Michael C. Schlachter, CFA
Managing Director & Principal

January 30, 2013

Mr. Henry Jones
Chairman of the Investment Committee
California Public Employees' Retirement System
400 P Street, Suite 3492
Sacramento, CA 95814

Re: Consultant Review of Internal Absolute Return Strategies (ARS) Program

Dear Mr. Jones:

Wilshire has conducted a review of the internally-managed Absolute Return Strategy's ("ARS") personnel, investment process, and resources. This review was conducted as part of Wilshire's contractual requirement to periodically review all of the internal asset management functions, and included on-site visits by Wilshire to several external vendors as well as periodic conference calls and in-person meetings with the members CalPERS Staff who serve as the ARS team. We also conducted several discussions over the last year with Joe Dear, Chief Investment Officer, Eric Baggesen, Senior Investment Officer for Global Equities, Ed Robertiello, Senior Portfolio Manager for ARS, and Craig Dandurand, Portfolio Manager for ARS, to review their roles with the ARS program and the overall management and oversight process of these portfolios.

Overall, we are pleased with the quality of the personnel, systems, and processes, and believe that the Investment Committee should continue to support this internal team. Staff has discussed the possibility of a significant expansion of this program, pending the outcome of the 2013 asset liability modeling process, which may result in a significant change in required staff and other resources. This review is for the current team and the current asset size, and will be revised as future changes to the program and size of the program warrant.

As part of this review, Wilshire conducts periodic on-site due diligence with the ARS program's two external consultants, Union Bank of Switzerland (UBS) in Connecticut and Pacific Alternative Asset Management (PAAMCO) in Newport Beach, California. On-site meetings were held with UBS in 2012 and PAAMCO in 2011.

In addition, we conduct on-site due diligence with the ARS program's external fund of funds managers approximately every two years. The external managers include:

- 47° North (Pfaeffikon, Switzerland) – last reviewed 2012
- ERAAM (Paris, France) -- 2012
- Ermitage (Jersey, United Kingdom) -- 2012
- PAAMCO, formerly KBC (Singapore) – 2011
- Rock Creek (Washington, DC) -- 2012
- Vision (Hong Kong) – 2011

Comments and summaries of these external managers are included at the end for your information. While we monitor these managers on an on-going basis on behalf of the Investment Committee, this review is primarily of the internal team, process, and resources.

Summary of Conclusions

As will be outlined in the sections that follow, we believe that the ARS program is being managed in a manner generally consistent with the direction from the Investment Committee and in compliance with the ARS program's policy. We also found that the two external advisors retained by CalPERS to assist in the areas of research and portfolio management, the third-party data collector and risk aggregator (IFS), and the external fund of funds managers make a significant contribution to the overall investment process.

We should note that approximately 3 years ago, additional controls were put in place that require both Wilshire and the CalPERS legal office to verify that any new investments comply with both the ARS policy and statement of delegated authority prior to the exercise of that delegated authority. We believe that this additional control helps to insure that this program is managed per the guidelines set down by the Investment Committee. To date, this additional step has not delayed the normal investment process and has prevented one transaction that would have resulted in a policy violation a few years ago when the ARS program was reaching the upper bounds of its asset allocation range.

In our last review, we expressed concerns regarding the level of staffing within the ARS team and the oversight of this program within the CalPERS investment office. In August 2011, the SPM for ARS, who was responsible for the development of the entire ARS program since its inception, departed CalPERS. Around the same time, oversight of the ARS program was moved from the SIO for Global Equities to the CIO and the membership of the ARS Advisory Board was restructured to be more broadly representative of all asset classes at CalPERS but with a less senior membership.

In the summer of 2012, a new SPM for ARS joined CalPERS with significant hedge fund and fund of hedge funds experience, alleviating many of our concerns about this hole in the organization. The ARS advisory board has been largely disbanded, however, leaving more responsibility in the hands of the ARS team.

We also note that this review does not include any comments on the "equitization" of the ARS portfolio that was approved by the Investment Committee in September 2011. Staff will be presenting at the February 2013 Investment Committee meeting a proposal to treat ARS as a stand-alone, diversifying program instead of a "stocks-plus-hedge funds" program. Whether or not the equity overlay is maintained is an asset allocation decision that has no bearing on the management of the underlying hedge fund and funds of hedge funds portfolios. The ARS program would be managed to the same benchmark with and without the overlay, with the impact of the overlay felt by CalPERS solely at the Total Fund level.

Performance as of December 31, 2012

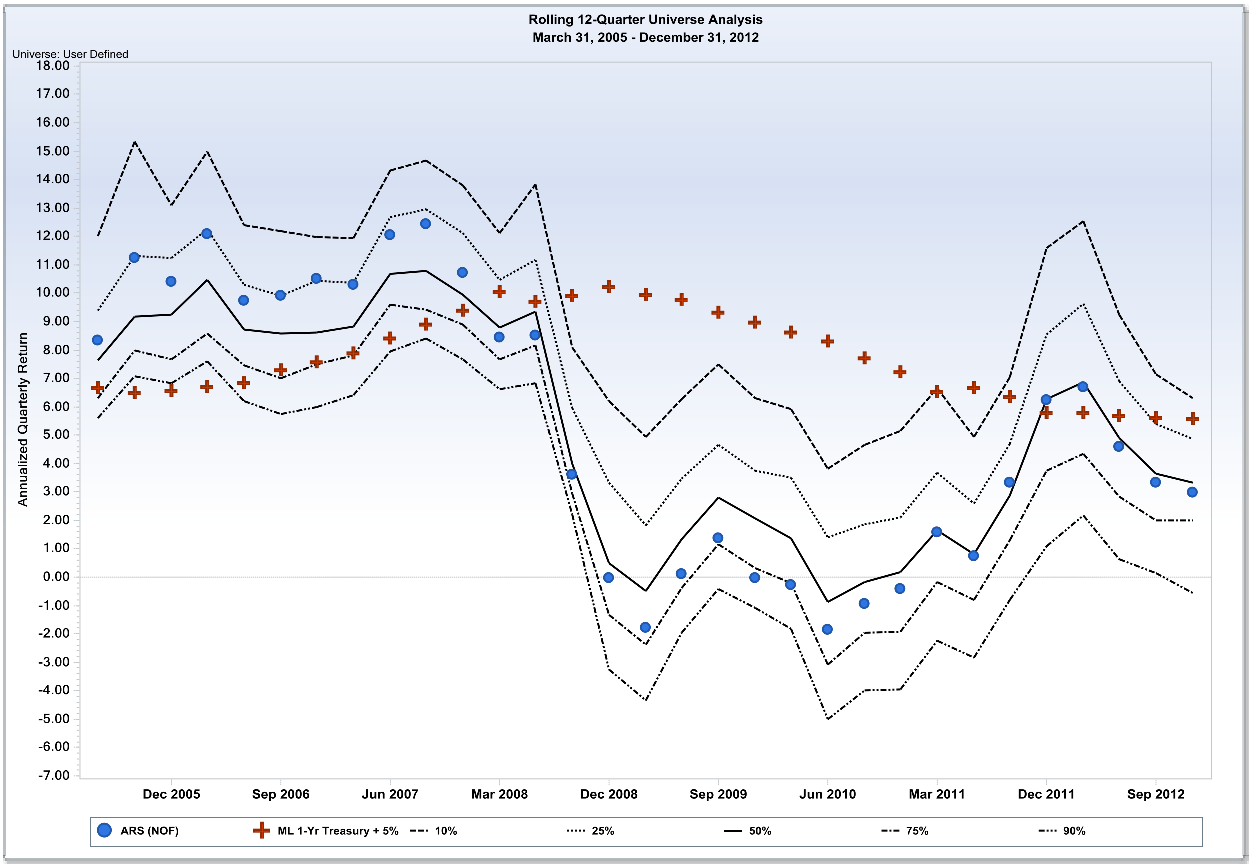
	Market Value	Qtr	1-Year	3-Year	5-Year	10-Year	5-Year Info Ratio	5-Year Up Capture Ratio	5-Year Sharpe Ratio	5-Year Sortino Ratio
Absolute Return Strategies	**5.2**	**0.6%**	**3.2%**	**3.0%**	**-0.1%**	**5.2%**	**-1.0**	**0.0**	**-0.1**	**-0.1**
ARS Policy Benchmark		1.3%	5.3%	5.6%	6.5%	8.6%				
Value Added		-0.7%	-2.1%	-2.6%	-6.6%	-3.4%				
Total Direct Investments	**3.6**	**0.3%**	**3.4%**	**4.0%**	**0.5%**	**5.7%**				
Total Funds of Funds	**1.5**	**1.3%**	**2.8%**	**0.3%**	**-0.9%**					
HFRI Fund of Funds Index		2.4%	2.9%	1.5%	-1.7%	3.6%				

During the market crash of 2007-2008, performance of the ARS program did not live up to the "absolute return" portion of the acronym, resulting in a poor return for the five year period, above, and a drag on the long term (10 year) reported results. Performance in 2010 and 2011 rebounded sharply from the lows experienced during the worst of the economic and market downturn, but then slowed again in 2012, falling 2% below the benchmark. Performance of the overall ARS portfolio is now below the benchmark in all measured and reported time periods (i.e., quarter, one year, three years, etc.). ARS has outperformed the benchmark in 6 of the 10 calendar years since inception, but only 2 of the last 6 years.

