



**SFERS**  
San Francisco Employees' Retirement System

City and County of San Francisco  
Employees' Retirement System

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**RETIREMENT BOARD CALENDAR SHEET**  
**Retirement Board Meeting of June 14, 2017**

**To:** Retirement Board

**Through:** Jay Huish   
Executive Director

**From:** William J. Coaker, Jr. – CFA, MBA  
Chief Investment Officer

**Date:** June 14, 2017

**Agenda Item:**

Recommendation to retain Parametric Portfolio Associates ("Parametric") for cash securitization and rebalancing overlay services.

**Background:**

Parametric's overlay program is a comprehensive, custom solution designed to maintain investment policy target exposures through the use of highly liquid index futures, by minimizing transactions of SFERS' physical holdings and the associated costs. The program is expected to increase total Fund performance by 0.10%-0.20% over a full market cycle after all costs, in addition to increasing liquidity and efficiency.

**Recommendation:**

After intensive research and due diligence, SFERS' investment staff recommends a cash securitization and rebalancing overlay program to be managed by Parametric Portfolio Associates. Should the Retirement Board agree, the following motion is required:

Move that the San Francisco Employees' Retirement System approve the engagement of Parametric Portfolio Associates for cash securitization and rebalancing overlay services.

**Attachment:**

Staff Memorandum  
NEPC Memorandum




**SFERS**  
San Francisco Employees' Retirement System

City and County of San Francisco  
Employees' Retirement System

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Date: June 14, 2017

To: The Retirement Board

Through: Jay Huish   
Executive Director

William J. Coaker, Jr. – CFA, MBA  
Chief Investment Officer

From: Ellen Brownell   
Managing Director, Asset Allocation,  
Risk Management & Innovative Solutions

Joe Bates   
Security Analyst, Asset Allocation,  
Risk Management & Innovative Solutions

Subject: Cash Securitization & Rebalancing Overlay Manager – Recommendation to Hire  
Parametric Portfolio Associates

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**PARAMETRIC PORTFOLIO ASSOCIATES**

Investment Staff is recommending engaging Parametric Portfolio Associates (“Parametric”) for cash securitization and rebalancing overlay services. Parametric’s overlay program is a comprehensive, custom solution designed to maintain investment policy target exposures, and increase liquidity and efficiency, through the use of highly liquid index futures, by minimizing transactions of SFERS’ physical holdings and the associated costs.

**Firm Background and Organization**

Parametric, headquartered in Seattle, WA, was founded in April 1987 by William Cornelius and Mark England-Markum as a subsidiary of Pacific Financial Asset Management Company (“PFAMCo”), which later merged with Thompson Advisors to form PIMCO Advisor L.P. (“PALP”). After PALP was acquired in 2000 by Allianz A.G., Parametric’s management team, in conjunction with outside investors, completed a management-led buyout from PALP/Allianz, and was then acquired by Eaton Vance Corp. (NYSE: EV) in 2003.

In 2007, Parametric expanded its expertise through the acquisition of Managed Risk Advisors in Westport, CT, and fully consolidated operations into Parametric in 2016. As it is now known, the Westport Investment Center specializes in options based solutions that seek to adjust the risk/return profile of an existing portfolio.

Similarly, Parametric expanded further in 2012 by acquiring The Clifton Group Investment Management Company, a firm based in Minneapolis, MN, and founded by Richard Kiene and Robert Wooters in 1972. The Clifton Group has consolidated all of its operations into Parametric

and now serves as its Minneapolis Investment Center, specializing in providing derivatives-based overlay, implementation and custom risk management solutions to institutional investors. Both the Minneapolis and Westport Investment Centers report to CIO Jack Hansen, who is based in Minneapolis and joined The Clifton Group ("Minneapolis Investment Center") in 1985. In 1986, Jack played an integral role in the development of the firm's overlay investment management program, which was created in partnership with the firm's first overlay service client, a Midwest-based utility company that is still a client today. Over three decades and through multiple market cycles, the firm continues to partner with clients to provide a customized program with an emphasis on client service, risk control and product development.

The Minneapolis Investment Center focuses on the institutional marketplace, with experience over a broad range of client types:

| Client Type                     | Client Count | AUM in \$MM     |
|---------------------------------|--------------|-----------------|
| Corporation                     | 39           | \$19,222        |
| Endowment                       | 46           | \$22,141        |
| Foundation                      | 22           | \$9,156         |
| Government (Public)             | 27           | \$13,728        |
| Health Service Organization     | 13           | \$1,558         |
| High Net Worth (Family Offices) | 4            | \$605           |
| Sub-Advised                     | 12           | \$2,221         |
| Union (Taft-Hartley)            | 27           | \$2,598         |
| <b>Grand Total</b>              | <b>190</b>   | <b>\$71,228</b> |

The overlay program run out of the Minneapolis Investment Center is a stable and significant percentage of Parametric's total AUM:

|                          | 2016         | 2015         | 2014         | 2013         | 2012        |
|--------------------------|--------------|--------------|--------------|--------------|-------------|
| <b>Overlay (\$MM)</b>    | \$71,227.90  | \$64,522.16  | \$54,065.54  | \$41,774.08  | \$31,416.26 |
| <b>Parametric (\$MM)</b> | \$178,602.45 | \$152,331.75 | \$136,743.10 | \$119,168.40 | \$91,670.25 |

Given the size of the overlay program relative to the firm as a whole, Parametric is committed to investing key resources into infrastructure, research and development, and additional investment professionals in order to maintain its leadership position among overlay service providers. For example, to manage expected growth and control operational risks, Parametric continues to make meaningful investments in the Minneapolis Investment Center's proprietary technology platform that supports portfolio management, order management, operations, accounting, and compliance. Parametric also follows the practice of hiring additional personnel in advance of anticipated need to ensure that growth does not negatively impact the firm's ability to implement client portfolios while maintaining its standards of client service. There are no foreseeable capacity constraints to the overlay program related to market liquidity or firm resources.

