget Amount	% Expended
SALARIES AND OTHER PERSONNEL COSTS					
Salaries and Wages	\$ 18,035,010.91	\$	\$ 38,284,981.00	\$ 20,249,970.09	47%
Longevity Pay	299,180.00		636,720.00	337,540.00	47%
Employer Retirement Contributions	1,160,807.70		2,450,239.00	1,289,431.30	47%
Employer FICA Contributions	1,551,443.39		2,804,067.00	1,252,623.61	55%
Employer Health Insurance Contributions	2,326,277.19		4,805,304.00	2,479,026.81	48%
Benefit Replacement Pay	88,674.88		129,836.00	41,161.12	68%
Other Employee Benefits	67,254.14	7,500.00	461,000.00	386,245.86	16%
TOTAL SALARIES AND OTHER PERSONNEL COSTS	\$ 23,528,648.21	\$ 7,500.00	\$ 49,572,147.00	\$ 26,035,998.79	47%
PROFESSIONAL FEES AND SERVICES					
	\$ 1,545,183.39	\$ 1,120,462.21	\$ 8,064,064.00	\$ 5,398,418.40	33%
OTHER OPERATING EXPENSES					
Consumable Supplies and Fuels	\$ 199,932.09	\$ 42,777.13	\$ 453,210.00	\$ 210,500.78	54%
Utilities	292,563.55	241,655.73	1,105,355.00	571,135.72	48%
Travel	409,953.05	53,152.66	1,177,003.00	713,897.29	39%
Rentals	1,155,463.57	387,342.29	2,239,147.00	696,341.14	69%
Dues, Fees and Staff Development	115,014.19	18,881.78	395,381.00	261,485.03	34%
Subscriptions and Reference Information	94,256.72	16,527.73	287,419.00	176,634.55	39%
Printing and Reproduction Services	110,406.29	204,938.56	507,650.00	192,305.15	62%
Postage, Mailing and Delivery Services	1,557,161.18	88,818.48	2,277,364.00	631,384.34	72%
Software Purchases and Maintenance	1,644,723.26	421,190.64	2,733,106.00	667,192.10	76%
Computer Hardware Maintenance	298,381.12	96,419.95	465,000.00	70,198.93	85%
Miscellaneous Expenses	274,948.24	131,121.07	1,095,370.00	689,300.69	37%
Insurance Premiums	615,131.00		693,100.00	77,969.00	89%
Furniture and Equipment - Expensed	133,880.86	5,183.52	430,550.00	291,485.62	32%
Maintenance - Buildings and Equipment	214,063.05	311,160.40	948,433.00	423,209.55	55%
TOTAL OTHER OPERATING EXPENSES	\$ 7,115,878.17	\$ 2,019,169.94	\$ 14,808,088.00	\$ 5,673,039.89	62%
TOTAL OPERATING EXPENSES	\$ 32,189,709.77	\$ 3,147,132.15	\$ 72,444,299.00	\$ 37,107,457.08	49%

Source: Unaudited monthly financial statements.



Financial Statements Second Quarter

Pension Trust Fund (Excludes TEAM) FY 2013 Budget Basis Administrative Expenses

(concluded)

	Actual YTD <u>February 28, 2013</u>	Encumbered YTD <u>February 28, 2013</u>	Annual Budget Amount	Remaining Budget Amount	% Expended
CAPITAL EXPENSES					
Furniture and Equipment	\$ 10,020.50	\$ 22,148.56	\$ 96,665.00	\$ 64,495.94	33%
Capital Budget Items		283,383.90	1,437,590.31	1,154,206.41	20%
TOTAL CAPITAL EXPENSES	\$ 10,020.50	\$ 305,532.46	\$ 1,534,255.31	\$ 1,218,702.35	21%
 TOTAL OPERATING AND CAPITAL EXPENSES*	 \$ 32,199,730.27	 \$ 3,452,664.61	 \$ 73,978,554.31	 \$ 38,326,159.43	 48%
 PERFORMANCE INCENTIVE COMPENSATION	 \$ 6,899,843.13	 \$ _____	 \$ 6,899,843.13	 \$ _____	 100%
 TOTAL OPERATING AND CAPITAL EXPENSES INCLUDING PERFORMANCE INCENTIVE COMPENSATION	 \$ 39,099,573.40	 \$ 3,452,664.61	 \$ 80,878,397.44	 \$ 38,326,159.43	 47%
 METHOD OF FINANCE					
Administrative Operation Appropriations	\$ 33,972,370.24	\$ 3,452,664.61	\$ 70,688,951.44	\$ 33,263,916.59	53%
Employer Retirement Contributions	1,160,807.70		2,450,239.00	1,289,431.30	47%
Employer FICA Contributions	1,551,443.39		2,804,067.00	1,252,623.61	55%
Employer Health Insurance Contributions	2,326,277.19		4,805,304.00	2,479,026.81	48%
Benefit Replacement Pay	88,674.88		129,836.00	41,161.12	68%
 TOTAL OPERATING AND CAPITAL EXPENSES	 \$ 39,099,573.40	 \$ 3,452,664.61	 \$ 80,878,397.44	 \$ 38,326,159.43	 53%

*Amounts are net of reimbursements.

Source: Unaudited monthly financial statements.