However, it should be noted that this performance is better than the HFRI universe of all Funds of Funds, which was down 1.7% for the last five years, significantly worse than the ARS program. Over three and ten year periods, CalPERS was also significantly ahead of the HFRI Fund of Funds index.

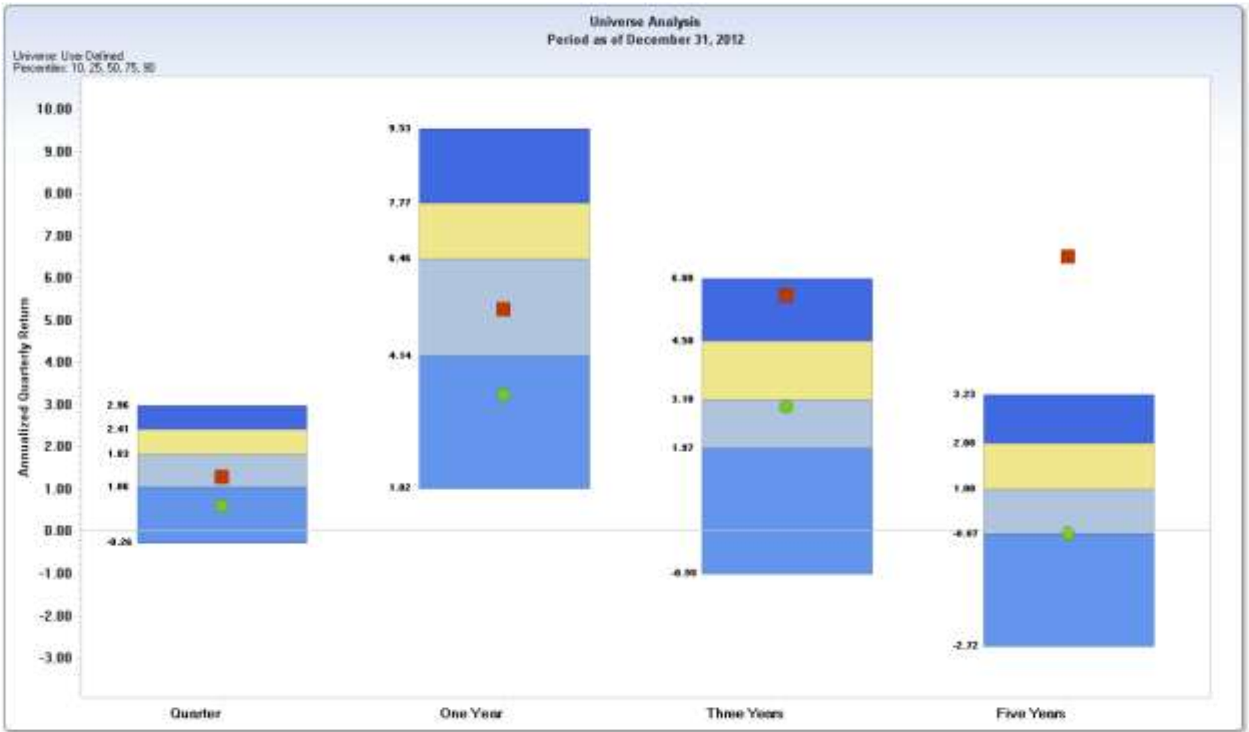
In short, while CalPERS has been unable to achieve the stated benchmark in all time periods, the performance of the ARS program has been significantly better than the external alternative. While the question of whether hedge funds as can deliver returns commensurate with investor objectives is valid and should be discussed with Staff, we see clear evidence that the internal management of hedge funds within the ARS program has been capable of performing at least as well as, if not much better than, the industry as a whole.

This level of underperformance versus target has not always been the case. As the next graph illustrates, ARS' performance was generally in the 8% to 12% range on a rolling 3 year basis prior to the beginning of the economic and market crisis that began in 2007. Since then, performance briefly crossed above the benchmark in late 2011 but has generally struggled to keep pace with the return target.



This performance, however, begs the question of the nature of the investments in the ARS portfolio. Hedge funds come in many flavors, and the fact that the performance for the HFRI index was down significantly and then rebounded strongly in virtual lock-step with the stock market in 2010 and 2011 (performance has since moderated for hedge funds, despite another strong year for equities in 2012) should not imply that every hedge fund had equally poor performance. CalPERS performance, as indicated in the rolling universe chart, above, and the "snapshot" universe chart, below, is reflective of the universe of Funds of Hedge Funds in general, but may or may not be reflective of what the Investment Committee expects of this program.

The next chart compares the performance of the ARS program to the universe of funds of hedge funds over a variety of periods. While performance over the last quarter and year has been below median, the three and five year performance is near the top of the distribution.

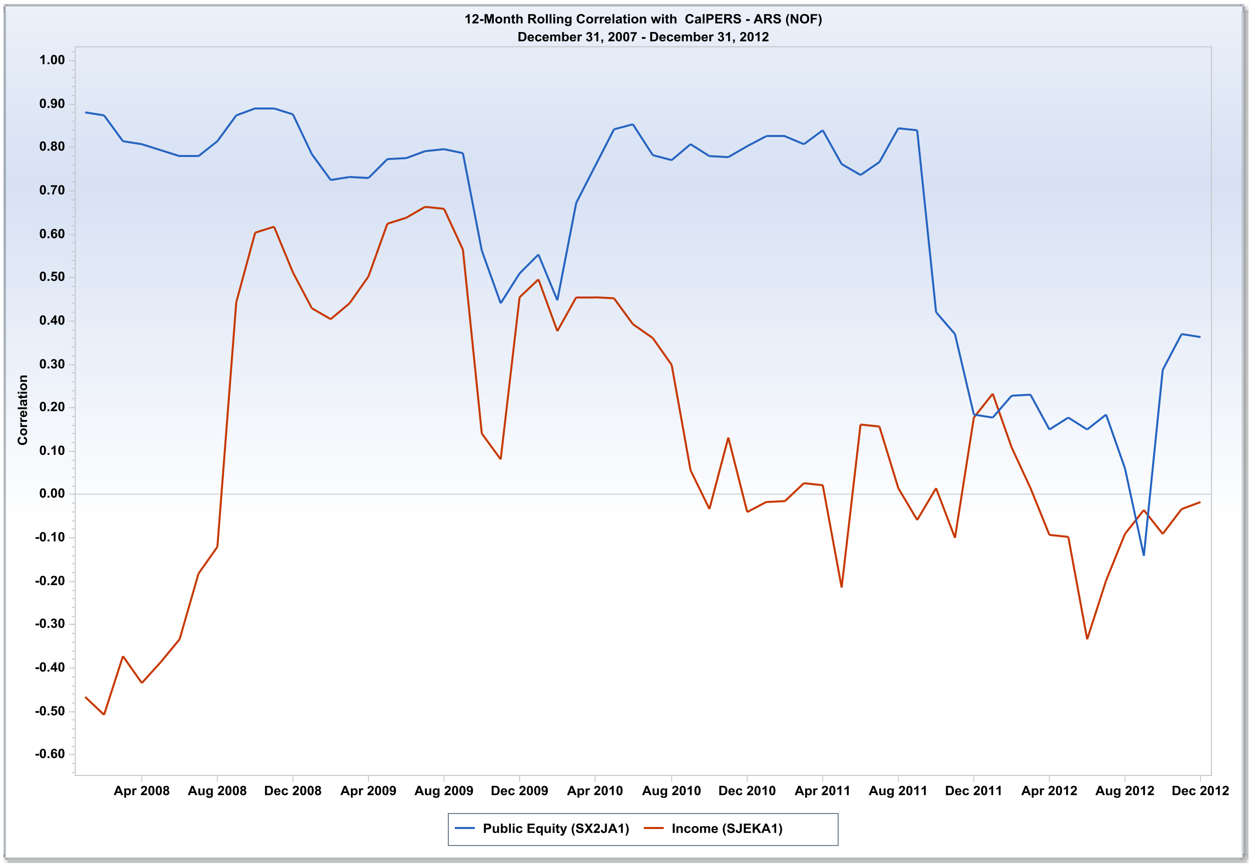


		Quarter	One Year	Three Years	Five Years
●	ARS (HOF)	0.60 (83%)	3.23 (80%)	2.86 (55%)	-0.08 (75%)
■	ML 1-Yr Treasury + 5%	1.29 (68%)	5.25 (63%)	5.67 (14%)	6.49 (1%)
	# of Products	136	131	126	114