Cash Securitization & Rebalancing Overlay Recommendation  
Parametric Portfolio Associates

Of the 42 investment professionals at the Minneapolis Investment Center, the team responsible for managing the proposed SFERS overlay service have been dedicated to the overlay program and its continued development since joining the firm:

| <b>Name &amp; Location</b>         | <b>Title &amp; Responsibility</b>                  | <b>Total Years Experience w/ Subject product</b> | <b>Total Years Experience</b> | <b>Years with Firm</b> | <b>Approx. % of time devoted to subject product</b> |
|------------------------------------|--|--|-------------------------------|------------------------|---|
| Jack Hansen, CFA, Minneapolis, MN  | Chief Investment Officer                           | 31   | 31                            | 31                     | 50  |
| Justin Henne, CFA, Minneapolis, MN | Managing Director - Customized Exposure Management | 12   | 12                            | 12                     | 100   |
| Dan Wamre, CFA, Minneapolis, MN    | Senior Portfolio Manager                           | 18   | 18                            | 18                     | 100   |
| Ricky Fong, CFA Minneapolis, MN    | Portfolio Manager                                  | 6  | 6                             | 6                      | 100   |
| Joseph Zeck, CFA Minneapolis, MN   | Associate Portfolio Manager                        | 2  | 11                            | 2                      | 100   |
| Drew Carlson, CFA Minneapolis, MN  | Associate Portfolio Manager                        | 1  | 8                             | 1                      | 100   |
| Tyler Nowicki, CFA Minneapolis, MN | Associate Portfolio Manager                        | 2  | 2                             | 2                      | 100   |

Jack Hansen, CFA, CIO (joined 1985) and Rick Ballsrud, CFA, Senior Portfolio Manager and Principal (joined 1984) were directly responsible for the launch of the overlay program in 1986. Rick Ballsrud retired from Clifton in June 2009. As CIO, Jack Hansen leads the investment management teams at the Minneapolis and Westport Investment Centers and remains deeply involved in oversight and development of the overlay program.

Justin Henne, CFA, Managing Director – Customized Exposure Management, joined Clifton in 2004. Mr. Henne leads the investment team responsible for the implementation and enhancement of the Minneapolis Investment Center’s Customized Exposure Management Product, including the overlay program.

Daniel Wamre, CFA, Senior Portfolio Manager, joined Clifton in 1998. Mr. Wamre leads the team of investment professionals responsible for designing, trading and managing overlay portfolios.

Richard Fong, CFA, Portfolio Manager, joined Clifton in 2010. Mr. Fong is responsible for designing, trading and managing overlay portfolios in the Minneapolis Investment Center.

### **Investment Strategies**

In addition to the proposed overlay services, Parametric’s Policy Implementation Overlay Service (“PIOS”) at the Minneapolis Investment Center includes customized applications for overlay

transition/reallocation management; currency exposure management; equity options strategies; custom synthetic exposures; interest rate exposure management; credit exposure management; and inflation hedges. The Westport Investment Center specializes in customized and product-based option portfolio solutions. The Seattle Investment Center, Parametric's headquarters, offers rules-based, quantitative portfolio strategies ranging from index tracking portfolios to factor investing and defensive equity strategies. In short, the three investment centers offer differentiated, but complimentary investment strategies.

### **Investment Approach and Process**

It is common for institutions such as SFERS to set an Asset Allocation target for cash at 0.0%, since cash is expected to underperform other asset classes over the long term. In order to make benefit payments and meet capital calls, however, it is necessary to hold a minimal amount of cash. Over time, cash causes a drag on performance. The process of rebalancing physically held securities to target causes additional performance drag due to transaction costs and market exposure gaps. These costs can be minimized, and liquidity and efficiency can be increased, by using liquid index futures to maintain portfolio exposures and reduce the number of physical security transactions.

The Parametric Minneapolis Investment Center's overlay service is a customized solution designed to help investors achieve their policy objectives more efficiently and cost effectively through adherence to detailed investment guidelines. The overlay program's investment philosophy has remained consistent from inception in 1986, while implementation has evolved to incorporate technology improvements, adapt to changes in the markets, meet client demands, and mitigate risk. Investment objectives include:

- Best execution and exposure management cost reduction
- Increased expected portfolio returns, liquidity, and flexibility
- Enhanced risk control during transactions and/or reallocations
- Comprehensive daily monitoring of fund exposures
- Reduced performance risk to policy benchmark

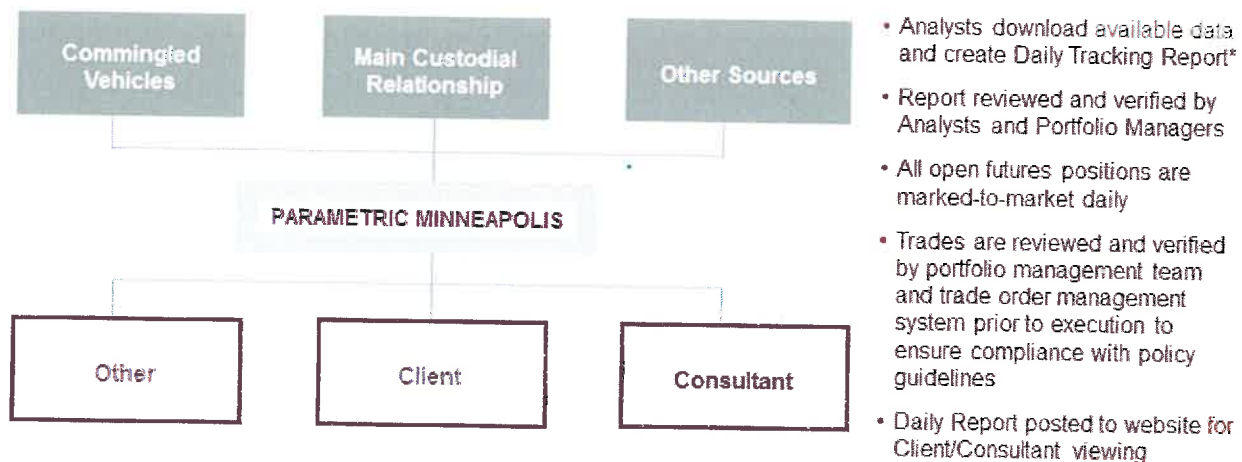
The overlay program uses a team approach for portfolio management, which expands client coverage through shared responsibilities. Each client is assigned to a team of 3-4 portfolio managers and 2-3 investment analysts (see table above). The team approach assists in broadening the investment perspective by incorporating the expertise and experience of the entire group on each investment decision. This approach also mitigates the risks of key personnel departures. When appropriate, members of other teams with specialized expertise are brought in to assist with specific client solutions. In this way, teams are able to learn from the solutions for all clients and are not limited to the experience of clients they primarily support.

During account setup, Investment Policy Guidelines and unique client parameters are coded into a proprietary internal system. These parameters are utilized to calculate the asset allocation, target overlay positions, required daily trades, cash flows, fund rebalancing thresholds, margin, and other

required variables. Each day, a new Daily Tracking Report that contains all of these variables is generated and reviewed by the investment team for accuracy and completeness. The team verifies changes between target and actual overlay positions based on market and cash flow data, and calculates the required trades (if needed) to maintain account compliance with guidelines.

Data used to create the Daily Tracking Report is accessed beginning at 5:00 a.m. central time to ensure the report is posted by 10:30 a.m. central time for client viewing via a secure website. The Portfolio Management Team ("PMT") establishes a process with each client for communicating information regarding anticipated cash inflows and outflows. This cash flow management system enables Parametric to implement the client's predetermined Investment Policy Guidelines efficiently and anticipate any margin requirement changes.

