

North Carolina Retirement 403 (b) Plan

Defined Contribution Performance Evaluation

Fourth Quarter 2014

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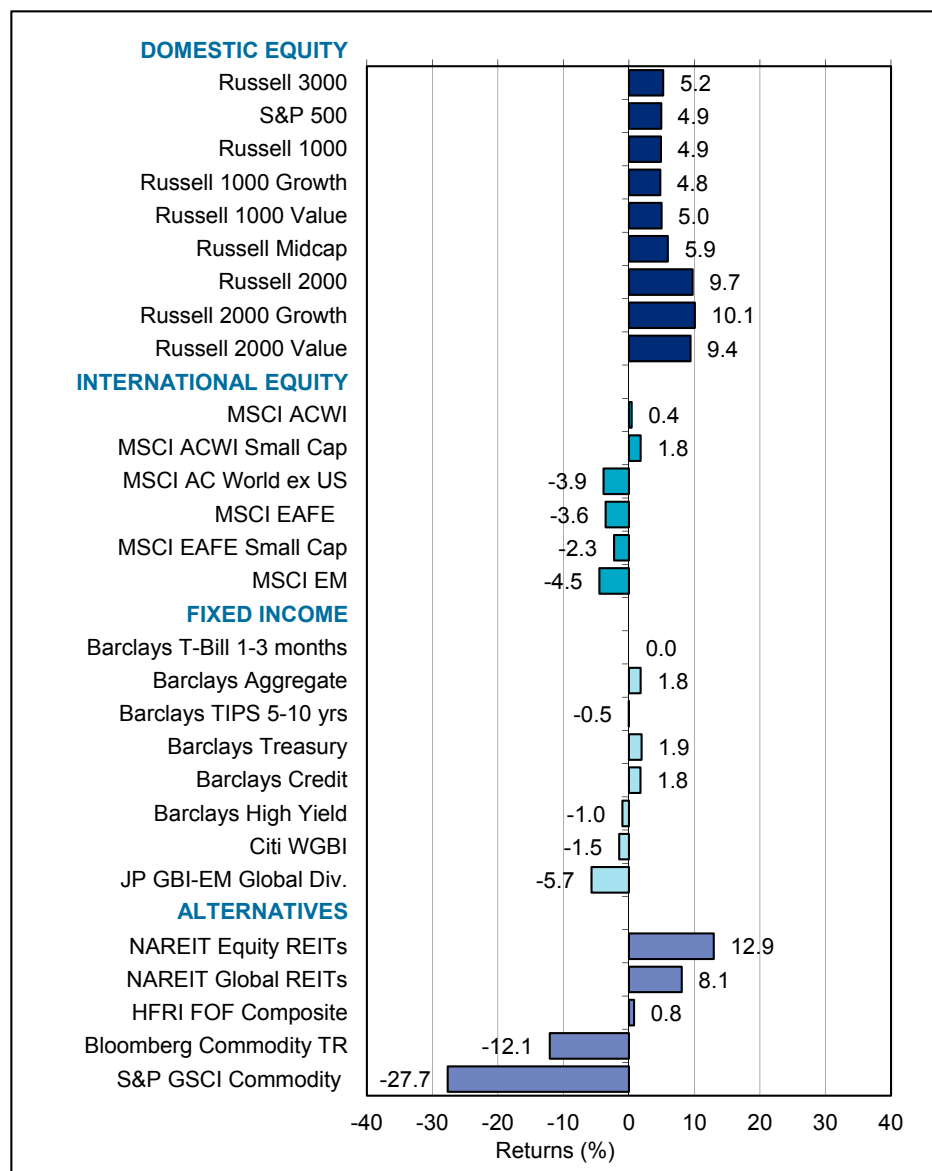
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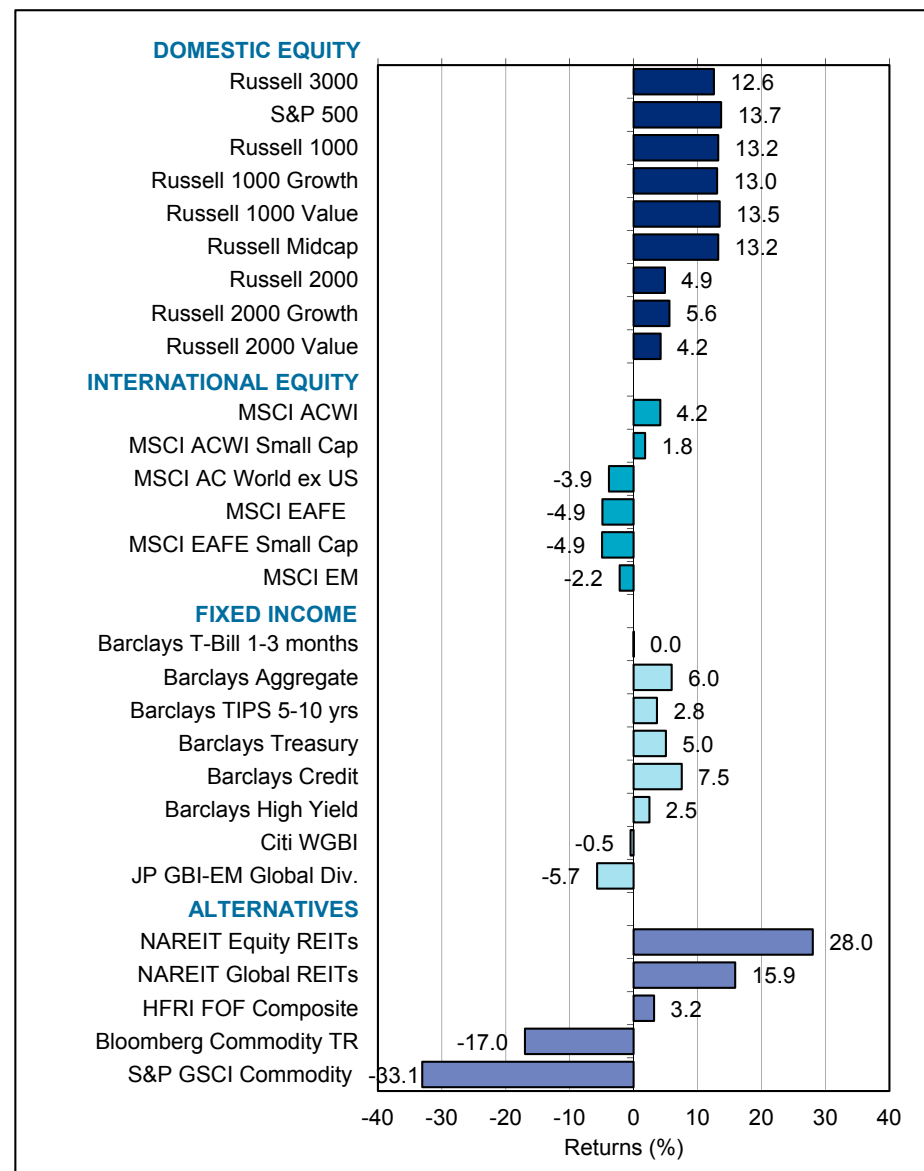
Performance Summary: Quarter in Review

Market Performance
Fourth Quarter 2014



Source: Standard & Poor's, Russell, MSCI Barra, NAREIT, Bloomberg

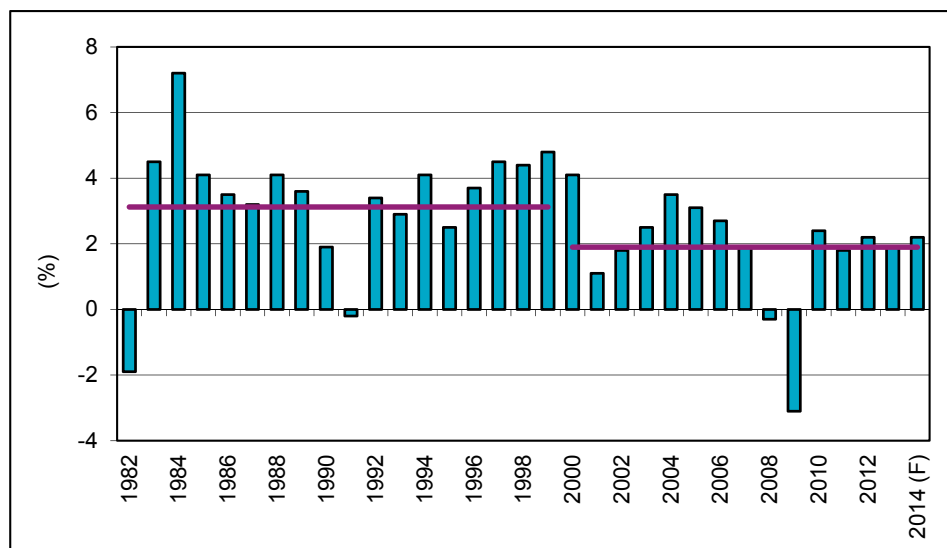
Market Performance
YTD



Source: Standard & Poor's, Russell, MSCI Barra, NAREIT, Bloomberg

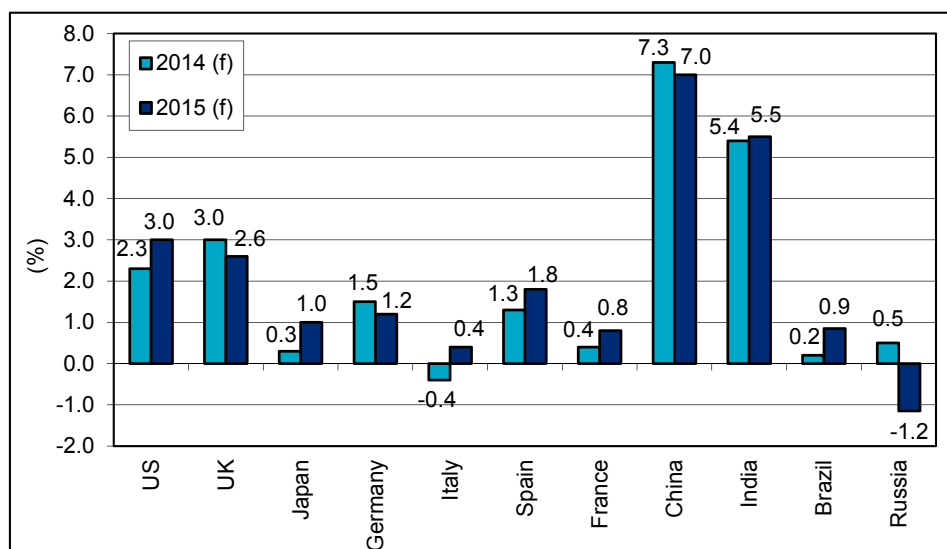
Macro Environment: Economic Review

Annual GDP Growth



Source: Bureau of Economic Analysis

World Economic Growth
(Projections as of December 2014)

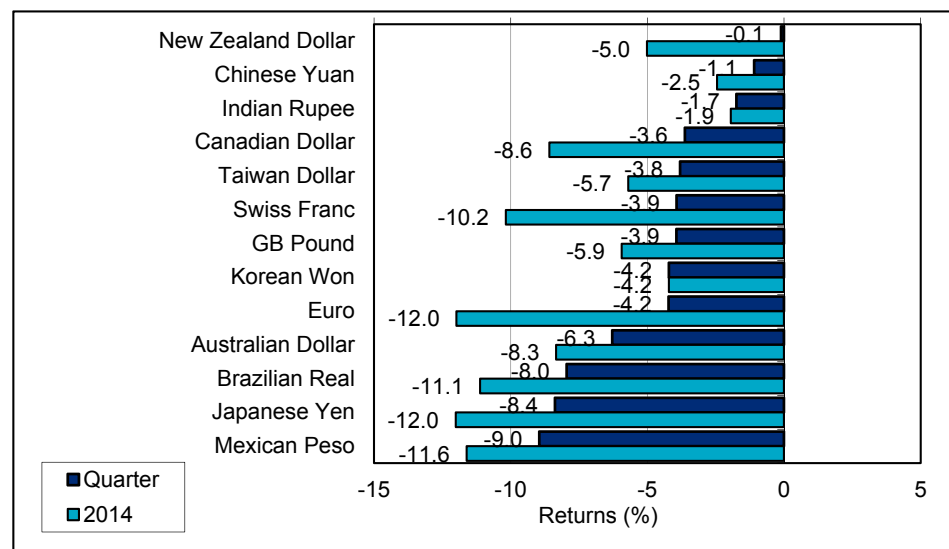


Source: Bloomberg

- Developed world growth is likely to improve in 2015 due to lower energy prices and less fiscal tightening. However, growth will remain uneven across regions. The expansion is likely to be the strongest in the US and the UK, while the Eurozone and Japan are likely to struggle.
- US GDP is forecast to expand by 3% in 2015, which would be the best year for growth since 2005. The unemployment rate has declined to 5.6%, which is in-line with historical averages, although broader measures still suggest some labor slack. While the Fed is likely to raise rates in 2015, we expect that it will do so gradually as inflationary pressures remain subdued.
- The 2015 outlook for the Eurozone is modestly better than 2014 due to reduced fiscal tightening, a weaker euro, and a stronger global economy. However, the region is forecast to expand by only 1.1% in 2015. Whether QE and structural reforms will be implemented and prove sufficient at helping the region avoid a prolonged period of weakness remains to be seen.
- Consumption tax increases slowed growth more than expected in Japan in 2014. While the weaker yen has improved the near-term outlook, further structural reforms of the corporate sector and labor markets are needed to improve the secular growth outlook.
- The EM growth outlook is mixed. Stronger growth in developed markets and weaker currencies should help exports. However, there is also a wide divergence across countries. Countries with a high potential for structural reform (India, Mexico, Indonesia) are likely to enjoy better prospects than non-reformers (Brazil, South Africa, Russia). The sharp fall in oil prices will also have an uneven impact. Energy importers (Asia) will benefit at the expense of energy exporters such as Russia and Middle Eastern countries.
- Chinese growth is likely to slow further in 2015; however, a hard landing remains unlikely given China's ability to provide stimulus and recapitalize the banking sector. The secular outlook depends on the ability to implement structural reforms in order to transition the economy toward consumption.

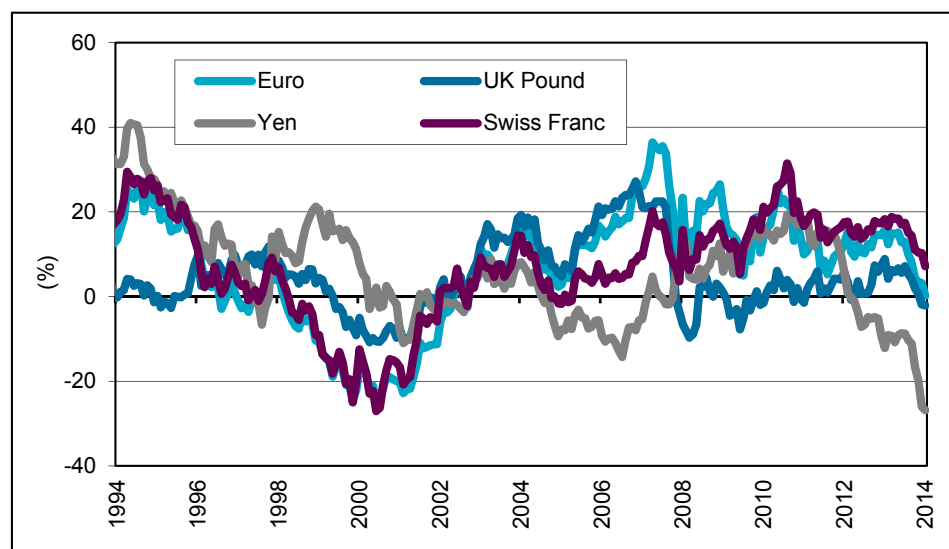
Macro Environment: Currencies

Performance of Foreign Currencies versus the US Dollar



Source: Bloomberg

Currency Valuation versus US Dollar (Based on Relative PPP)

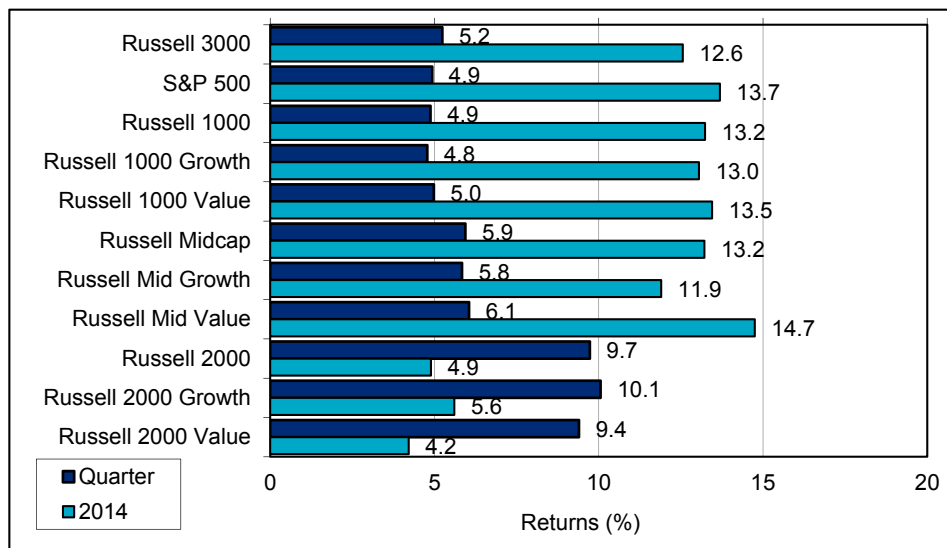


Source: Bloomberg

- On a trade-weighted basis, the US dollar advanced 5.6% in the fourth quarter, taking its 2014 gain to 10.3% and marking the strongest calendar year performance since 1982. The yen and euro were hit particularly hard, tumbling 8.4% and 4.2% in the fourth quarter, and both pushing 2014 losses to 12.0%. Commodity sensitive currencies and emerging market currencies were also pummeled. Speculators are positioned very long the dollar, posing the risk of a short-term counter trend move. However, we believe the dollar is likely to continue to appreciate over the intermediate-term.
- Monetary policy should continue to support the dollar. The Fed has ended QE3 and expected rate hikes will likely lead to a US yield advantage, making the dollar more attractive to foreign investors and a destination for carry trade flows.
- Japan's reflationary efforts largely hinge on a weaker yen, and in the fourth quarter the BOJ intensified its QE program. In Europe, weak GDP growth and deflationary fears may push the ECB to engage in QE. Of course, an excessively strong dollar could hinder growth and inflation prompting the Fed to slow the pace of interest rate normalization.
- The dollar does face a few headwinds. It now appears modestly rich based on purchasing power parity (PPP). Additionally, the US continues to run a current account deficit. The US is also likely to experience higher inflation than most other developed markets over the long-term.
- After the 2014 rally, we have less conviction in the strength of the dollar than we did a year ago. However, we expect further, albeit more modest, appreciation going forward, fueled by a powerful monetary policy tailwind.

