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# **A Brief Review of Institutional Investment Strategy and How We Might Change It**

by

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## **Overview**

*Recent market developments have forced institutional investors to rethink their understanding of risk and how they manage it. Given the growing complexity and globalization of the investment markets, there is recognition that structuring portfolios strategically using only the asset class framework is becoming obsolete. In its place, investors are organizing their portfolios, in whole or in part, by risk classes. This paper examines how the markets have shaped our thinking on this issue and how investors are implementing this approach.*



## Introduction

2009 marks the final year of the 21<sup>st</sup> Century's first decade. It is also the fourth decade of an amazing journey for institutional investors.

In looking back over the last four decades, one might rightly conclude that the 1970s and the 2000s were very disappointing chapters surrounding a two-decade run of above-trend investment times (see table below).

### Annualized Returns – Various Investment Class Benchmarks 1/1/1970 – 3/31/2009

	Cash	Fixed Income	US Equities	Non US Equities	Real Estate	Priv. Eq	65/35	CPI
<b>Nominal Returns</b>								
1970s	6.5	6.9	5.9	10.1	10.0	8.8	7.9	7.4
1980s	9.2	12.4	17.6	22.8	10.5	14.7	15.8	5.1
1990s	5.1	7.8	18.2	7.3	5.7	25.7	12.8	3.0
2000s	3.2	6.1	(4.7)	(3.0)	8.7	(10.9)	1.5	2.5
All 4 Decades	5.9	8.2	8.9	9.0	8.7	8.7	9.4	4.4
<b>Real Returns</b>								
1970s	(0.9)	(0.5)	(1.5)	2.7	2.6	1.4	0.5	
1980s	4.1	7.3	12.5	17.7	5.4	9.6	10.7	
1990s	2.1	4.8	15.2	4.3	2.7	22.7	9.8	
2000s	0.7	3.6	(7.2)	(5.5)	6.2	(13.4)	(1.0)	
All 4 Decades	1.5	3.8	4.5	4.6	4.3	4.3	5.0	
<b>Risk Premium Returns (vs. Cash)</b>								
1970s		0.4	(0.6)	3.6	3.5	2.3	1.4	0.9
1980s		3.2	8.4	13.6	1.3	5.5	6.6	(4.1)
1990s		2.7	13.1	2.2	0.6	20.6	7.7	(2.1)
2000s		2.9	(7.9)	(6.2)	5.5	(14.1)	(1.7)	(0.7)
All 4 Decades		2.3	3.0	3.1	2.8	2.8	3.5	(1.5)
<b>Risk Premium Returns (vs. Core Fixed)</b>								
1970s	(0.4)		(1.0)	3.2	3.1	1.9	1.0	0.5
1980s	(3.2)		5.2	10.4	(1.9)	2.3	3.4	(7.3)
1990s	(2.7)		10.4	(0.5)	(2.1)	17.9	5.0	(4.8)
2000s	(2.9)		(10.8)	(9.1)	2.6	(17.0)	(4.6)	(3.6)
All 4 Decades	(2.3)		0.7	0.8	0.5	0.5	1.2	(3.8)

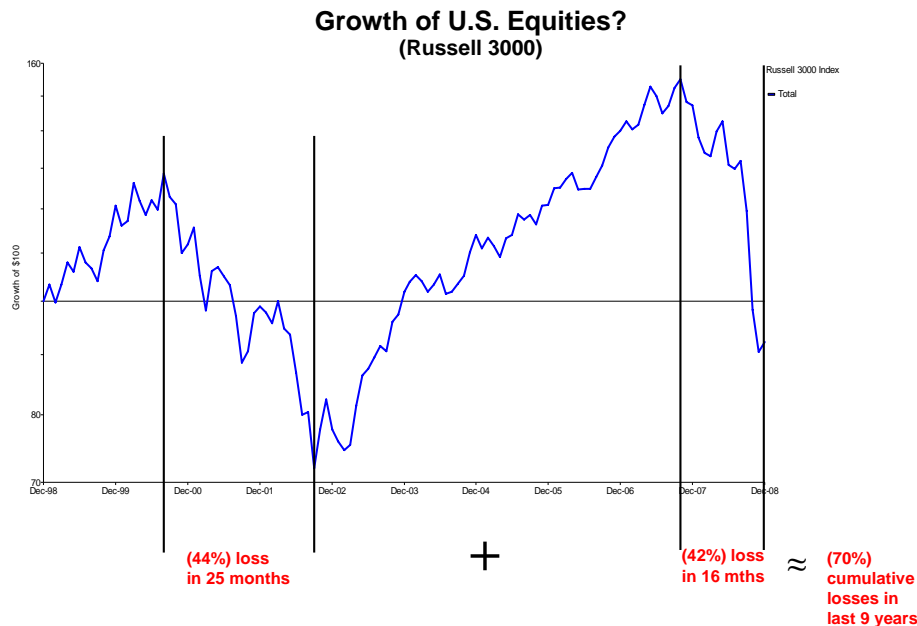
This forty-year period represents, in effect, the complete learning period for the institutional investor community. While institutional investing was clearly in place prior to this time, the last four decades represent a period when the application of modern financial economic theory took hold and had an incredibly large impact upon the global investing community. Keeping these thoughts in mind, the results in the table above presents a few key findings:

- Investors were rewarded with positive real returns;
- Investors were rewarded for taking risk;
- The distinctions across real returns and risk premium returns among the various classes are virtually indistinguishable;



- Finally, diversification worked. A basic 65% equity-oriented/35% stable-oriented portfolio<sup>1</sup> produced higher absolute, real, and risk premium returns than any single isolated class, while incurring risk that was between equities and bonds.

The last decade, however, has caused major turmoil across the investment markets. While the recent 2007-2008 investment crisis is garnering the lion's share of headlines, the equity bear market of the early 2000s still remains fresh in our minds. Putting these two equity bear markets together, equity-oriented investors have experienced an overwhelming destruction of investment capital over the last ten years (see chart).



To put this in perspective, based on 40 years of history (since 1969), when the 2001 Internet-bust caused the domestic equity markets to decline by (11.9%), it was considered a once-in-a-decade event. Then 2002 unfolded and domestic equities declined by another (22.1%). By itself, 2002 was a once-in-a-generation event. The statistical probability of 2001 and 2002 occurring consecutively translates to a *near-impossible* occurrence. Then, within a period of six years, 2008 produced a (37.0%) equity decline. This result, on its own, should only occur once every 238 years or so, based on normal probabilities (upon which modern portfolio theory relies). Thus, within the space of eight years, there have been three years of outlying results that were expected to occur only once in multiple investment generations. The only modern (post-1970) period that approaches the last eight years of equity investing occurred in 1973-1975, with 1975 actually producing outlying *positive* results.

These pictures of the recent past should begin to raise some questions about whether institutional investors should continue to rely heavily upon the public market equity risk premium (and its variants) to the degree that they have in the past. Volatility that significantly exceeds even the widest range of reasonable expectations (and, therefore, being “unprecedented”) is no friend to the investor, regardless of the investment horizon. In fact, this volatility is a leading contributor to other risks that, from time-to-time, can place severe pressure upon a pension system. During periods of market dislocation, liquidity risk, employer funding risk, and even political risks become much more apparent. In this paper, we begin to explore other strategic options that investors are considering to deal with the public equity risk premium volatility issue.

<sup>1</sup> The 65/35 portfolio consists of 40% U.S. Equities, 10% Non-U.S. Equities, 5% Private Equity, 10% Real Estate, 33% Fixed Income, and 2% Cash. Assumed to be re-balanced annually.



Will the next decade prove radically different from the prior four decades? Or, will it be more a collage of prior outcomes? It is impossible to know. One lesson to possibly apply, however, is that the interval between major market crises might be shortening. The strategic ideas surveyed later in this report begin to take this consideration into account.

### A Brief Discussion of Wealth Creation through Investing

Albert Einstein once said, *“The most powerful force in the universe is compound interest.”*

We’ll take Einstein at his word. But while true, Einstein’s statement will only translate into huge gains in wealth if the compound interest return is stable and positive. If these assumptions hold, the results can prove to be truly amazing. However, once return *volatility* enters the picture, compounding returns can still be a powerful force, but that force might be compounding in the wrong direction, destroying, rather than creating, wealth. Thus, investors often face a classic dilemma: Should we seek to create wealth from higher, but more volatile investment returns, or with lower, more stable returns?

To begin studying these questions let’s examine the returns of two investment portfolios below. Which portfolio do you think will produce the highest level of dollar wealth?