Financial Statements

Second Quarter

TRS Enterprise Application Modernization - TEAM FY 2013 Budget Basis Administrative Expenses

	Actual YTD February 28, 2013	Encumbered YTD February 28, 2013	Annual Budget Amount	Remaining Budget Amount	% Expended
SALARIES AND OTHER PERSONNEL COSTS					
Salaries and Wages	\$ 542,646.91	\$	\$ 1,210,950.00	\$ 668,303.09	45%
Longevity Pay	8,560.00		17,355.00	8,795.00	49%
Employer Retirement Contributions	35,376.24		77,501.00	42,124.76	46%
Employer FICA Contributions	40,962.15		92,638.00	51,675.85	44%
Employer Health Insurance Contributions	44,905.20		106,720.00	61,814.80	42%
Benefit Replacement Pay	1,546.86		4,125.00	2,578.14	37%
Other Employee Benefits			15,095.00	15,095.00	
TOTAL SALARIES AND OTHER PERSONNEL COSTS	\$ 673,997.36	\$	\$ 1,524,384.00	\$ 850,386.64	44%
PROFESSIONAL FEES AND SERVICES	\$ 658,504.77	\$ 1,100,761.70	\$ 15,024,840.00	\$ 13,265,573.53	12%
OTHER OPERATING EXPENSES					
Travel	\$ 984.22	\$	\$ 25,000.00	\$ 24,015.78	4%
Dues, Fees and Staff Development	1,785.00	3,190.00	50,000.00	45,025.00	10%
Software Purchases and Maintenance	158,250.75		2,870,000.00	2,711,749.25	6%
Furniture and Equipment - Expensed	2,024.99	18,959.81	24,000.00	3,015.20	87%
TOTAL OTHER OPERATING EXPENSES	\$ 163,044.96	\$ 22,149.81	\$ 2,969,000.00	\$ 2,783,805.23	6%
TOTAL OPERATING EXPENSES	\$ 1,495,547.09	\$ 1,122,911.51	\$ 19,518,224.00	\$ 16,899,765.40	13%
CAPITAL EXPENSES					
Furniture and Equipment	\$ 405,674.89	\$ 952,567.36	\$ 1,525,000.00	\$ 166,757.75	89%
Capital Budget Items					
TOTAL CAPITAL EXPENSES	\$ 405,674.89	\$ 952,567.36	\$ 1,525,000.00	\$ 166,757.75	89%
TOTAL OPERATING AND CAPITAL EXPENSES*	\$ 1,901,221.98	\$ 2,075,478.87	\$ 21,043,224.00	\$ 17,066,523.15	19%
METHOD OF FINANCE					
Administrative Operation Appropriations	\$ 1,778,431.53	\$ 2,075,478.87	\$ 20,762,240.00	\$ 16,908,329.60	19%
Employer Retirement Contributions	35,376.24		77,501.00	42,124.76	46%
Employer FICA Contributions	40,962.15		92,638.00	51,675.85	44%
Employer Health Insurance Contributions	44,905.20		106,720.00	61,814.80	42%
Benefit Replacement Pay	1,546.86		4,125.00	2,578.14	37%
TOTAL OPERATING AND CAPITAL EXPENSES	\$ 1,901,221.98	\$ 2,075,478.87	\$ 21,043,224.00	\$ 17,066,523.15	19%

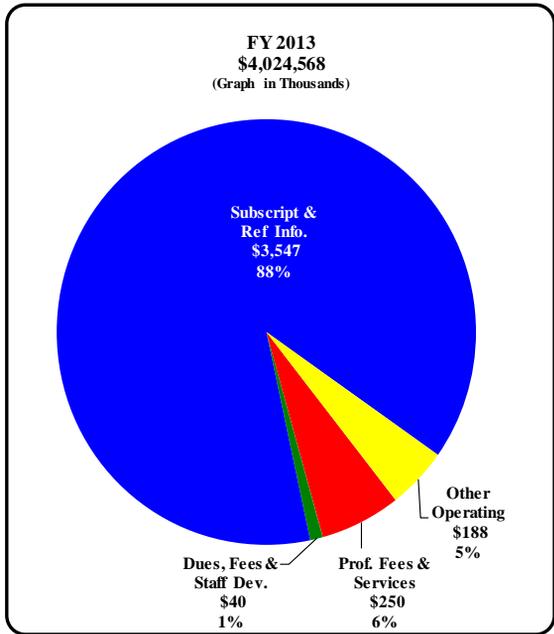
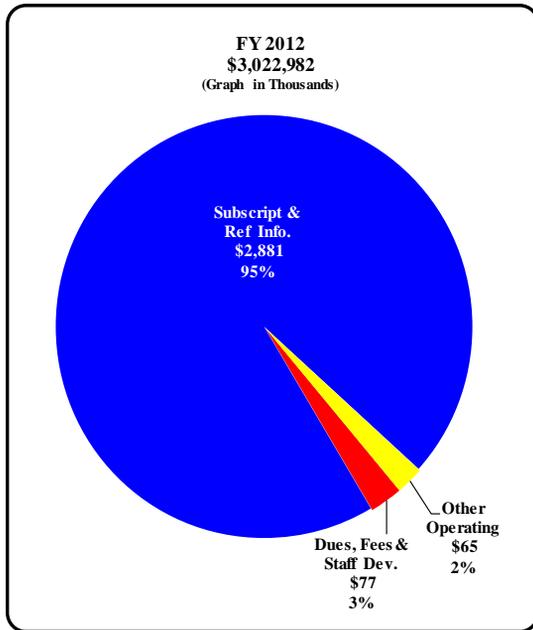
Source: Unaudited monthly financial statements.