Asset Class: US Equities – Style, Sector, Cap Performance

Style and Capitalization Market Performance



Source: Standard & Poor's, Russell, Bloomberg

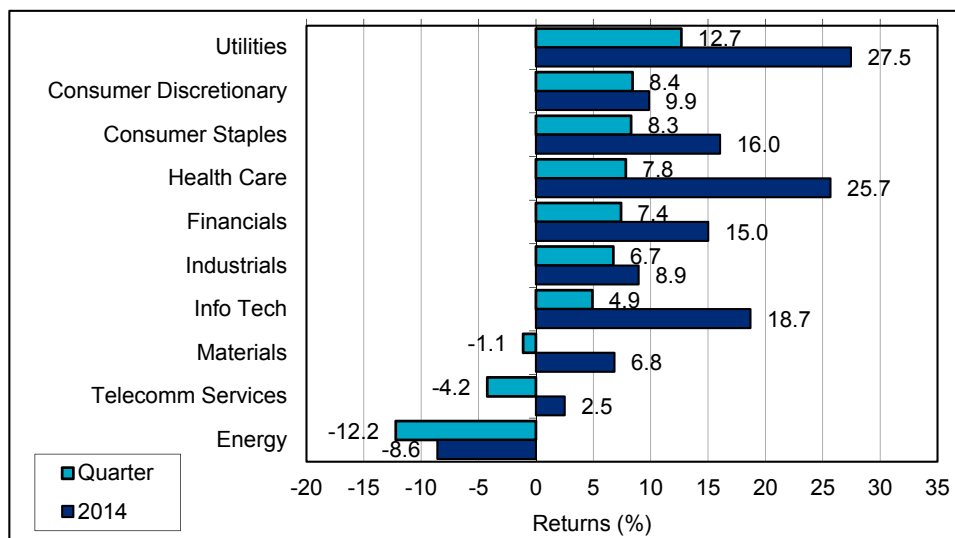
Broad Market

US equities delivered strong returns for the quarter and the year. The Russell 3000 Index advanced 5.2% in the fourth quarter and gained 12.6% in 2014. However, returns varied significantly by sector and capitalization.

Market Cap

- **Large Caps:** The S&P 500 rose by 4.9% during the fourth quarter and returned 13.7% for the year. While large cap stocks lagged mid and small cap stocks in the fourth quarter, they outperformed by 50 basis points and 880 basis points, respectively, in 2014.
- **Mid Caps:** The Russell Midcap Index gained 5.9% during the fourth quarter and returned 13.2% for the year. Mid caps outpaced large caps by 100 basis points in the fourth quarter, but lagged small caps by 380 basis points. For the year, mid caps trailed large caps by 50 basis points, but outperformed small caps by 830 basis points.
- **Small Caps:** Small cap stocks surged in the fourth quarter, gaining 9.7%. For the year, small cap stocks only advanced 4.9%, underperforming both large caps and mid caps.

Sector Performance



Source: Russell 1000 GICs Sector

Style

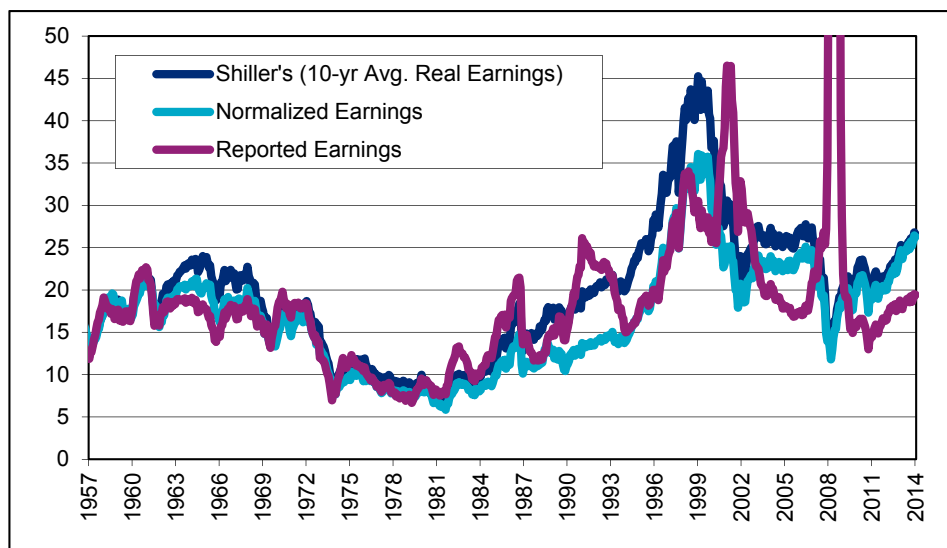
- **Value vs. Growth:** While value outperformed growth within large and mid caps in the fourth quarter, small cap growth stocks were the leader for the quarter, spiking 10.1%. For the year, mid cap value was the top performing style gaining 14.7%, while small cap value stocks were the laggard, returning only 4.2%.

Sector

- There was a wide dispersion in sector returns in the fourth quarter and in 2014. Energy stocks plummeted by 12.2% during the quarter, while utilities spiked by 12.7%. For the year, energy stocks fell by 8.6%. The utilities, health care, and information technology sectors were the top performers, earning 27.5%, 25.7%, and 18.7%, respectively.

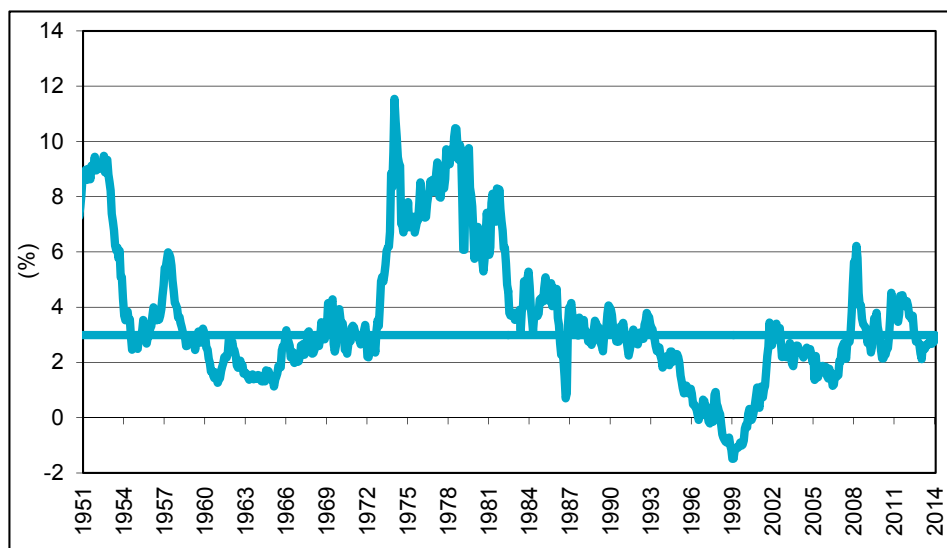
Asset Class: US Equities – Valuation Review

S&P500 – P/E Ratio



Source: S&P, Bloomberg, Mercer

S&P500 – Estimated Equity Risk Premium¹
Versus Long-Term Treasuries



Source: S&P, Bloomberg, Mercer

- Valuations ticked higher in the fourth quarter as price gains outpaced earnings growth. The P/E ratio on trailing earnings moved from 19.1 to 19.4, which is above the median of 17.4 since 1956. Valuations are much higher based on measures that adjust for record high profit margins. The P/E ratio based on average 10-year real earnings (Shiller's methodology) finished the quarter at 26.6, compared to a median of 19.2 since 1956.
- The Shiller P/E for the S&P 500 is very high compared to historical measures, but current values are negatively impacted by a 2001 change in GAAP accounting standards, which significantly reduced profits during the financial crisis. The ratio based on MSCI's measure of earnings, which have been consistent throughout history, stands at a more reasonable 23.7.
- The US has emerged as a global growth leader and current readings of the ISM Business Activity Composite suggest an improvement in revenue growth, which should support further earnings growth. Additionally, lower oil prices should improve profitability through lower input costs, and corporations continue to reduce their share count through stock buybacks.
- However, the stronger dollar could prove a powerful headwind as S&P 500 corporations generate over 40% of their sales abroad. Additionally, further improvement in the labor market could lead to higher labor costs and reduced margins.
- On a relative basis, valuations remain fairly attractive against bonds. A conservative estimate of the equity risk premium over long-term Treasuries finished the fourth quarter at 2.9%, which is near the long-term average. While we expect stocks to outperform bonds, current valuations suggest long-term returns will be below normal.

¹ Definitions:

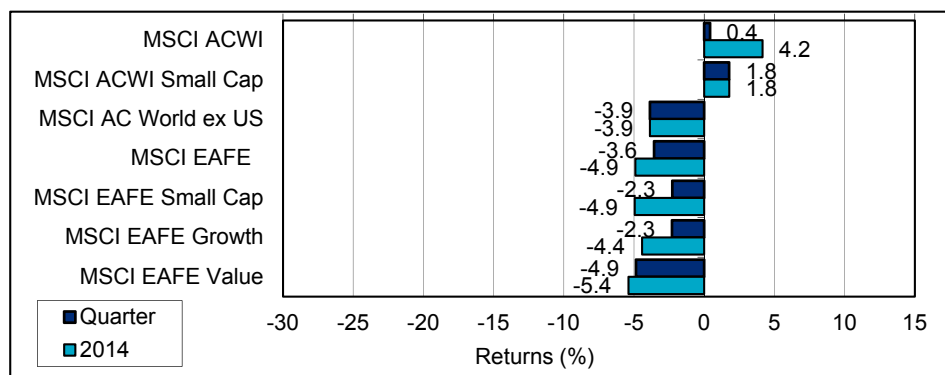
Shiller's P/E= Current S&P 500 price/average 10-year real earnings

Normalized P/E= Current S&P 500 price/(current trailing twelve month sales * 6.6% profit margin)

Equity Risk Premium= Earnings yield (1/PE) minus the real yield on long-term Treasuries

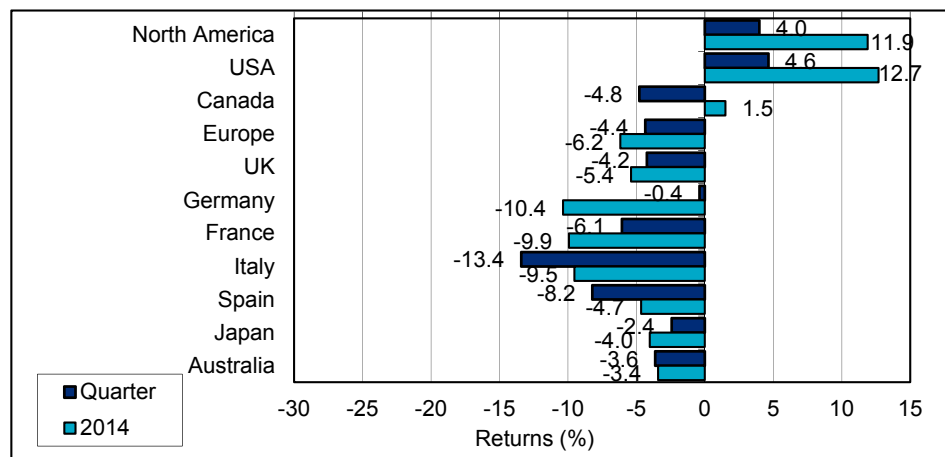
Asset Class: International Equities – Performance Review

Global and International Equity Performance



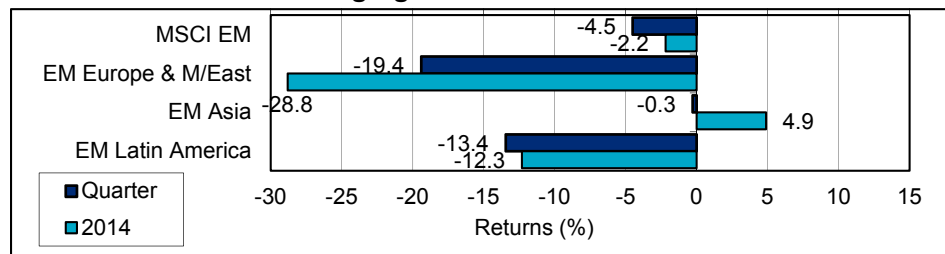
Source: MSCI, Bloomberg

Developed Country Performance



Source: MSCI, Bloomberg

Emerging Market Performance

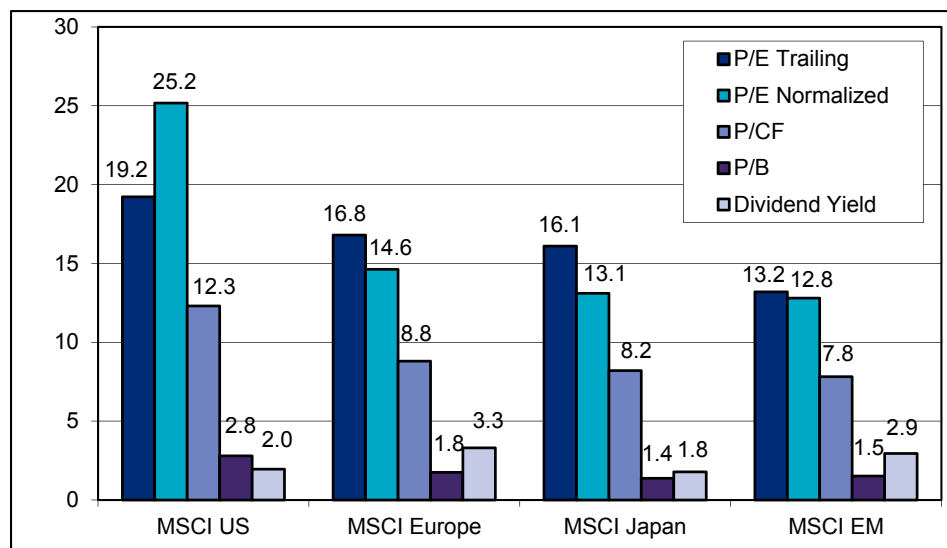


Source: MSCI, Bloomberg

- **Global equities** were mixed for the quarter and the year. US equities rose, while currency declines and economic concerns weighed on the performance of international developed and emerging market equities. The MSCI ACWI Index gained 0.4% in the fourth quarter and 4.2% in 2014, while the MSCI ACWI-ex US Index tumbled 3.9% for both periods.
- **Global small cap equities** lagged large cap equities in 2014 due to the underperformance of US small stocks.
- **International small cap equities** performed in-line with international large caps for the year.
- **International developed stocks** fell by 3.6% in the fourth quarter. The losses were entirely attributable to currency declines. In local terms, EAFE returned 1.8%. For the year, EAFE fell 4.9% in \$US terms, but rose 5.9% in local terms. EAFE underperformed the S&P 500 by 1860 basis points in \$US terms and 780 basis points in local terms during the year. European stocks tumbled 4.4% in the fourth quarter as the euro experienced further losses. In local terms, European stocks were flat as the region experienced subpar economic growth. For the year, Europe returned 4.7% in local terms, but dropped 6.2% in \$US terms. Japanese stocks contracted by 2.4% in \$US terms in the fourth quarter as the yen fell relative to the US dollar. In local terms, Japanese stocks rose a solid 6.7%, outperforming the S&P 500 by 180 basis points. For the year, Japanese stocks returned 9.5% in local currency terms, but stumbled 4.0% in \$US terms.
- **Emerging market stocks** struggled in the fourth quarter due to currency weakness and a sharp decline in oil prices. In local terms, the MSCI EM Index was flat; however, it fell 4.5% in \$US terms. EM stocks lagged the S&P 500 by 1590 basis points in \$US terms for the year. The sharp drop in oil prices, political tensions, and currency declines weighed on Eastern European stocks, which fell 28.8% for the year. The decline in commodity prices dragged Latin America down by 12.3%. Lower commodity prices and prospects for reform helped push Asian stocks to a 4.9% gain.

