

Investment Program

PUBLIC EQUITY REBALANCING PLAN EMERGING MARKETS

Joint IC

Summary:

- Target allocation to Emerging Markets Public Equity is 10%. Currently P&F has \$190 mm (5.3%) allocated Northern Trust Passive Emerging Market IMI fund. Federated has \$117 mm (5.5%) allocated to Northern Trust Passive Emerging Markets IMI Fund. *
- Historically, MSCI Emerging Markets IMI index has ranked below median in various market conditions. That provides opportunities for active managers to add value through a market cycle.

Percentiles	Returns - 1 Year (3/2019)	Returns - 3 Years (3/2019)	Returns - 5 Years (3/2019)	Returns - 7 Years (3/2019)	Returns - 10 Years (3/2019)
High	9.96	23.25	12.45	11.95	19.51
10th Percentile	-2.99	14.27	7.00	6.65	13.11
25th Percentile	-5.60	12.30	5.66	5.32	11.82
Median	-7.82	10.69	4.38	3.96	10.56
75th Percentile	-10.03	8.83	3.43	2.92	9.53
90th Percentile	-12.73	7.17	2.33	2.18	8.64
Low	-30.01	-2.25	-2.03	-0.32	5.66
Observations	515	482	421	321	204
MSCI EM IMI Net Index	-7.97	10.08	3.45	2.68	9.12
Rank (%)	53	60	74	82	83

Source: eVestment

• Staff recommends that the plan hire Wellington Emerging Markets Systematic Equity and RWC Emerging Markets Equity, and terminate Comgest GEM Promising Companies product for underperformance concerns. Wellington Emerging Markets Systematic Equity and RWC Emerging Markets Equity provide uncorrelated sources of alpha and diversification to the current portfolio. Adding the two funds to our existing portfolio will provide better risk and return profile for Emerging Markets equity.

^{*} Based on preliminary AUM data as of April 30, 2019

Summary Boston, MA Firm Founded 1928 9/30/2009 \$1,080 billion 11% Firm AUM Product AUM \$2.8 billion Investment Team 20 (product) **Investment Vehicle** Com, Sep, mutual fund Incentive based MSCI EM Net About 200 stocks 90% 62 \$50 m(Fed); \$80 m(PF) NT EM IMI Passive Context of Funding Moving passive assets to active managers SJ Funding Date TBD

Lead PM Background

David Elliott, CFA, FRM is director of portfolio management and co-director of quantitative investments. He is responsible for overseeing the investment processes for the Quantitative Investment Group's global suite of products. He oversees the development of the group's portfolio construction platform and related analytical tools. He also contributes to research, particularly in the areas of portfolio construction and risk management. Prior to joining Wellington in 1995, David served as an independent information technology consultant to health care and financial service firms, focusing on applying business intelligence techniques to large databases.

David received dual BS degrees in mathematics and computer and information sciences, Phi Beta Kappa, from the University of Massachusetts at Amherst (1989). Subsequently, he was admitted to the doctoral program at the MIT and completed all but his dissertation in the field of computational neuroscience. He holds the CFA designation and is a member of the CFA society of Boston. He is also certified by the Global Association of Risk Professionals as Financial Risk Manager (FRM).

Investment Philosophy

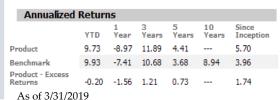
Wellington Emerging Markets Systematic Equity Portfolio is a bottom-up approach that seeks to capitalize on market inefficiencies using a highly systematic and risk-controlled process.

The team score each company using a proprietary quantitative equity model, which includes a library with over 50 factors from six primary categories: Fair Value, Pure Value, Management Behavior, Earnings Quality, Short-Term and Long-Term Momentum.

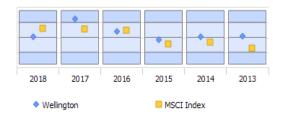
The investment process also employs a proprietary transaction cost model in order to avoid illiquid names and to systematically incorporate the likely implementation costs into the decision process.

The investment team utilizes a proprietary risk model along with third-party models to monitor and control differences from the benchmark in terms of factors.