Financial Statements

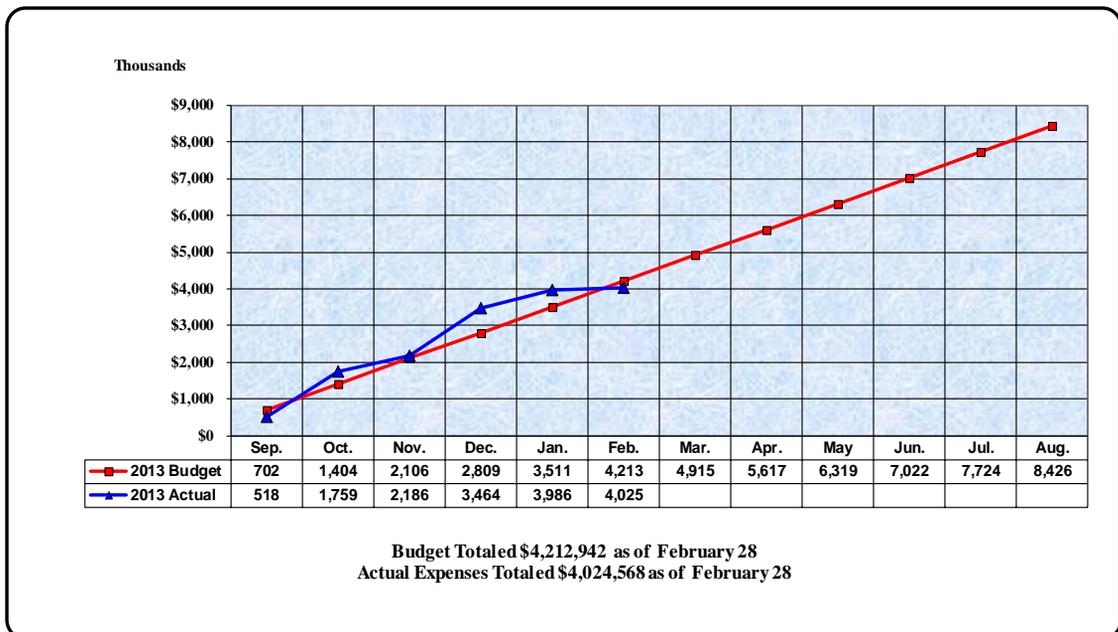
Second Quarter

Investment Soft Dollars Administrative Expenses

YTD for the Second Quarter Ended February 28 - FY 2012 and FY 2013



Budget to YTD Actual - FY 2013

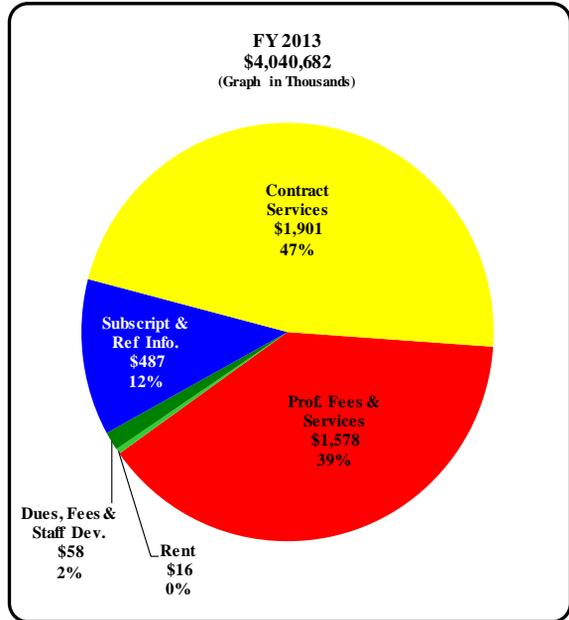
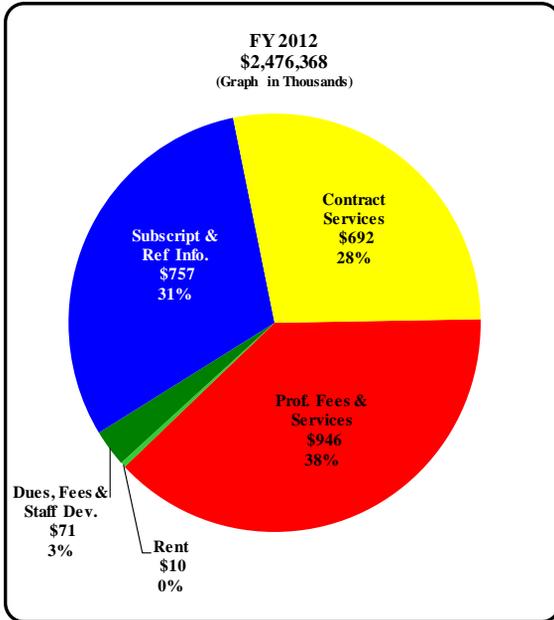