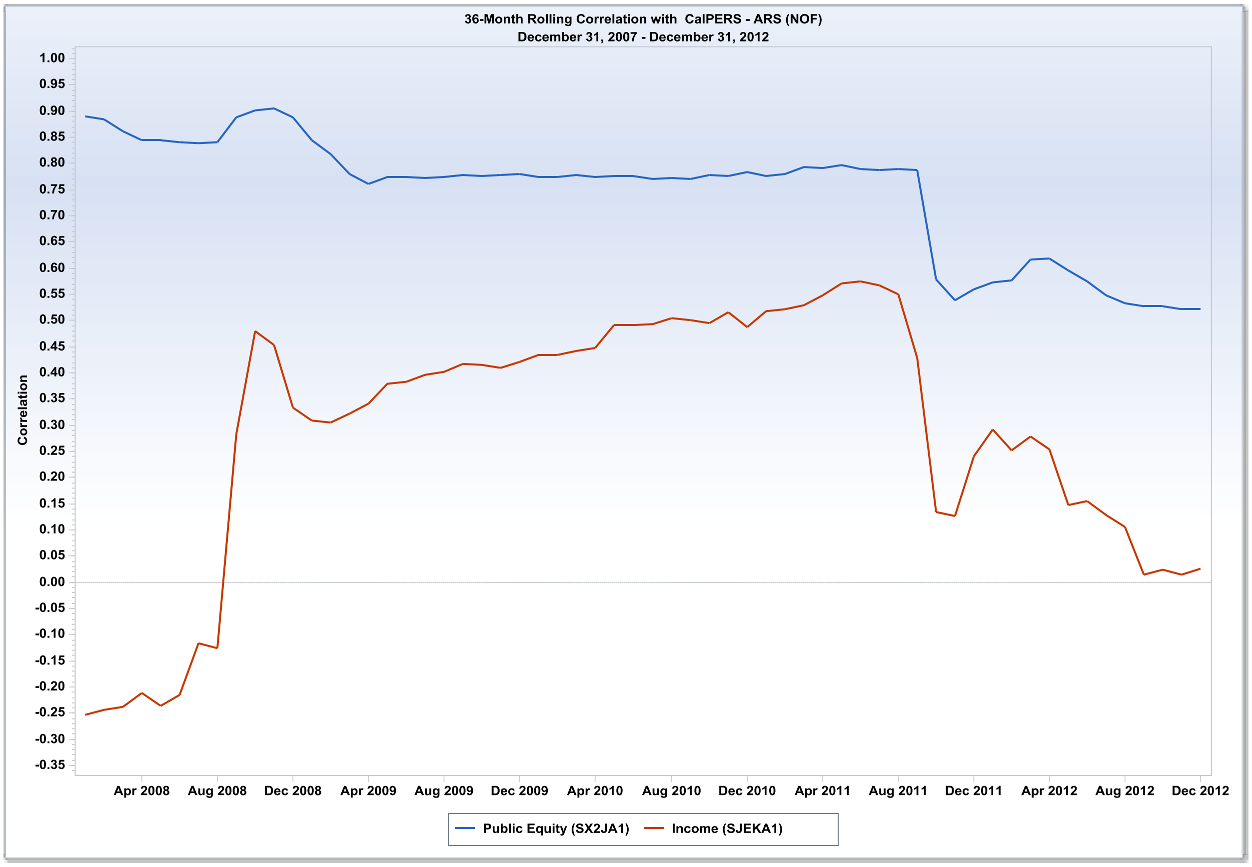
Given that the nature of this program as either a risk-diversifying stand-alone program or a return-enhancing program overlaid on equity futures is currently under debate by both Staff and the Investment Committee, the fact that this portfolio has a history of moderately tracking the stock market could be valuable if the intention is to magnify equity movements to compound returns. On the other hand, if the goal is to achieve stock market returns plus a completely differentiated source of value-added, or a stand-alone diversifying portfolio, then this program should be more oriented toward pure alpha with as little market exposure as possible.

The Investment Committee has authorized Staff to implement the equitized approach year by year and report back on the results. We support the discussion that Staff is beginning with the 2013 strategic program review over the desired nature of this program.

In the next two charts that follow, we show the rolling correlation between ARS and both Global Equities and Global Fixed Income on a 12 month and 36 month basis. The correlation between Global Equities and ARS has fallen significantly over the last year or so, indicating that ARS is increasingly serving as a diversifier again in the portfolio. Throughout the credit crisis and recovery, the correlation between ARS and Global Equities was very high, decreasing the value of ARS as a diversifier during that period of stress. The correlation between ARS and Global Fixed Income increased significantly as all assets fell during the crisis of 2008 but has now declined back to roughly zero over a rolling one year period for the last few years.



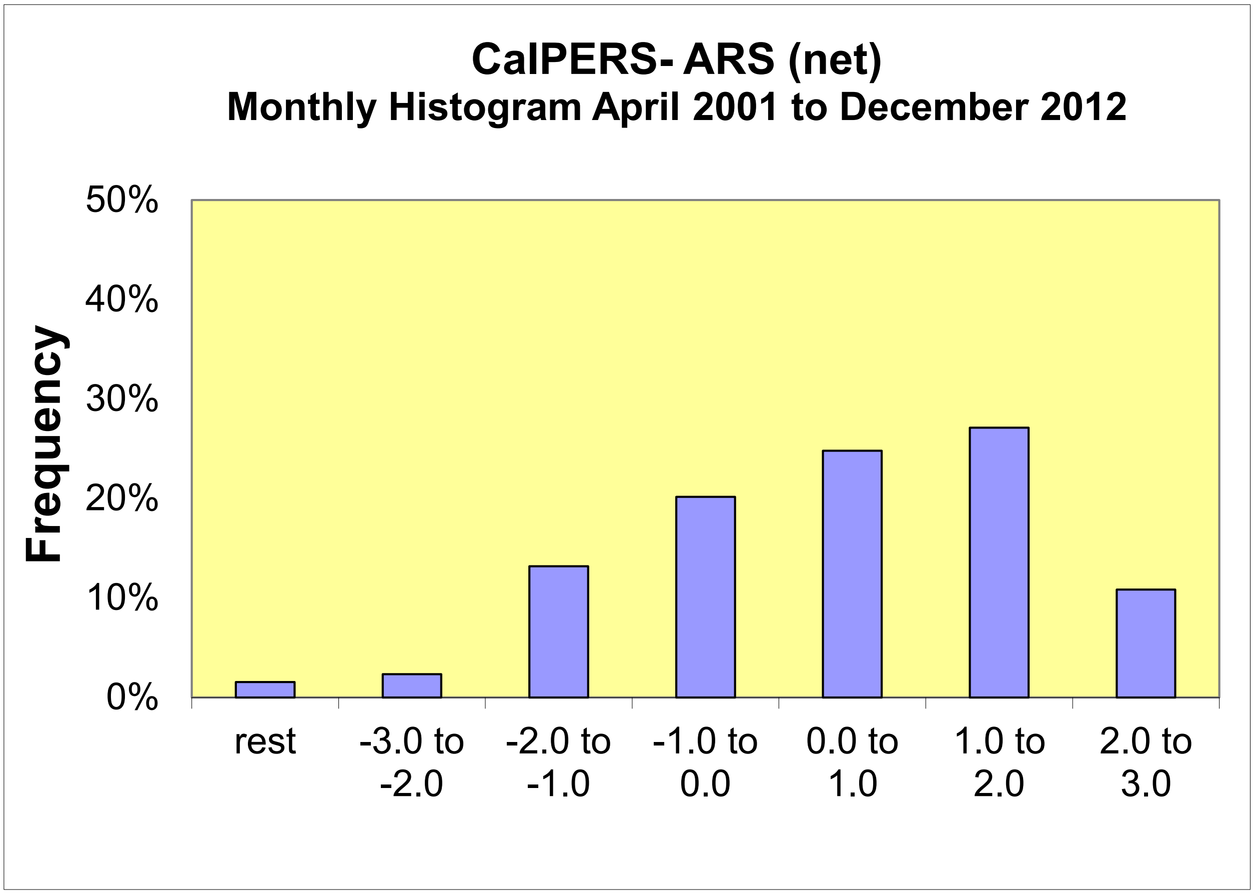
The graph on the next page also shows the correlation of ARS to Global Equities and Global Fixed Income, but on a rolling three year basis. This chart indicates that the correlation between ARS and Global Equities has been very stable over time, while the correlation with Global Fixed Income fundamentally changed during the credit crisis and has continued to increase for a few years after the crisis, before returning to historical levels.



Wilshire does not have much interaction with the underlying direct investments made by the ARS team. However, as part of our on-site reviews of the external funds of funds beginning in 2009 we review lists of the underlying funds in each of the six funds of funds we visit. In our last few program reviews, we have commented on the number of “macro”, commodity, and currency funds in the portfolios, and this exposure remains today. CalPERS Staff has defined the investment parameters for each underlying fund and approves or vetoes each underlying fund that is proposed to be included in each fund of funds. As a result, the higher risk profile of some of these investment types appears to be acceptable to Staff, as well as the potential for directional (market-impacted) movements.

The chart on the next page reflects the incidence of “tail” event in this portfolio – monthly returns of greater than +/- 2%. In our prior review, we noted that more than 20% of monthly returns have been of this extreme type. As you can see in the chart below, the rate has fallen to around 15% of monthly returns. This decrease in extreme risk events is partly a function of changes to the portfolio to decrease risk and partly a decrease in the number of monthly market shocks since the recession ended. We monitor this distribution of results on a quarterly basis in our performance reports and will report to the Investment Committee if we see a riskier pattern re-emerge.

When Wilshire first began producing this exhibit for the Executive Summary of Performance, approximately eight years ago, we told the Investment Committee that we expected the results to form a clear bell curve over time. With each passing month, the realized results have tended to form more of a proper bell curve and a positive bias in the results has appeared.



Possible Issue Regarding Impacts on Fund of Funds Performance

The ARS program is one of the most complicated of all CalPERS investment programs from a governance / management standpoint. Staff makes all decisions, within the bounds of delegated authority, but receives advice regarding any decision it makes regarding direct investments from two outside advisors. In addition, Wilshire monitors the overall program for the Investment Committee but does not review the direct investments made by Staff.