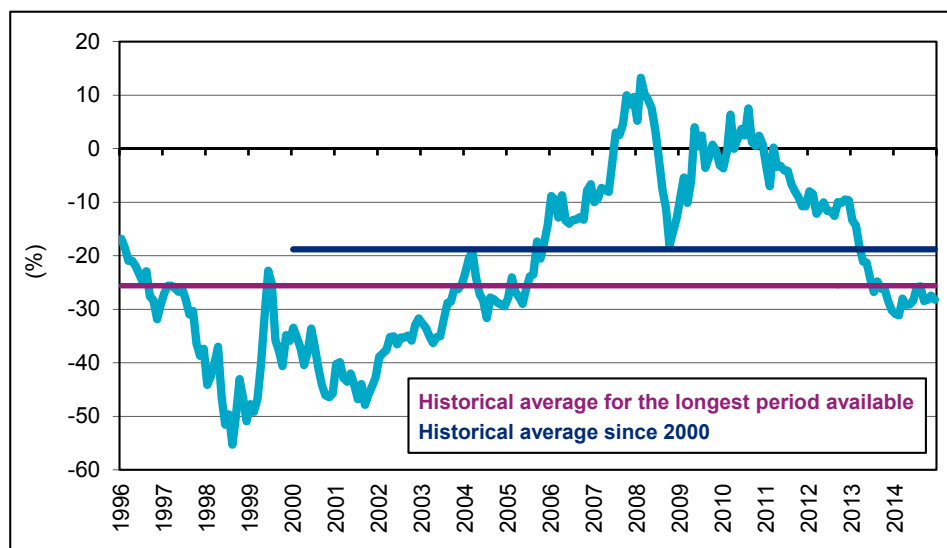
Asset Class: International Equities – Valuation Review

Global Valuations



Source: MSCI, Bloomberg

Valuation of MSCI Emerging Markets to MSCI World (Based on Average of P/E, P/B and P/CF)

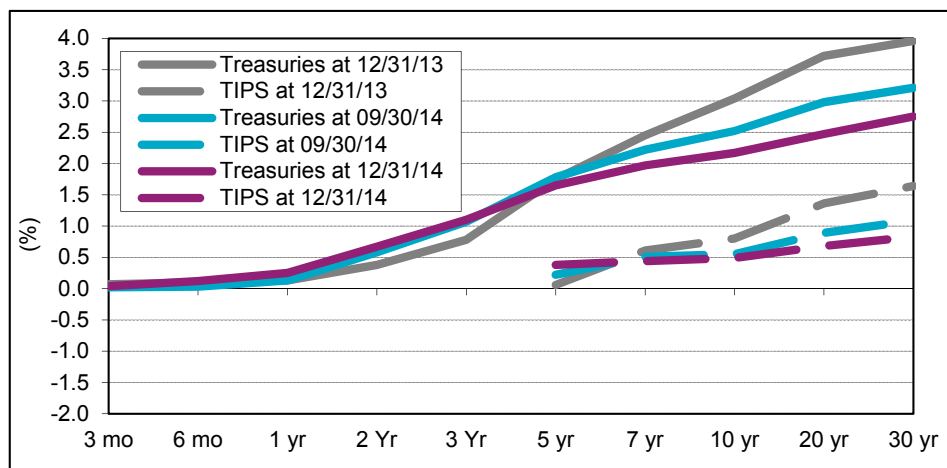


Source: MSCI, Bloomberg

- The weak growth environment in Europe has continued to weigh on profit growth as EPS rose only an estimated 3.0% in 2014, and corporate profitability remains depressed. A weaker euro should help profitability, and high operating leverage could lead to a rapid earnings rebound should economic conditions improve. However, it remains to be seen if firms can overcome domestic headwinds. Based on trailing earnings, Europe appears reasonably valued at a P/E of 16.8, and valuations look more compelling if margins return to historical averages. A potential QE program could provide a jolt to the stock market as it did in the US and Japan.
- Supported by a weak yen, Japanese earnings spiked by 17% in 2014. Firms still have ample room to improve profitability as ROE remains nearly 20% below the pre-financial crisis peak. While the slowdown in the domestic economy is a concern, the drop in energy prices and a lower yen should be supportive of earnings. From a structural standpoint, enacting corporate governance reforms could lead to further profit margin improvements. Japanese stocks appear reasonably valued, trading at 16.1x trailing earnings.
- The drop in energy and other commodity prices has darkened the outlook for emerging market equities. Additionally, tighter Fed policy could lead to capital outflows and further currency weakness. On the surface EM valuations are compelling. They trade at a P/E of only 13.2, a 11% discount to their historical average. They are also trading at a 28% discount to developed stocks. However, these discounts are driven primarily by commodity-sensitive sectors and Chinese financials. On a sector-neutral basis, we estimate EM stocks are trading at P/E of 17 and only a 12% discount to developed stocks. We continue to favor EM stocks on a strategic basis; however, the commodity exposure and other macro pressures will provide headwinds over the short-term.

Asset Class: Fixed Income – Interest Rates and Yield Curve

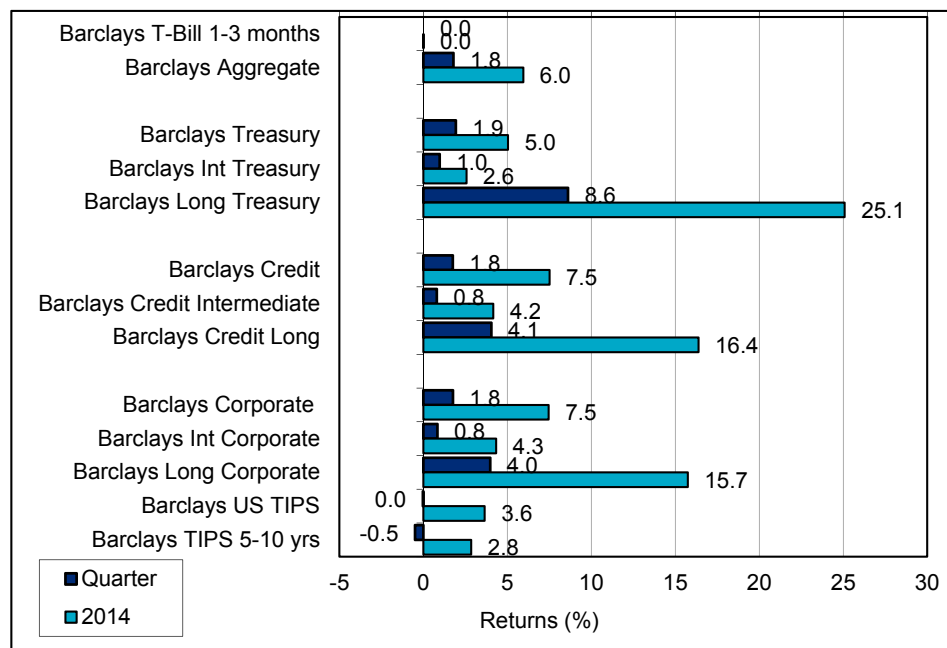
Treasury Yield Curve



Source: Federal Reserve

- The yield curve continued to flatten in the fourth quarter and has leveled significantly since the end of 2013. During 2014, the 2-year yield rose by 29 basis points, while the 10- and 30-year yields fell by 87 and 121 basis points, respectively. While the yield curve has historically flattened around rate hikes, the large decline in long yields took many investors by surprise.
- The timing and pace of interest rate increases as well as the ultimate endpoint for the target rate are likely to be the key drivers of yield movements. While the Fed is likely to raise rates in 2015, we expect them to do so gradually given the subdued inflation outlook. However, the market may be pricing an overly dovish Fed policy. For example, while the Fed expects the target rate to reach 3.5% by the end of 2017, Fed funds futures are pricing only a 2.0% rate.

Bond Performance by Duration

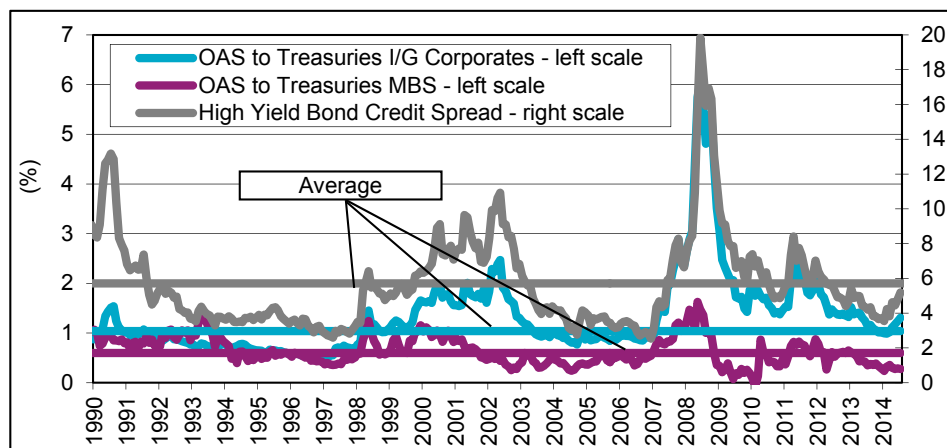


Source: Barclays, Bloomberg

- **US Bonds** rose as yields declined. The Barclays Aggregate index returned 1.8% in the fourth quarter and 6.0% in 2014. Credit lagged Treasuries in the fourth quarter, but outperformed for the year.
- **Long-Duration Bonds** advanced in the fourth quarter as the yield on 30-year Treasury dropped by 46 basis points. The Barclays Long Treasury, and Long Credit Indexes returned 8.6% and 4.1%, respectively, in the fourth quarter and gained 25.1% and 16.4%, respectively, for the year.
- **TIPS** underperformed Treasuries in the fourth quarter and for the year as inflation breakeven rates declined. The real yield on 5-year TIPS rose by 32 basis points to 0.38% in 2014. The inflation breakeven rate on 10-Year TIPS fell from 2.24% to 1.68% during the year.

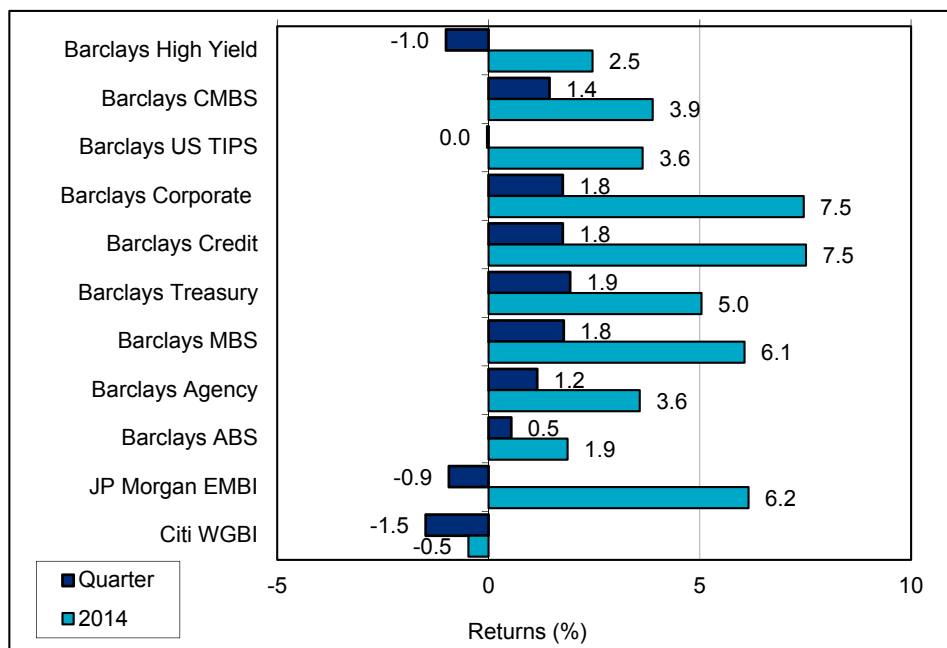
Asset Class: Fixed Income – Credit and Non-US Bonds

Credit Spreads



- During the year, the yield on the Corporate index declined a modest 15 basis points to 3.1% while the option-adjusted spread to Treasuries moved up by 17 basis points to 1.3%, which is moderately above long term norms. Given above average spreads and the favorable economic outlook, the downside risk for corporates relative to Treasuries is limited over the short-term.
- The yield on the Barclays High Yield index rose from 6.1% to 6.6% during the fourth quarter. During 2014, the yield increased by 97 basis points. The option adjusted spread widened by 59 basis points in the fourth quarter and 101 basis points in 2014, finishing the year at 4.8%, which is near long-term norms. The increase in spreads was driven largely by the energy sector, although the selloff has also spread to other sectors. While defaults could occur in the energy sector, a healthy US economy should keep defaults low outside of energy.

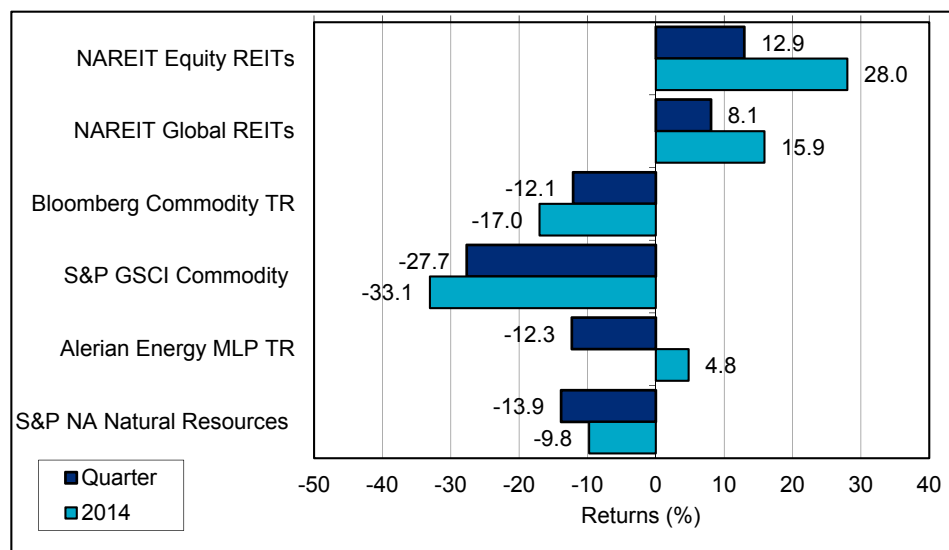
Sector, Credit, and Global Bond Performance



- US Treasuries** rose as Treasury yields declined. The Barclays Treasury Index returned 1.9% in the fourth quarter and 5.0% for the year.
- US Corporate** bonds lagged Treasuries by 10 basis points in the fourth quarter as spreads widened. For the year, I/G corporate bonds returned 7.5%, outperforming Treasuries by 250 basis points.
- US MBS, Agency, CMBS, and ABS** bonds suffered from credit spread widening and a flatter yield curve, causing them to lag Treasuries in the fourth quarter.
- High Yield** bonds shed 1.0% in the fourth quarter as yields increased and credit spreads widened. High yield bonds trailed Treasuries by 250 basis points in 2014 due to the wider spreads and higher yields.
- Local currency Emerging Market debt** fell by 5.7% for the quarter and the year due to currency declines. \$US-denominated debt dropped 0.9% in the fourth quarter as spreads widened, but rose 6.2% for the year.
- Global Bonds** were hurt as the dollar appreciated relative to foreign currencies. The Citigroup World Government Bond Index fell 1.5% in the fourth quarter and finished 2014 down 0.5%.

Asset Class: Alternatives – Performance Review

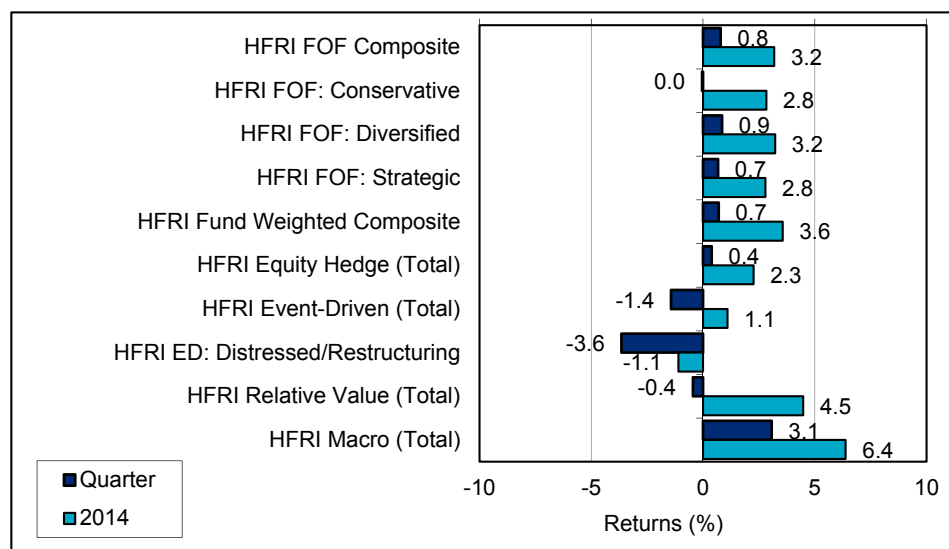
Real Asset Performance



Source: NAREIT, Dow-Jones, UBS, Goldman Sachs

- **REITs** – Global and US REITs moved 8.1% and 12.9% higher in the fourth quarter. They returned 15.9% and 28.0%, respectively, in 2014, benefiting from the decline in interest rates and improving property prices.
- **Commodities** suffered major losses as oil prices tumbled 41.5% during the quarter and 45.9% in 2014, which reflects the second largest calendar year slide since 1983 (compared to -53.4% in 2008). The S&P NA Natural Resources Index declined 13.9% in the fourth quarter and 9.8% for the year, while the Bloomberg Commodity Index lost 12.1% in the fourth quarter and finished the year down 17.0%.

Hedge Fund Performance

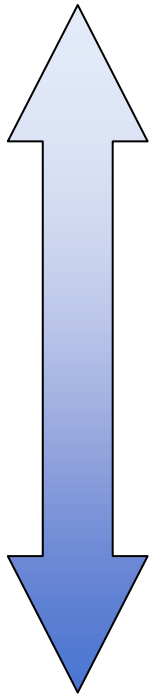


Source: HFR

- **Hedge funds** outperformed global equities in the fourth quarter, but trailed them by 100 basis points for the year. The HFRI Fund of Funds Composite Index gained 0.8% in the fourth quarter and returned 3.2% in 2014. Macro strategies were the top performer for the quarter and the year, while distressed strategies were hurt by spread widening.

Investment Structure

Conservative



Aggressive

Tier I Asset Allocation	Tier II Passive Core Options	Tier III Active Core Options	Tier IV Specialty Options
		Stable Value TIAA Stable Value	
	Fixed Income Passive Vanguard Short-Term Bond Index	Fixed Income JP Morgan Core Bond	All Asset PIMCO All Asset Fund
Wells Fargo Target Date Funds		Diversified Inflation PIMCO IRMAF	Real Estate TIAA-CREF Real Estate
	Large Cap Passive Vanguard 500 Index	Large Cap Equity Vanguard Windsor Fund TIAA-CREF Social Choice Equity Fund T. Rowe Price Growth and Income Fund	
	Small/Mid Cap Equity Vanguard Mid-Cap Index Vanguard Small-Cap Index		
	International Equity Passive Vanguard Total International Stock Index	International Equity AllianzGI NFJ International Value American Funds EuroPacific Growth Fund DFA International Small Company	

Management Summary

Quarterly Summary

At quarter end, the North Carolina 403 (b) Plan had \$921,864 in assets. The Plan had 45.0% of assets allocated to the Wells Fargo Advantage Target Date Funds, 34.8% to passive core options, 17.4% to active core options and 2.7% to the speciality real estate option.

News Items

In July 2014, Rahul Seksaria, TIPS portfolio manager, was charged by the Chicago Mercantile Exchange of violating rules related to his personal trading activity. As a result of the investigation, Mercer was informed that Seksaria has been terminated from **PIMCO**. During the investigation, Mihir Worah, CIO of Real Return and Asset Allocation, assumed responsibilities for the TIPS portfolio. While Seksaria's termination does not directly impact the Total Return Fund, and we believe Mihir Worah is a knowledgeable TIPS investor that is capable of handling additional portfolio manager responsibilities, we are mostly concerned this represents additional headline risk for the firm. After a year filled with CIO departures, an SEC investigation, and CME trading violations, it will be difficult for PIMCO to repair its reputation. We are not proposing any action at this time, but will continue to monitor developments at PIMCO.