A performance report detailing market returns, average overlay exposures, overlay gain/loss data, overlay program returns, and customized benchmark returns is produced on a monthly basis and is posted to Parametric's secure website. In addition, an accounting report is provided quarterly.



\*In some cases, data may not be available on a daily basis or is not accessible because the balance is held by a manager who does not make information available electronically.

One of the key differentiators in evaluating Parametric's overlay service is their teams' customized, collaborative approach to working with clients. Their diverse client base provides the opportunity to work with clients to create and learn from a wide range of strategies that are based on each client's unique circumstances. In this way, they have been able to build on their 30 years' experience to provide cutting edge programs for their clients.

### **Portfolio Construction**

Parametric is able to provide synthetic exposure to a wide variety of benchmark indices. A multitude of exchange-traded futures contracts are available that, either in isolation or as part of an optimized replication basket, provide excellent liquidity and flexibility. For example, Parametric provides exposure to the S&P 500 index utilizing the S&P 500 index futures contract. Similarly,

Parametric provides exposure to the Russell 2000 and MSCI Emerging Markets indices through index futures contracts specific to those indices. These widely-utilized contracts offer exceptional liquidity and low expected tracking error. For the Russell 3000 index, however, Parametric provides exposure using a three-contract futures basket (S&P 500, S&P 400, and Russell 2000).

Similar baskets are used for public fixed income exposure, with Treasury futures often providing a low cost solution for controlling the duration profile of a large number of indices. Futures baskets such as this are designed to minimize expected tracking error, while controlling trading costs by limiting the number of contracts utilized. Contract weights are updated monthly using quantitative estimates which seek to minimize tracking error. Since there are no futures contracts available to gain exposure to Private Equity and Absolute Return, Parametric will work with each client to determine an appropriate proxy index, such as the Russell 2000 for venture capital exposure. Alternatively, clients may choose to allocate proportionally across the public/investable asset classes.

Managing transaction costs while factoring in tracking error considerations is an important consideration in the implementation of an overlay program, and Parametric seeks to minimize these costs on both an explicit and implicit basis. To that end, Parametric maintains several Futures Commission Merchant ("FCM") relationships which facilitate competitively negotiated commission schedules. These schedules are renegotiated on a continual basis to ensure that fair and competitive pricing is achieved. In addition, transaction costs can be minimized by creating a thoughtful framework for the overlay program. The use of tolerance bands, for example, where trading is triggered only after a band has been breached, can significantly reduce the number of trades without sacrificing the benefits of the overlay. Other cost reduction strategies are tailored for clients experiencing higher than average cash flows. Parametric also continuously monitors the embedded financing costs in futures pricing and works with clients to respond to evolving market conditions.

Due to their high liquidity, minimal counterparty risk, transparency, and capital efficiency, index futures have been and continue to be the predominant instrument used to manage market exposure as part of an overlay program. However, depending upon the complexity of the asset classes being replicated as defined in the customized Investment Policy Guidelines, Parametric will work with clients to employ a wide range of additional instruments, such as over-the-counter swaps, exchange traded funds, physical holdings, options, and most recently, centrally cleared swaps. Parametric seeks to implement solutions in the most efficient and cost effective way possible. The table below describes the scenarios leading to the use of various instruments:



|                                |  |
|--------------------------------|--|
| Futures                        | Position is not fully funded and benchmark can be easily tracked with liquid index futures.  |
| Centrally Cleared Swaps        | Position is not fully funded, turnover is low, and liquid index futures do not provide the desired tracking of the benchmark (e.g. credit based fixed income indices).                     |
| Bilateral Swaps                | Position is not fully funded, client has operational ISDAs, and neither futures nor centrally cleared swaps can adequately track the designated benchmark (e.g. CPI swaps).                |
| Listed or OTC Options          | Client is seeking non-linear exposure. Listed options are preferred but OTC may be used if client has operational ISDAs and listed options do not adequately track the benchmark exposure. |
| Exchange Traded Funds          | Position is fully funded and low cost, liquid exchange traded fund that closely tracks the benchmark is available (e.g. value or growth exposure).   |
| Physical Fixed Income / Equity | Position is fully funded, benchmark can be easily tracked with physical holdings, and no low cost ETF is available to provide exposure (e.g. Bloomberg Barclays US TIPS Index).            |

Client specific investment decisions are based on the client's individual guidelines and are executed by strict adherence to a formalized process for obtaining and reviewing fund data on a daily basis. Each Portfolio Management Team assigned to a client is comprised of a portfolio management lead, portfolio managers and analysts. Portfolio managers are the only staff members authorized to trade in client accounts; they work intensively with the analysts on their team to review and verify daily reports and effect any policy-driven changes to maintain client accounts in compliance with the strictly rules-based Investment Policy Guidelines.

Cash exposure is monitored daily with positions adjusted to maintain a fully invested position at all times. In addition, Parametric is typically included on communications regarding any relevant client activity, including projected cash flows (such as capital calls and distributions, as well as benefits payments), so that any necessary adjustments can be planned for and adjusted accordingly. Regarding rebalancing, Parametric will work with each client and consultant to establish a rebalancing approach prior to program initiation. Rebalancing approaches used by Parametric clients include band-based, time-based (e.g., monthly), and dynamic cash flow rebalancing (a hybrid approach). Parametric can accommodate rebalancing fully back to target, halfway back to target, or other asymmetric or custom methodologies as desired.

As part of the investment process, Parametric is responsible for managing the daily flow of collateral/margin between the client and accounts in which synthetic positions (e.g., futures) are held. This process includes a daily calculation of required collateral to support synthetic positions, as well as recommended collateral levels which serve as the pool for meeting mark to market obligations. Based on each client's fund-level liquidity and unique needs, thresholds for available collateral will be established that allow Parametric to easily notify the client when additional



collateral may be needed, or when collateral levels have become excessive. Typically, 10%-20% of the total gross notional value (i.e., total overlay position) is requested for initial margin requirements, which is usually invested in T-Bills to comply with banking regulations.

### **Performance and Fees**

At a high level, the program's return expectations over a full market cycle are to increase total Fund performance by 0.10%-0.20% after all costs (including implicit and explicit trading costs and fees of approximately 3-5 bps, based upon expected total notional value).

Since cash overlay/rebalancing programs are highly customized, the returns experienced for a particular investor in any market environment will be driven primarily by the investor's portfolio positioning. The two main sources of this expected outcome are cash securitization and rebalancing, which may experience different outcomes in any one distinct period:

**Cash Securitization:** When implementing a long-only cash securitization program, investors will experience gains when there is a positive risk premium generated by the capital markets (i.e., equity/fixed income markets outperform cash). Conversely, investors will experience losses when there is a negative risk premium generated by the capital markets (i.e., equity/fixed income markets underperform cash). In short, since the cash overlay replicates SFERS' target asset allocation, the overlay position can be expected to track the Fund's total performance.