#### Return Comparisons – Two Hypothetical Portfolios

Year	Annual Returns	
	Steady Eddie	Levered Larry
1	10.0%	30.0%
2	6.0%	51.0%
3	8.0%	-8.0%
4	0.0%	24.0%
5	16.0%	-35.0%
Arith. Avg. Return	8.0%	12.4%

Notice that Levered Larry’s average returns are 4.4%/year higher than Steady Eddie’s. In the investment world (where competitive positions are determined by increments of 0.01%, or 1 basis point), this difference is huge. In addition, notice that Levered Larry produces very high double-digit returns in three of the five years, but also produces one huge negative return in Year 5. In contrast, Steady Eddie’s returns are dull. In only two of the five years did Steady Eddie produce double-digit rates of return. In three years, Levered Larry’s returns were multiples of Steady Eddie’s. Where Steady Eddie did shine was when principal protection proved valuable (Years 3 and 5).

As it turns out, even though Levered Larry’s arithmetic average return was over 1.5-times larger than Steady Eddie’s, Steady Eddie created modestly more wealth than Levered Larry once the five year horizon is completed (see table below, next page).



### Compounded Wealth Creation Comparisons – Two Hypothetical Portfolios

Year	Wealth Path		Annual Gains/Losses	
	Steady Eddie	Levered Larry	Steady Eddie	Levered Larry
beg value	50.0	50.0		
1	55.0	65.0	5.0	15.0
2	58.3	98.2	3.3	33.2
3	63.0	90.3	4.7	-7.9
4	63.0	112.0	0.0	21.7
5	73.0	72.8	10.1	-39.2

Ironically, from the end of Year 1 through Year 4 Levered Larry’s wealth is significantly greater than Steady Eddie’s. Then Steady Eddie makes up all this lost ground in one year (Year 5). Interestingly, the gain and loss pattern of the two investors vary dramatically. Steady Eddie never posts a loss and gains are consistent but modest, while Levered Larry posts significant gains and losses in different years.

Instead of starting with \$50.00 as Steady Eddie and Levered Larry do, let’s multiply that by \$1 billion. Now we have a \$50 billion portfolio to begin with and it will grow to approximately \$73 billion in five years. From a long-term planning perspective, which journey should we choose to take? To the extent we must make contributions into this portfolio over time, the Steady Eddie portfolio would likely prove advantageous. While we would likely plan to make contributions every year with this portfolio, at least we have a higher confidence of what those contributions will be and the surprise factor is kept to a minimum. Using the Levered Larry portfolio, we might begin making contributions, but by the end of Year 2 we might be so happy with our position (the portfolio is now worth \$98 billion versus \$50 billion two years ago) that we might conclude that future contributions are no longer necessary. So, we cease making contributions, only to get hammered in Year 5. So, as a result, from the *portfolio’s* perspective, not only did the original wealth grow at a slightly slower pace, there is a significant chance that the contributions meant to support the portfolio were much lower as well.

Given that the scenario above is similar to what plan sponsors, in general, have gone through over the last decade, PCA has worked closely with its clients over the last three years to begin developing strategies and policies seeking to stabilize their investment return patterns and focus those return patterns toward attaining specific client objectives. Once these objectives are identified, mapping expected returns and risks around those objectives becomes critical. As a result, investment risk management has become a significantly higher priority than in the past. One practical outcome of these new efforts has been the introduction of new risk/objective-based investment classes into an institutional portfolio. The next section summarizes a few of these major trends by examining the investment practices of a handful of leading large-scale global public pension funds.

### Risk Allocation versus Asset Allocation – Shifting the Strategic Framework

The traditional framework that the investment community has relied upon during the last forty years provided a systematic process for managing risk by guiding investors to allocate investment capital across a variety of asset classes. While this process has proven helpful and provided an appropriate level of intuition to the investment process, reliance upon the traditional framework has, over the last two investment cycles, fallen severely short of expectations to protect investors’ portfolios. One major cause of this failure is that several of the key assumptions upon which the traditional framework rests have not adequately reflected the reality of the markets that they were supposed to represent. For example, one key assumption



is that different asset classes represent exposures to different risks (i.e., equities respond to one set of risks while bonds respond to another set of risks). The recent market crises have shown that different asset classes (or major segments of asset classes) can, in fact, *share* the same risk exposures. In addition, the traditional framework assumes that, over time, returns of asset classes do not exhibit trending characteristics. This assumption is counter to the reality that several asset classes' returns have exhibited dramatic cyclical behavior over the last several years. The traditional framework also assumes the diversification capabilities (i.e., correlation) of one asset class versus another remains stable over a predetermined investment horizon. In fact, during periods of market stress (when diversification is supposed to be most helpful), many assets classes actually moved *in tandem* with one another, providing little, if any, diversification benefit at all.