Additionally, on January 13, 2015, **PIMCO** announced that Saumil Parikh, managing director and member of the PIMCO Investment Committee, resigned from the firm. Parikh had broad portfolio management responsibilities which included the PIMCO Total Return Full Authority Fund. Mercer views Parikh's resignation as further evidence that the organization has yet to stabilize despite management's attempts to retain key talent. It appeared Parikh was a rising star at PIMCO, as he was named a portfolio manager on the Unconstrained Bond Fund and co-wrote the firm's 2015 economic outlook report. Mercer maintained the "B" rating on the Total Return Strategy. Swedish Match has elected to replace the Total Return Fund with the Prudential Core Bond Trust. This transition is expected to take place in the first quarter of 2015. Additional details can be found in the appendix.

The **PIMCO All Asset Fund** was downgraded from an A (P) Rating to a B+ rating after the organization turnover and shifts in key decision makers. The Multi-Asset strategies are all directly or indirectly linked to underlying PIMCO strategies. The full research view can be found in the appendix.

JPMorgan Asset Management announced that Co-Head of Risk Management for Global Fixed Income, Currency & Commodities, Rene Noel, would retire at the end of the year. Vincent Kumaradjaja will take over as sole Head of Risk Management, operating primarily out of New York. Mercer does not recommend any rating changes as a result of this announcement.

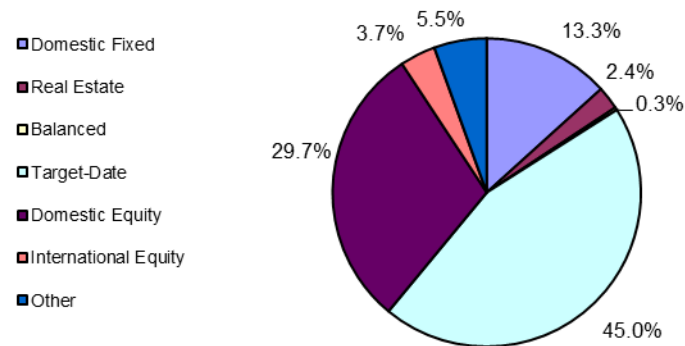
Mercer met with **DFA** at their London headquarters to discuss the World ex US Small Cap Value Equity Strategy. Mercer continues to have conviction in the process and reaffirmed the "A" rating as a result of the meeting.

Management Summary – Watch List

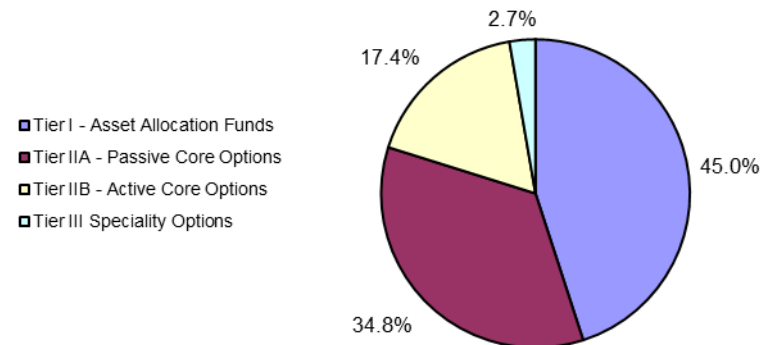
Fund Name	Failing Objective	On Watch Since	Comments
PIMCO All Asset Fund	Organizational Instability	4Q 2014	With the recent organizational changes at PIMCO, we have downgraded the PIMCO All Asset Fund from an A (P) to a B+. The All Asset Fund performance is largely driven by the asset allocation ndriven by Research Affiliates LLC, not by PIMCO's active management views within the underlying funds. We still feel that the fund warrants increased monitoring given the recent instability at PIMCO.
PIMCO Inflation Response Multi-Asset Fund	Organizational Instability	4Q 2014	After the recent organizational changes at PIMCO and the appointment of portfolio manager Mihir Worah as co-portfolio manager of the Total Return Fund, we placed the Inflation-Responsive Multi Asset Fund should be placed on watch. Worah will have increased responsibilities, which will likely put more on the plates of his team members. We feel that the team is very capable but Mercer will monitor how they adapt to the situation.

Management Summary – Asset Allocation

Current Asset Allocation - December 31, 2014



Current Tier Allocation - December 31, 2014



Defined Contribution Performance Evaluation Report

North Carolina - Retirement Systems 403 (b)

Investment Option	Tier/Asset Class	Current Balance	% of Plan
Asset Allocation Funds	Tier I	\$414,900	45.0%
Wells Fargo Advantage Dow Jones Tgt Today Fd R6	Target-Date	\$11,393	1.2%
Wells Fargo Advantage Dow Jones Tgt 2020 Fund R6	Target-Date	\$186,665	20.2%
Wells Fargo Advantage Dow Jones Tgt 2030 Fund R6	Target-Date	\$109,690	11.9%
Wells Fargo Advantage Dow Jones Tgt 2040 Fund R6	Target-Date	\$88,953	9.6%
Wells Fargo Advantage Dow Jones Tgt 2050 Fund R6	Target-Date	\$18,200	2.0%
Passive Core Options	Tier IIA	\$321,219	34.8%
Vanguard Short-Term Bond Index Fund Admiral	US Fixed	\$55,260	6.0%
Vanguard 500 Index Fund Admiral	US Large Cap Equity	\$176,598	19.2%
Vanguard Mid-Cap Index Fund Admiral	US Mid Cap Equity	\$31,889	3.5%
Vanguard Small-Cap Index Fund Admiral	US Small Cap Equity	\$26,657	2.9%
Vanguard Total International Stock Index Fund Adm	International Equity	\$30,814	3.3%
Active Core Options	Tier IIB	\$160,743	17.4%
TIAA Stable Value	Other	\$50,993	5.5%
JPMorgan Core Bond Fund R6	US Fixed	\$67,184	7.3%
PIMCO Inflation Response Multi-Asset Fund Inst	Balanced	\$0	0.0%
Vanguard Windsor II Fund Admiral	US Large Cap Equity	\$33,786	3.7%
TIAA-CREF Social Choice Equity Fund Institutional	US Large Cap Equity	\$78	0.0%
T Rowe Price Growth & Income Fund	US Large Cap Equity	\$5,037	0.5%
AllianzGI NFJ International Value Fund Inst	International Equity	\$662	0.1%
DFA International Small Company Portfolio Inst	International Equity	\$71	0.0%
American Funds EuroPacific Growth Fund R-6	International Equity	\$2,933	0.3%
Speciality Options	Tier IIII	\$25,001	2.7%
PIMCO All Asset Fund Institutional	Balanced	\$2,710	0.3%
TIAA Real Estate Account	Real Estate	\$22,291	2.4%
Total Plan		\$921,864	100%

Manager Summary – Compliance Table

Periods ending December 31, 2014

	Mercer Rating*	3 Months	1 Year	3 Years	5 Years
I – Index U – Universe Median		I U	I U	I U	I U
Tier I - Asset Allocation Funds					
Wells Fargo Advantage Dow Jones Tgt Today Fd R6	N	T ✖	T ✖	T ✖	T ✖
Wells Fargo Advantage Dow Jones Tgt 2020 Fund R6	N	T ✖	T ✖	T ✖	T ✖
Wells Fargo Advantage Dow Jones Tgt 2030 Fund R6	N	T ✖	T ✖	T ✖	T ✖
Wells Fargo Advantage Dow Jones Tgt 2040 Fund R6	N	T ✔	T ✖	T ✖	T ✔
Wells Fargo Advantage Dow Jones Tgt 2050 Fund R6	N	T ✔	T ✖	T ✖	T ✔
Tier IIA - Passive Core Options					
Vanguard Short-Term Bond Index Fund Admiral	Preferred Provider	T –	T –	T –	T –
Vanguard 500 Index Fund Admiral	Preferred Provider	T –	T –	T –	T –
Vanguard Mid-Cap Index Fund Admiral	Preferred Provider	T –	T –	T –	T –
Vanguard Small-Cap Index Fund Admiral	Preferred Provider	T –	T –	T –	T –
Vanguard Total International Stock Index Fund Adm	Preferred Provider	T –	T –	T –	T –
Tier IIB - Active Core Options					
TIAA Stable Value	N	✔ –	✔ –	✔ –	✔ –
JPMorgan Core Bond Fund R6	A	✖ ✔	✖ ✔	✔ ✖	✔ ✔
PIMCO Inflation Response Multi-Asset Fund Inst	B+ (W)	✔ ✔	✔ ✔	✔ ✖	– –
Vanguard Windsor II Fund Admiral	B+	✖ ✖	✖ ✔	✖ ✖	✖ ✔

✔ = Outperformed or matched performance ✖ = Underperformed T = Index Fund

* For the most recent approved ratings of an investment strategy, and a fuller explanation of their meanings, contact your Mercer representative.

Defined Contribution Performance Evaluation Report

North Carolina - Retirement Systems 403 (b)

	Mercer Rating*	3 Months	1 Year	3 Years	5 Years
I – Index U – Universe Median		I U	I U	I U	I U
TIAA-CREF Social Choice Equity Fund Institutional	N	✗ ✗	✗ ✗	✗ ✓	✗ ✓
T Rowe Price Growth & Income Fund	N	✓ ✓	✗ ✓	✗ ✓	✗ ✓
AllianzGI NFJ International Value Fund Inst	R	✗ ✗	✗ ✓	✗ ✗	✗ ✓
DFA International Small Company Portfolio Inst	A	✗ ✓	✗ ✗	✓ ✗	✓ ✓
American Funds EuroPacific Growth Fund R-6	B	✓ ✓	✓ ✓	✓ ✓	✓ ✓
Tier III- Speciality Options					
PIMCO All Asset Fund Institutional	B+	✗ ✗	✗ ✗	✗ ✗	✗ ✗
TIAA Real Estate Account	N	✓ –	✗ –	✗ –	✗ –

 = Outperformed or matched performance
  = Underperformed
  = Index Fund

* For the most recent approved ratings of an investment strategy, and a fuller explanation of their meanings, contact your Mercer representative.

Management Summary – Performance Summary

Periods ending December 31, 2014

	% of Plan	3 Months	1 Year	3 Years	5 Years
Tier I - Asset Allocation Funds					
Wells Fargo Advantage Dow Jones Tgt Today Fd R6 Dow Jones Global Target Today Index <i>Mercer MF Target-Date Income Universe Median</i> <i>Fund Rank in Universe</i>	1.2%	0.7% 0.8% 1.1% 79	3.6% 3.9% 3.9% 71	3.2% 3.6% 6.2% 98	4.5% 4.9% 6.3% 88
Wells Fargo Advantage Dow Jones Tgt 2020 Fund R6 Dow Jones Global Target 2020 Index <i>Mercer MF Target-Date 2020 Universe Median</i> <i>Fund Rank in Universe</i>	20.2%	1.1% 1.3% 1.7% 83	4.5% 4.8% 5.1% 73	7.3% 7.7% 10.1% 86	7.0% 7.4% 8.3% 89
Wells Fargo Advantage Dow Jones Tgt 2030 Fund R6 Dow Jones Global Target 2030 Index <i>Mercer MF Target-Date 2030 Universe Median</i> <i>Fund Rank in Universe</i>	11.9%	1.7% 1.9% 2.0% 65	5.1% 5.5% 5.7% 68	11.0% 11.4% 12.6% 77	9.2% 9.6% 9.9% 66
Wells Fargo Advantage Dow Jones Tgt 2040 Fund R6 Dow Jones Global Target 2040 Index <i>Mercer MF Target-Date 2040 Universe Median</i> <i>Fund Rank in Universe</i>	9.6%	2.1% 2.3% 2.1% 48	5.5% 6.1% 5.9% 61	13.8% 14.2% 13.9% 53	10.7% 11.1% 10.3% 46
Wells Fargo Advantage Dow Jones Tgt 2050 Fund R6 Dow Jones Global Target 2050 Index <i>Mercer MF Target-Date 2050+ Universe Median</i> <i>Fund Rank in Universe</i>	2.0%	2.2% 2.5% 2.1% 44	5.7% 6.2% 6.1% 63	14.5% 14.9% 14.9% 58	11.0% 11.4% 10.6% 41
Tier IIA - Passive Core Options					
Vanguard Short-Term Bond Index Fund Admiral Vanguard Spliced Barclays 1-5 G/C Float Adj Idx	6.0%	0.3% 0.4%	1.3% 1.4%	1.2% 1.3%	2.1% 2.2%
Vanguard 500 Index Fund Admiral S&P 500	19.2%	4.9% 4.9%	13.6% 13.7%	20.4% 20.4%	15.4% 15.5%
Vanguard Mid-Cap Index Fund Admiral Vanguard Spliced Mid Cap Index	3.5%	6.6% 6.7%	13.8% 13.8%	21.3% 21.3%	17.0% 17.1%
Vanguard Small-Cap Index Fund Admiral Vanguard Spliced Small Cap Index	2.9%	6.8% 6.8%	7.5% 7.5%	20.5% 20.5%	16.9% 16.8%

Fund: ■ Outperformed Benchmark ■ Underperformed Benchmark ■ Tracked Benchmark Universe Ranking: ■ 0% - 50% ■ 51% - 100%

Defined Contribution Performance Evaluation Report

North Carolina - Retirement Systems 403 (b)

	% of Plan	3 Months	1 Year	3 Years	5 Years
Vanguard Total International Stock Index Fund Adm Vanguard Total International Composite Index	3.3%	-4.2% -3.8%	-4.2% -3.4%	9.3% 9.4%	NA 4.4%
Tier IIB - Active Core Options					
TIAA Stable Value Citigroup 3-Month T Bill	5.5%	0.5% 0.0%	2.0% 0.0%	2.1% 0.0%	2.3% 0.0%
JPMorgan Core Bond Fund R6 Barclays US Aggregate Mercer MF US Fixed Core Universe Median Fund Rank in Universe	7.3%	1.5% 1.8% 0.9% 22	5.4% 6.0% 4.7% 41	3.0% 2.7% 3.4% 60	4.8% 4.5% 4.7% 48
PIMCO Inflation Response Multi-Asset Fund Inst PIMCO Inflation Response Multi-Asset Index Mercer MF Diversified Inflation Hedge Universe Median Fund Rank in Universe	0.0%	-1.8% -2.1% -1.8% 50	1.6% -0.3% 1.1% 25	0.3% -1.1% 1.1% 75	NA 2.7% 3.2% NA
Vanguard Windsor II Fund Admiral Russell 1000 Value Mercer MF US Equity Large Cap Value Universe Median Fund Rank in Universe	3.7%	3.6% 5.0% 4.1% 59	11.3% 13.5% 10.9% 42	19.3% 20.9% 19.7% 55	14.1% 15.4% 13.9% 44
TIAA-CREF Social Choice Equity Fund Institutional Russell 1000 Mercer MF US Equity Large Cap Core Universe Median Fund Rank in Universe	0.0%	4.1% 4.9% 4.5% 62	11.2% 13.2% 11.6% 54	19.4% 20.6% 19.3% 46	14.6% 15.6% 13.8% 34
T Rowe Price Growth & Income Fund Russell 1000 Growth Mercer MF US Equity Large Cap Growth Universe Median Fund Rank in Universe	0.5%	6.7% 4.8% 4.6% 5	12.9% 13.0% 10.3% 21	19.9% 20.3% 19.7% 48	14.4% 15.8% 14.3% 44
AllianzGI NFJ International Value Fund Inst MSCI AC Wld ex US Mercer MF Intl Equity Large Cap Value Universe Median Fund Rank in Universe	0.1%	-4.8% -3.8% -4.7% 53	-5.3% -3.4% -6.5% 36	8.5% 9.5% 9.7% 81	4.8% 4.9% 4.6% 45
DFA International Small Company Portfolio Inst MSCI AC Wld ex US Small Cap Mercer MF Intl Equity Small Cap Universe Median Fund Rank in Universe	0.0%	-4.2% -3.9% -4.2% 50	-6.3% -3.7% -5.1% 69	12.4% 11.2% 12.6% 52	8.3% 7.2% 8.3% 50

Fund: ■ Outperformed Benchmark ■ Underperformed Benchmark ■ Tracked Benchmark Universe Ranking: ■ 0% - 50% ■ 51% - 100%

Defined Contribution Performance Evaluation Report

North Carolina - Retirement Systems 403 (b)

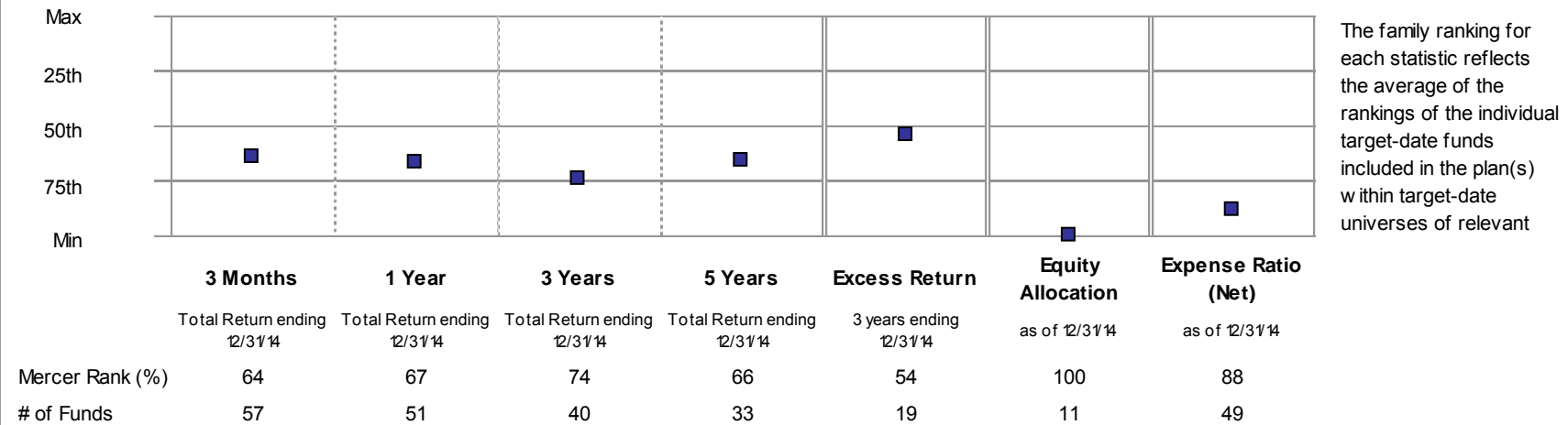
	% of Plan	3 Months	1 Year	3 Years	5 Years
American Funds EuroPacific Growth Fund R-6	0.3%	-1.6%	-2.3%	12.1%	6.0%
MSCI AC Wld ex US		-3.8%	-3.4%	9.5%	4.9%
Mercer MF Intl Equity Universe Median		-3.3%	-5.2%	10.7%	5.8%
Fund Rank in Universe		21	18	30	45
Tier III – Speciality Options					
PIMCO All Asset Fund Institutional	0.3%	-2.9%	0.8%	5.5%	6.4%
CPI USD + 500bp		-0.1%	5.8%	6.4%	6.8%
TIAA Real Estate Account	2.4%	3.7%	12.2%	10.9%	11.6%
NCREIF NFI ODCE		3.3%	12.4%	12.4%	13.9%