**Rebalancing:** For the rebalancing component, actual returns will be dependent on the specific rebalancing parameters selected by SFERS. For example, the size of the rebalancing bands and frequency of underlying physical portfolio rebalances will have a significant impact on the actual results of an overlay-assisted rebalancing program. As with rebalancing in general, a rebalancing program using futures will perform well in mean-reverting markets, and detract value when markets are trending.

Overlay programs such as cash securitization and rebalancing are designed to recapture unintended expenses and performance slippage and are therefore difficult to measure by traditional performance measurement calculations. Parametric provides transparency by tracking performance in multiple levels:

### **Impact to the Total Fund**

Parametric measures both dollar gain/loss and the percentage contribution of overlay performance to the Total Fund. This contribution approach helps to demonstrate the overall impact of the overlay on Total Fund performance and is consistent with Parametric's role as a "completion" manager who maximizes adherence to investment policy guidelines. Parametric also performs tracking error analysis to demonstrate the effect the overlay has had on overall tracking error of the Fund.

### Attribution of Components

Parametric's overlay service is a menu-based solution in which clients can choose the appropriate components that seek to achieve their unique objectives. Parametric provides component-level attribution in order to show the impact each had on the Fund. The four primary components are Fund Cash Securitization, Manager Cash Securitization, Rebalancing, and Transitions Management (e.g., when a new manager is hired).

### Overlay vs. Benchmark Comparison

A customized benchmark will be created based on SFERS' Investment Policy Guidelines. This benchmark would be the most appropriate measure to gauge the ability of the synthetic index positions and general program management to track the designated benchmarks.

### Risks and Controls

For over 30 years, Parametric's Minneapolis Investment Center has developed controls and procedures to mitigate the risks involved in an overlay strategy:

Market Risk: The risk that the market performs in a way that was not anticipated. For example, cash outperforms capital markets. Systematic market risk is an inherent part of the overlay program and can neither be diversified away nor mitigated. Client specific guidelines are established to clearly define desired market risk based on client asset allocation targets.

Data/Communication Risk: The risk that information received from outside sources is inaccurate, incomplete, or stale. Parametric establishes an electronic link to the custodial bank, third-party, and other custody providers on a daily basis. Fund data is downloaded into the proprietary system, Investment Management System ("IMS"), for the overlay program. Automation reduces the potential for human error in data transmission.

IMS has numerous business rules against which data is checked automatically. Investment team members also scrub data for accuracy. Portfolio holdings such as commingled vehicles are updated via proxy to mutual fund or index returns as agreed to by the client. Analysts also review individual manager security and cash balance changes versus the previous day, as well as total account percentage change, for reasonableness. For example, if a manager account changes by more than 3% in a day, the account is reviewed to determine the nature of the change. Changes can be attributable to a market move, pricing error, cash flow, or other events. Parametric will investigate changes that appear unreasonable based on market conditions. Each manager's daily change is also compared to a benchmark change as a continuity check. Parametric will coordinate with the client and consultant regarding anticipated changes in cash and asset balances in the fund. Trades are not initiated until Parametric is confident that the data fairly represents fund exposures. They may verify positions by contacting the custodial bank, individual managers, and/or the client.

Margin/Liquidity Risk: The risk that market movements will result in the need for the posting of incremental variation margin or the accumulation of excess collateral in the margin pool. A section of the Daily Tracking Report ("DTR") is dedicated to margin required, the excess amount available, and an estimate of the magnitude of an adverse market move which would require additional funds. When market moves dictate, a Portfolio Manager will notify the client that either additional margin is needed or that excessive margin collateral exists. Parametric works proactively with all parties to maintain adequate liquidity for the program. Importantly, during the Global Financial Crisis of 2008-2009, none of Parametric's overlay clients were forced to eliminate or alter their desired level of overlay market exposure due to a shortfall in available liquidity. In addition, 100% of the overlay program could be liquidated in one month without incurring a markdown, and there is no leverage in this cash securitization and rebalancing overlay program.

Cash Flow Risk: The risk that unexpected cash flows result in sub-optimal overlay execution. Parametric works with clients and their consultants to establish a communication system to track anticipated cash flow moves into and out of the Fund, along with any reallocation of manager positions. Recognition of these flows in advance of their occurrence results in more efficient exposure maintenance. If an unexpected cash flow should occur, Parametric will investigate. Through communication of anticipated cash flows and Parametric's monitoring of the portfolio's positions, Parametric seeks to ensure that the data is accurate and the overlay program is implemented correctly and efficiently.

Tracking Error Risk: The risk that synthetic exposure of an index has a tracking error to the cash index (SFERS' policy asset allocation targets). Parametric seeks to minimize tracking error by utilizing optimized futures baskets of liquid futures contracts. All derivative contracts will have some tracking error that cannot be mitigated by an overlay manager.

Trading Risk: The risk that an error is made in the execution of a trade on behalf of the client. Parametric's first step in minimizing trading risk is to accurately collect and analyze data. Investment staff then enter and review trades for compliance. The review process helps to ensure that trades executed fulfill Investment Policy Guidelines and no errors have been made. Trades are settled by back office staff within hours using continuously updated electronic trade reconciliation systems. No trades are executed until two separate Portfolio Managers review the trade. Investment staff members physically sit next to each other in the trading room so communications are frequent and direct.

The overlay program's proprietary IMS has integrated trade error verification functionality into the trade management process. Client-specific guideline parameters, or rules, are coded into the system during account set-up, and can include a wide range of rules-based factors to prevent unauthorized trades and/or trade allocations from occurring within a client portfolio. For example, client-prohibited contract types are prevented from reaching trade execution and, thus, allocation to client accounts. Various parameters related to trade size limits, short positions, purchase/sale of previously un-held or unauthorized contract types can be constructed during account set-up to

minimize the risk of trading errors. Overall, trading activity is a relatively low risk area for an overlay program because of the infrequency and size of trades relative to total portfolio size.

**Counterparty Risk:** The risk that the counterparty in an over the counter (“OTC”) transaction defaults. OTC swap exposure is not necessary for a disciplined cash securitization and rebalancing program. In addition to index futures, since the implementation of Dodd/Frank regulation, centrally cleared swaps are available. These instruments continue to trade over the counter, but function much like a futures contract as they clear through a central exchange, which aggregates the credit exposure risk of each counterparty. To the extent that centrally cleared swaps or futures will not satisfy a client’s particular objective, Parametric takes numerous steps to mitigate credit exposure both in negotiations prior to the trade and through ongoing monitoring of the credit ratings of all counterparties. Typically, clients will have several counterparties, and Parametric’s client base as a whole have agreements in place with 12 OTC counterparties.