Following the equity bear market of the early-2000s, the plan sponsor community began considering changes to try to stabilize long-term investment return patterns. Several forward-thinking plan sponsors began developing new investment frameworks to address these concerns. These new frameworks attempt to address two main areas. First, given the growing complexity and globalization of the investment markets, there is recognition that structuring portfolios strategically using only the asset class framework is becoming obsolete. In its place, portfolios are now, in whole or in part, being organized by *risk classes*. These risk classes may represent key underlying risks that a pension system faces, or they may represent specific objectives of the overall plan. Organizing by risk class instead of asset classes, allows the plan sponsor to position the portfolio for major risks that may confront the markets in the future. Second, there is growing recognition that it might prove highly useful for investors to plan for specific expected risk events. For example, today there is significant concern about the risk of inflation in the coming years due to the unprecedented amount of deficit financing incurred by the United States (and other governments around the world) in 2008/2009. What are plan sponsors doing to prepare their portfolios for this potential major systematic risk? Should they structure their portfolio strategically to take this risk into account? Should they somehow take out "insurance" against this risk? The examples below highlight how a few large-scale plan sponsors have begun to tackle these issues from an investment policy/strategy perspective.

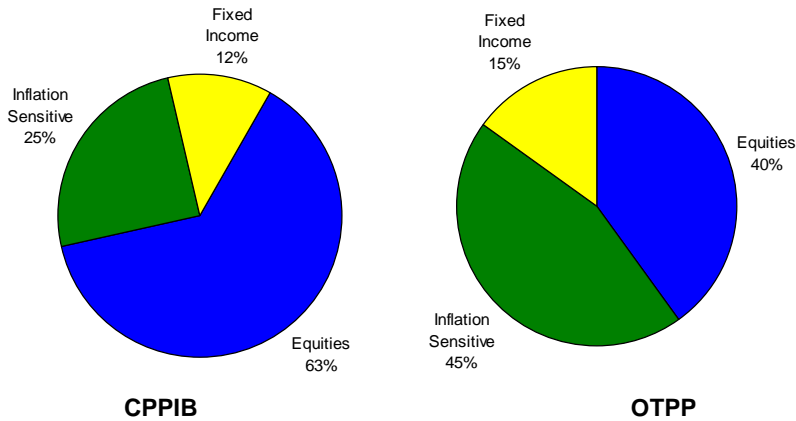
#### CPPIB (Canadian Pension Funds) and OTTP

Canadian Pension Plan Investment Board (CPPIB) and the Ontario Teachers Pension Plan (OTPP) are two of Canada's largest pension funds. As of 12/31/08, the CPPIB portfolio had a market value of approximately \$100.3 billion and the OTTP had a value of approximately \$71.4 billion. Both plans have developed a reputation in the institutional market place for being leaders in developing real return/inflation-linked investment programs, particularly with respect to infrastructure investing. OTTP, in particular, has over \$7 billion invested in infrastructure and has a decade of experience of investing in this asset class.

From a strategic allocation perspective, both CPPIB and OTTP have similar structures (see chart, next page).



### Comparison of CPPIB and OTPP Strategic Allocations

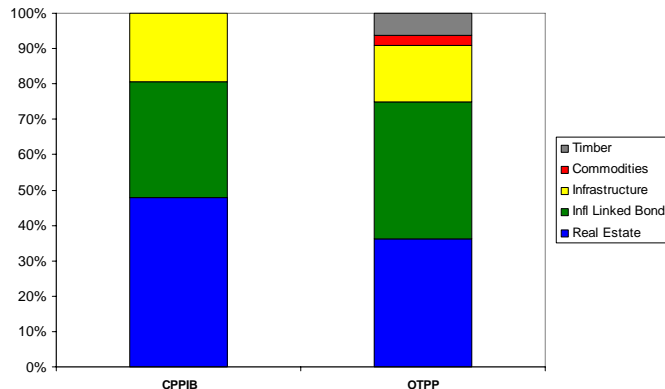


Source: CPPIB and OTPP websites

Interestingly, each fund has only three strategic classes. Two of the classes could be considered asset classes, while the third is a more generalized, risk/objective-oriented class. Each of the three classes is broadly-defined, reflecting broader over-arching objectives for each class. For example, there is no separate strategic breakout of public and private equity, nor is real estate viewed as a separate strategic class. Both funds have one class, Inflation Sensitive, which makes no reference to a specific asset type. Also of note is that, while the allocation to the Inflation Sensitive class varies between the two plans, in both cases the allocation to this class is a major component of the overall portfolio. In OTPP’s case the Inflation Sensitive class garners the largest allocation of assets.