Our review of the funds of hedge funds over the last few years has repeatedly raised the question of how to evaluate the funds of funds fairly. CalPERS has the ability to veto any investment that a fund of hedge funds wishes to make. To date, this power has been used sparingly. However, given that the external funds of hedge funds have performance-based incentives, were CalPERS to reject an investment that turned out to be spectacular, the firms might have a legitimate complaint that they were unduly restricted. Granted, these firms agreed to these terms in advance, but we still wish to remind the Investment Committee of this issue should it come up in the future. At the present time, most of the funds of funds in which CalPERS invests are relatively small and therefore dependent on a good relationship with CalPERS. Were any of these funds to grow substantially, or were CalPERS to begin to invest in far larger funds, this complaint could become more likely.

Beyond performance-based fees, this question also matters for performance analysis. If a fund of funds is performing well above or below its benchmark, the credit or blame might not be assigned purely to the manager. A manager might underperform the benchmark if Staff vetoed several subsequently great investments or might outperform if Staff tells a fund of funds not to redeem its investment in an underlying manager.

Organizational Structure

Due to the number of parties involved in the ARS portfolio management process, the overall investment process is more complicated than any other internally or externally managed investment portfolio. CalPERS' Staff retains all ultimate decision-making authority in sector allocations and manager selection, but utilizes UBS and PAAMCO for strategic guidance and individual manager research. Despite the fact that the firms are in similar lines of business, they play different and complementary roles in the management of the portfolio.

Staff is charged with creating the overall strategy allocation structure within the ARS program, deciding what will be the target allocations to a variety of absolute return strategies currently in the marketplace. This allocation process is accomplished through three main steps. First, both UBS' and PAAMCO's staffs review the ARS program's sector allocations and make recommendations to CalPERS Staff as is warranted. Second, Staff models PAAMCO's and UBS' recommended portfolio allocation changes, as well as their own internally-developed asset allocation ideas, using their own internally-developed asset allocation software, an IFS system, and a system from an outside vendor to verify whether the proposed sector allocation changes will improve the expected distribution of monthly and quarterly returns. Input may also be sought from the variety of funds of hedge funds with which CalPERS has invested, or through a variety of other channels and contacts within the hedge fund industry.

Second, Staff also conducts its own independent research on sector and manager allocations, with or without input from PAAMCO or UBS, if they believe that the return distribution can be improved.

Finally, the ARS Staff produces a written recommendation for the new asset allocation, which is presented to the SPM and CIO for approval, as well as to Wilshire to confirm that the recommendation is consistent with policy.

If the internal Staff and PAAMCO team are the equivalent of the "portfolio manager", then UBS is the "research analyst". Given budgetary constraints, it is unlikely that CalPERS would be able to assemble a team of research analysts sufficiently large and skilled as to be able to monitor all of the approximately 10,000 hedge funds currently in operation, although Staff's 2013 strategic plan proposes taking the first steps toward building this capability. Until such time as a comprehensive internal team is developed, UBS' fund of hedge funds team is primarily responsible for sourcing ideas for new funds in which CalPERS may invest. Managers may be suggested either as a result of a new sector allocation or as a replacement / diversifier for a current fund. Managers recommended by UBS to CalPERS are fully screened and approved for investment in UBS' portfolios through their own due diligence process. CalPERS Staff then takes the process a step further and conducts its own independent due diligence, including on-site visits to each suggested manager, resulting in duplicative reviews of managers. Although some might argue that such a duplicative effort is a waste of time and resources, we believe that having a complete due diligence / manager evaluation conducted by both UBS and Staff allows for twice as many opportunities to spot issues and avoid investments that may have operational issues or other problems that could impact CalPERS' assets. Given the lack of governmental / regulatory oversight in the hedge fund industry, two complete sets of due diligence reviews help to protect CalPERS more than would simple reliance on the external advisor. Managers recommended by UBS are also submitted to PAAMCO and/or some of the external fund of hedge funds managers for comment, based on their expertise and familiarity with each candidate manager.

Both third-party advisors (PAAMCO and UBS) are also free to play the opposite roles as is necessary. UBS contributes to the overall portfolio management process by recommending sector allocation changes as necessary, and PAAMCO will discuss managers under consideration that are discovered/proposed by Staff. The major difference between the UBS and PAAMCO relationships is that UBS acts as a source of new manager ideas while PAAMCO serves as a "sounding board" or second opinion for Staff. PAAMCO does not source new ideas for Staff in order to avoid potential conflicts of interest by disadvantaging its asset management clients.

Finally, as mentioned above, all new managers or increased funding to existing managers are reviewed by both CalPERS' legal office and Wilshire to verify that the allocation changes being made by Staff comply with both the policy for the RMARS program and Staff's delegated authority.

Investments in Fund of Hedge Funds Portfolios

Several years ago, the ARS program added investments in European and Asian funds of hedge funds, a recognition that there are many opportunities outside of the United States that warrant investment by CalPERS yet are beyond the reach of Staff's expertise and resources even with the combined resources of UBS and PAAMCO. Although Staff is beginning to review non-US managers on its own and is considering adding the capability to begin to invest directly in European managers, without having any members of Staff based overseas it is difficult to exercise the same level of due diligence as is currently employed in selecting managers within the US on a frequent basis. As a result, despite the higher cost of investing through funds of hedge funds, (typically an additional layer of management base fees with a possible incentive fee) these overseas partnerships are still the most effective manner for CalPERS to gain most of its exposure to non-US absolute return managers at this time. Non-US funds of hedge funds also provide an opportunity for current Staff to become more familiar with non-US portfolios, potentially laying the groundwork for greater use of direct investments in the future. As Staff continues to expand, and as the assets in the ARS program grow, it may become more cost-effective in the future to begin to invest directly in non-US absolute return managers.

We have included summaries of the six funds of hedge funds and two external advisors on which we conducted due diligence over the past two years of rolling reviews at the end of this report. In general, we are pleased with the overall quality of these managers and believe that they offer skills and resources to the investment process which add to the overall program. Most of these fund of funds managers are fairly small, compared to the "mega-funds" that tend to dominate hedge fund investing, and so they can find unique sources of value-added that may be off the radar for CalPERS' other partners. As noted in our comments on the managers, however, small firms do have their own limitations, especially in staffing. As they grow, we hope that they have the same priorities for future hiring as we do.

Risks

In this section, we will discuss the risks specific to the investment process, including research and portfolio construction. The risks inherent in hedge fund investing are already well documented and therefore not discussed in this section, since they were accepted by the CalPERS Investment Committee when the ARS program was first approved. Our review of this portfolio discovered no previously unknown risks involved with absolute return investing.

Much of the allocation decision process is based on the impact new strategies or managers will have on the expected distribution of portfolio returns. In other words, the portfolio management team seeks to determine whether a new manager or strategy should help mitigate or offset the volatility in some other manager or strategy (or in the portfolio as a whole) based on historical performance. Although qualitative factors are considered during due diligence, our understanding is that Staff utilizes quantitative tools for a significant portion of the modeling and allocation process and has added more quantitative tools a few years ago with a new asset allocation / risk modeling software provider.

While we have been concerned for the last few years that Staff may become over-reliant on such quantitative models, the new SPM and the potential addition of sector analysts should reduce this reliance through the additional of more qualitative resources for portfolio management. Our concerns over a quantitative-dependent process, which we hope will be mitigated over time, are twofold. First, historical performance data does not predict future returns with certainty. A manager who would have been a good diversifier over the last few years may not provide the same correlation benefits under different economic, interest rate, or political regimes in the future. Reliance on historical data may not properly anticipate the true risk in the portfolio, especially in times of market shocks. Further, the investment philosophies or exposures within absolute return strategies tend to be dynamic in nature and therefore historical results may not truly reflect a given strategy's behavior in the future. In other words, the very flexible nature of hedge funds which makes them desirable as an investment also makes them unreliable to model consistently. A fund with a two year track record is still maturing and may have shifts in its strategies or implementation process that lead it to perform differently than the models expect. While building a portfolio of hedge funds on the backs of these models and assumptions and fine-tuning the skewness and kurtosis is standard practice for funds of hedge funds, the entire process can be meaningless and inaccurate if the underlying funds do not perform or interact as expected.

Fraud and manager "blow ups" (fast and significant losses) are always a possibility in the hedge fund industry, due to the lack of transparency in many portfolios, the esoteric nature of many hedge fund investments, and the paucity of regulatory scrutiny. CalPERS mitigates many of these risks by employing outside advisors to act as additional "sets of eyes", generally receiving full transparency into manager positions, monitoring portfolio risk through IFS, avoiding highly levered strategies, and insisting on third party custody of all assets. Over the last few years, these measures have helped CalPERS avoid the headline-grabbing blow-ups that have captured the media's attention.

However, while we are reasonably confident that CalPERS should be able to avoid fraud due to the measures it has put in place, significant investment losses are always a possibility in any hedge fund portfolio. As such, Staff does model the possibility of multiple standard deviation events by individual managers and employs diversification across a variety of strategies to limit the damage any one fund can do to the overall portfolio.