### **Due Diligence**

SFERS’ due diligence process for cash securitization and rebalancing overlay services began in early 2016 and has included numerous in-person and telephone meetings. After many months of conversations with institutional peers that utilize overlay services in addition to meetings with providers, and in consultation with NEPC, staff determined that the list of dedicated overlay specialists is narrow and issued a Due Diligence Questionnaire. Chief Investment Officer William J. Coaker, Managing Director Ellen Brownell, and Security Analyst Joseph Bates made on-site visits together to three of the respondents (including Parametric’s headquarters in Seattle and their Minneapolis Investment Center), all of which staff had already met, both in person and on numerous phone calls. Parametric’s Minneapolis Investment Center, formerly known as the Clifton Group, emerged as the clear leader for the following reasons: responsiveness, knowledge of SFERS’ unique needs, readiness to partner with SFERS to find solutions to challenges now and in the future, expertise and experience, broad client base, focused dedication to overlay services, transparency, reporting, and commitment to risk management.

Ellen Brownell and Joseph Bates returned to Minneapolis for a second on-site due diligence visit, focusing on operations, compliance, systems, risk management, and trading capabilities. Personnel that staff met during these due diligence visits include Brian Langstraat, CEO (Seattle); Randall Hegarty, CCO (Seattle); Christine Smith, Chief Administrative Officer (Seattle); Jack Hansen, CIO (Minneapolis); Justin Henne, Managing Director, Customized Exposure Management (Minneapolis); Ben Lazarus, Senior Director, Institutional Relationships (Minneapolis); compliance, risk management, IT and operations team members in Minneapolis, as well as investment team members who would be dedicated to the SFERS account. In total, SFERS staff has conducted seven in person meetings with Parametric, in addition to numerous phone conversations. Staff has also conducted reference checks with clients throughout the year, both informally and formally, by phone and in person. All were positive.

### Recommendation

In summary, after intensive research and due diligence, SFERS' investment staff recommends a cash securitization and rebalancing overlay program to be managed by the Minneapolis Investment Center of Parametric Portfolio Associates. The program is expected to recover 0.10%-0.20% of performance lost annually due to cash needs and trading costs, in addition to increasing liquidity and efficiency, and staff believes the Minneapolis Investment Center is uniquely qualified to implement the strategy. Should the Retirement Board agree, the following motion is required:

Move that the San Francisco Employees' Retirement System approve the engagement of Parametric Portfolio Associates for cash securitization and rebalancing overlay services.

### **SUMMARY OF KEY TERMS**

|                                  |   |
|----------------------------------|---|
| <b>Investment</b>                | Policy Implementation Overlay Service (PIOS)  |
| <b>Firm</b>                      | Parametric Portfolio Associates   |
| <b>Investment Type</b>           | Cash Securitization and Rebalancing Program   |
| <b>Capacity</b>                  | N/A   |
| <b>Geography</b>                 | Global  |
| <b>Benchmark</b>                 | SFERS' Policy Benchmark   |
| <b>Investment Objective</b>      | Increase Total Fund returns by 0.10%-0.20%, after all costs, over a full market cycle. Increase liquidity and efficiency. |
| <b>Investment Universe</b>       | Global Index Futures Market   |
| <b>Capitalization Range</b>      | All Cap   |
| <b>Position Limits</b>           | Customized in Investment Guidelines   |
| <b>Portfolio Guidelines</b>      | Customized to track SFERS policy portfolio  |
| <b>Derivatives Usage</b>         | Index Futures   |
| <b>Leverage</b>                  | None  |
| <b>Time to be Fully Invested</b> | 10 business days after completion of legal documents  |
| <b>Lock-Up</b>                   | None  |
| <b>Withdrawals/Redemption</b>    | 100% liquidity in 3 business days   |
| <b>Fee Schedule</b>              | Approximately 3-5 bps, based upon expected notional value   |
| <b>Reporting</b>                 | Monthly account statements and performance reports. Daily Tracking Report.  |



## SAN FRANCISCO EMPLOYEES' RETIREMENT SYSTEM (SFERS)

June 14, 2017

This material has been prepared at the explicit request and for the exclusive use of San Francisco Employees' Retirement System in a one-on-one presentation only.



# LARGE, ESTABLISHED, AND GROWING ORGANIZATION

## We provide systematic, disciplined portfolio management solutions

- > Parametric Portfolio Associates® LLC ("Parametric") is a majority-owned subsidiary of Eaton Vance Corp.
- > Parametric equity ownership is broadly distributed among senior management and investment professionals.
- > Approximately \$197.7 Billion in assets under management; 85 investment professionals\*.

## We offer investment solutions through our three investment centers:

| Seattle, WA  | Minneapolis, MN   | Westport, CT  |
|--|---|---|
| <ul style="list-style-type: none"><li>• Leaders in rules-based, engineered portfolio solutions</li><li>• Strategies ranging from index tracking portfolios to managed smart beta</li><li>• Ability to incorporate responsible investing themes</li><li>• Founded 1987</li><li>• A subsidiary of Eaton Vance Corp. since 2003</li></ul> | <ul style="list-style-type: none"><li>• Pioneers in overlay strategies and custom risk management solutions (formerly The Clifton Group)</li><li>• Innovative product solutions in real asset and liquid alternatives</li><li>• Founded 1972</li><li>• Acquired by Parametric in 2012</li></ul> | <ul style="list-style-type: none"><li>• Specialists in option portfolio management</li><li>• Provide product-based and custom option overlay solutions</li><li>• Founded 2002</li><li>• A part of Parametric since 2007</li></ul> |

Parametric is divided into two segments: Parametric Investment & Overlay Strategies and Parametric Custom Tax-Managed & Centralized Portfolio Management. For compliance with the Global Investment Performance Standards (GIPS®), the Firm is defined and held out to the public as Parametric Investment & Overlay Strategies.

\*As of 3/31/2017. Includes AUM of Parametric Investment & Overlay Strategies and Parametric Custom Tax-Managed & Centralized Portfolio Management.

This material has been prepared at the explicit request and for the exclusive use of San Francisco Employees' Retirement System in a one-on-one presentation only.

# ADDRESSING IMPLEMENTATION CHALLENGES

Most portfolios have one or more policy implementation challenges that may prevent the portfolio from meeting its objectives



OVERLAY

An overlay adds value by alleviating the inefficiencies created by policy implementation challenges



## IMPLEMENTATION CHALLENGES

- Performance drag due to liquidity needs / inefficient cash flow process
- Residual manager cash balance performance drag
- Exposure management needs related to manager transitions
- Meaningful deviation from policy targets
- Unique exposure needs

An overlay application for each implementation challenge

## PARAMETRIC OVERLAY COMPONENT <sup>1</sup>

- Fund Cash Securitization
- Manager Cash Securitization
- Overlay Transition / Reallocation Management
- Rebalancing
- Outsourced Exposure Management

<sup>1</sup> Client selects from the Parametric Overlay Component(s) based on unique needs and objectives. Additional Parametric Overlay Components including Currency Exposure Management and Interest Rate Management are also available.