Fund: ■ Outperformed Benchmark ■ Underperformed Benchmark ■ Tracked Benchmark **Universe Ranking:** ■ 0% - 50% ■ 51% - 100%

Family Profile

Tier I - Target-Date - Wells Fargo Advantage DJ Target Funds

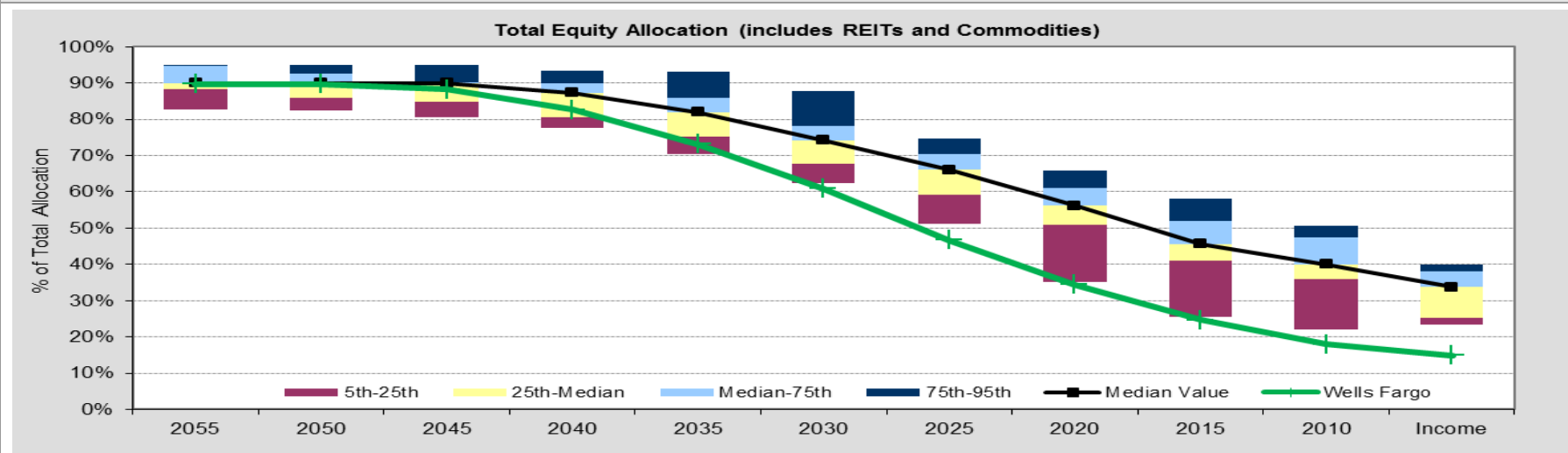
Wells Fargo Advantage DJ Target Funds vs. Universe of Target-Date Families



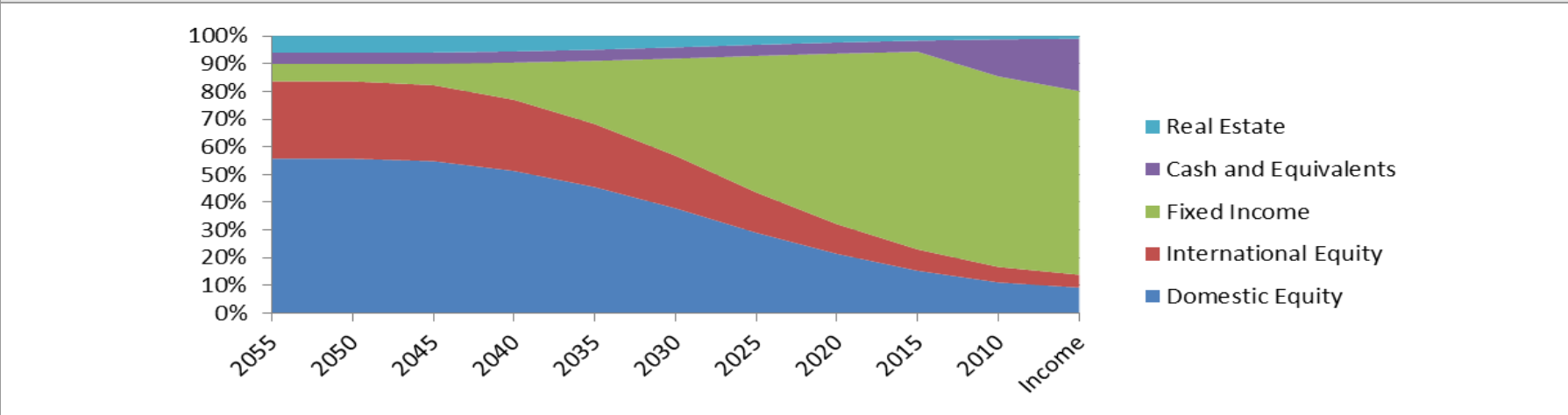
Family Profile

Tier I - Target-Date - Wells Fargo Advantage DJ Target Funds

Glide Path Comparison vs. Universe of Target-Date Families (as of 12/31/2014)¹



Family Asset Allocation (as of 12/31/2014)



¹ Compared against the Mercer's 3Q14 Target Date Survey
Mercer

Family Profile

Tier I - Target-Date - Wells Fargo Advantage DJ Target Funds

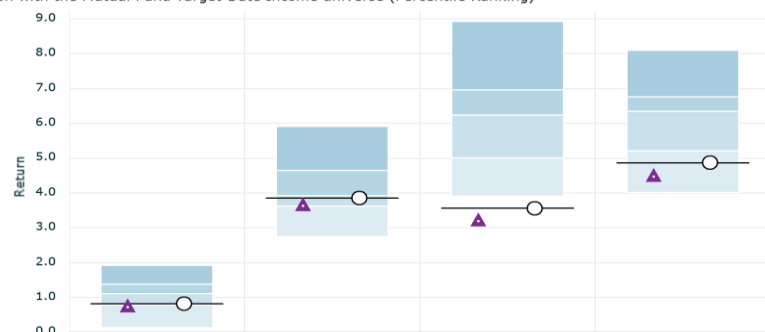
Allocation (%) to Underlying Funds (as of December 31, 2014)

Asset Class	2055	2050	2045	2040	2035	2030	2025	2020	2015	2010	Income
Domestic Equity	55.8	55.8	54.9	51.3	45.5	37.9	29.1	21.4	15.3	11.1	9.3
International Equity	27.9	27.9	27.4	25.7	22.8	18.9	14.5	10.7	7.7	5.6	4.6
Fixed Income	6.3	6.3	7.7	13.4	22.8	35.1	49.2	61.5	71.3	68.7	66.3
Cash and Equivalents	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	13.4	18.8
Real Estate	6.0	6.0	5.9	5.5	4.9	4.1	3.1	2.3	1.7	1.2	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Fund Profile

Tier I - Target-Date - Wells Fargo Advantage Dow Jones Tgt Today Fd R6 - WOTDX

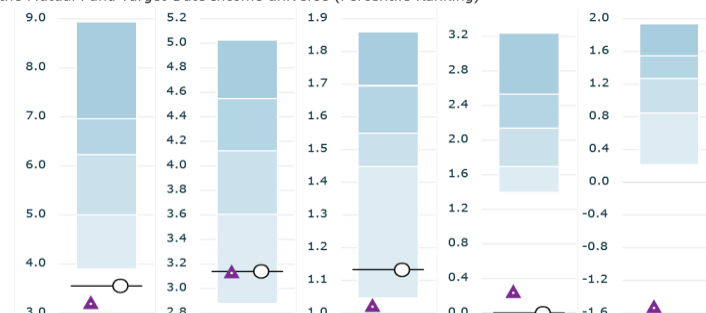
Return in \$US (after fees) over 3 mths, 1 yr, 3 yrs, 5 yrs ending December-14
Comparison with the Mutual Fund Target-Date Income universe (Percentile Ranking)



	3 mths (%)	1 yr (%)	3 yrs (%pa)	5 yrs (%pa)
▲ WFADJTFR	0.7(79)	3.6(71)	3.2(98)	4.5(88)
○ DJPTT	0.8(72)	3.9(64)	3.6(97)	4.9(86)
5th Percentile	1.9	5.9	8.9	8.1
Upper Quartile	1.4	4.6	7.0	6.8
Median	1.1	3.9	6.2	6.3
Lower Quartile	0.8	3.6	5.0	5.2
95th Percentile	0.1	2.8	3.9	4.0
Number	29	29	29	29

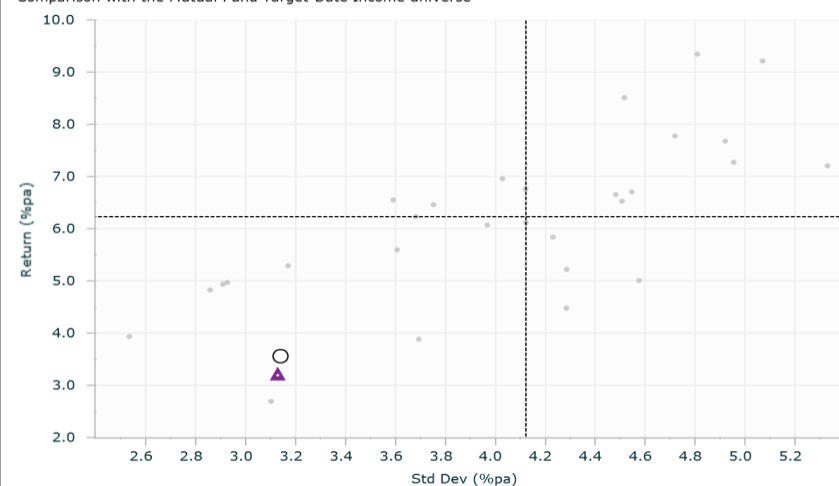
Performance characteristics vs. Dow Jones Global Target Today Index in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)

Comparison with the Mutual Fund Target-Date Income universe (Percentile Ranking)



	Ret (%pa)	Std Dev (%pa)	Ret/SD	TE (%pa)	IR
▲ WFADJTFR	3.2(98)	3.1(84)	1.0(97)	0.2(100)	-1.5(98)
○ DJPTT	3.6(97)	3.1(84)	1.1(88)	0.0(100)	-
5th Percentile	8.9	5.0	1.9	3.2	1.9
Upper Quartile	7.0	4.5	1.7	2.5	1.5
Median	6.2	4.1	1.6	2.1	1.3
Lower Quartile	5.0	3.6	1.4	1.7	0.8
95th Percentile	3.9	2.9	1.0	1.4	0.2
Number	29	29	29	29	29

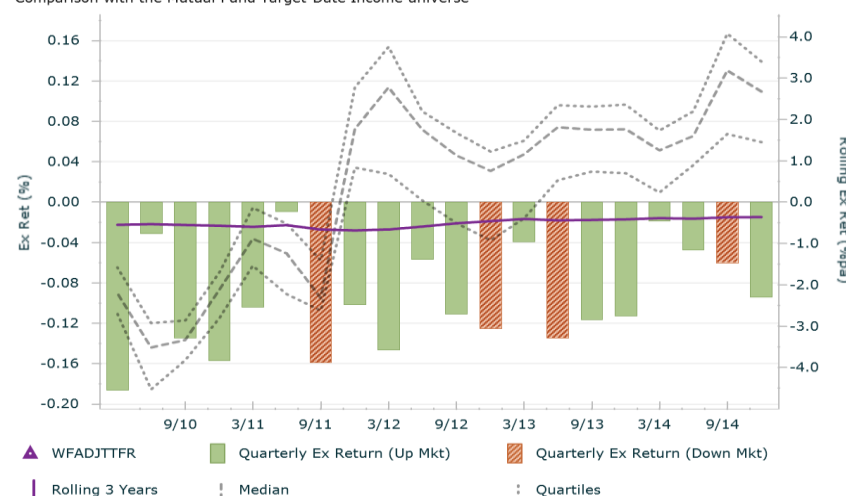
Return and Std Deviation in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund Target-Date Income universe



▲ WFADJTFR ○ DJPTT + Median • Universe

Quarterly Excess Return vs. Dow Jones Global Target Today Index with rolling 3 yr line in \$US (after fees) over 5 yrs ending December-14

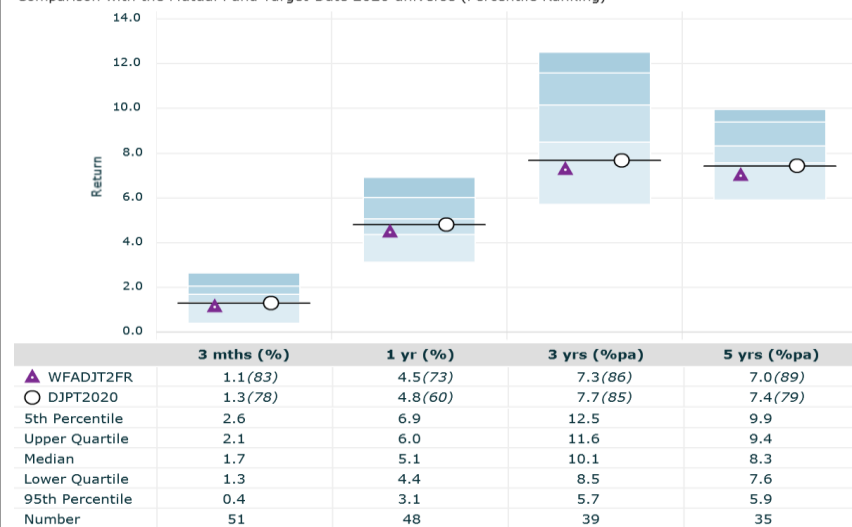
Comparison with the Mutual Fund Target-Date Income universe



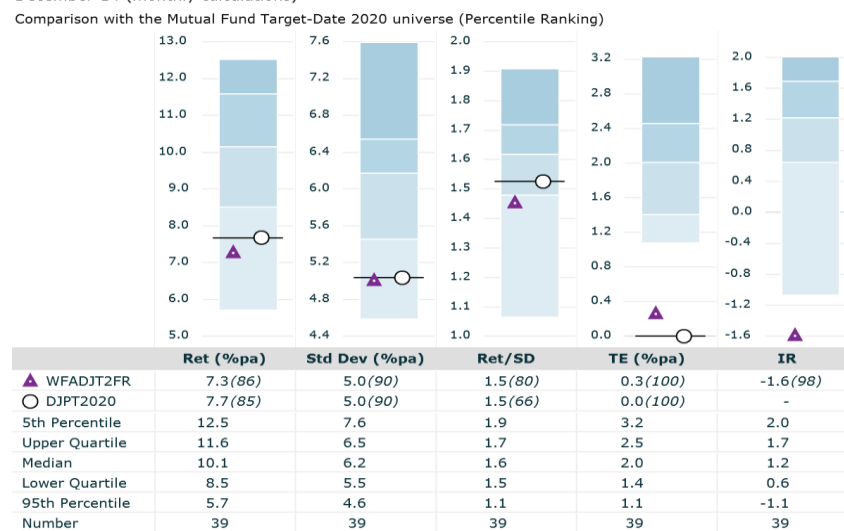
Fund Profile

Tier I - Target-Date - Wells Fargo Advantage Dow Jones Tgt 2020 Fund R6 - WFOBX

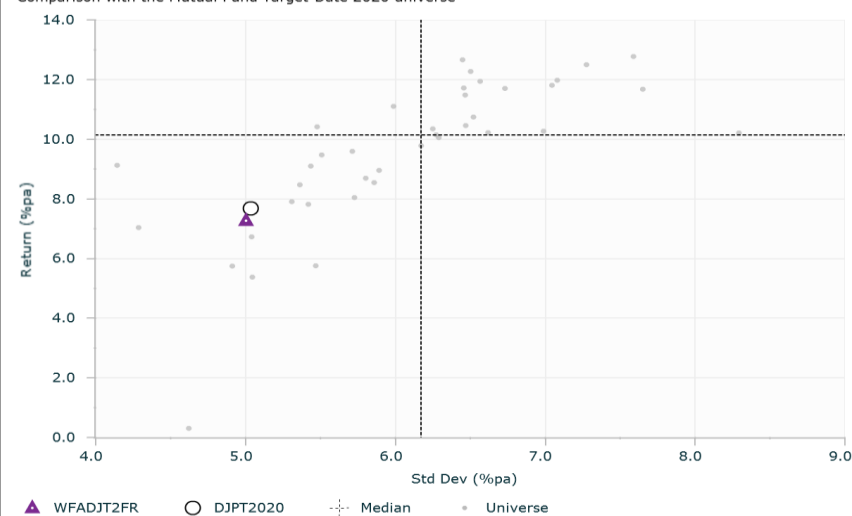
Return in \$US (after fees) over 3 mths, 1 yr, 3 yrs, 5 yrs ending December-14
Comparison with the Mutual Fund Target-Date 2020 universe (Percentile Ranking)



Performance characteristics vs. Dow Jones Global Target 2020 Index in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund Target-Date 2020 universe (Percentile Ranking)

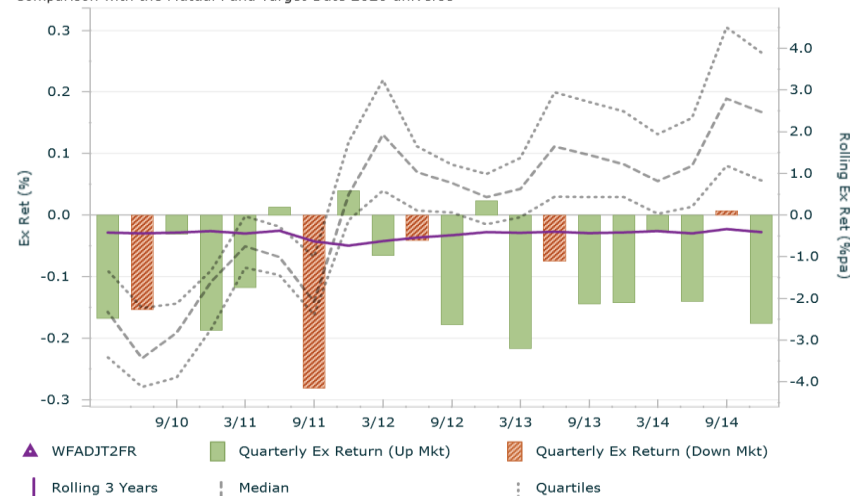


Return and Std Deviation in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund Target-Date 2020 universe