Finally, many absolute return vehicles lack a track record that encompasses all economic environments (especially newer managers that barely have any track record at all), and it may be difficult to determine how a manager will fare in a different environment. The creation of strategy proxies (used in modeling new investment strategies under consideration for inclusion in the portfolio) is equally limited since they are largely based on historical data. Second, over-engineering the portfolio can lead to middling performance at a high cost. In a simplistic example, if the portfolio has a long bias (i.e., a higher correlation than desired to movements in markets as a whole), the temptation exists to offset that bias with a short-biased manager to reduce overall market risk. While this approach should work in theory, the net result of combining a broadly invested long manager with a broadly invested short manager, for example, could be a net performance of zero and a very high fee paid to both parties. As a result, we believe that sector allocations and manager selection need to be based as much on qualitative assessments of the true value they add as on purely quantitative projections. PAAMCO states that they do provide qualitative advice to Staff, in addition to quantitative modeling, but we believe that there is a chance such advice can become lost amid the preponderance of models and quantitative factors.

We recognize that the current ARS policy states that the portfolio should be managed through the use of quantitative tools, and we do not want to discount the value of such tools or to recommend a change to the policy language. However, we believe it is important to make sure that the qualitative input of Staff and the outside advisors will continue to override the quantitative factors when the aggregate wisdom of all parties involved recommends a different investment approach than what the models dictate. In addition, we encourage Staff to discuss internally and with the outside advisors whether the allocations recommended by the modeling process make fundamental sense even when the mathematical result may be compelling. Our understanding of how Staff manages this program is that the qualitative inputs can overrule the investment models and we would encourage Staff to make policy language changes in the future as their experience grows.

As with any investment management organization, CalPERS is subject to the impact of departures by Staff. Unfortunately, CalPERS has a higher rate of attrition than a similar-sized investment management organization, largely due to the inability to offer compensation which is competitive with institutional investment managers. Investing in absolute return vehicles is often a “relationship” business, where the right reputation and contact base can make a significant impact in a portfolio’s success. As a result, it could be argued that the performance of this portfolio is more subject to the retention of a few key individuals than is the case for many other CalPERS investments. However, this concern is mitigated by the presence of UBS and PAAMCO, who provide significant resources to the overall effort. In the event of significant Staff departures, UBS and PAAMCO should be able to provide assistance with portfolio monitoring and the training of replacement Staff, with the wind-down of the portfolio, or with the wholesale shift of the portfolio to external fund of funds managers.

To that end, the prior SPM for ARS departed in August 2011, significantly decreasing Staff resources and experience during the interim period until a new SPM was retained in the summer of 2012.

Conclusion

While the performance of the ARS program has not achieved its desired long term benchmark, it has outperformed the majority of external alternatives. Staff has proposed a number of changes to the investment process in its annual strategic plan to improve further upon this track record.

Staff is assisted and backed by two independent advisors and a third-party data collection and risk aggregator. Any function which Staff lacks the ability to provide on its own is covered one to three times over by the external advisors and data providers, as well as by other relationships such as the external fund of funds managers. In our opinion, there is no resource or tool which is not available to Staff through either its in-house capabilities or one of these external parties.

Our criticisms of this program are as follows: First, we believe the internal portfolio construction process is heavily dependent on quantitative tools and historical performance. However, this concern is mitigated by the qualitative input provided by PAAMCO, UBS, and the ARS Advisory Group prior to any investment by the portfolio management team. In addition, the new SPM and the future personnel additions under consideration may reduce this concern in the future.

Second, we believe that the track record over the past few years, while not dissimilar from the majority of funds of hedge funds, indicates that there may be more macro, currency, commodity, or directional risk in the program than the Investment Committee prefers. In addition, the underperformance of the hedge fund industry as a whole versus the typical target over the last several years brings into question whether hedge funds on the whole can deliver their promised results.

In the sections that follow, we have added separate commentary on the external advisors, UBS and PAAMCO, and six of the external funds of hedge funds, analyzing their organizations, people, processes, and resources as stand-alone entities. In addition, we have provided a point-by-point scoring table for all aspects of the ARS program.

Sincerely,

Review of PAAMCO's People, Process, and Resources

Organization & People

PAAMCO is an independent, employee-owned absolute return strategy advisory firm started in 2000 by four founding partners, Jane Buchan, Judy Posnikoff, James Berens, and William Knight (Mr. Knight retired at the end of 2011 but remains a shareowner in the firm), who all previously worked together at Collins Associates from 1997 to 2000. All four founding members have PhDs in finance and economics. In 2005, the founding partners decided to extend the partnership to other senior professionals. PAAMCO attempts to foster a positive work environment by allowing members of the team to grow and seeks to maintain long tenure among its employees through profit sharing and other incentives. PAAMCO has experienced very low turnover on an absolute basis and extremely low turnover on a relative basis compared to its peers. They have been SEC-registered since inception and currently manage approximately $8.5 billion dollars, plus several billion more in advisory assets.

After a long legal battle in 2011, an outside investor was awarded a significant, but non-controlling, interest in the ownership of the company. To date, the new ownership structure has not impacted employee retention, the management of the company, or the investment process. We continue to monitor the firm for any impact from this outside party.

Investment Philosophy & Portfolio Construction

The PAAMCO investment committee sets tactical asset allocation for each strategy on a quarterly basis. The committee creates expectations for each strategy developed from historical data, current sector spreads, and PAAMCO's forward-looking views which are input into a proprietary optimizer, as well as a Northfield optimizer. Views are made with a one-year time horizon and tactical moves tend to be gradual and small, involving macro-economic scenarios, stress-tests, and sector expectational views.

The Strategy Allocation Subcommittee (SAS) reviews the optimizer outputs and adjusts the results with a heavy qualitative overlay, accounting for tail risks, asset flows, strategy flexibility and adaptability, as well as the capacity of appropriate managers within each sector. The SAS makes asset allocation recommendations to the Investment Management Committee, who then reviews, may adjust, and approves all final investments.

PAAMCO only invests in the following strategies, and therefore advises CalPERS mainly in these areas:

- Convertible fixed income arbitrage
- Debt & mortgage hedging
- Capital structure arbitrage

- Distressed fixed income investing
- Equity market neutral
- Merger arbitrage
- Long/short equity
- Short-biased equity

Managers Selection & Monitoring

PAAMCO believes that original research by an experienced and focused group of professionals will improve the manager selection process. Due diligence is also based on the requirement that absolute return managers provide PAAMCO with position level transparency to assess manager risk. Refusal is grounds for disqualification. The due diligence process addresses five major areas of concern, organizational/behavior, investment strategy and process, operations, overall risk, and the firm as a business. The sector specialist and research manager construct a research team of investment professionals to address areas of concern. The group is made up of various individuals with skill sets relevant to analyzing the areas of concern. Research process includes: background checks, reference checks, a due diligence questionnaire, review of fund documents and an audit, regulatory registrations, back up procedures, and portfolio attribution analysis. Specialists will also try to negotiate a preferential side letter which guarantees superior deal terms to PAAMCO as compared to the average client. In addition, an Independent Risk Analysis (IRA) is performed by a PAAMCO founding partner who has not previously been involved in the research process. If the manager passes the IRA, the research is passed to the investment committee.

PAAMCO will evaluate and hire both new and experienced managers. Approximately 80% of managers are established while new managers have the relevant experience even if the organization is new. They do not see any benefit to artificially limiting the universe of absolute return managers based on age.

Average manager turnover is roughly 25% -- average to below average for the industry.

Risk Management

PAAMCO demands position level transparency from the funds in which they invest although they do not make it available to investors. As of our last visit, clients are not informed of the names of underlying managers, risk exposures, and portfolio level detail due to confidentiality agreements with the absolute return managers. Risk management is based on aspects such as long exposure, short exposure, net and gross exposure, sector concentration, geographic allocation, equity beta, market cap exposures, growth/value exposures, position concentration, liquidity, credit exposure, and duration. This allows the specialist to ascertain what risk a particular manager brings to the overall portfolio and its diversification benefits. They use a variety of tools including SQL

Server for positions, optimizers and in-house models, RiskMetrics, Northfield, Bloomberg API, and proprietary (internally developed) analytics.

Conclusion

PAAMCO is a large and established institutional absolute return strategy advisory firm with a solid organizational structure, low turnover among its employees, and more than $8 billion in client assets. PAAMCO's founding partners and subsequent staffing additions bring a unique approach to absolute return investing due to their academic backgrounds combined with significant hedge fund and consulting experience. PAAMCO is one of the most stable and institutional quality absolute return advisors.

Review of UBS Global Asset Management's People, Process, and Resources

Organization & People

Alternative Investment Strategies (AIS) is wholly owned subsidiary of UBS Global Asset Management and started operations 1998, bringing together several disparate components of the UBS absolute return platform. UBS is a large global organization involved in all aspects of absolute return vehicle management, including direct absolute return management and seeding, prime brokerage, administration, and risk management. This platform creates vast resources for the AIS unit to use. AIS currently oversees approximately $26 billion, in both non-discretionary and discretionary assets, down from a peak of $48 billion prior to both the market decline and issues regarding taxation of Swiss accounts held by American citizens that led many clients to move their assets elsewhere.

Individuals are paid a base salary and bonus. There is one bonus pool set by management. They also have a deferred compensation plan in place for certain employees which vests over time.

AIS has experienced significant turnover especially at the more senior investment level over the past five years on both an absolute and relative basis, with five more people (including the Chief Operating Officer) departing in the year prior to our last on-site review. In addition, the former head of AIS retired approximately two years ago. While we do not believe that this event materially affected the services offered to CalPERS, it is yet another instance of turnover at the most senior level.