Financial Statements Second Quarter

SSB/TRS Partnership Account

Administrative Expenses

YTD for the Second Quarter Ended February 28 - FY 2012 and FY 2013



Budget to YTD Actual - FY 2013



Budget Totaled \$3,000,000 as of February 28
Actual Expenses Totaled \$4,040,682 as of February 28



Financial Statements Second Quarter

Financial Report for the Second Quarter Ended February 28, 2013 TRS-Care

To: TRS Board of Trustees
Brian Guthrie, Executive Director
Ken Welch, Deputy Director

From: Don Green, Chief Financial Officer

Date: April 4, 2013

Net Assets Held in Trust for Other Employee Benefits:

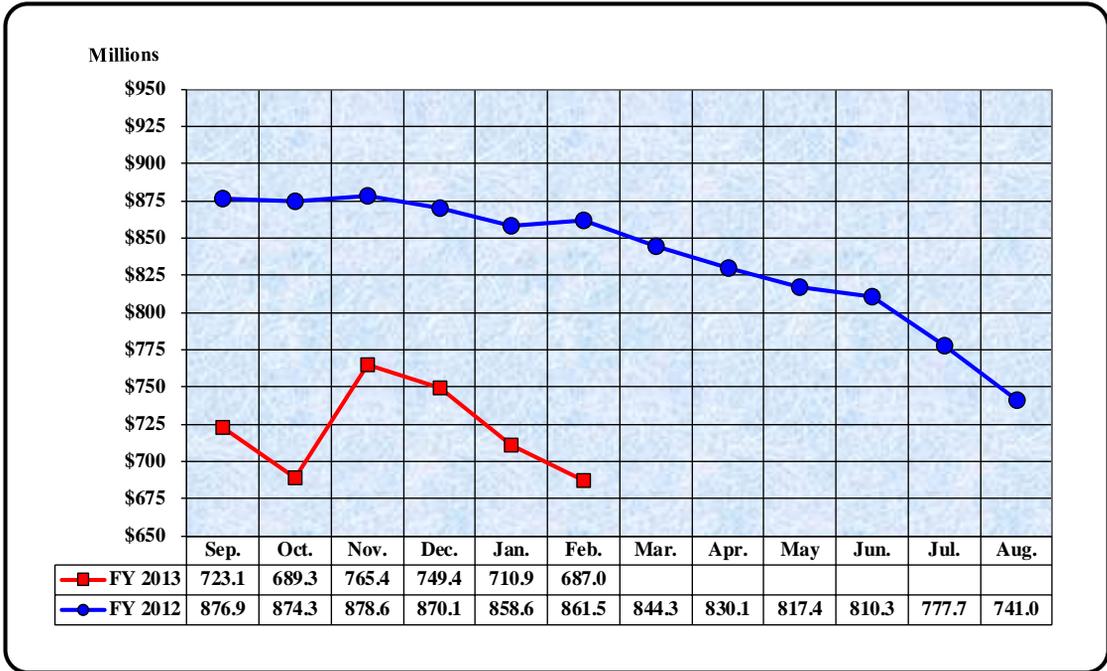
For the second quarter ended February 28, 2013, *Net Assets Held in Trust for Other Employee Benefits* were \$687.0 million, a decrease of \$78.4 million from the first quarter and a \$54.0 million decrease from the \$741.0 million at August 31, 2012. *Total Additions* include contributions and other additions of \$123.1 million, premiums of \$88.2 million, and federal revenue of \$16.4 million. *Total Deductions* were \$306.1 million including medical claims payments and processing fees of \$174.4 million and pharmacy claims payments and processing fees of \$131.0 million.

Administrative Operations:

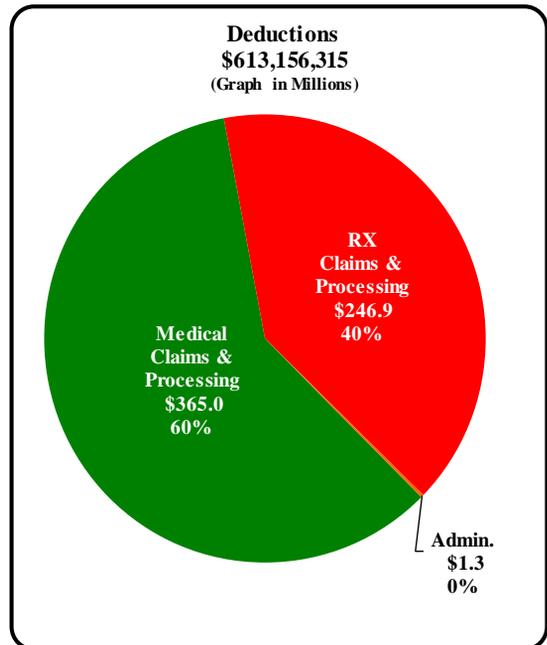
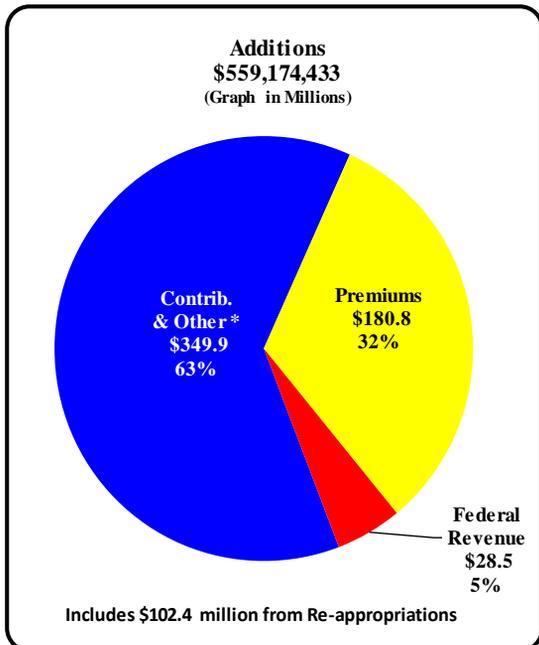
Total Administrative Expenses were \$713 thousand of which \$231 thousand was for December, \$283 thousand for January, and \$199 thousand for February. *Salaries and Other Personnel Costs* were \$611 thousand, *Professional Fees and Services* were \$92 thousand, and *Other Operating Expenses* were \$10 thousand. At the end of the second quarter, 65% of the total funds budgeted were remaining.