Specific asset classes feed up into the broader strategic classes. For example, continuing with the Inflation Sensitive class, each fund’s Inflation Sensitive class has numerous asset sleeves (see chart below). While this particular strategic class is focused on a specific objective (i.e., maintaining purchasing power over time), the structure of the class is customized by each specific fund depending on that fund’s preferences and unique characteristics. Such strategic customization is not normal practice under a more traditional asset allocation framework.

### Comparison Asset Class Structures of the CPPIB and OTPP Inflation-Linked Class



Source: CPPIB and OTPP websites

### ATP (Denmark’s Leading Pension Fund)

As of 12/31/2008, ATP’s investment portfolio had a value of approximately \$137 billion. In 2008, ATP concluded a system-wide multi-year major risk management integration effort. One



result of this multi-year project is the development of an investment portfolio that is fully risk class-oriented at the strategic framework level (see table below).

**ATP Strategic Allocation – 3/31/2009**

	<b>Risk Classes</b>	<b>% Allocation</b>	<b>Underlying asset sleeves</b>
<b>Beta Portfolio</b>	Nominal interest rate risk	50.5	Government, mortgage bonds
	Credit risk	12.3	Corporate bonds, HY bonds, EMD
	Equity-oriented risk	10.5	Public equity, private equity, venture capital
	Inflation-related risk	24.7	Infl-linked bonds, real estate, infrastructure
	Commodity-related risk	2.0	Commodity index bonds
<b>Alpha Portfolio</b>	Long/short strategies	0.0	Long/short strategies
	<i>Total Allocation</i>	<i>100.0</i>	

Source: ATP Website

Under this framework, ATP now orients itself toward strategically allocating across various risks (i.e., a risk budgeting exercise) rather than allocating across asset classes.

There are several other interesting features of the ATP framework. First, ATP has elected to separate the added value component (Alpha Portfolio) from the other strategic components. A critical assumption and concern with this approach is that the strategies employed under the Alpha Portfolio, in aggregate, exhibit very little if any, dependency on the risk factors driving the Beta portfolio. In fact, alpha strategies produced a very poor record of market independence during the 2008 crisis.

A second feature of the ATP framework is that the risk class framework allows decision makers to express views about which risks to hedge and protect against. For example, ATP’s risk allocation emphasizes exposures toward certain interest rate volatility risks and inflation risks while de-emphasizing taking credit and equity-oriented risks. As with other European investors, ATP’s pension liabilities are marked-to-market on a more continuous basis than required by their U.S. public fund counterparts. This dynamic causes ATP to focus more on interest rate risks than the typical U.S. public plan sponsor. Nevertheless, ATP’s inflation protection exposure is more than double its equity risk exposure. Such an emphasis is explicit and can be controlled in a much better manner than the traditional asset-based framework allows. In addition, this emphasis on inflation sensitivity (while minimizing other risk exposures) reflects ATP’s specific goal and mission of granting cost-of-living benefits to its participants consistently over time.

Also, note how the asset sleeves are organized under their risk-based strategic framework. For example, fixed income assets are now divided across three different strategic risk-based classes. This asset class splicing is a major feature of a risk-based approach and is counter to the organizational structures that have developed under the asset-based approaches. As highlighted above, it took several years for ATP to get to this point. Nevertheless, specific assets are now organized in a manner that better reflects their shared risks and/or objectives.

Finally, in order to implement adjustments among the risk classes in a timely manner, ATP and its staff utilize the derivatives markets across their entire portfolio. Derivatives are utilized to both transfer risk exposures from one class to another, as well as mute overall risk exposures within the classes themselves.



### CalPERS and CalSTRS

As of 12/31/2008, CalPERS' investment portfolio had a value of approximately \$183.3 billion while CalSTRS's investment portfolio totaled \$125.7 billion.<sup>2</sup> Over the last two-to-three years CalPERS has moved to broaden its strategic allocation. First, CalPERS adopted a global equity framework, consolidating its domestic equity and international equity portfolios and adopting a broader global benchmark. In addition, CalPERS approved the funding of an Inflation-Linked class that consolidates the commodities, timber, agriculture, and infrastructure sub-asset classes (see table below).

