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Texas Treasury Safekeeping Trust Company

Endowment Adopts Risk Budgeting Strategy and Selects Riskdata To Implement New Approach

Texas Treasury Safekeeping Trust Company
Risk Management Case Study

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SYNOPSIS

A three-billion-dollar endowment managed within a Texas public agency adopts a new risk-based allocation policy. After a thorough search, Texas Treasury Safekeeping Trust selects Riskdata's risk management platform FOFiX to help implement the program. The choice of Riskdata FOFiX's suite of tools for risk budgeting results in significant and substantial investment process improvements and TTSTC gains a long-term risk management partner.

BRIEF

- **Client:** Texas Treasury Safekeeping Trust Company (TTSTC) is a state agency that oversees \$50 billion in investments for Texas state and local governments and agencies, including a \$3 billion pool of capital from twelve endowments, the largest being the Tobacco Settlement Permanent Trust. Chief Executive Officer Paul Ballard and his deputy Danny Sachnowitz manage the endowment in-house, employing the asset allocation style and investment techniques more commonly associated with educational institutions and foundations.
- **Challenge:** With the goal of building a more broadly diversified portfolio and including more alternative investments, TTSTC planned to implement a major change to its asset allocation in early 2008. To reduce investment risks, the fund decided to switch from a dollar- to a risk-budget allocation model. While it had the investment knowledge and research to support the proposed change, TTSTC top management knew it needed a sophisticated risk management system in place to carry out its plan. Not only would such a system be instrumental in assessing existing investment risks, but it was also a requirement of the TTSTC Investment Advisory Board.
- **Solution:** To find a solution, TTSTC's top executives researched, tested and vetted a mix of holdings-based and returns-based risk management systems. After a thorough investigation, they selected and installed Riskdata's FOFiX platform.
- **Results:** Installing the Riskdata FOFiX system has resulted in substantial improvements to TTSTC's entire investment process. The risk budgeting approach has improved TTSTC's ability to respond to unexpected risk exposures, select managers, construct portfolios and support their fiduciary decisions. Today, Riskdata plays an ever-increasing role in helping TTSTC achieve its long-term investment goal of sustainable growth even in the adverse market conditions.





CLIENT

Public Endowment with a Broad, Flexible Investment Mandate

Texas Treasury Safekeeping Trust Company, (TTSTC) is the investment management division of the Texas State Comptroller. Led by Paul Ballard, Chief Executive and Chief Investment Officer, TTSTC oversees approximately \$50 billion in state and local government assets, primarily in cash. Among other assets, Ballard and Deputy Director and Deputy Chief Investment Officer, Danny Sachnowitz, manage twelve endowments, primarily the Tobacco Settlement Permanent Trust Account, in a \$3 billion endowment fund overseen by an 11-member Investment Advisory Committee.

CHALLENGE

Diversify Portfolio, Add Alternatives and Broaden Opportunities

Believing institutional portfolios need flexible investment policies with more allocations to alternative investments, TTSTC initially added alternative assets such as funds of hedge funds and private equity, but then sought to make a more significant change in its asset allocation approach from asset class allocation to risk budgeting.

“We knew that there were better ways to diversify a portfolio,” Ballard says. “It was frustrating to see a lot of investment managers with strategies that made sense and that were uncorrelated with equities and traditional beta sources, but in the classic asset allocation of semantically diversified 9 style boxes - large versus small, growth versus value – these managers fit none of the boxes. These were solid investment strategies, uncorrelated and great diversifiers with no place in the architecture or blueprint.”

TTSTC planned to move away from “semantic diversification” (allocating assets according to the name of the asset) by consolidating asset classes into four allocation classes and changing the nomenclature to reflect the allocation’s function and investment characteristics.

Allocation Class (Function in Portfolio)	Asset Class (Asset Type)
Market return	Equities, hedged equities
Enhanced return	Private assets like private equity and private real estate.
Inflation protection	TIPs, Core real estate
Stable return	Fixed income, absolute return strategies





By broadly defining the allocation classes, TTSTC sought to broaden the opportunity set and improve its ability to diversify the portfolio and move from a dollar- to a risk-budget allocation model.

TTSTC management knew that initiating and executing a risk budgeting process would require more sophisticated risk management tools. TTSTC began searching for a risk management system even before formally proposing the new investment strategy to the Committee. Ballard says: “If you’re going to broaden the opportunity set, you need to establish some kind of ‘ring fence’ --parameters or boundaries-- in order to control risk.”

The board quickly approved the new policy provided that TTSTC install an efficient risk management system.