Financial Statements Second Quarter

TRS-Care Net Assets - FY 2013 YTD and FY 2012



Additions and Deductions - FY 2013 YTD for the Second Quarter Ended February 28



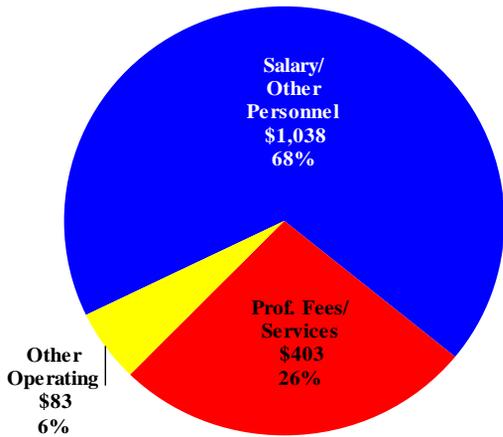


Financial Statements Second Quarter

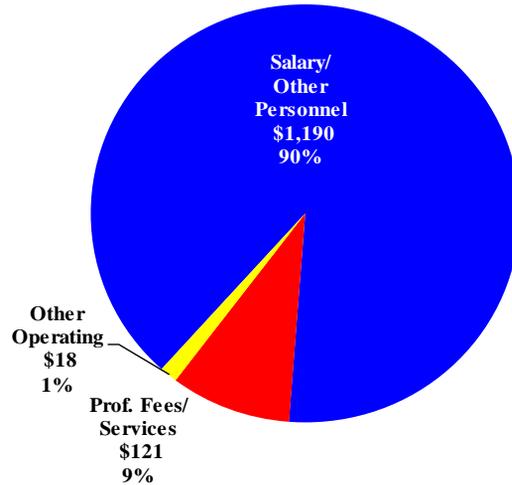
TRS-Care Administrative Expenses

YTD for the Second Quarter Ended Feb 28 - FY 2012 and FY 2013

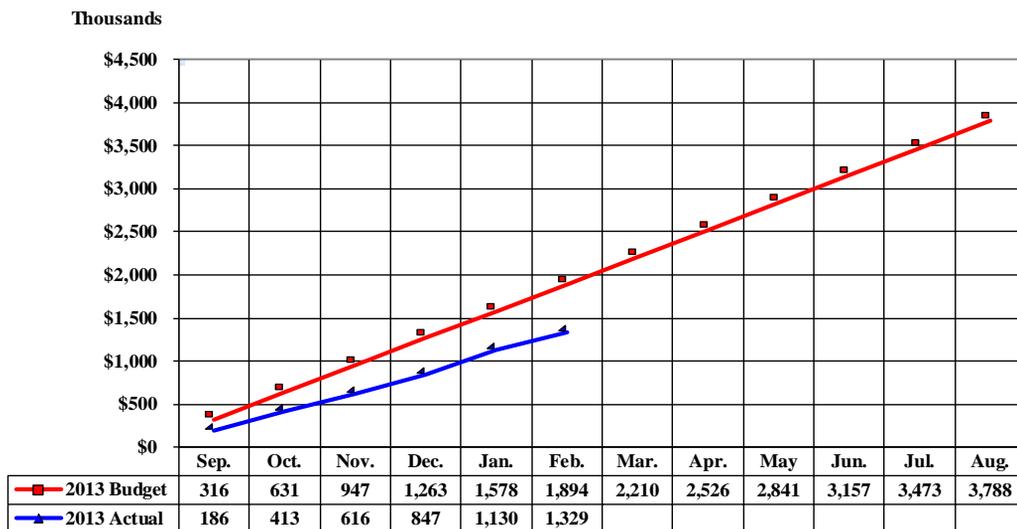
FY 2012
\$1,524,022
(Graph in Thousands)



FY 2013
\$1,328,997
(Graph in Thousands)



Budget to YTD Actual - FY 2013 (Excludes Encumbered Funds)



Budget Totaled \$1,894,157 as of February 28
Actual Expenses Totaled \$1,328,997 as of February 28