Historical Net Performance



Calendar Year Returns



Chai	racteristi	ics - 5 Yea	r and S	ince Inc	eption	1	
	Tracking Error	Batting Average	Info Ratio	UMC	DMC	Beta	Sharpe Ratio
5 Year	1.91	0.53	0.38	105.57	101.36	1.02	0.24
Since Inception	2.13	0.57	0.82	106.05	98.14	1.01	0.31

Portfolio Characteristics and Portfolio Role

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Portfolio Characteristic s	 The team utilize a proprietary risk model to monitor their position size, countra and sector allocation, as well as factor exposures. The portfolio shows slight variand high quality bias. Majority of risk comes from stock specific risk. Their sector and country allocations are very close to the benchmark. The portfolio has a slight bias to smaller cap names and value names.
°ortfolio Role	 The strategy is expected to have low tracking error and high information ratio does not show strong value or growth, large cap or small cap bias relative to the benchmark. It is appropriate to be used as a core allocation. The strategy showed little correlation to managers such as DFA and GQG. Its history complements well with the growth and value manager combination.

Investment Thesis

- Wellington Management Company is currently funded by City of San Jose. Organizationally it has been strong.
- The investment process is highly disciplined. What makes them unique is not only the quantitative equity model, but their proprietary risk model and transaction cost model.
- The strategy is intentionally designed as a core strategy that should not lag significantly even if growth or value is out of favor. The strategy historically has demonstrated very consistent returns with high information ratio and batting average.

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- Strategy tracking error is low. It is unrealistic to have high alpha expectation from this strategy.
- The quantitative research team support multiple products including US and international products.
 - The strategy AUM has not grown significantly since its launch in 2009.

Comparison with Universe

		Organization	Operation	Compliance	Team	Process	Risk	Correlation	Valuation	Fees	Capacity	Client Service	Overall
Strong	5												
	4												
	3												
	2												
Weak	1												

Summary

Miami, FL Firm Founded 2000 8/2012 \$16 billion % of Public Fund in 60% \$6.1 billion Investment Vehicle Commingled fund 75 bps Benchmark MSCI EM Net # of stocks 50-60 60-70% 91 Allocation \$25 m(Fed); \$40 m(PF) NT EM IMI Passive Moving passive assets to active managers TBD

Lead PM Background

John Malloy, Portfolio Manager for RWC's EM strategy. John also serves as a member of the investment committee for the RWC Emerging and Frontier Markets strategies. He has 26 years of experience in international investment management and commodity, debt and equity research analysis. John previously held the position of Senior Managing Director, Director of Învestments at Everest Capital where he worked since 1996. Prior to this he was an investment manager at Baring Asset Management focused on Latin American and US high yield markets. John holds a BS in Management from Norwich University and an MBA from the Boston University Graduate School of Management. John speaks Spanish.

Investment Philosophy

RWC's Emerging Markets team combine both top-down and bottom-up research to identify the countries, themes and companies with the highest return potential. RWC targets growth opportunities trading at reasonable prices and pursues an idea-focused rather than index approach.

The Investment Committee forms the macro views across all regions and sectors. Macro factors considered include strength of the business cycle, inflation management, foreign exchange reserves, current account balance, fiscal policy, fiscal balance, GDP growth prospects, and monetary policies, etc.

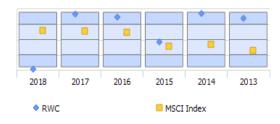
The analyst team have regional and industry coverage. Through quantitative and on-the ground research, the team look for companies that have low forward PEG ratio, strong revenue and earnings growth, and strong balance sheet.

Historical Net Performance



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Annualized Returns								
	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception		
Product	17.43	-14.36	13.19	6.16		8.62		
Benchmark	9.93	-7.41	10.68	3.68	8.94	3.97		
Product - Excess Returns As of 3/31/20	7.50 19	-6.95	2.51	2.48		4.65		

Calendar Year Returns



Characteristics - 5 Year and Since Inception

	Tracking Error	Batting Average	Info Ratio	UMC	DMC	Beta	Shar Ratio
5 Year	7.44	0.52	0.33	113.73	100.52	1.09	0.30
Since Inception	7.14	0.54	0.65	121.32	96.84	1.09	0.47

Portfolio Characteristics and Portfolio Role

Portfolio Role

- The portfolio has very high active share. Predicted Tracking Error in over 6%.
- Portfolio has a growth tilt with higher PE, PB
- Portfolio currently has underweight in Communication and Information Technology. They currently have significant overweight to Materials. Sector weights are a result of where they see secular growth and their current valuation.
- The strategy follows bottom-up process. Their macro overlay helps the PM to determine if it is appropriate to overweight or underweight certain countries.
- The strategy has a high tracking error. It is best used as an opportunistic Even though this is a growth manager. Correlation analysis shows that it is highly
- correlated with DFA, and quite negatively correlated with GQG.
- The manager tends to do well in strong up market. It may lag in down markets.