This material has been prepared at the explicit request and for the exclusive use of San Francisco Employees' Retirement System in a one-on-one presentation only.

# SECURITIZE FUND CASH EXAMPLE

## Fund Liquidity Position

\$20 billion fund has \$400 million in unintended cash

## Policy Asset Allocation<sup>1</sup>

73% global equity (MSCI ACWI IMI)

27% fixed income (Bloomberg Barclays U.S. Universal)

## Potential Index Overlay Solution

Employ exchange traded futures contracts to provide capital market exposure on \$400 million of fund cash exposure

## Expected Results:

- The risk premium in the market is captured through index futures while still maintaining on-demand liquidity
- Fund realizes transaction cost savings by using futures to manage liquidity instead of physical capital transactions
- Fund has the ability to carry additional liquidity without suffering expected performance drag
- Due to additional liquidity, fund staff does not have to frequently manage cash levels

## How it Works

- A portion of the \$400 million is used to satisfy the margin requirements of the futures contracts<sup>2</sup>
- Futures exposure will closely match cash levels daily so as not to introduce leverage in the fund

| Asset Class   | Target Cash Balance | Futures Overlay |
|---|---------------------|-----------------|
| Global Equity<br>(MSCI ACWI IMI)                    | \$292,000,000       | \$291,900,900   |
| Fixed Income<br>(Bloomberg Barclays U.S. Universal) | \$108,000,000       | \$107,850,000   |
| Total   | \$400,000,000       | \$399,750,000   |
| Fund Liquidity <sup>3</sup>                         | 2.00%               |                 |
| Economic Cash Exposure After Overlay <sup>4</sup>   | 0.001%              |                 |

<sup>1</sup> Asset Allocation is for illustrative purposes only. Not created specifically based on SFERS actual asset allocation.

<sup>2</sup> Margin requirements are typically 15%-20% of the total notional

<sup>3</sup> As a percentage of total fund value

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# SYNTHETIC REBALANCING: EXAMPLE

## Target Asset Allocation

\$20 billion investment fund has a 40% target allocation to global equity (MSCI ACWI IMI) and a 20% target allocation to fixed income (Bloomberg Barclays U.S. Universal)

## Actual Asset Allocation

The fund's actual allocation is 41% global equity (1% overweight) and 19% fixed income (-1% underweight)

## Potential Index Overlay Solution

Employ global equity and fixed income futures to align asset class exposures to desired targets

## Expected Results:

- Fund exposures are effectively rebalanced to policy targets without disrupting underlying manager structure or movement of physical capital
- Fund realizes transaction cost saving by utilizing futures to rebalance fund exposures instead of physical securities
- Portfolio exposures are rebalanced immediately and efficiently thus avoiding the settlement limitation and risk of physical capital movements

## How it Works

- \$200 million in global equity exposure is sold (1% of \$20 billion) and \$200 million in fixed income exposure is purchased (1% of \$20 billion)
- Futures exposure combined with physical fund positions produce desired asset allocation
- Existing fund liquidity is utilized for initial margin to support the futures positions; typically, no incremental funding is needed
- Offsetting long and short positions produce only fully collateralized market exposures without introducing explicit leverage

| Asset Class                                      | Target      | Actual      | Futures Overlay | Deviation from Target |
|--|-------------|-------------|-----------------|-----------------------|
| Global Equity (MSCI ACWI IMI)                    | 40%         | 41%         | -1%             | 0%                    |
| Fixed Income (Bloomberg Barclays U.S. Universal) | 20%         | 19%         | +1%             | 0%                    |
| Alternatives (Custom)                            | 40%         | 40%         |                 |                       |
| <b>Total</b>                                     | <b>100%</b> | <b>100%</b> | <b>0% Net</b>   | <b>0%</b>             |

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## PROCESS OVERVIEW

| Daily Reconciliation of Positions, Activity and Mark-To-Market with clearing firms  | Settlements and Trade Details transmitted to the custodian  | Monthly Clearing Firm and Custodian Reconciliation   | Finalizing Monthly/ Quarterly Accounting Statements   |
|---|---|--|---|
| <ul style="list-style-type: none"> <li>Parametric's Operations Team uses proprietary, automated, exceptions based tools to reconcile every Futures account to the clearing firm daily.</li> </ul> | <ul style="list-style-type: none"> <li>Trade details are sent to the custodian once confirmed with the clearing broker/counterparty.</li> <li>Only after a futures account is fully reconciled will Parametric's Operations Team instruct daily mark-to-market settlements to the custodian.</li> </ul> | <ul style="list-style-type: none"> <li>Accounting group reconciles with clearing broker to ensure the futures activity and cash flows are accurate. Then accounting focuses on the custodian, by reconciling the positions, including cash and all flows.</li> </ul> | <ul style="list-style-type: none"> <li>Once each account is reconciled with the various custodians, a final report is created, saved and delivered as requested.</li> </ul> |

**Accounting and Audit Process:** Parametric's Operations and Accounting teams in the Minneapolis office use proprietary technology and controlled processes to maintain account accuracy through our multi-phase reconciliation processes.

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# BIOGRAPHIES: PARAMETRIC MINNEAPOLIS INVESTMENT CENTER

## **Justin Henne, CFA**

*Managing Director – Customized Exposure Management*

Mr. Henne leads the investment team responsible for the implementation and enhancement of Parametric's Customized Exposure Management product. Since joining Parametric in 2004\*, Justin has gained extensive experience trading a wide variety of derivative instruments in order to meet each client's unique exposure and risk management objectives. He earned a B.A. in Financial Management from the University of St. Thomas. He is a CFA® charterholder and a member of the CFA Society of Minnesota.

## **Kelly Shelquist**

*Director of Operations*

Ms. Shelquist is responsible for leading and managing all aspects of Operations related to both exchange traded and over-the-counter markets. Kelly has over twenty years of industry experience working for retail brokerage firms, custodian banks, and private investment companies. Prior to joining Parametric in 2010\*, she served as the Director of Operations for TPG Credit Management and Operations Manager for EBF & Associates. She earned a B.A. in Business and Psychology from Gustavus Adolphus College, and an MBA from the University of St. Thomas.