#### **CalPERS Strategic Allocation – 5/7/2009**

	Target %	Actual %
Cash	0	4
Global Fixed	19	27
Global Public Equity	56	44
Private Equity	10	12
Real Estate	10	11
Inflation-Linked	5	2
<i>Total</i>	<i>100</i>	<i>100</i>

Source: PCA

This approach, while currently smaller in scale versus the above-referenced Canadian and European funds, is consistent with making a similarly-structured incremental move toward utilization of risk-oriented/objective-oriented classes.

CalSTRS has moved deliberately in considering and adopting one-or-more risk/objective-oriented classes. During its 2009 asset-liability study (which is currently in progress), CalSTRS has approved the consideration and analysis of an Absolute Return strategic class. If approved, this class would likely contain initial allocations in infrastructure and inflation-linked bonds and is expected to evolve to include other sub-class components.

In addition, both CalPERS and CalSTRS are in the midst of major refinements to their investment risk management procedures. The long-term expected outcome of these refinements is to have a process that allows these funds to better identify a portfolio's risk exposures and to adjust the portfolio accordingly. Longer-term this could lead to investment policies that are more analogous to the ATP framework.

### South Carolina Retirement System

The South Carolina Retirement System Investment Commission (SCRSIC) manages approximately \$25 billion on behalf of the State's retirement systems. In early 2009, the SCRSIC was recognized nationally for making significant strategic adjustments to its investment structure. Many of these adjustments reflected the move from a somewhat obsolete three-class domestic-only structure that had been in place historically, to a more diversified structure containing a very broad array of U.S. and non-U.S. investable classes.<sup>3</sup> In addition, the SCRSIC was recognized because of two other strategic adjustments it is now beginning to implement, primarily as a result of investment markets volatility:

<sup>2</sup> Sources: CalPERS, CalSTRS, PCA.

<sup>3</sup> Sources: SCRSIC Website, Money Management Newsletter, Pensions & Investments.



- First, the SCRSIC has allocated a material portion of its capital (20% - 30%) to five “strategic partner” investment management groups. These strategic partners have the flexibility, with SCRSIC’s oversight, to move among multiple asset classes in seeking to deliver high risk-adjusted returns. Within their mandates, several of the strategic partners are expected to invest significantly in non-traditional investment categories to bolster investment returns. The strategic partners will also have the flexibility to utilize a very wide spectrum of investment tools, including the derivatives markets, long/short investment techniques, etc.
- Second, the SCRSIC has developed policies and procedures in their investment process that allow for a significant amount of tactical flexibility. The flexibility is accomplished by (i) employing an implementation beta-overlay process that allows SCRSIC to utilize the derivative markets to gain or reduce exposure to specific investment classes long before specific specialist managers are retained or terminated from the SCRSIC line-up, (ii) committing significant capital to active tactical asset allocation strategies, (iii) providing staff with relatively wide latitude to deviate from the SCRSIC’s policy benchmark, and (iv) beginning to develop a more portfolio-wide allocation adjustment approach that would adjust the policy mix based upon SCRSIC’s views about which phase or regime the economy and/or investment markets are trending toward.

As highlighted above, SCRSIC’s innovative approaches are relatively new and have not been tested through multiple investment cycles. There is reasonable debate within the investment community about the merits and value-added capabilities of tactical allocation-oriented (i.e., market timing) approaches. On the other hand, in light of dramatic increases in market volatility, there is growing concern about the merits of adhering to a static investment mix policy. SCRSIC’s recent moves reflect this latest concern.

## Concluding Remarks

In the prior sections we have provided a brief overview recent market dynamics and how several large-scale global public pension investment funds are responding to the increased volatility in the investment markets. In all cases, these changes were initiated largely as a result of experiencing one (if not two) of the most recent equity bear markets (in addition to several other “minor” crises). In aggregate, these funds are taking the following actions:

- Shifting the emphasis towards risk allocation; asset allocation is a secondary consideration;
- Developing investment classes that serve a purpose, rather than represent an asset;
- Customizing investment class(es) to meet the stated purpose;
- Building flexible response/adjustment measures into their policy frameworks, including the broad acceptance of derivatives-based investments as risk-management tools;
- Developing risk measurement methodologies and metrics that focus on exposures to risk characteristics versus asset characteristics.

These changes are taking place because institutional portfolios have been punished severely by relying too much on one risk factor (the equity risk premium) to drive portfolio returns. This one factor punished not only the public equity asset class, but numerous other classes as well. In short, a single risk factor dominated many asset classes. In light of the more volatile and increasingly complex investment environment that the plan sponsor faces today, the goal of these changes is to re-focus the investment function back to its primary purpose: furnishing a stable mechanism for providing long-term benefits to a retirement system’s participants.