Investment Thesis

- PM has experience in EM investing since he was at Everest
- The team leverages RWC's legal, operations and compliance platform. The investment team can focus on security research and portfolio
- They have teams located in US, London and Singapore with access to regional local research.
- Historical performance has demonstrated very strong up capture. This complements well with current manager line-up.
- RWC senior management level had some recent turnovers. They explained that it was part of a plan that upgrade the team with people having more global perspectives..
- The research team also had some turnover. Their Head of China Research along with 2 other analysts left the firm in July 2018.

Comparison with Universe

		Organization	Operation	Compliance	Team	Process	Risk	Correlation	Valuation	Fees	Capacity	Client Service	Overall
Strong	5												
	4												
	3												
	2												
Weak	1												

COMGEST GROWTH GEM PROMISING **COMPANIES**

31-Mar-2019 Currency: USD Index: MSCI Emerging Markets SMID Cap - Net

Return

PERFORMANCE (NET)*

CUMULATIVE PERFORMANCE SINCE INCEPTION (%)

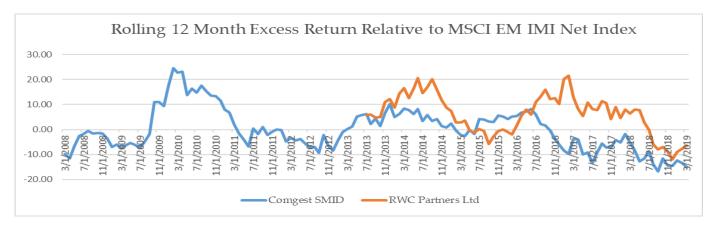


ROLLING PERFORMANCE (%)

					Annualized				
	1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Inception 04-Apr-2007	
Rep. Acct.	-0.00	8.18	8.18	-22.94	1.21	-0.90	8.71	1.17	
Index	0.63	7.41	7.41	-10.42	6.90	1.92	9.62	3.18	

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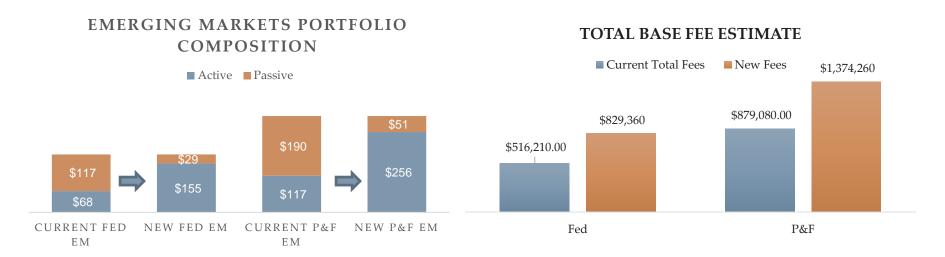
Source: Comgest

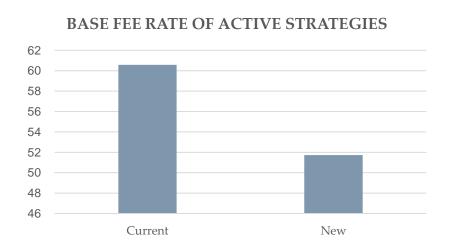


Comgest RWC SI Average -0.2 6.1 Current Z-Score -1.8 -1.6 Correlation 41%

		Current Fund	ded Managers		Proposed Managers		
	DFA	GQG	Comgest	Passive	Wellington	RWC	
Current Allocation (Fed)	\$25 mm (13%)	\$29 mm (16%)	\$15 mm (8%)	\$117 mm(63%)	0	0	
Proposed Allocation (Fed)	\$40 mm (22%)	\$41 mm (22%)	0%	\$29 mm (16%)	\$50 mm (27%)	\$25 mm (14%)	
Current \$ Allocation (P&F)	\$33 mm (11%)	\$50 mm (16%)	\$34 mm (11%)	\$190 mm (62%)	0	0	
Proposed \$ Allocation (P&F)	\$68 mm (22%)	\$68 mm (22%)	0% \$51 mm (1		\$80 mm (26%)	\$40 mm (13%)	
Investment Approach	Smart Beta	Fundamental	Fundamental	Index	Quantitative Systematic	Fundamental	
Style	Value	GARP	SMID Growth	Core	Core/Value	Core/Growth	
Portfolio Role	ValueMid Cap	owthDownside Protection	SMID Cap	Passive	CoreHigh IR	Up Market Participation Opportunistic	
Base Fee	57 bps	65 bps	60 bps < \$25 mm; 55 bps on the next \$25 mm; and 50 bps for over \$50 mm	9 bps	25 bps	75 bps	
Performance Fee	N/A	N/A	20% of excess return vs. MSCI EM SMID Net USD	N/A	30% of (excess return over Index + 0.5%) up to 57 bps and 10% split thereafter	N/A	
Fund Structure	Commingled	Commingled	Commingled	Commingled	Commingled	Commingled	