Researching and Finding the Right Long-Term Risk Management Solution

As they began to research risk systems, TTSTC sought advice from investment managers and consultants and even considered having a fund of hedge funds manager provide the service.

“Initially we kind of naively thought we could select one fund of hedge funds firm and require the others to port their data into that one firm’s system; they could then aggregate it and provide a composite view to us. Very shortly thereafter we came to realize, ‘they’re not sharing their secret sauce with a competitor’,” Ballard says.

Because of disclosure issues, TTSTC decided to focus its search on in-house systems. After meeting the Riskdata team at a Global ARC event, they vetted the system through their funds of hedge fund managers. TTSTC evaluated other leading systems and chose Riskdata’s FOFiX product for cross-asset class investments risk management.

Ballard explains that although FOFiX was initially adopted by funds of hedge funds, “We are essentially a fund of funds of funds, so it’s a totally appropriate choice for us.”





SOLUTION

Riskdata's FOFiX

FOFiX's ability to handle their high level, strategic approach to risk management and portfolio implementation factored heavily in the TTSTC decision, but the Riskdata returns-based system also compared favorably with holdings-based systems when they considered their business and operational needs.

At the portfolio level, Ballard says, "We want a general sense of where we are and a general understanding of the risk exposures in the portfolio." You can't (let yourself) get a false sense of total confidence from any of these systems. They are indicators. None are going to be perfect. You are looking at today's holdings and risk, and those are subject to change if you have active managers."

At the business level, "When you look at the holdings-based systems, they're a lot more expensive. You have to be willing to take on the data management issues. You should scrub the data before loading the system or you risk polluting it. So, you have to take on that task and expense, including headcount," says Ballard. Considering license fees and additional data costs, you have to ask yourself whether that's worth it," Ballard concludes.

Speed of implementation also factored into the decision. Another fund TTSTC knew of started the process of choosing a risk management system at the same time as TTSTC, but its choice of a holdings-based system led to vastly different implementation results.

"It took them over a year to install the system," says Sachnowitz. "It took us maybe a couple of months. They started the process at the same time as us, and we were using our system while they were still trying to install their system."

Significant Investment Process Improvements

Although business and operational factors influenced the decision to select Riskdata, Ballard lists a number of benefits, starting with having the ability to reorganize the portfolio using the risk-budgeting approach, to indicate that TTSTC has clearly benefited most from the improvements to their investment process.

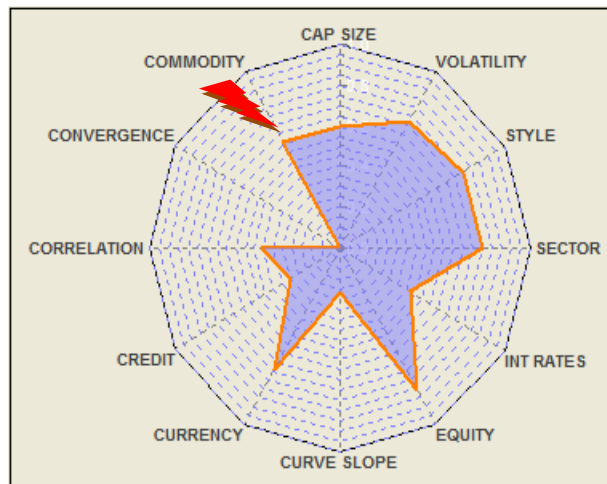
"We feel like we have moved from a fluoroscope (the system that pre-dates the X-Ray) to a Magnetic Resonance Imaging (MRI). With a fluoroscope you can see the skeleton and maybe a





broken toe. With an MRI you can slice it into smaller views and see changes at a much more accurate level. We now can see the risk exposures in our system.”

Continuing, Ballard offers an example. “You decide not to have an allocation to commodities. Then you run the portfolio through our MRI – the Riskdata system – and suddenly you see a giant commodities exposure you didn’t know you had. Unless you were able to extract the risk exposures from the portfolio, you wouldn’t know the degree to which this independent bet was on. “Suddenly you have a big commodity risk exposure and now you can control it. You can’t control it unless you can see it. You now have a methodology for measuring it and can take action, such as an overlay, to reduce exposure. We’re excited about that for the future. “ Now that we’re able to see our risk exposures, we can develop strategies and methodologies for better controlling those exposures – synthetics, options, futures – and balancing the risks better.”