Quarterly Excess Return vs. Dow Jones Global Target 2020 Index with rolling 3 yr line in \$US (after fees) over 5 yrs ending December-14

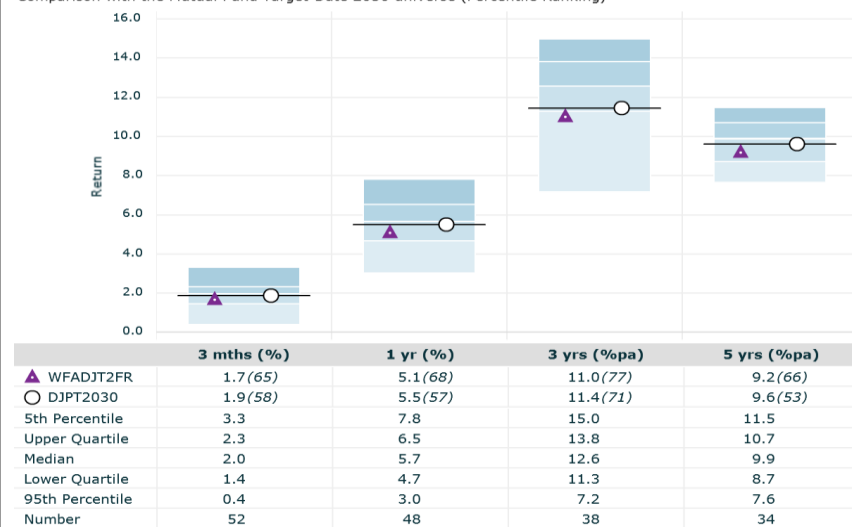
Comparison with the Mutual Fund Target-Date 2020 universe



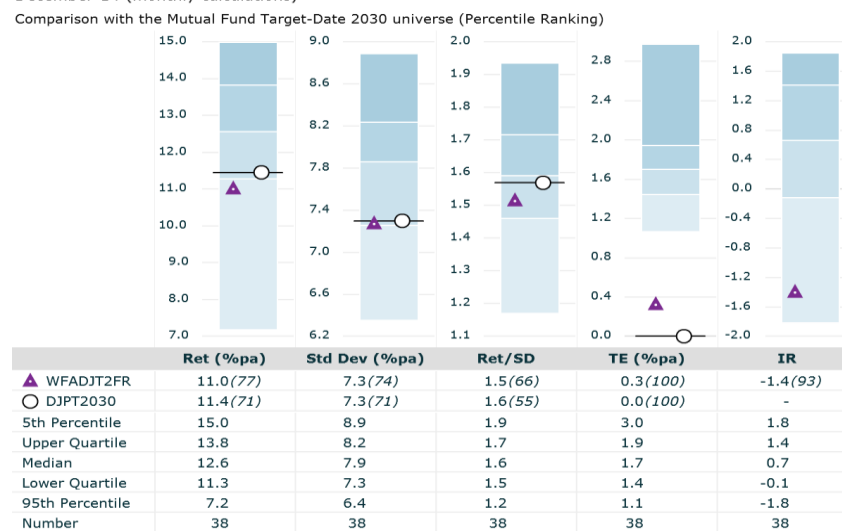
Fund Profile

Tier I - Target-Date - Wells Fargo Advantage Dow Jones Tgt 2030 Fund R6 - WFOOX

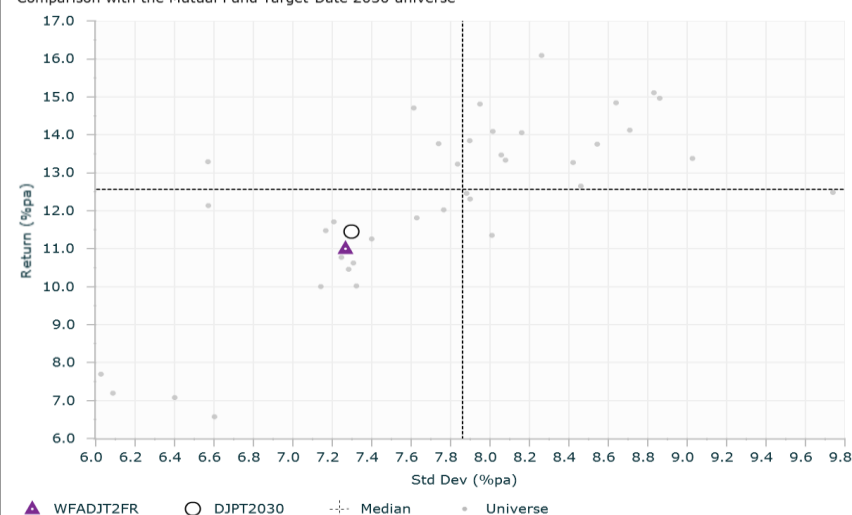
Return in \$US (after fees) over 3 mths, 1 yr, 3 yrs, 5 yrs ending December-14
Comparison with the Mutual Fund Target-Date 2030 universe (Percentile Ranking)



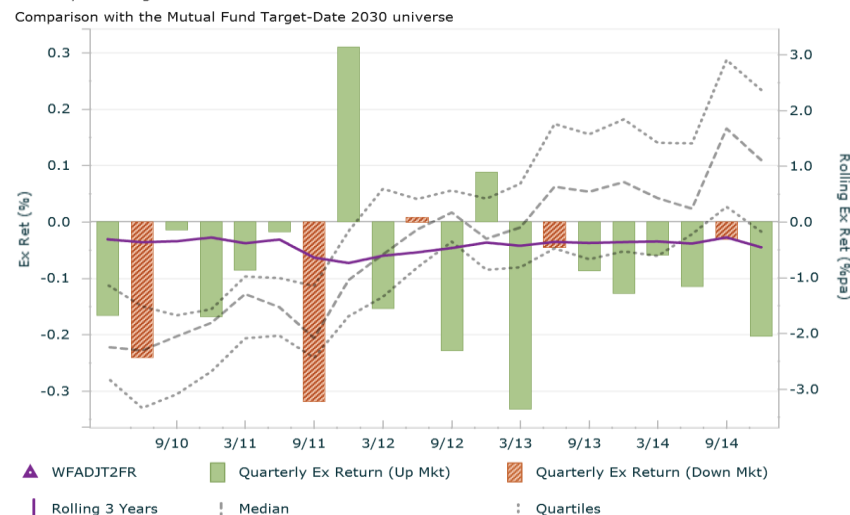
Performance characteristics vs. Dow Jones Global Target 2030 Index in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund Target-Date 2030 universe (Percentile Ranking)



Return and Std Deviation in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund Target-Date 2030 universe



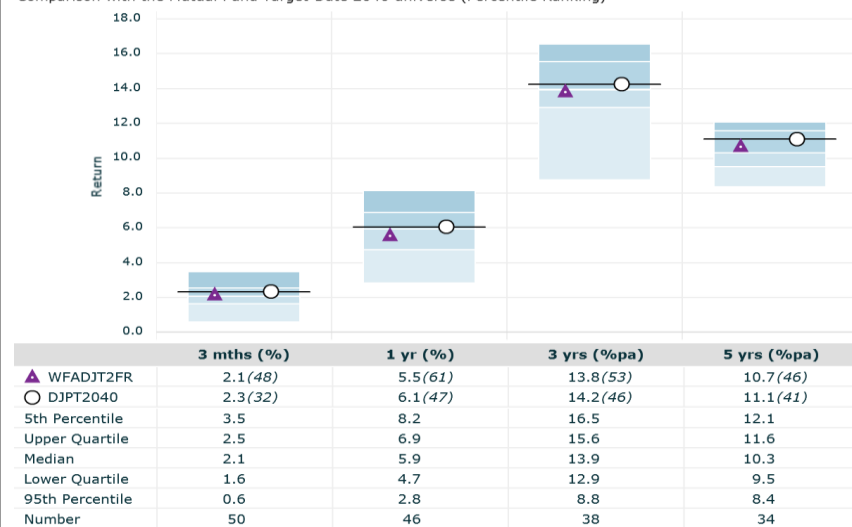
Quarterly Excess Return vs. Dow Jones Global Target 2030 Index with rolling 3 yr line in \$US (after fees) over 5 yrs ending December-14



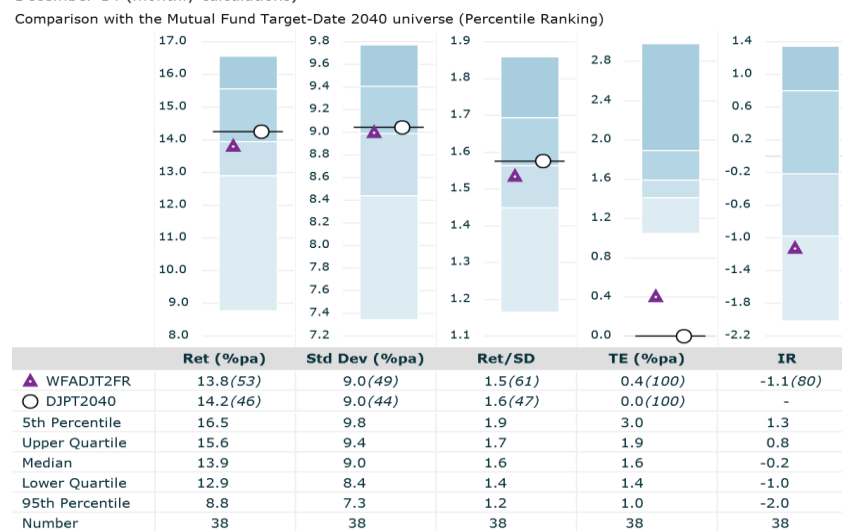
Fund Profile

Tier I - Target-Date - Wells Fargo Advantage Dow Jones Tgt 2040 Fund R6 - WFO SX

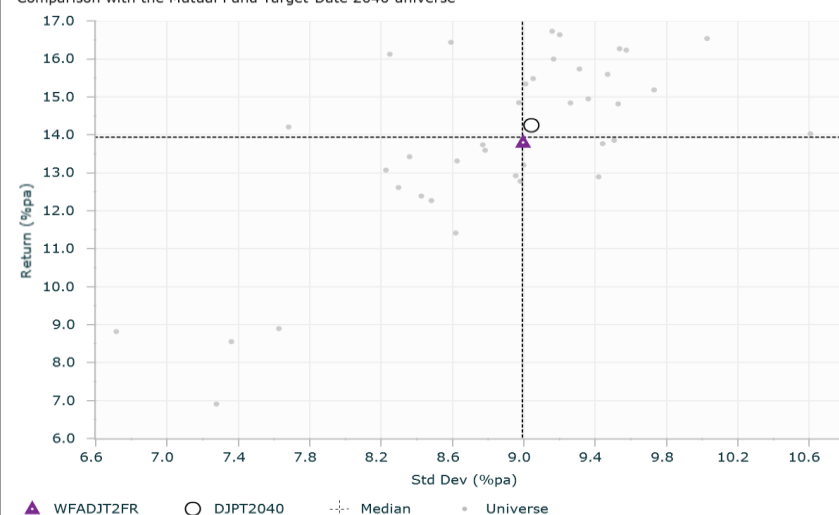
Return in \$US (after fees) over 3 mths, 1 yr, 3 yrs, 5 yrs ending December-14
Comparison with the Mutual Fund Target-Date 2040 universe (Percentile Ranking)



Performance characteristics vs. Dow Jones Global Target 2040 Index in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund Target-Date 2040 universe (Percentile Ranking)

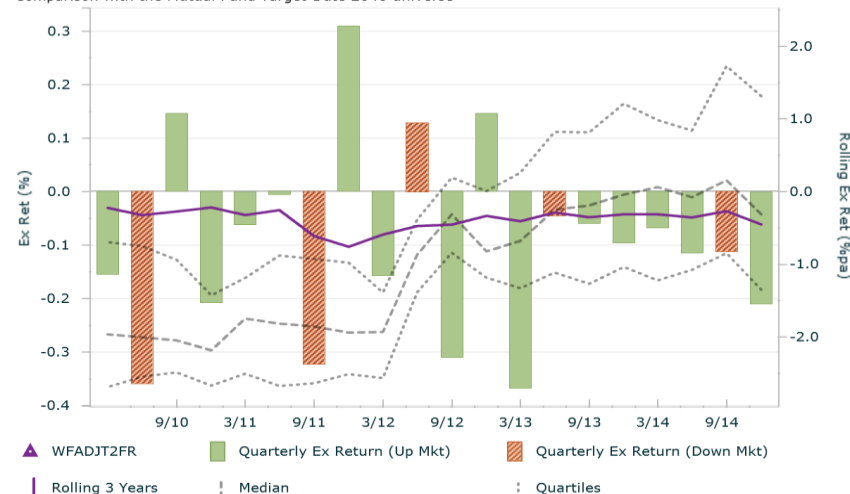


Return and Std Deviation in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund Target-Date 2040 universe



Quarterly Excess Return vs. Dow Jones Global Target 2040 Index with rolling 3 yr line in \$US (after fees) over 5 yrs ending December-14

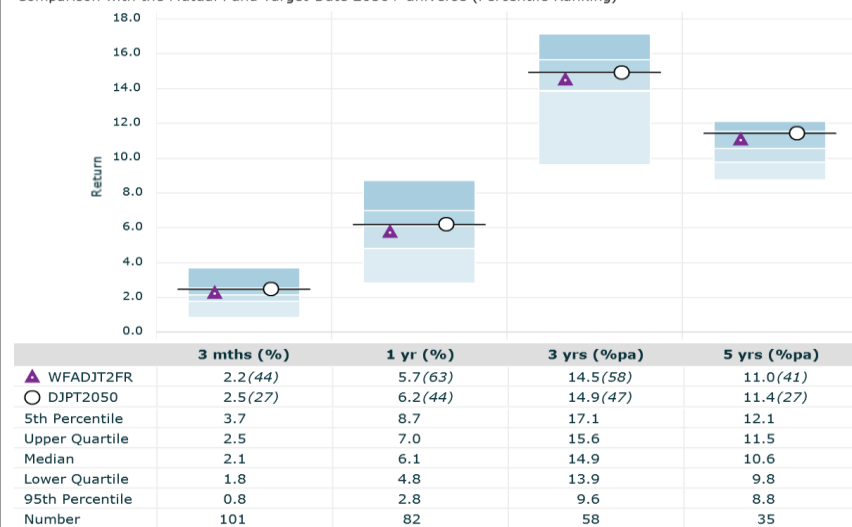
Comparison with the Mutual Fund Target-Date 2040 universe



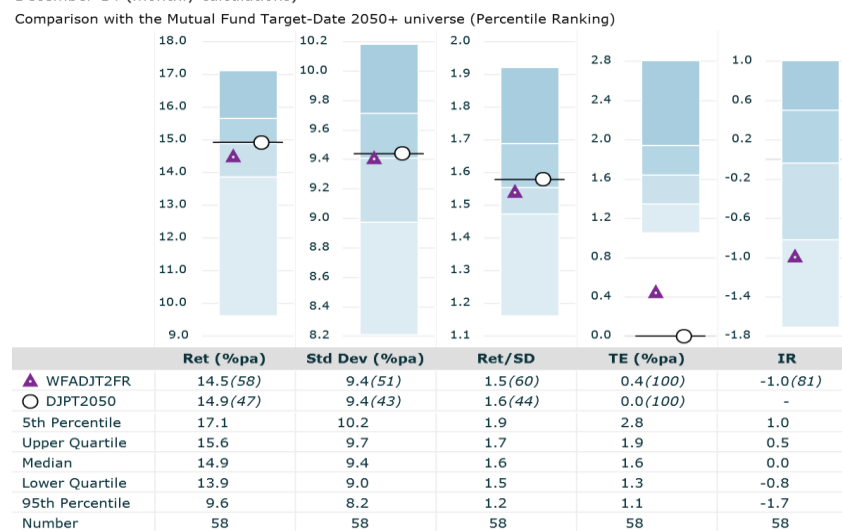
Fund Profile

Tier I - Target-Date - Wells Fargo Advantage Dow Jones Tgt 2050 Fund R6 - WFQFX

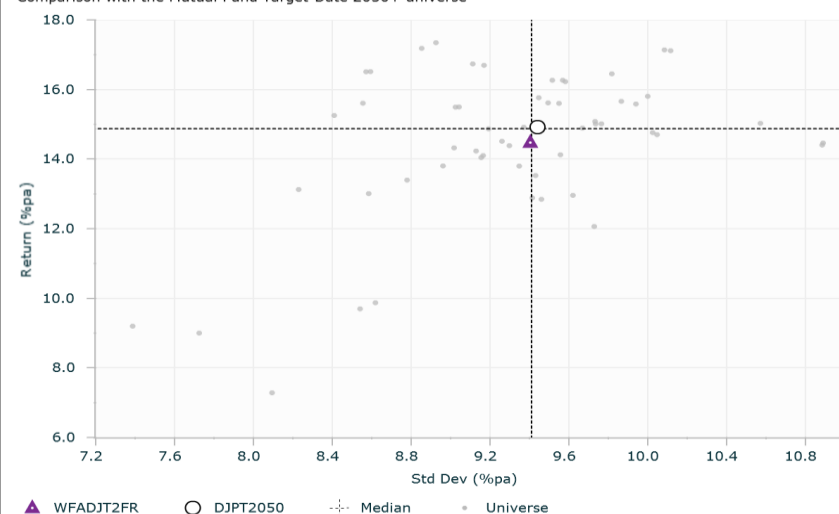
Return in \$US (after fees) over 3 mths, 1 yr, 3 yrs, 5 yrs ending December-14
Comparison with the Mutual Fund Target-Date 2050+ universe (Percentile Ranking)