Financial Statements

Second Quarter

TRS-Care FY 2013 Budget Basis Administrative Expenses

	Actual YTD February 28, 2013	Encumbered YTD February 28, 2013	Annual Budget Amount	Remaining Budget Amount	% Expended
SALARIES AND OTHER PERSONNEL COSTS					
Salaries and Wages	\$ 912,525.47	\$ -	\$ 1,815,673.00	\$ 903,147.53	50%
Lump Sum Payments			50,000.00	50,000.00	
Longevity Pay	26,540.00		54,100.00	27,560.00	49%
Employer Retirement Contributions	58,973.87		116,203.00	57,229.13	51%
Employer FICA Contributions	68,790.62		138,899.00	70,108.38	50%
Benefit Replacement Pay	9,719.82		12,377.00	2,657.18	79%
Other Employee Benefits			14,150.00	14,150.00	
Employer Health Insurance Contributions	113,301.18		233,442.00	120,140.82	49%
TOTAL SALARIES AND OTHER PERSONNEL COSTS	\$ 1,189,850.96	\$ -	\$ 2,434,844.00	\$ 1,244,993.04	49%
PROFESSIONAL FEES AND SERVICES					
	\$ 120,983.02	\$ 170,263.66	\$ 1,071,000.00	\$ 779,753.32	27%
OTHER OPERATING EXPENSES					
Consumable Supplies	\$ 610.86	\$ 700.00	\$ 5,200.00	\$ 3,889.14	25%
Utilities	2,745.18		5,531.00	2,785.82	50%
Travel In-State		1,367.00	6,500.00	5,133.00	21%
Travel Out of State	2,818.21		5,455.00	2,636.79	52%
Rental - Building		41,255.50	82,511.00	41,255.50	50%
Dues, Fees and Staff Development	75.00	1,036.00	3,325.00	2,214.00	33%
Subscriptions and Reference Information			570.00	570.00	
Printing and Reproduction Services	3,294.85	2,230.50	15,000.00	9,474.65	37%
Postage, Mailing and Delivery Services	2,208.59	48,163.63	135,277.00	84,904.78	37%
Miscellaneous Expenses	6,415.97	833.33	14,600.00	7,350.70	50%
Furniture and Equipment - Expensed			6,500.00	6,500.00	
Maintenance - Buildings and Equipment	(5.71)		2,000.00	2,005.71	0%
TOTAL OTHER OPERATING EXPENSES	\$ 18,162.95	\$ 95,585.96	\$ 282,469.00	\$ 168,720.09	40%
TOTAL OPERATING EXPENSES	\$ 1,328,996.93	\$ 265,849.62	\$ 3,788,313.00	\$ 2,193,466.45	42%
Less: Employer Retirement Contributions paid on behalf of Employees	\$ (58,973.87)	\$ -	\$ (116,203.00)	\$ (57,229.13)	51%
TOTAL CASH OUTLAY FOR OPERATING EXPENSES	\$ 1,270,023.06	\$ 265,849.62	\$ 3,672,110.00	\$ 2,136,237.32	42%

Source: Unaudited monthly financial statements.



Financial Statements Second Quarter

Financial Report for the Second Quarter Ended February 28, 2013 TRS-ActiveCare

To: TRS Board of Trustees
Brian Guthrie, Executive Director
Ken Welch, Deputy Director

From: Don Green, Chief Financial Officer

Date: April 4, 2013

The fund captures financial activity for the following programs:

- TRS-ActiveCare health care program for active public school employees
- Optional life and long-term care insurance for active members and retirees

Net Assets – Restricted for Health Care Programs

For the second quarter ended February 28, 2013, *Net Assets* were \$74.6 million, a decrease of \$3.9 million from the first quarter and an increase of \$28.8 million over the \$45.8 million at August 31, 2012. *Total Revenues* were \$453.1 million. Health care premiums were \$450.7 million, COBRA premiums were \$2.0 million, investment income was \$321 thousand and optional life and long-term care administrative fees were \$23 thousand. *Total Expenses* were \$457 million including medical claims payments and processing fees of \$367.3 million, pharmacy claims payments and processing fees of \$64.2 million, and HMO payments of \$25 million.

Administrative Operations:

Total Administrative Expenses were \$473 thousand of which \$129 thousand was for December, \$165 thousand for January, and \$179 thousand for February. *Salaries and Other Personnel Costs* were \$386 thousand, *Professional Fees and Services* were \$84 thousand and *Other Operating Expenses* were \$3 thousand. At the end of the second quarter, 67% of the total funds budgeted were remaining.