Managers Selection & Monitoring

The investment process formerly separated absolute return vehicles into four main strategy clusters or working groups and three non-strategy clusters for operational due diligence, asset allocation, and risk management, with each strategy cluster handled by one analyst, one investment officer, and one senior investment officer. UBS has undertaken an effort to move away from these clusters into strategy teams, resulting in a flatter organization. In addition, AIS has been actively marketing itself as a consulting organization, providing hedge fund consulting advice to large private investors. AIS maintains offices in the USA, Europe, and Asia for manager and market research, and benefits from the UBS affiliate absolute return portfolio administrator who is responsible for all NAV calculations done for their internal funds.

The AIS research process begins first with strategy research in order to understand the drivers of risk and return. This establishes a framework for manager research to understand the underlying strategies utilized by managers based upon these factors and their outlook. The group seeks to identify changes in strategies and adapt research by monitoring macro factors and market technical indicators. As one of the largest absolute return managers in the world, AIS has a competitive advantage in sourcing new managers. AIS has developed a proprietary system called "Octane" which encompasses every aspect of the manager selection and monitoring process including quantitative, qualitative, operational, risk management, and NAV calculations done by the administrator. UBS has also developed its own reporting system that allows clients on-line access to custom-designed reports and information about their portfolio and investments. The strategy research, sourcing, and Octane software all facilitate and augment their manager research process which includes several meetings with managers. Analysts go through manager portfolios, portfolio management, and risk control processes and then conduct peer group analysis. If the manager is approved through this initial due diligence phase it will then be passed onto the Manager Approval Committee consisting of SIO's and the CIO. If recommended, managers move to the operational due diligence team and will either receive a fail, qualify or pass score. The operational due diligence group looks at a variety of issues including valuation methodology, cash policies, IT systems, and disaster recovery etc. If the firm fails any of these screens, UBS will work with it to enhance its operational controls and move it to qualify or pass if processes are improved. Once this step is completed, UBS conducts security checks and continues to monitor each manager. The managers are then sent back to the Manager Approval Committee.

Over the last few years, AIS has begun exploring adding co-investments into its portfolio, as well as direct commodities and interest rate trades. As Staff is considering other ways to add value in the portfolio and minimize expenses, these skills could be useful for expanding the toolset available to the ARS program.

Risk Management

AIS focuses on analytical decomposition of fund performance. The group utilizes performance-based analysis of portfolio risks and aggregate measures of manager risk at the portfolio level. This is achieved through the development of multi-factor models to explain performance in both normal and stress environments. A strictly quantitative process is employed and the firm does not utilize underlying holdings to any significant degree.

Two other systems, "Propane" and "Hypo", locate all research and allocation tools into a central location for all staff. The new systems have significantly streamlined work flow, especially for coordinating efforts among a variety of staff members for evaluating new funds.

Conclusion

UBS AIS is one of the largest fund of hedge fund managers in the world, and is able to leverage the UBS platform for more robust manager selection and monitoring processes than the typical absolute return strategy advisory firm. However, AIS has experienced consistently moderate to high personnel turnover which is a cause for concern.

47° North Capital Management

Organization & People

47°N was established in 2006 by Claude Porret. Over the last few years the firm has steadily added people, with the exception of the downsizing of 2 members of the team in 2008, largely from Ms. Porret's prior contacts at RMF and Man Investments. Most members of the team have very significant experience in the hedge fund industry.

All employees own stock in the firm. Less than 1/3 of the equity in the firm is held by CalPERS and an "angel" seed investor. Since our last review, another large client ceased its strategic partnership with the firm and sold its equity interest back to the partners.

With total assets in the $250MM range[1], the team is necessarily fairly small, with seven individuals who conduct portfolio management, research, due diligence, etc. All members of the investment team "wear many hats", with no clear division of labor. As the organization grows, we hope to see further definition of roles, including the development of a team dedicated to operational due diligence, which we believe is a skill set that requires specialized experience. At the present time, given the asset size, we believe that the team is sufficient to the task, especially due to the very high level of experience possessed by the senior employees. A recent hire from a competing organization has a professional background in operational due diligence, expanding the firm's capabilities in this area.

Manager Selection & Monitoring

47°N focuses primarily on new generation hedge funds and sees itself as a start-up, innovation, or new fund seeding satellite manager for clients who have "core" hedge fund positions. 47°N tries to focus on new areas of innovation and new types of investments more than just new managers in traditional areas. The company has made significant investments in areas such as power-trading, carbon-trading, and insurance-linked products that tend to fall outside the scope of most traditional funds of funds. The firm has even explored, but not invested in, such areas as seafood futures, intellectual property, and soccer player rights to stay ahead of the curve for new development of future types of hedge fund investments. Interestingly for CalPERS, one of the criteria that 47°N uses to ascertain whether a new type of hedge fund is investible is an evaluation of whether the investment area is "ethical".

At its core, the firm believes that start-up or new generation managers allow for 47°N to receive better terms on liquidity, transparency, fees, etc. than they would receive by investing in traditional or established hedge fund strategies which may have more

[1] At the time of our 2012 review.

competition among investors, and therefore less willingness to negotiate terms. Several members of the team worked together at another fund of funds who would not allow them to build a start-up fund platform in-house, leading to their departure. This history indicates to us the level of dedication the team has to this particular subset of hedge fund investing. The team is currently developing proposals for an even more targeted set of seed investments in start-up funds, in exchange for equity stakes and better terms.

Like UBS, 47°N has started investing in UCITS (roughly the European equivalent of ETFs) to add "Beta" (directional market) exposure to the portfolio far more cheaply than many hedge funds will offer. As a result, the firm can reduce the amount it is paying external managers for low-information market positions and focus more on value-adding strategies.

Risk Management and Technology

47°N has built a proprietary screening, tracking, and due diligence system for monitoring, tracking, and evaluating prospective investments. This system was obviously easy to use and very user friendly. This single system also had full database functionality, allowing for storage of all notes, manager documents, etc. in one place.

We were very impressed with the analysis 47°N can conduct with this system. The system appears to have one of the most complete charting and evaluation packages available and the firm conducts very large amounts of quantitative analysis and peer comparison as part of its review and portfolio management process.

Conclusion

Despite its small size, we believe that 47°N provides CalPERS with a unique skill set and access to a section of the hedge fund market not available through its other relationships. The team is very experienced and well-suited to the task at hand.

Ermitage

Organization & People

Ermitage was originally founded in 1975 as a private wealth management firm, began offering single hedge funds in 1984, and then launched a fund of hedge funds business in the late 1990s.

Ermitage is currently owned by the Societe General spin-off Nexar, which bought the firm from Caledonia in 2011, but is combining the firm with others within Union Bank Privee (UBP). Altogether, the UBP organization remains very committed to hedge funds and has more than $12 BN in assets under management.

Manager Selection & Monitoring

Ermitage employs a structured approach where they divide each fund into one of three buckets – Long/Short Equity, Relative Value, or Directional (CTA, macro, natural resources) and then assign dedicated staff to evaluate it.

Instead of viewing themselves as simply a fund selector, Ermitage tries to operate as a capital markets allocator – they will put on and take off positions depending on their global economic, currency, etc. outlook. As a result, they function somewhat as a "macro" fund of hedge funds. In doing so, they are willing to invest in funds with high volatility under the assumption that they can properly time the market regarding when to get in and out. To this end, the portfolio management team holds weekly meetings in which they discuss not just the underlying funds but also the market environment and where the opportunities lie. Ermitage believes that this is a competitive advantage since their peers do not make full use of all the information they are privy to.

In March of 2008, this process worked – all three style teams concluded that the market was headed down, so the fund liquidated 40% of the portfolio and protected clients against some of the downside.

Operational due diligence is a separate and dedicated team with several individuals

Risk Management and Technology

Ermitage has two proprietary risk management and modeling systems that allow them to extract data from external databases, merge it with market data, and then model their portfolios under a variety of conditions and stress tests – an important skill for a fund of hedge funds that wants to time the markets. Ermitage has very extensive analytics for modeling portfolios in various market conditions, with lots of ability to override historical information and program in unique expectations for future market conditions. This system has been considered in the past for use by CalPERS' Global Equity team for overall portfolio management within CalPERS.

New funds require multiple reference checks from known contacts within Ermitage's network. They do not use the usual background checks except for small, startup funds that are outside their network.

All portfolio and cash management tools have trading functionality built in so the portfolio managers can send redemption or funding directions from within their portfolio modeling system. The system is also designed to remind portfolio managers of notification periods specific to each underlying fund so that redemptions can be timed within the portfolios to match other activities.

Conclusion

Ermitage relies more heavily on macro-economic forecasting than the other funds of hedge funds, but has the systems and modeling tools to back it up. This is not a typical bottom-up fund manager but rather a macro-style fund of hedge funds. As a result, this fund should have a unique return stream versus the other managers and should introduce an uncorrelated return for CalPERS.

Europanel Research & Alternative Asset Management (ERAAM)

Organization & People

ERAAM launched in 1998 by two partners with extensive sales and trading backgrounds for major investment banks – both had been the heads of the equity, fixed income, and derivatives desks for Europe. This background gave them extensive contacts with all the major traditional fund managers from the 1990s who have now branched out into hedge funds. While one of these partners retired in 2009, additions to the team have maintained the firm's capabilities.

ERAAM had substantial exposure to high net worth client accounts prior to the credit crisis and hedge fund industry collapse. As the market imploded, these accounts were redeemed disproportionately, putting pressure on ERAAM's budgets and operations. ERAAM has since restructured its private client offerings to pose more of a hurdle for "fast money" business. Four staff members were terminated as assets fell.