## **Benjamin Lazarus, CFA**

*Senior Director – Institutional Relationships*

Mr. Lazarus joined the firm in 2004\*. He is responsible for developing, coordinating, and executing the business development and client services plan for Parametric's unique family of products with emphasis on the Western region of the United States and Canada. In addition, Ben works on developing and managing new partnerships for Parametric and has presented on the use of derivatives at different industry events. From 2015 to 2016, he was the Senior Vice President of US Sales at Nuveen Investments in Minneapolis, Minnesota. Ben earned a B.A. in Psychology from the University of California, San Diego and an MBA in Marketing and Strategic Management from the University of Minnesota. He is a CFA® charterholder and a member of the CFA Society of Minnesota.

\*Reflects the year employee was hired by The Clifton Group, which was acquired by Parametric Portfolio Associates® LLC on December 31, 2012.

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# DISCLOSURE

Parametric Portfolio Associates® LLC ("Parametric"), headquartered in Seattle, Washington, is registered as an investment adviser with the U.S. Securities and Exchange Commission under the Investment Advisers Act of 1940. Parametric is a leading global asset management firm, providing investment strategies and customized exposure management directly to institutional investors and indirectly to individual investors through financial intermediaries. Parametric offers a variety of rules-based investment strategies, including alpha-seeking equity, alternative and options strategies, as well as implementation services, including customized equity, traditional overlay and centralized portfolio management. Parametric is a majority-owned subsidiary of Eaton Vance Corp. and offers these capabilities through investment centers in Seattle, WA, Minneapolis, MN and Westport, CT. This material may not be forwarded or reproduced, in whole or in part, without the written consent of Parametric Compliance. Parametric and its affiliates are not responsible for its use by other parties.

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Derivatives such as futures, swaps, and other investment strategies have certain disadvantages and risks. Futures require the posting of initial and variation margin. Therefore, a portion of risk capital must be preserved for this purpose rather than being allocated to a manager. Liquid futures may not exist for published benchmarks which may result in tracking error. Also, some intra-period mispricing may occur. Swaps require periodic payments, may be less liquid than futures, and may have counterparty/credit risk. Some investment strategies require a cash investment equal to the desired amount of exposure.

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Parametric is headquartered at 1918 8th Avenue, Suite 3100, Seattle, WA 98101. Parametric's Minneapolis investment center is located at 3600 Minnesota Drive, Suite 325, Minneapolis, MN 55435. For more information regarding Parametric and its investment strategies, or to request a copy of Parametric's Form ADV, please contact us at 206.694.5575 (Seattle) or 952.767.7700 (Minneapolis), or visit our website, [www.parametricportfolio.com](http://www.parametricportfolio.com).

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NEPC, LLC

**To:** Trustees of the San Francisco City and County Employees' Retirement System  
**From:** Allan Martin and Daniel Hennessy, CFA, CAIA  
**Date:** June 14, 2017  
**Subject:** Parametric Policy Implementation Overlay Service

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**RECOMMENDATION:**

We support staff's recommendation to hire Parametric as the plan's new overlay manager. A well-specified overlay strategy will help SFERS achieve its return objectives, manage its risk exposures, and fulfill its liquidity requirements. NEPC rates Parametric a preferred manager for overlay services, as the firm's long-term experience and disciplined, solution oriented approach to providing overlay services promotes a process that delivers intended exposures to clients in a low-cost, efficient manner.

**OVERLAY SERVICES:**

Overlay managers use a rules-based derivatives portfolio to solve a number of different issues for institutions like SFERS. They gather portfolio information from managers, the custodian bank, and staff to track portfolio holdings on a daily basis. As a result, they can provide a range of useful services. The primary solutions that Parametric would provide are:

- **Cash Securitization** – portfolio cash is used as collateral to purchase stock and bond futures that match the overall asset allocation and eliminate "cash drag" in the portfolio. This benefits plan performance when those asset classes outperform cash returns.
- **Rebalancing** – Instead of securitizing cash to a static target, Parametric would purchase stock and bond futures to rebalance the beta exposures of the portfolio back to its targeted asset allocation. This allows SFERS to avoid unwanted tracking error at a lower cost than buying/selling physical assets.
- **Transition Management** – Parametric could smoothly maintain beta exposures during manager transitions, again eliminating potential cash drag issues.

NEPC reported in a 2014 white paper that using an overlay manager for cash securitization and rebalancing could potentially improve an institutional portfolio's long-term investment return by approximately 22 basis points annually.<sup>1</sup> For the SFERS Pension Plan that could amount to an incremental \$48 million gain per year. In addition, other uses for an overlay program could be adopted by SFERS in the future including:

- **Tactical Asset Allocation** – Parametric could quickly and efficiently implement tactical beta exposures as directed by SFERS.
- **Currency Management** – Parametric could add or remove currency exposures as either a long-term risk control measure or to implement a tactical investment decision.
- **Interest Rate Management** – Parametric could adjust the plan's overall interest rate yield curve exposures more quickly and at a lower cost than changing strategies or buying/selling physical bonds.

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<sup>1</sup> Brian Roberts, "Overlay Strategies: Increasing Portfolio Efficiency Through Derivatives," NEPC, LLC March 2014.



Not all of SFERS' current exposures are easily replicated using liquid index futures. For example, proxies would have to be agreed upon for private equity and real assets. Also, the low-cost beta exposures managed by Parametric would not be sources of manager alpha for the portfolio. But over time we believe that the cash securitization and rebalancing program would benefit SFERS greatly.

**PARAMETRIC COMPANY DESCRIPTION:**

Parametric Portfolio Associates LLC (Parametric), headquartered in Seattle, WA, provides investment strategies and implementation services to institutions and individual investors around the world. Parametric offers a variety of rules-based, risk-controlled investment strategies, including alpha-seeking equity and alternative and options strategies. They also offer implementation services, including customized equity, traditional overlay and centralized portfolio management. Parametric is a majority-owned affiliate of Eaton Vance Corp. and offers these capabilities through investment centers in Seattle, WA, Minneapolis, MN and Westport, CT (home to Parametric subsidiary Parametric Risk Advisors, LLC, a registered investment adviser).

The Clifton Group was sold to Parametric/Eaton Vance by Dougherty Financial at the end of 2012. Eaton Vance, through two of its wholly owned entities, holds a 94% stake in the profits of Parametric. Employees of Parametric, through ownership in Parametric Portfolio LP, hold the remaining 6% stake. The Clifton Group was founded in Minnesota in 1972. The concept of a centralized overlay investment management program was developed by Clifton in 1986 in partnership with the firm's first overlay service client. This service originally served as an efficient means to implement asset allocation shifts as directed by an outside tactical asset allocation vendor, but quickly evolved to include several overlay applications. Parametric's Policy Implementation Overlay Service (PIOS) focuses on delivering value-added synthetic strategies including cash securitization, synthetic rebalancing, and exposure management during transitions, currency hedging/management, interest rate hedging/duration management of defined benefit plan liabilities, and centralized beta management. Parametric has invested in PIOS (Portfolio Implementation Overlay Services), in both people and technology, to maintain the capacity needed to better serve their current client base while allowing for future growth. The program has continually been enhanced with over two decades of research and development. From this base the firm has begun to offer more broad risk management solutions such as Global Balanced Risk (customized Risk Parity completion/Risk Parity) and Defensive Equity (low-volatility solution).