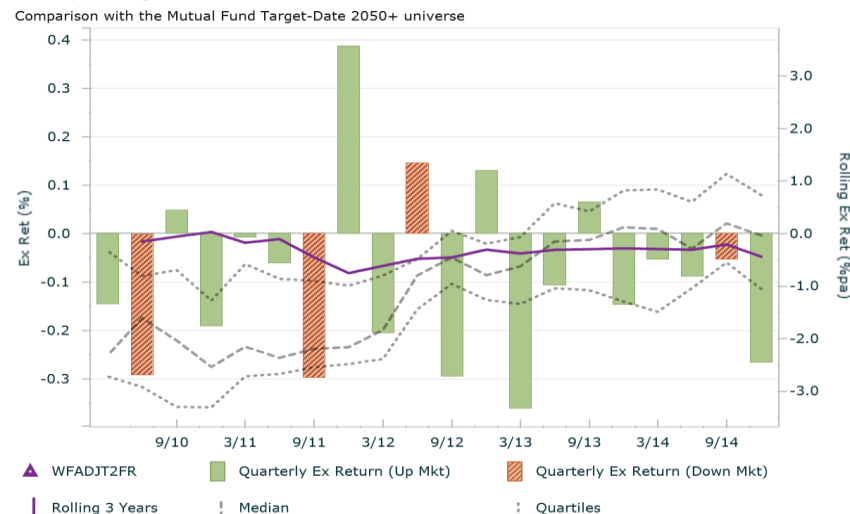
Performance characteristics vs. Dow Jones Global Target 2050 Index in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund Target-Date 2050+ universe (Percentile Ranking)



Return and Std Deviation in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund Target-Date 2050+ universe



Quarterly Excess Return vs. Dow Jones Global Target 2050 Index with rolling 3 yr line in \$US (after fees) over 5 yrs ending December-14
Comparison with the Mutual Fund Target-Date 2050+ universe



Fund Profile

Tier IIA - Domestic Fixed - Passive - Vanguard Short-Term Bond Index Fund Admiral - VBIRX

Tracking Error

Rolling 1 yr Tracking Error vs. Vanguard Spliced Barclays 1-5 G/C Float Adj Idx in \$US (after fees) over 5 yrs ending December-14 (monthly calculations)



Fund Profile

Tier IIA - Domestic Fixed - Passive - Vanguard Short-Term Bond Index Fund Admiral - VBIRX

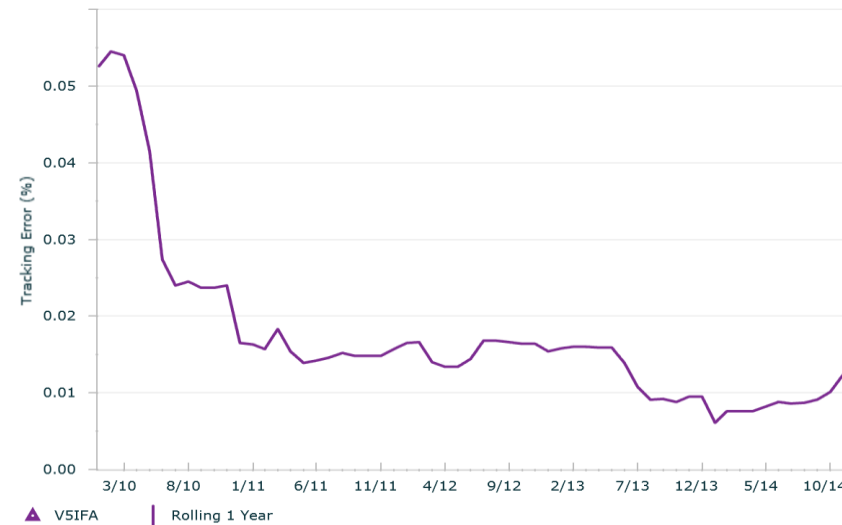
Factor	Rating (-, =, + or ++)	Comments
Idea Generation		<p>Cost & Fees:</p> <p>The fees charged by Northern Trust on its passive products are in line with competitors. The scale of the firm's operation allows it to achieve pricing power compared to lower-resourced firms.</p>
Portfolio Construction	++	Vanguard's risk dashboard provides a robust framework for assessing the level of dispersion between its portfolio and the benchmark. The process has been thoughtfully constructed and the tolerance for tracking risk has been tightened considerably over the years. The firm's tactics for generating very modest excess returns are prudently applied and do not constitute a meaningful source of tracking variance. This is true whether looking at ex-ante risk reports or reviewing ex-post results. Vanguard monitors its positioning across a wide range of curve, sector, sub-sector, issuer, and issue factors. These factors are intelligently designed and take into account risk sources beyond the obvious, high-level index characteristics data.
Implementation	++	Trading costs are closely monitored and the team attempts to eke out basis points through trading. Each trader is evaluated over rolling three month periods to determine if the individual is finding opportunities to sell bonds when they are rich or special without disturbing the factor-neutrality of the portfolio. The index team has dedicated traders who use all available trading platforms and are able to cross-trade among index portfolios where fund-specific flows provide opportunity to do so.
Business Management	++	Business management is a key strength of the firm. Vanguard remains committed to providing top quality services to investors at the lowest reasonable costs. Turnover within the active and passive fixed income investment teams has been low.
Overall Rating Preferred Provider		Vanguard's experience, scale, depth, and stability as a team provide a competitive advantage in efficient portfolio management and trade execution. The experience and stability of the team have permitted continuous refinement of techniques for reducing tracking error. The group uses proprietary tools to maintain close correlation with index performance and to implement fund flows efficiently. Compensation of index team members is based on keeping six month rolling and six month cumulative tracking error at absolute low levels. This aligns the team's incentive with the goals of the fund.

Fund Profile

Tier IIA - Domestic Equity - Passive - Vanguard 500 Index Fund Admiral - VFIAX

Tracking Error

Rolling 1 yr Tracking Error vs. S&P 500 in \$US (after fees) over 5 yrs ending December-14 (monthly calculations)



Fund Profile

Tier IIA - Domestic Equity - Passive - Vanguard 500 Index Fund Admiral - VFIAX

Factor	Rating (-, =, + or ++)	Comments
Idea Generation		Vanguard is a major provider in passive management which aims to be extremely competitive on fees. The firm uses its breadth, asset base and unique ownership structure to reduce transaction costs, maximize efficiency and pass savings on to its investor-owners. Uniquely, 100% of lending revenue is credited back to investors.
Portfolio Construction	++	<p>Vanguard's equity index specialist team constructs portfolios that aim to mirror the benchmark index returns. Subject to liquidity constraints in small or foreign markets, it employs a full replication approach. Its competitive edge comes from the experience and stability of the US based investment team, trading strength, rigid management of cash flows and from minimizing costs. It may employ securities lending on a small component of the portfolio to add incremental value, particularly within Non-US and Small Cap portfolios.</p> <p>Proprietary systems with daily monitoring of tracking risks using multiple systems help the team manage tightly to the index. Where full replication is not possible, Vanguard employs an optimizer to mirror the benchmark characteristics as tightly as possible.</p>
Implementation	++	<p>Vanguard employs a variety of trading strategies to maximize trading efficiency. Managers trade themselves to stay in close contact with the market. Vanguard operates regional trading desks for developed and emerging markets trades. Most strategies have sufficient assets under management to ensure efficient execution.</p> <p>Risk management is an independent function and continuously monitored at the factor and stock levels. Daily analysis is available to the portfolio managers regarding portfolio imbalances, tracking error, and other discrepancies.</p>
Business Management	+	Vanguard has a stellar history in the investment business built on its long time success in passive management. The firm's size has enabled it to develop ample resources in investment and retirement research. Vanguard remains committed to providing top quality services to investors at the lowest reasonable costs. Its reputation for investing in the best interest of its participants is a clear strength. In addition, the firm has created a culture of stability with investment professionals having long tenures at the firm. The firm has plans to expand its global presence, while retaining regional specialties. This may lead to certain changes in roles and responsibilities, although we don't expect significant disruption to the US based investment team itself. Any company expansion, such as the one Vanguard intends, creates the potential for higher turnover and client service challenges.
Overall Rating Preferred Provider		The passive equity strategies managed out of the US are overseen by a stable and experienced team. Vanguard carefully controls cash flows, which may reduce flexibility for new investors, but allows for superior cost management. Large assets under management in most strategies also contribute to cost management and efficient execution. The Risk Management team provides independent enforcement of constraints and risk controls which is vital to the products and a good form of checks-and-balances. Vanguard's plan to increase its global presence, integrate all systems and processes, and maximize regional trading opportunities should strengthen its offerings over the long term, although shorter term it may face some challenges.
Additional Observations		Vanguard strives to attract long-term investors. It may refuse assets from investors wanting to park money for short periods of time or it may apply withdrawal penalties. Investors should ensure they understand the withdrawal rules for the particular fund they are investing in prior to making the investment. Investors should be willing to invest in Vanguard's pooled vehicles as it has little interest in separate accounts or custom mandates. The availability of a fund in a particular country depends on where the fund is domiciled (US or Ireland) and the type of investor. Investors must work with the local Vanguard representative to determine the eligibility criteria. Funds domiciled in the US may have more tracking discrepancies due to differences in the close time for the benchmark vs. the portfolio. Vanguard reserves the right to engage in stock lending with cash collateral invested in an internal money market fund. With any such arrangement, there is always a risk of illiquidity or loss in the collateral fund. We have not reviewed the quality of the stock lending program as part of this assessment of the firm's passive management capabilities. Investors seeking more information about the stock lending features should contact Mercer Sentinel.

Fund Profile

Tier IIA - Domestic Equity - Passive - Vanguard Mid-Cap Index Fund Admiral - VIMAX

Tracking Error

Rolling 1 yr Tracking Error vs. Vanguard Spliced Mid Cap Index in \$US (after fees) over 5 yrs ending December-14 (monthly calculations)



Fund Profile

Tier IIA - Domestic Equity - Passive - Vanguard Mid-Cap Index Fund Admiral - VIMAX

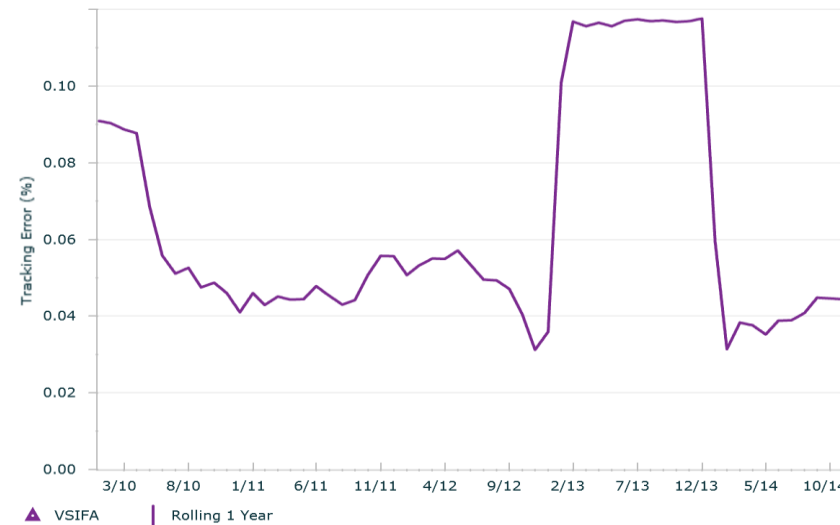
Factor	Rating (-, =, + or ++)	Comments
Idea Generation		Vanguard is a major provider in passive management which aims to be extremely competitive on fees. The firm uses its breadth, asset base and unique ownership structure to reduce transaction costs, maximize efficiency and pass savings on to its investor-owners. Uniquely, 100% of lending revenue is credited back to investors.
Portfolio Construction	++	Vanguard's equity index specialist team constructs portfolios that aim to mirror the benchmark index returns. Subject to liquidity constraints in small or foreign markets, it employs a full replication approach. Its competitive edge comes from the experience and stability of the US based investment team, trading strength, rigid management of cash flows and from minimizing costs. It may employ securities lending on a small component of the portfolio to add incremental value, particularly within Non-US and Small Cap portfolios. Proprietary systems with daily monitoring of tracking risks using multiple systems help the team manage tightly to the index. Where full replication is not possible, Vanguard employs an optimizer to mirror the benchmark characteristics as tightly as possible.
Implementation	++	Vanguard employs a variety of trading strategies to maximize trading efficiency. Managers trade themselves to stay in close contact with the market. Vanguard operates regional trading desks for developed and emerging markets trades. Most strategies have sufficient assets under management to ensure efficient execution. Risk management is an independent function and continuously monitored at the factor and stock levels. Daily analysis is available to the portfolio managers regarding portfolio imbalances, tracking error, and other discrepancies.
Business Management	+	Vanguard has a stellar history in the investment business built on its long time success in passive management. The firm's size has enabled it to develop ample resources in investment and retirement research. Vanguard remains committed to providing top quality services to investors at the lowest reasonable costs. Its reputation for investing in the best interest of its participants is a clear strength. In addition, the firm has created a culture of stability with investment professionals having long tenures at the firm. The firm has plans to expand its global presence, while retaining regional specialties. This may lead to certain changes in roles and responsibilities, although we don't expect significant disruption to the US based investment team itself. Any company expansion, such as the one Vanguard intends, creates the potential for higher turnover and client service challenges.
Overall Rating Preferred Provider		The passive equity strategies managed out of the US are overseen by a stable and experienced team. Vanguard carefully controls cash flows, which may reduce flexibility for new investors, but allows for superior cost management. Large assets under management in most strategies also contribute to cost management and efficient execution. The Risk Management team provides independent enforcement of constraints and risk controls which is vital to the products and a good form of checks-and-balances. Vanguard's plan to increase its global presence, integrate all systems and processes, and maximize regional trading opportunities should strengthen its offerings over the long term, although shorter term it may face some challenges.
Additional Observations		Vanguard strives to attract long-term investors. It may refuse assets from investors wanting to park money for short periods of time or it may apply withdrawal penalties. Investors should ensure they understand the withdrawal rules for the particular fund they are investing in prior to making the investment. Investors should be willing to invest in Vanguard's pooled vehicles as it has little interest in separate accounts or custom mandates. The availability of a fund in a particular country depends on where the fund is domiciled (US or Ireland) and the type of investor. Investors must work with the local Vanguard representative to determine the eligibility criteria. Funds domiciled in the US may have more tracking discrepancies due to differences in the close time for the benchmark vs. the portfolio. Vanguard reserves the right to engage in stock lending with cash collateral invested in an internal money market fund. With any such arrangement, there is always a risk of illiquidity or loss in the collateral fund. We have not reviewed the quality of the stock lending program as part of this assessment of the firm's passive management capabilities. Investors seeking more information about the stock lending features should contact Mercer Sentinel.

Fund Profile

Tier IIA - Domestic Equity - Passive - Vanguard Small-Cap Index Fund Admiral - VSMAX

Tracking Error

Rolling 1 yr Tracking Error vs. Vanguard Spliced Small Cap Index in \$US (after fees) over 5 yrs ending December-14 (monthly calculations)



Fund Profile

Tier IIA - Domestic Equity - Passive - Vanguard Small-Cap Index Fund Admiral - VSMAX

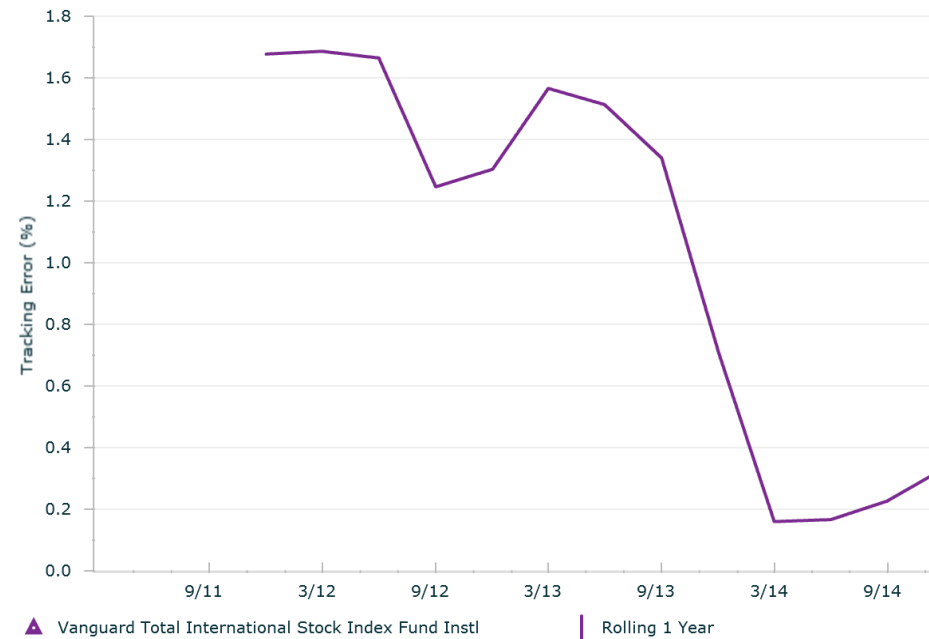
Factor	Rating (-, =, + or ++)	Comments
Idea Generation	++	Vanguard is a major provider in passive management which aims to be extremely competitive on fees. The firm uses its breadth, asset base and unique ownership structure to reduce transaction costs, maximize efficiency and pass savings on to its investor-owners. Uniquely, 100% of lending revenue is credited back to investors.
Portfolio Construction	++	Vanguard's equity index specialist team constructs portfolios that aim to mirror the benchmark index returns. Subject to liquidity constraints in small or foreign markets, it employs a full replication approach. Its competitive edge comes from the experience and stability of the US based investment team, trading strength, rigid management of cash flows and from minimizing costs. It may employ securities lending on a small component of the portfolio to add incremental value, particularly within Non-US and Small Cap portfolios. Proprietary systems with daily monitoring of tracking risks using multiple systems help the team manage tightly to the index. Where full replication is not possible, Vanguard employs an optimizer to mirror the benchmark characteristics as tightly as possible.
Implementation	+	Vanguard employs a variety of trading strategies to maximize trading efficiency. Managers trade themselves to stay in close contact with the market. Vanguard operates regional trading desks for developed and emerging markets trades. Most strategies have sufficient assets under management to ensure efficient execution. Risk management is an independent function and continuously monitored at the factor and stock levels. Daily analysis is available to the portfolio managers regarding portfolio imbalances, tracking error, and other discrepancies.
Business Management	++	Vanguard has a stellar history in the investment business built on its long time success in passive management. The firm's size has enabled it to develop ample resources in investment and retirement research. Vanguard remains committed to providing top quality services to investors at the lowest reasonable costs. Its reputation for investing in the best interest of its participants is a clear strength. In addition, the firm has created a culture of stability with investment professionals having long tenures at the firm. The firm has plans to expand its global presence, while retaining regional specialties. This may lead to certain changes in roles and responsibilities, although we don't expect significant disruption to the US based investment team itself. Any company expansion, such as the one Vanguard intends, creates the potential for higher turnover and client service challenges.
Overall Rating Preferred Provider		The passive equity strategies managed out of the US are overseen by a stable and experienced team. Vanguard carefully controls cash flows, which may reduce flexibility for new investors, but allows for superior cost management. Large assets under management in most strategies also contribute to cost management and efficient execution. The Risk Management team provides independent enforcement of constraints and risk controls which is vital to the products and a good form of checks-and-balances. Vanguard's plan to increase its global presence, integrate all systems and processes, and maximize regional trading opportunities should strengthen its offerings over the long term, although shorter term it may face some challenges.
Additional Observations		Vanguard strives to attract long-term investors. It may refuse assets from investors wanting to park money for short periods of time or it may apply withdrawal penalties. Investors should ensure they understand the withdrawal rules for the particular fund they are investing in prior to making the investment. Investors should be willing to invest in Vanguard's pooled vehicles as it has little interest in separate accounts or custom mandates. The availability of a fund in a particular country depends on where the fund is domiciled (US or Ireland) and the type of investor. Investors must work with the local Vanguard representative to determine the eligibility criteria. Funds domiciled in the US may have more tracking discrepancies due to differences in the close time for the benchmark vs. the portfolio. Vanguard reserves the right to engage in stock lending with cash collateral invested in an internal money market fund. With any such arrangement, there is always a risk of illiquidity or loss in the collateral fund. We have not reviewed the quality of the stock lending program as part of this assessment of the firm's passive management capabilities. Investors seeking more information about the stock lending features should contact Mercer Sentinel.