ERAAM is owned by senior employees, an outside partner, and an employee-benefit trust.

In the first quarter of 2013, an external bank will begin marketing their funds on their behalf. ERAAM is also in talks with several private banks to take over management of the in-house hedge fund assets of these organizations.

Manager Selection & Monitoring

ERAAM relies heavily on its network of past relationships and the fund managers in its portfolio for new investment ideas. One of the partners said at a previous meeting that database screenings are the least valuable tool at their disposal to find new investments.

Each investment opportunity is assigned a "leader" and a "challenger" to review the opportunity, and both will visit the fund independently. A separate operational due diligence person is assigned to review each investment, as well.

ERAAM is 100% bottom-up focused. The team has no macro-structure or model portfolio, but rather reviews opportunities and finds what it believes to be are the best investments without regard to style or region.

Risk Management and Technology

ERAAM tends to focus its investments in continental Europe, where reporting standards are significantly higher than in other regions. As a result, while operational due diligence is still important, they tend to rely a bit more on the regulators and auditors than do the funds reviewed located elsewhere. For example, ERAAM does not contract with the usual background investigators for new investments. Instead, the partners conduct their own checks with their contacts and then rely on the FSA/ARM for criminal, educational, etc. background checks.

For reviewing opportunities, ERAAM demonstrated a sophisticated custom-made quantitative package that helps to discern how much of each manager's return is due to skill (alpha) versus hidden residual market exposure (beta). Their analytics can perform the full suite of "what if" analysis, including modeling current and prospective portfolios under a variety of conditions and stress tests. However, the partners made clear that while they value these tools, they believe that their experience and intuition is more than half of the investment process and they do not rely on the quantitative software to make any decisions – merely to test and validate their assumptions.

ERAAM stated that they are not afraid to be "Day 1" investors in new funds, since they tend to receive better treatment on fees and other terms. Given the on-going de-risking of balance sheets at commercial and investment banks, proprietary trading teams continue to migrate to the hedge fund industry. Given their background in investment banking and their contact network, ERAAM believes that they are well-positioned to find and evaluate these new funds.

Conclusion

This is a team with tremendous market experience and contacts, although no direct experience managing hedge fund assets. The team has extensive quantitative tools at its disposal but clearly contends that it relies more on its experience and contacts than such tools. We believe that this team has a very strong investment and review process, although it may rely a little too heavily on market regulators to assure the safety of investments.

Pacific Alternative Asset Management (Singapore team)

Organization & People

The Singapore-based PAAMCO team is a fairly recent addition to the PAAMCO organization. In 2008, as the team's former firm (the investment bank KBC) decided to shut down fund of hedge fund operations, PAAMCO emerged as a natural buyer for the group, with CalPERS' assistance. The team initially began operations in 2001 as a Japan-only Fund of hedge funds but has grown to encompass all of Asia.

Integration with PAAMCO was completed on schedule with the timeline presented to us during our 2009 visit. Members of PAAMCO's global team now rotate through the Singapore office and the team has relocated to class A office space to allow for more personnel. All legal review of fund documents is now handled by PAAMCO's legal team in California.

Manager Selection & Monitoring

The team generally does not seek out "high beta" (high market exposure) managers and invests little in the macro style. Mainly, the team focuses on finding funds with an optimal tradeoff between risk and reward.

Every fund is reviewed by a two-person team, in addition to the operational due diligence team, in order to maximize the number of opinions and perspectives on a manager.

The investment process has significant top-down elements, with macro-level considerations given to the firm's view on countries, regions, and strategies.

PAAMCO (Singapore team) has two dedicated operational due diligence people, in addition to the entire operational due diligence team within the PAAMCO parent. The head of operational due diligence in Singapore has tremendous back office experience due to his history as the COO for a product area at Credit Suisse. The second operational due diligence person was the former head of HSBC's fund administration group. A full operational due diligence review is conducted on existing investments every two years.

Interestingly, PAAMCO stated during our 2009 visit that they continue to monitor terminated funds after redemptions have been completed both in absolute terms and versus the funds' peers to act as a check on investment decisions.

During the 2011 visit, PAAMCO discussed how they have been making efforts to concentrate the portfolio into fewer managers. Given that this portfolio is a non-core position for CalPERS, focusing the small amount of money invested here into “higher octane” positions provides for more outperformance potential, but with more risk.

Risk Management and Technology

The Singapore team has completely converted to the use of PAAMCO’s full suite of analytics and technology, which is superior to that of the predecessor organization. In addition, since the credit crisis, PAAMCO has automated their counterparty risk reporting systems in order to better and more quickly monitor the counterparty risks in the portfolio.

Conclusion

This team has benefited greatly from the acquisition by PAAMCO and will continue to get better as the investment process, technology standards, due diligence process, and ongoing monitoring all are brought up to PAAMCO standards or benefit from PAAMCO’s resources. Given that PAAMCO had a fledgling Asian operation prior to this acquisition, we do not see a downside to the merger and integration of these two organizations.

Rock Creek

Organization & People

Washington, DC-based Rock Creek was founded in 2002 by several individuals from the internal asset management division at the World Bank who specialized in foreign currency transactions and derivatives. This provides the team with substantial "hands on" experience when it comes to evaluating perspective managers.

Rock Creek was initially seeded by the Carlyle Group when it first launched, but parted ways with that organization in 2003. The firm was owned by 2 founders from that separation through the end of 2012, when the asset management division at Wells Fargo purchased a substantial share of the organization. This purchase also allowed the firm to more broadly distribute equity to key individuals. Although the external interest is non-voting and senior members of the team have employment agreements, this type of purchase must always be monitored closely to insure that it is not used as an exit strategy for key individuals.

As of year end 2012, Rock Creek managed over $7 billion of fund of funds assets, solely for institutional investors.

Manager Selection & Monitoring

Unlike many of CalPERS other managers who have located themselves in a nexus of hedge fund management (New York / Connecticut, Hong Kong, Jersey, Zurich / Pfaeffikon, etc), Rock Creek has chosen to locate in the nation's political center and approach the topic of asset management from a slightly different angle. The senior members of the team are highly involved in political activities / foundations / think tanks / etc. in the area, a former Federal Reserve Chairman maintains an office in their suite, and the niece of a former President (and a former state Lieutenant Governor) serves as their marketing person. While this may not necessarily keep Rock Creek "in the know" about every new fund that springs out of a New York bank, it does give them tremendous access to policy makers and allows them to run their fund from more of a macro perspective.

Rock Creek's team meets weekly to discuss managers and risk although more informal meetings occur far more frequently. An advisory committee of experienced outside individuals (a former US chief trade negotiator, a former CalPERS CIO, a former head of research for a major investment bank) also contribute to the investment process.

Risk Management and Technology

With the help of a team of internal programmers, Rock Creek has developed a unique risk and allocation system. The firm maintains daily risk, factor, sector, etc exposure databases and can graphically show how a given risk factor has changed on a daily basis over time in a movie-like display that combines various elements of data into a day-by-day running analysis that visually indicates drift and trends within the portfolio. All risk statistics for the fund of funds are based on actual holdings in the underlying portfolios. While the database that creates this display is not unique within the industry, the visual approach to display shifts in allocation and risk exposure over time is very valuable for understanding how a portfolio has performed and how its exposures may impact it in the future.

Rock Creek also maintains its own risk system that it contends is substantially better than more common measures like VaR. (One of the senior members of the team helped to start RiskMetrics.) This risk model predicted 50% to 60% of the 2008 decline (versus a prediction of 10% by VaR, Rock Creek contends), although Rock Creek's performance was still negative for the period.

Rock Creek also has offered to clients a tail hedging portfolio where options, volatility hedges, uncorrelated managers, etc. can be employed to prevent the worst market declines. This is similar to one of the managers recently selected as part of the MAC search and could be a valuable resource should CalPERS continue to explore ways to mitigate the impact of extreme market movements.

Conclusion

Rock Creek is an extremely well-connected manager politically and should have an informational advantage for macro-economic, currency, or foreign markets investment decisions. However, past analysis has showed that most of their investments are in equity and credit strategies, which may not benefit as much from Rock Creek's Washington-centric approach. On the other hand, Rock Creek did demonstrate unique risk monitoring and allocation systems and has had generally superior performance over the last few years.

Vision Investment Management

Organization & People

Vision is privately held, with 60% owned by employees and 40% owned by an Italian family that has stakes in many other firms with whom Vision can partner.

The company experienced a fair amount of turnover in 2008 – 6 people left, including the head of proprietary capital, and some analysts. The firm hired 3 replacement personnel in 2008.

Given market movements over the last few years, Vision experienced approximately a 60% redemption of client assets in the year prior to our 2011 visit. While we do not believe that this endangers the firm as an on-going entity, we are monitoring the situation to ensure that the firm remains viable.

Manager Selection & Monitoring

Vision has been moving over the last few years to a managed account platform that allows better “look-through” transparency of all underlying funds. This platform appears to work well, as Vision actually fired 2 managers whose positions did not match their stated investment philosophy. Given the current exodus of talent from investment bank proprietary trading desks, this platform allows Vision to seed new funds with far less concern about operational support within new managers, since Vision controls the assets.

Operational due diligence is conducted by the head of compliance upon initial investment and annually thereafter. In addition to the usual checklists and on-site reviews, Vision also operationally tracks a trade made by the underlying fund from inception to settlement to monitor all steps in the execution, compliance, and settlement process. The firm has five people dedicated to operational due diligence and the firm also conducts operational due diligence on all service providers.