Graph: FOFiX risk profile factor exposures of portfolio of Hedge Funds identifying large exposure to commodities as of May 2008

Robust Metrics Refine the Process of Risk Budgeting

- **New Risk Limits:** After having some months of experience using the system, TTSTC revised the investment policy to “bake in” some risk limits that hadn’t been in place before. Sachnowitz says, “We are now able to monitor and measure risk and put controls around it, and document it in our policy.”
- **Risk Measures:** In addition to Factor exposures, a Marginal VAR allows TTSTC to calculate and present two pie charts, one using the old “semantic allocation” and another using the current allocation, to see where risk is concentrated so they’re in a better position to diversify it.





- **New Insights:** The system calculates each investment manager's contribution to total risk, allowing TTSTC to establish limits on the total amount of risk allocated to any one manager.

Quantitative Tools Support Manager Selection and Portfolio Construction Decisions

One of the key benefits of Riskdata's FOFIX, according to Sachnowitz, is manager selection. Riskdata enables TTSTC to take managers' return streams, analyze various combinations of managers and allocations, compare them against numerous types of strategies and derive a portfolio more likely to produce the results they want. Rather than just selecting managers they like through a qualitative process, TTSTC executives have added a systematic element that helps them assess the true diversification of their managers.

Having recently used this capability in a search for new fixed income index managers, Ballard remarks, "Now we think we have come up with a group of fixed income managers that combine well with each other and that when combined, will bring down the overall portfolio risk."

Better Understanding, Better Communication

Ballard adds, "We have made a huge leap forward from the fluoroscope to the MRI and we can see the risk exposures, so it's interesting when we talk with managers." TTSTC analyzed the returns of one global macro manager, using Riskdata to produce a spider diagram that identified the fund's sensitivity to certain factors. Although the manager claimed his fund was broadly diversified and uncorrelated, "the graph showed that they had all these weird exposures."

The benefit, Sachnowitz says is that "reports lead to a better dialogue with managers and prospective managers. Using the system, we ask better questions and better understand what the managers do."

Portfolio Constructed with Hedge Funds of Funds and Analyzed by Riskdata Weathers 2008 Market

TTSTC chose to construct its portfolio with hedge fund of funds, using risk budgeting to ensure robust risk control and diversification. "We don't want the managers stepping on each other or offsetting each other's bets," says Ballard. He values having the extra protection and diversification of funds of funds because, if an unforeseen blow up occurs, "It doesn't run us into a ditch." With 250 hedge funds in the underlying portfolios and approximately 60% of the fund's assets in top 50 hedge funds, Ballard





is satisfied: "It's not quite as diversified as it sounds, but it's pretty darn diversified, and in this market, it's great to be diversified."

Their approach worked well in the turbulent 2008 markets. Ballard says the new asset allocation implemented with Riskdata gave them better downside protection and made them "the best performing fund of the major Texas state funds." In a nationwide database compiled by Northern Trust, TTSTC performance ranked in the top 6% of public funds greater than \$1 billion for calendar year 2008 and in the top 3% in the first quarter of 2009.

Riskdata Helps Meet Fiduciary Responsibilities

Riskdata has also allowed Ballard to meet fiduciary responsibilities.

"As a fiduciary you've always got to be able to stand behind your decisions," says Ballard. "It's part art and part science, part accounting and legal, so you need to be able justify and document the allocation and selections decision. Riskdata is a great tool to help us do that."

Leading a public agency compels Ballard to limit costs by keeping a small staff and relying on outside advisors and managers. However, he plans to hire a dedicated risk manager with quantitative skills in order to benefit fully from the risk system. He says it has, "a lot more depth that we have yet to plumb."

RESULTS

Riskdata Now an Important Partner in Achieving Ambitious Lifetime Investment Goals

"Over time," Ballard says, "we're constantly trying to take risk and volatility out and develop a more predictable return stream. Ultimately the brass ring - I think it will be constantly out of reach, but think it's what we're all striving for - is to build a model that will produce 8% year over year over year, consistently, with no volatility. Everyone's got a target return of 8%, 'plus or minus 10'. We're all working toward the same thing, we are all trying to get more for less - more return for less risk - that's the ultimate objective. That's the wonderful thing about this business. You can work toward that your whole life. Riskdata is part of the engine we need to achieve that result."

Choosing Riskdata FOFiX and integrating the system into their investment process has given TTSTC an instrumental partner for attaining its long-term and lifetime investment goals.





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About RISKDATA:

Riskdata is a leading provider of quantitative risk management tools developed for the hedge funds, funds of funds, mutual and pension funds and asset managers. Riskdata is the only risk control developer that manages both systemic and specific risks. Combining the expertise of professional daily market watchers with state-of-the-art software, Riskdata provides solutions for a sustainable asset growth. Headquartered in Paris, France with regional offices in New York, London and Moscow, Riskdata is servicing over hundred and fifty top financial and investment institutions worldwide.