	RWC		Wellington		New EM Fund		Current EM Fund		
Total Tracking Error Ex Ante	5.51	5.51		2.23		2.15		1.41	
3 Largest Country Active Weight	Taiwan South Africa UK	-6.9% -5.6% +4.9%	China India Taiwan	-4.7% -2.7% -2.2%	Taiwan India Korea	+2.7%	Taiwan Korea India	-2.5% -2.0% +1.8%	
3 Largest Sector Active Weight	Industrials Comm. Services Financials	+8.5% -6.8% -6.3%	Financials Health Care Consumer Disc.	+3.2% -2.3% -2.1%	Financials IT Comm. Services	-2.9%	Financials IT Consumer Disc.	+2.7% -2.1% -1.4%	
3 Largest Style Factor Exposure (Barra)	Dividend Yield Liquidity Residual Vol.	-0.5 +0.5 +0.4	Earnings Yield Book-to-Price Dividend Yield	+0.5 +0.3 +0.3	Beta Book-to-Price Earnings Yield	-0.2 +0.1 +0.1	Beta Size Risidual Volatility	-0.1 +0.1 -0.1	
Historical Excess Return SI	4.7		1.7		1.3		0.0		
Historical Tracking Error SI	7.2		2.1		1.7	1.7			
Historical Information Ratio SI	0.7		0.8	0.8			0.0		
Average Rolling 12M Excess Return	6.1		2.1	2.1		1.4		-0.1	
% of Positive 12M Excess Return	75%		77%		81%		41%		





Based on AUM as of April 30, 2019. The analysis does not include performance fees.

- Federated: Allocate \$50 mm to Wellington EM, and \$25 mm to RWC EM. Increase by \$15 mm to DFA and by \$12 mm to GQG.
- P&F: Allocate \$80 mm to Wellington EM, and \$40 mm to RWC EM. Increase by \$35 mm to DFA and increase by \$18 mm to GQG.
- Terminate Comgest Emerging Markets SMID Cap
- For both plans, source of funding will be from Northern Trust EM IMI passive fund and the terminated manager.
- Both Wellington and RWC are stable organizations with strong investment teams. Wellington utilizes a
 quantitative approach to produce returns with no clear style tilt and perform in majority of market
 conditions. RWC provides a different source of alpha from their macro top-down and fundamental
 bottom-up research. RWC also has the potential of achieving very strong up-capture.
- Comgest has lagged its benchmark since inception. Comgest has a higher correlation with RWC in terms of excess return pattern.
- The new allocation is expected to provide stronger excess return with appropriate tracking error.

Appendix



Donald S. Tunnell MBA, University of Chicago 30 years experience



David J. Elliott, CFA, FRM BS, University of Massachusetts, Amherst 29 years experience



Multi-horizon Return Models Risk Modeling Transactions Cost Models Multi-asset Modeling Portfolio Management and Oversight

Research Infrastructure Behavioral Finance

Alternative Data



Cheryl L. Davis MBA, Bentley University 21 years experience



Glola Dominedo SM, Harvard University 13 years experience



Yang Du, PhD PhD, Northeastern University 8 years experience



David Goddeau, PhD PhD, Massachusetts Institute of Technology 36 years experience



Andy D. Gossard MBA, Massachusetts Institute of Technology 12 years experience



Josh Graver, PhD PhD, Princeton University 10 years experience



Christopher R. Grohe, CFA MBA, Massachusetts Institute of Technology 23 years experience



Sharon Gu, CFA MS, Cornell University 8 years experience



Gabby He, CFA MA, Massachusetts Institute of Technology 5 years experience



Owen Lamont, PhD PhD, Massachusetts Institute of Technology 26 years experience



Michael P. McElroy, CFA MS, Massachusetts Institute of Technology 31 years experience