Risk Management and Technology

A risk management team monitors concentration risks, liquidity, etc. and establishes risk guidelines. The fund keeps 50% with 30 day liquidity, and 75% with 180 day liquidity.

Risk management at Vision does not appear to be as technical as at many other firms. Vision seeks out managers that can stand on their own, while still fitting into the portfolio as a whole. While many fund of funds add or delete managers to model a specific desired outcome, Vision appears to be more qualitatively focused, while still adhering to overall portfolio risk limits.

Conclusion

Vision has the strongest operational due diligence effort among the funds reviewed this year on CalPERS' behalf. Although this firm does not have the in-depth risk analytics of many of its peers, we believe that its investment approach and portfolio construction methodology are not as dependent on such systems. As a result, while the firm does not have all the tools of its peers, its process does not require them.

Strategy Evaluation: CalPERS Risk Managed Absolute Return Strategy

Due to the nature of this investment process, where Staff works closely with, and depends on the resources of, two external advisors, the evaluation below treats the combination of Staff and the external advisors as a single team.

Organization (0-100)

SCORE:	**COMMENTS:**
Ownership/Incentives (0-30) Direct Ownership/Phantom Stock Profit Sharing Performance Bonus Depth of Incentives Score: 5	Employees receive performance bonus only.
Team (0-25) Communication Role of Manager, Research, and Operations Longevity of Team Score: **18 (up from 10 in 2010)**	Team suffered the loss of the Senior Portfolio Manager in August 2011, resulting in the low prior score. The SPM had built the ARS program since inception. It remains to be seen how much of the program was based on the SPM's relationships versus the presence of CalPERS in the market. Upward revision in this score reflects the addition in 2012 of the new SPM.
Quality of Key Professionals (0-15) Experience Quality of Leadership Quality of Education Score: **12 (up from 10 in 2010)**	New SPM formerly managed the funds of hedge funds portfolio at a major investment bank and brings much experience to CalPERS. In addition, key advisors from UBS and PAAMCO are among the best in the business. Portfolio management team understands risks and issues to be monitored or resolved regarding strategy. Appropriately concerned about process, reporting, and monitoring.

Turnover of Senior Professionals (0-15)
Low (<10%), Medium (<20%), High (>20%)

Score: **3 (Up from 0 in 2011)**

Staff turnover for CalPERS is high at both the senior and junior levels, including the departure of the SPM for ARS, SIO for AIM, two CIOs, and the CEO over the last several years. The rate of departures has slowed recently, leading to the slight upward revision in this score. Lack of long-term retention incentives lead some staff to consider the organization as a "stepping stone" to better compensation in similar positions elsewhere. Turnover for this strategy is a risk. However, the two external advisors can assist Staff with the continuation or termination of this portfolio in the event of wholesale turnover in key personnel. Current budgetary constraints, Staff pay cuts, and changes to the incentive structure are impacting morale and potentially turnover.

Commitment to Improvement (0-15)
Clear Mission
Re-investment
Process Enhance

Score: 15

Strategy has clear mission and objectives. Resources are sufficient to the current tasks assigned to team, and support exists within the organization to add staff or other resources if strategy expands or other demands warrant. Outside advisors have a significant on-going effort to re-invest in their own research and other capabilities, which directly impacts the internal Staff.

Philosophy/Process (0-100)

SCORE:

COMMENTS:

Market Anomaly/Inefficiency (0-40)
Permanent or Temporary
Clear Identification
Where and How Add Value
Empirical or Academic Evidence to Support

Score: **35 (down from 40 in 2011)**

The strategy seeks to find and invest in a variety of external absolute return portfolios that should generate consistently positive returns with as little market correlation as possible. While in the past the portfolio has operated under the premise that smaller, more nimble, and less constrained absolute return managers can add value in ways that traditional long-only managers cannot, some recent changes in the portfolio have shifted more assets toward the biggest firms in the industry

The portfolio manager is able to shift assets as necessary across the broad spectrum of available absolute return strategies, without a requirement that the total portfolio mirrors the universe of investment opportunities or any absolute return industry benchmark allocations.

Information (0-15)
Unique Sources, Unique Processing

Score: 15

Program seeks out and invests in a variety of absolute return portfolios that are evaluated both on their own merits and on the basis of how they contribute to the performance of the overall blended ARS performance. Each portfolio invests slightly or significantly differently from the others, and seeks to exploit some market anomaly or information advantage.

Buy/Sell Discipline (0-15)
Disciplined/Structured Process
Quantitative and Qualitative Inputs

Score: 12

Managers are hired and fired based on a process that includes input from two third-party advisors and on-site due diligence. Internal process is highly reliant on quantitative process for portfolio construction, although outside advisors add a significant element of qualitative input on both manager selection and portfolio construction.

Portfolio Construction (0-15)
Benchmark Orientation
Risk Controls
Ongoing Monitoring

Score: 12

Portfolio construction techniques and monitoring are very good with internally developed and maintained systems. Monitoring of all absolute return manager performance is conducted on an on-going basis, and managers can be hired and fired quickly as events or performance warrant.

Portfolio does not have a traditional benchmark like most other PERS portfolios, but is charged with outperforming short term cash interest rates plus a performance hurdle. As a result, the portfolio is engineered to generate consistently positive returns and the portfolio management team and outside advisors have many tools in place to help construct a portfolio with the required distribution of expected returns.

The absolute return nature of the portfolio should result in consistently positive performance for the CalPERS Total Fund, regardless of the current inflation, interest rate, or macroeconomic environment, excluding the impact of the beta (market) overlay which is added later by Staff.

Recent performance over the past several years has not held up to this standard, but does not impact our score since this review is based on a qualitative assessment of the team's ability to add value in the future.

Quality Control (0-15)
Return Dispersion
Performance Attribution
Performance Consistency
Style Drift

Score: 15

The process has tight risk controls built in, and is independently-monitored within the Unit through a separate reporting line to the CIO. Within the portfolio management team there is good separation of responsibilities as well as back-up and cross-check functions provided by third party advisors. Wilshire has reviewed and had input into the drafting of the policy that covers portfolio management, research, and monitoring.

Returns have been positive in more than 60% of monthly periods and have generally improved in their consistency as the portfolio has grown, matured, and diversified, with the exception of the past year.

Style drift is not an issue with this portfolio as the portfolio management team is given the right to move assets between absolute return strategies as their research, and that of the third-party advisors, recommends.

Performance attribution and data collection is conducted by a third-party provider (IFS), and provides reports custom-tailored to PERS' specific needs. IFS also maintains an individual on-site in CalPERS' office to provide on-going data collection and risk monitoring services.

<u>Resources (0-100)</u>

SCORE:

COMMENTS:

Research (Alpha Generation) (0-40)

Appropriate for Product Style
Conducted Internally/Externally
Quantitative/Qualitative
Sufficient Databases and Models for Research
How are Research Capabilities Enhanced

Score: 35

Research is conducted both by the internal staff and by two third party advisors who function independently of each other.

Complete due diligence of each manager is conducted by UBS prior to recommendation to PERS, and then is mirrored by Staff prior to investment. Due diligence of candidate managers is often conducted by PAAMCO, as well, and the results are considered in Staff's ultimate investment decision.

Each underlying absolute return vehicle is expected to conduct on-going research into continual improvement in its own investment processes, and managers that fail to improve over time are removed from the portfolio.

Staff also conducts on-going research into quantitative tools for continual improvement in portfolio allocation process, and shares in the findings of such research with outside advisors.

Information/Systems Management (0-15)

Ability to Manage Large Flows of Data
Appropriate Systems for Research and Management

Score: 15

Systems at both UBS and PAAMCO have been developed from the beginning to handle the large amounts of data involved in researching, evaluating, and monitoring absolute return vehicles, and are sufficient to their needs.

Services provided by IFS to handle in-house data collection are sufficient to Staff's needs, and continually improved by IFS.

Marketing/Administration/Client Service (0-15)

Dedicated and Knowledgeable Group
Quality of Materials/Presentations of RFPs
Responsiveness
Measuring Client Satisfaction

Score: 15

Since marketing and client service are not involved, unlike external sources for such a strategy, full resources of portfolio managers will be devoted to CalPERS, as the portfolio managers will not have to travel to service other clients or market to prospects.

End client (Investment Committee) has regular meetings that usually require SIOs, but Portfolio Manager, team, and third-party advisors are able to continue to operate in their absence.

Trading (0-30)

Turnover Relative to Process
Sophistication of Trading Process
Measurement of Trading Costs
Soft Dollars in Client Interest

Score: 30 (maximum score assigned as trading is an external function, conducted by hedge funds hired.)

Strategy invests in external absolute return portfolios, and therefore has no internal trading functions.

All external managers are evaluated by Staff, UBS, and, often, PAAMCO, regarding whether their trading functions are sufficient to their investment strategies. Absolute return vehicles that lack sufficient resources to trade effectively, or those that execute at costs which are too high for their style, are not considered for investment.

Discussion

Wilshire's score on this strategy of 81% or 242 out of 300 possible points (up from 76% or 229 points in 2011 and slightly down from 249 points in 2010) reflects the addition of a replacement for a key individual and subtle shifts in the nature of the portfolio. The other main reasons for a less-than-perfect score overall are largely due to organizational-level issues such as senior management turnover and lack of retention incentives.