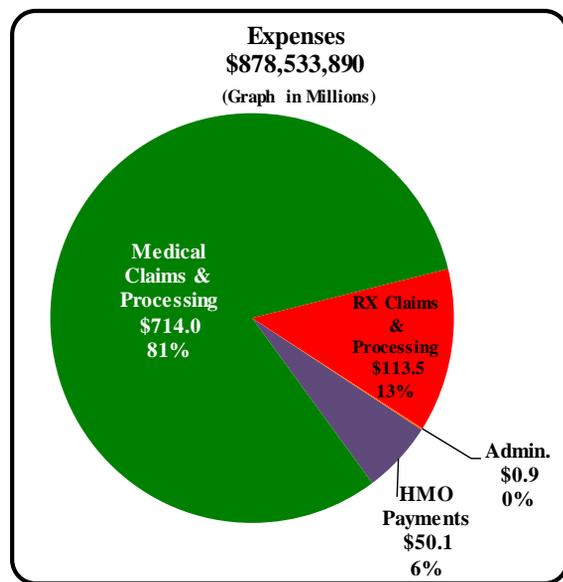
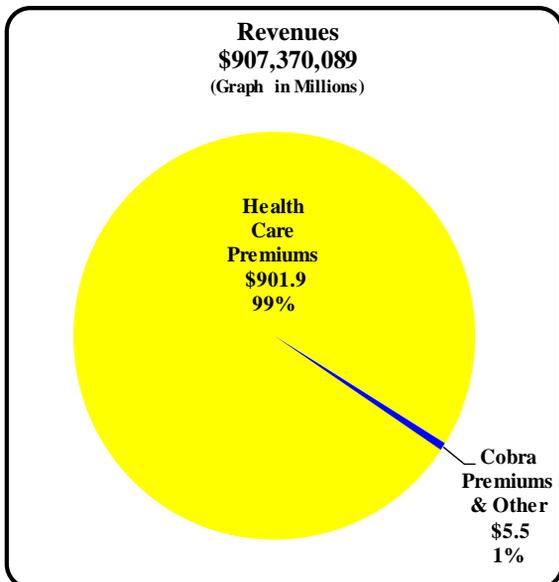


Financial Statements Second Quarter

TRS-ActiveCare Net Assets - FY 2013 YTD and FY 2012



Revenues and Expenses - FY 2013 YTD for the Second Quarter Ended February 28



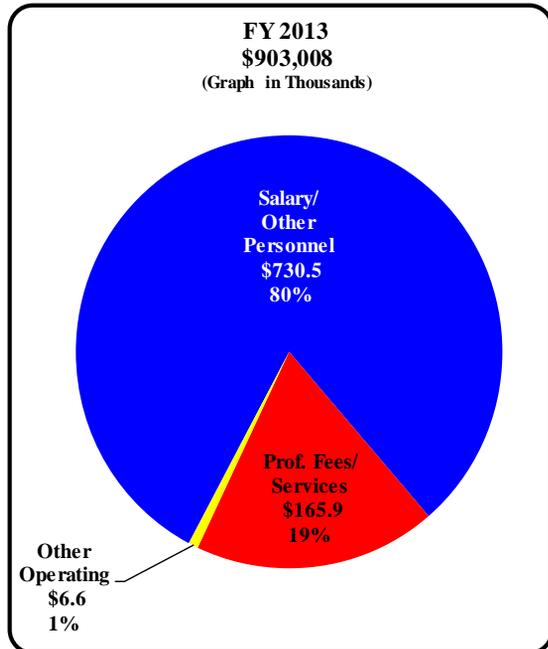
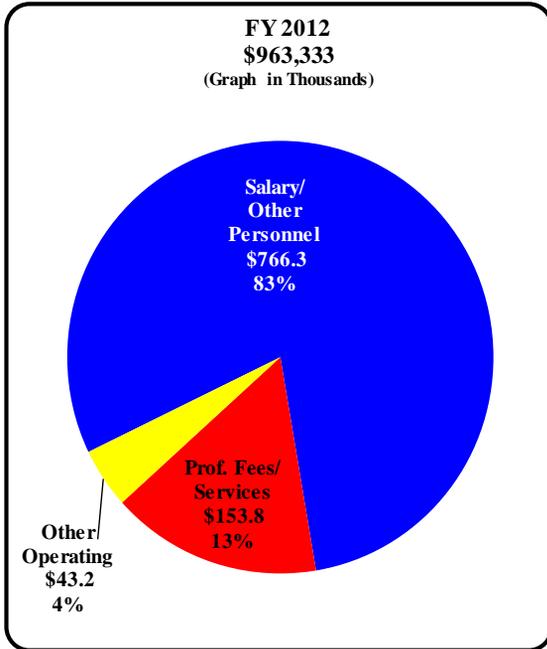