**OVERLAY IMPLEMENTATION:**

SFERS' onboarding process would begin with collaboration with Parametric to review and approve the Investment Management Agreement. A detailed review of the portfolio and the client's objectives would lead to establishment of Policy Guidelines – benchmarks, replication approaches, instruments, etc. Once guidelines are finalized, operational structures must be put in place, including setting up the Futures Commission Merchant (FCM) account and additional custodial cash account(s) tied to the FCM. Parametric works regularly with a number of FCMs including Goldman, Morgan Stanley, UBS and Citigroup. SFERS' overlay collateral account is then funded at their custodian with cash for margin. Parametric works with all major custody banks including BNY Mellon and Northern Trust.



Once fully implemented, the investment process would flow through Parametric's trading system. Parametric has invested significantly in their operational platform. Investment processes are driven by guidelines which outline rules that trigger trades/rebalancing, allowable instruments, contracts to be used to replicate exposures, etc. Parametric has built a proprietary system with internal checks and balances in order to accurately meet the unique set of objectives and guidelines of each client.

This platform creates proposed trades based on systematized rules from guidelines. The portfolio manager enters all trades (to clean up rounding, etc. from trading system output). The system will flag any trades that are not logical or outside of guidelines. Another portfolio manager reviews and approves the entered trades. The system sends the trades to the FCM and the FCM executes the order. The FCM will work across all the various exchanges depending on the needed exposure/instrument. A ticket arrives from the FCM confirming the trade.

Although staff's intention is to focus on highly liquid index futures for this overlay program, Parametric does have the ability to use other exchange traded and over-the-counter (OTC) derivatives such as swaps, options, forwards, and swaptions. In contrast to the almost entirely electronic trading for futures, the trading process can be very manual (often over email) for over-the-counter (OTC) swaps. For OTC transactions, Parametric has a standard bid sheet. They will send out a proposed trade to several counterparties to get competitive bidding. An email is received confirming the OTC transaction with the counterparty. They work with roughly 6 counterparties consistently and have umbrella ISDA agreements set up with several.

If they have orders that can be aggregated for better pricing (trades at market open/market close), the system will aggregate and execute them together. They are not able to cross trades across clients to save transaction costs. They are able to execute Exchange Futures for Physicals (EFP) transactions when clients are funding the collateral account from an index exposure.

#### **PERFORMANCE REPORTING AND COUNTERPARTY RISK:**

A daily data reconciliation occurs combining custody data and market performance to determine any required trading. For separate accounts or daily valued funds, actual performance is used. For monthly or quarterly valued funds, a chosen index or set of indices can be used as a proxy. Non-index tracking exposures (hedge funds, illiquids, etc.) are often carved out from portfolio analysis and trued up once new valuations are established. Performance reporting, reconciliation, and required trading are all based upon the carefully constructed investment agreement and policy for trading. Parametric provides daily exposure reports to clients to track asset allocation and overlay positions, including margin balances and gain/loss by exposure.

For clients that choose to use OTC swaps in their program Parametric evaluates counterparties and associated risks carefully. They typically utilize up to 4 counterparties per client to minimize concentration risk. A counterparty must have an A credit rating from S&P and Moody's at the initiation of a transaction, but Parametric also monitors its counterparties on a daily basis. Included in this monitoring are credit default spreads, public credit ratings, market news and equity capitalization. Parametric also is careful to negotiate ISDA agreements that can protect clients from deteriorating counterparty credit, including





minimum transfer amounts, appropriate thresholds, auto termination linked to counterparty credit and the ability to reset swap to zero credit exposure in certain situations. Additionally, they seek to have collateral held in third party accounts, or place restrictions on the counterparties right to repledge the collateral elsewhere or hold it offshore.

#### **KEY EMPLOYEE BIOS:**

Parametric's PIOS team has 90 employees in Minneapolis and Westport, CT. There are 10 portfolio managers, 12 assistant PMs and 11 investment support professionals led by Jack Hansen, CIO, Thomas Lee, Managing Director – Investment Strategy & Research, and Justin Henne, Managing Director – Customized Exposure Management.

**Jack Hansen, CFA, CIO**

Jack Hansen joined Parametric in 1985. As Chief Investment Officer, his responsibilities include the management of investment operations and portfolio management. Jack has managed futures, swaps, options, and other derivative based programs since 1986. Jack earned a BS degree in finance and economics from Marquette University and a MS in finance from the University of Wisconsin, Madison.

**Thomas Lee, CFA, Managing Director – Investment Strategy and Research**

Thomas Lee joined Parametric in 1994. Tom has traded futures, swaps, and other contracts in the overlay program since starting with the firm. Tom heads up a Portfolio Management Team that provides customized solutions for institutional investors' risk management needs and is responsible for research required to manage the firm's overlay portfolios. Tom has been instrumental in developing and enhancing synthetic fixed income strategies which track commonly referenced fixed income benchmarks. Prior to joining Parametric, he spent two years working for the Federal Reserve in Washington, D.C. In this position, he gained experience in modeling and forecasting interest rates and related monetary variables. Tom earned a BS in economics and an MBA in finance from the University of Minnesota.

**Jay Strohmaier, CFA, Managing Director**

Jay Strohmaier returned to Parametric in 2009. Jay has extensive experience with futures and options-based strategies and has been active in the investment industry since 1984. As a Sr. Portfolio Manager, Jay leads a team of investment professionals responsible for designing, trading and managing overlay portfolios with an emphasis on options-based strategies and hedging. Prior to rejoining Parametric, Jay worked for Cargill, Peregrine Capital Management, and Advantus Capital Management where his responsibilities included research, portfolio management, trading, marketing, and client service. He holds a BS degree in Agricultural Economics from Washington State University and MS in Applied Economics from the University of Minnesota.

**Justin Henne, CFA, Managing Director – Customized Exposure Management**

Justin Henne joined Parametric in 2004 as an Investment Analyst. In 2012, he was promoted to Senior Portfolio Manager and is a member of the Portfolio Management Team. He has overlay portfolio management responsibilities with an emphasis on international index and currency management strategies. He leads a team which continues to enhance overlay programs to meet clients ever changing risk management needs. Justin holds a BA in Financial Management from the University of St. Thomas. Prior to joining Parametric, he was a fixed income research analyst intern at Jeffrey Slocum & Associates.