Yasick Nemenov BA, Williams College 2 years experience



Feng Pan BA, Duke University 2 years experience



William Rubens, PhD PhD, Imperial College London 9 years experience



Reza Shabani, PhD PhD, University of California, Berkeley 5 years experience



Ryan Stuntz
BS, Massachusetts Institute
of Technology
<1 years experience

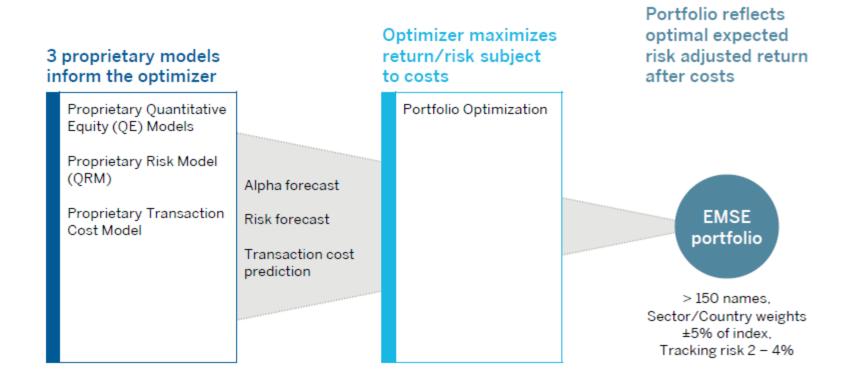


Mark A. Yarger, CFA MBA, Babson College 29 years experience



Wel Xu MS, Tsinghua University 10 years experience

Source: Wellington Management



Source: Wellington Management



John M. Malloy, Jr. Portfolio Manager of Emerging Markets Strategies Investment Committee



Patricio Danziger Latin America Investment Committee



Victor Erch



Thomas Allraum Co-Portfolio Manager Thematic Research Investment Committee



Colin Liang China Investment Committee



Long Hao



Christopher Siow



James Johnstone Portfolio Manager of Frontier Markets Strategies Investment Committee



Jaimin Shah Asia (Excluding China) Investment Committee



Shivesh Haulkhory



Muchemi Wandimi



Cem Akyurek, Ph.D. Economist Investment Committee



Marina Bulyguina ESG



Dan Huang



Ferdinand Campbell



Anil Tewari Research Investment Committee



Christopher DiSalvatore



Jessica Lim

Source: RWC

The investment team's process combines **top-down** and **bottom-up** fundamental inputs, enabling the team to select the countries, sectors, themes and companies they believe present the **strongest return prospects**

Macro Framework

TOP-DOWN

 Conduct macroeconomic and geopolitical analysis to identify opportunities, risks, themes and currency forecasts

Investment Idea Generation

THEMATIC

- Global approach to discover growth areas across countries and sectors
- Highlight synergies and historical parallels

BOTTOM-UP

- Monitor universe of stocks based on regional or sector coverage
- Identify securities that classify as "growth at a reasonable price"

Opportunistic Implementation

FLEXIBLE

- Unconstrained by index mandated countries and securities
- Manage risk by focusing on liquidity, position sizes and overall portfolio concentrations

Source: RWC

Firm Name	Strategy	Comments
Acadian Asset Management LLC	Emerging Markets Equity	Quantitative, core/value
AGF Investments	AGF Emerging Markets Equity	New team, fundamental, core/quality
Arrowstreet Capital, Limited Partnership	Emerging Markets	Quantitative
Artisan	Developing World	New team, fundamental, benchmark agnostic
Ashmore Group plc	Ashmore EM Active Equity Strategy	Top-down
Aubrey Capital Management Limited	Global Emerging Markets Strategy	Fundamental bottom-up stock picker, high tracking error
Axiom Investors	Axiom Emerging Markets Equity Strategy	Fundamental, core/growth
Baillie Gifford & Co	Emerging Markets All Cap	Fundamental, high growth
Barrow, Hanley, Mewhinney & Strauss, LLC	Emerging Markets Equity	Fundamental, value
BlackRock	Emerging Markets Alpha Advantage	Quantitative, academic research based, core
Driehaus Capital Management LLC	Driehaus Emerging Markets Growth	Fundamental, growth
Lazard Asset Management LLC	Emerging Markets Equity	Fundamental, relative value
LSV Asset Management	Emerging Markets Value Equity	Quantitative, value
Metis Global Partners, LLC	Emerging Markets Equity	Quantitative, deep value
Numeric Investors LLC	Emerging Markets Core	Product closed
Putnam Investments	Putnam Emerging Markets Equity	Fundamental, growth
TT International	TT Emerging Markets Equity	Top-down & bottom-up fundamental
William Blair Investment Management, LLC	Emerging Markets Growth	Fundamental, quality growth