Financial Statements Second Quarter

TRS-ActiveCare

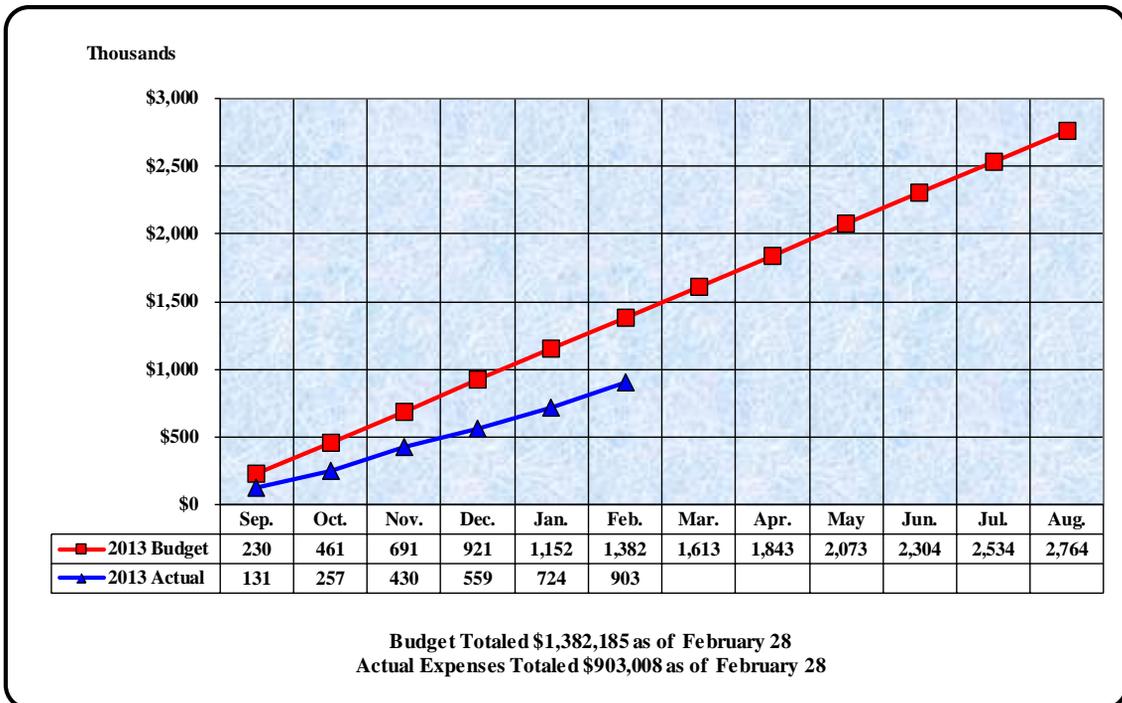
Administrative Expenses

YTD for the Second Quarter Ended February 28 - FY 2012 and FY 2013



Budget to YTD Actual - FY 2013

(Excludes Encumbered Funds)



Financial Statements

Second Quarter

TRS-ActiveCare FY 2013 Budget Basis Administrative Expenses

	Actual YTD February 28, 2013	Encumbered YTD February 28, 2013	Annual Budget Amount	Remaining Budget Amount	% Expended
SALARIES AND OTHER PERSONNEL COSTS					
Salaries and Wages	\$ 575,859.57	\$	\$ 1,295,835.00	\$ 719,975.43	44%
Longevity Pay	12,960.00		32,040.00	19,080.00	40%
Employer Retirement Contributions	37,589.32		82,933.00	45,343.68	45%
Employer FICA Contributions	42,326.33		99,131.00	56,804.67	43%
Employer Health Insurance Contributions	61,247.50		141,422.00	80,174.50	43%
Benefit Replacement Pay	515.61		2,063.00	1,547.39	25%
Other Employee Benefits			59,500.00	59,500.00	0%
TOTAL SALARIES AND OTHER PERSONNEL COSTS	\$ 730,498.33	\$ 0.00	\$ 1,712,924.00	\$ 982,425.67	43%
PROFESSIONAL FEES AND SERVICES	\$ 165,926.30	\$ 371,916.66	\$ 950,750.00	\$ 412,907.04	57%
OTHER OPERATING EXPENSES					
Consumable Supplies	\$ 253.69	\$ 333.26	\$ 3,000.00	\$ 2,413.05	20%
Utilities	306.56		1,500.00	1,193.44	20%
Travel	1,145.37	425.00	8,350.00	6,779.63	19%
Rentals		28,222.00	62,245.00	34,023.00	45%
Dues, Fees and Staff Development	3,885.00	299.00	8,700.00	4,516.00	48%
Subscriptions and Reference Information	499.00		900.00	401.00	55%
Printing and Reproduction Services		712.50	1,425.00	712.50	50%
Postage, Mailing and Delivery Services		1,817.74	4,775.00	2,957.26	38%
Miscellaneous Expenses	493.63	166.63	3,300.00	2,639.74	20%
Furniture and Equipment - Expensed			4,500.00	4,500.00	0%
Maintenance - Buildings and Equipment			2,000.00	2,000.00	0%
TOTAL OTHER OPERATING EXPENSES	\$ 6,583.25	\$ 31,976.13	\$ 100,695.00	\$ 62,135.62	38%
TOTAL OPERATING EXPENSES	\$ 903,007.88	\$ 403,892.79	\$ 2,764,369.00	\$ 1,457,468.33	47%
Less: Employer Retirement Contributions paid on behalf of Employees	\$ (37,589.32)	\$ -	\$ (82,933.00)	\$ (45,343.68)	45%
TOTAL CASH OUTLAY FOR OPERATING EXPENSES	\$ 865,418.56	\$ 403,892.79	\$ 2,681,436.00	\$ 1,412,124.65	47%

Source: Unaudited monthly financial statements.



Financial Statements Second Quarter

Financial Report for the Second Quarter Ended February 28, 2013 403(b) Administrative Program

To: TRS Board of Trustees
Brian Guthrie, Executive Director
Ken Welch, Deputy Director

From: Don Green, Chief Financial Officer

Date: April 4, 2013

For the second quarter ended February 28, 2013, *Net Assets* were \$330 thousand, an increase of \$27 thousand over the first quarter of \$303 thousand. *Total Revenues* were \$39 thousand. Product Registration Fees were \$33 thousand and Certification Fees were \$6 thousand. *Total Operating Expenses* were \$13 thousand for *Salaries and Other Personnel Costs*. At the end of the second quarter, 49% of the total funds budgeted were remaining.

403(b) Certification Program Net Assets – FY 2013 YTD and FY 2012