Fund Profile

Tier IIA - International Equity - Vanguard Total International Stock Index Fund Adm – VTIAX

Tracking Error

Rolling 1 yr Tracking Error vs. Vanguard Total International Composite Index in \$US (after fees) over 4 yrs ending December-14 (quarterly calculations)



Fund Profile

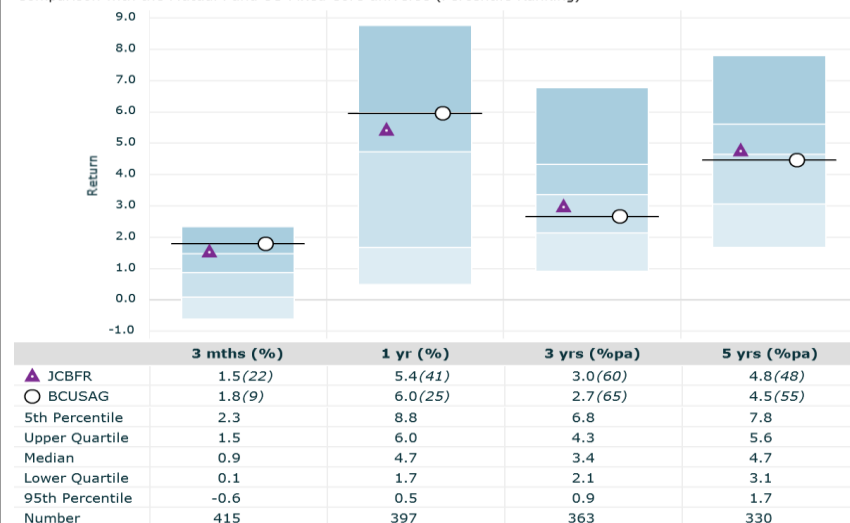
Tier IIA - International Equity - Vanguard Total International Stock Index Fund Adm - VTIAX

Factor	Rating (-, =, + or ++)	Comments
Idea Generation	++	Vanguard is a major provider in passive management which aims to be extremely competitive on fees. The firm uses its breadth, asset base and unique ownership structure to reduce transaction costs, maximize efficiency and pass savings on to its investor-owners. Uniquely, 100% of lending revenue is credited back to investors.
Portfolio Construction	++	Vanguard's equity index specialist team constructs portfolios that aim to mirror the benchmark index returns. Subject to liquidity constraints in small or foreign markets, it employs a full replication approach. Its competitive edge comes from the experience and stability of the US based investment team, trading strength, rigid management of cash flows and from minimizing costs. It may employ securities lending on a small component of the portfolio to add incremental value, particularly within Non-US and Small Cap portfolios. Proprietary systems with daily monitoring of tracking risks using multiple systems help the team manage tightly to the index. Where full replication is not possible, Vanguard employs an optimizer to mirror the benchmark characteristics as tightly as possible.
Implementation	+	Vanguard employs a variety of trading strategies to maximize trading efficiency. Managers trade themselves to stay in close contact with the market. Vanguard operates regional trading desks for developed and emerging markets trades. Most strategies have sufficient assets under management to ensure efficient execution. Risk management is an independent function and continuously monitored at the factor and stock levels. Daily analysis is available to the portfolio managers regarding portfolio imbalances, tracking error, and other discrepancies.
Business Management	++	Vanguard has a stellar history in the investment business built on its long time success in passive management. The firm's size has enabled it to develop ample resources in investment and retirement research. Vanguard remains committed to providing top quality services to investors at the lowest reasonable costs. Its reputation for investing in the best interest of its participants is a clear strength. In addition, the firm has created a culture of stability with investment professionals having long tenures at the firm. The firm has plans to expand its global presence, while retaining regional specialties. This may lead to certain changes in roles and responsibilities, although we don't expect significant disruption to the US based investment team itself. Any company expansion, such as the one Vanguard intends, creates the potential for higher turnover and client service challenges.
Overall Rating Preferred Provider	The passive equity strategies managed out of the US are overseen by a stable and experienced team. Vanguard carefully controls cash flows, which may reduce flexibility for new investors, but allows for superior cost management. Large assets under management in most strategies also contribute to cost management and efficient execution. The Risk Management team provides independent enforcement of constraints and risk controls which is vital to the products and a good form of checks-and-balances. Vanguard's plan to increase its global presence, integrate all systems and processes, and maximize regional trading opportunities should strengthen its offerings over the long term, although shorter term it may face some challenges.	
Additional Observations	Vanguard strives to attract long-term investors. It may refuse assets from investors wanting to park money for short periods of time or it may apply withdrawal penalties. Investors should ensure they understand the withdrawal rules for the particular fund they are investing in prior to making the investment. Investors should be willing to invest in Vanguard's pooled vehicles as it has little interest in separate accounts or custom mandates. The availability of a fund in a particular country depends on where the fund is domiciled (US or Ireland) and the type of investor. Investors must work with the local Vanguard representative to determine the eligibility criteria. Funds domiciled in the US may have more tracking discrepancies due to differences in the close time for the benchmark vs. the portfolio. Vanguard reserves the right to engage in stock lending with cash collateral invested in an internal money market fund. With any such arrangement, there is always a risk of illiquidity or loss in the collateral fund. We have not reviewed the quality of the stock lending program as part of this assessment of the firm's passive management capabilities. Investors seeking more information about the stock lending features should contact Mercer Sentinel.	

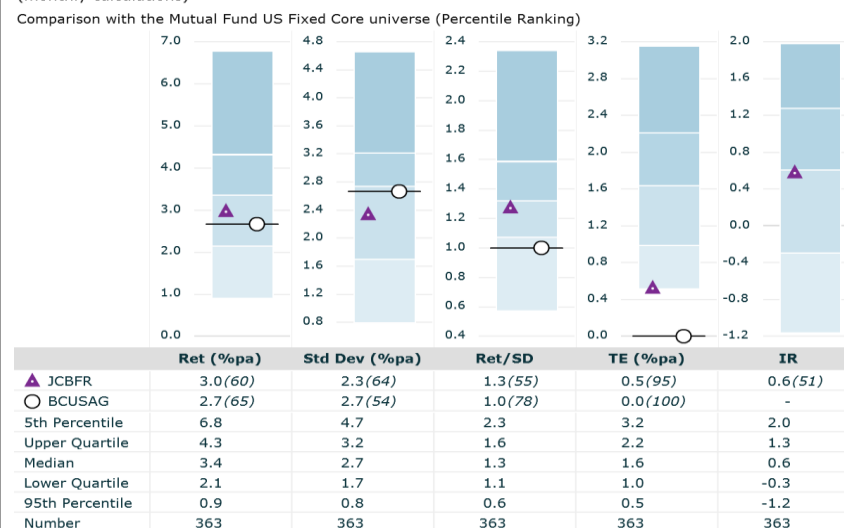
Fund Profile

Tier IIB - Domestic Fixed - JPMorgan Core Bond Fund R6 - JCBUX

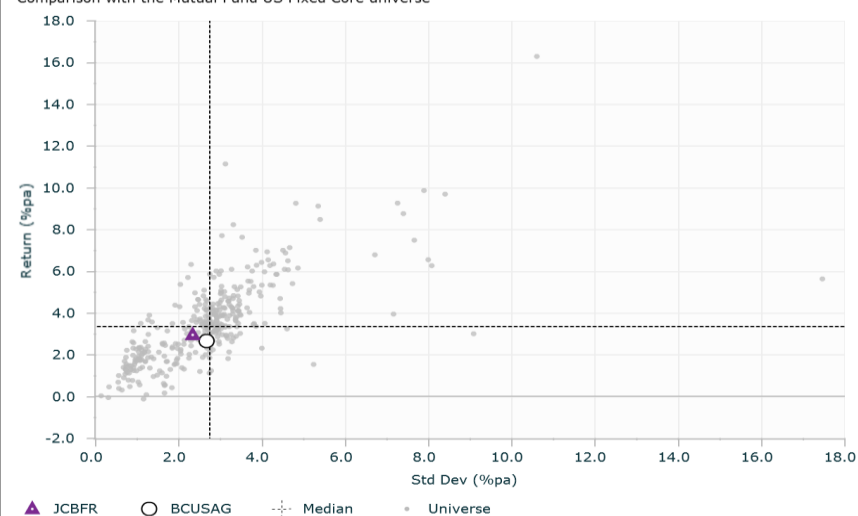
Return in \$US (after fees) over 3 mths, 1 yr, 3 yrs, 5 yrs ending December-14
Comparison with the Mutual Fund US Fixed Core universe (Percentile Ranking)



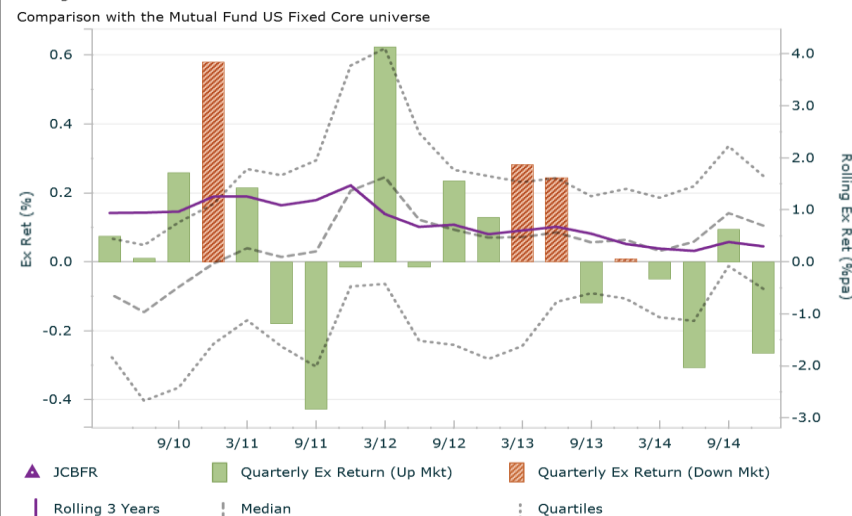
Performance characteristics vs. Barclays US Aggregate in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)



Return and Std Deviation in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund US Fixed Core universe



Quarterly Excess Return vs. Barclays US Aggregate with rolling 3 yr line in \$US (after fees) over 5 yrs ending December-14



Fund Profile

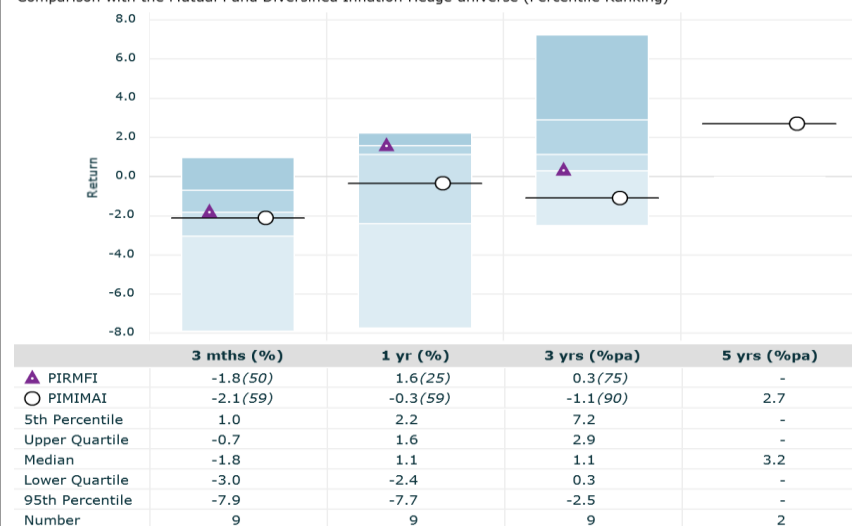
Tier IIB - Domestic Fixed - JPMorgan Core Bond Fund R6 - JCBUX

Factor	Rating (-, =, + or ++)	Comments
Idea Generation	++	JPMAM's key strength is Doug Swanson's experience in the mortgage sector and the depth of his support staff. The strategy relies heavily on Swanson's ability to find superior carry in the CMO market, which provides positive convexity with minimal credit risk. As a result, the team has generated consistent alpha with minimal return volatility. Quantitative analysis of structured products is adequate, but unlike most managers with a mortgage slant, proprietary quantitative tools do not play a significant role in the decision-making process.
Portfolio Construction	+	The fixed income investment process includes ongoing review, monitoring, and control of key portfolio characteristics. The consistent overweight to CMO tranches is reflective of Swanson's mortgage background and investment philosophy. Risk management tools are robust with user-friendly data displays at the sector and portfolio levels.
Implementation	+	To respond effectively to market opportunities and inefficiencies, trading authority lies with the portfolio managers. At this time, capacity is not a concern.
Business Management	+	The Columbus-based fixed income team has been able to keep its investment management team and management style separate and intact from its New York team. Also, despite recent changes to the reporting hierarchy within JPMAM, the firm has retained key personnel affiliated with the Multi-Sector and Mortgage strategies. That said, the integration with the New York platform is still evolving, and therefore, remains an issue of concern.
Overall Rating A		JPMAM's value-oriented approach to investing is ideal for risk-averse core fixed income clients. The investment process, led by Swanson, thrives on identifying relative value in the CMO market with minimal option or event risk. In addition, the risk management function is well integrated with the investment process at all levels. However, clients should be comfortable with the strategy's significant overweight to the mortgage sector, and understand that the team favors CMOs over MBS pass-throughs and corporates.
Additional Observations		Our rating pertains solely to the Columbus fixed income team, rather than JPMAM's New York team. It is also dependent on Douglas Swanson remaining head of the Columbus team. Swanson is the seminal figure in the taxable fixed income strategies, having guided the investment philosophy in Columbus for over a decade. We are not confident that the firm has sufficient leadership and technical expertise to thrive in his absence.

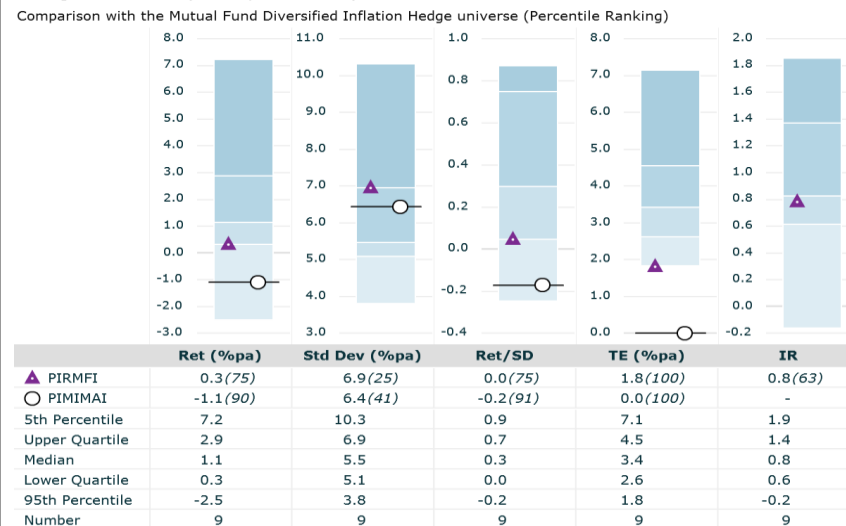
Fund Profile

Tier IIB - Balanced - PIMCO Inflation Response Multi-Asset Fund Inst - PIRMX

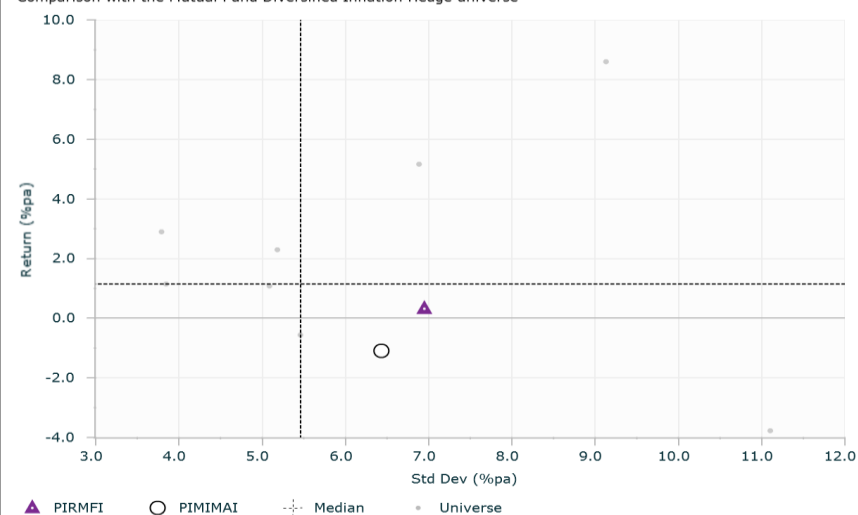
Return in \$US (after fees) over 3 mths, 1 yr, 3 yrs, 5 yrs ending December-14
Comparison with the Mutual Fund Diversified Inflation Hedge universe (Percentile Ranking)



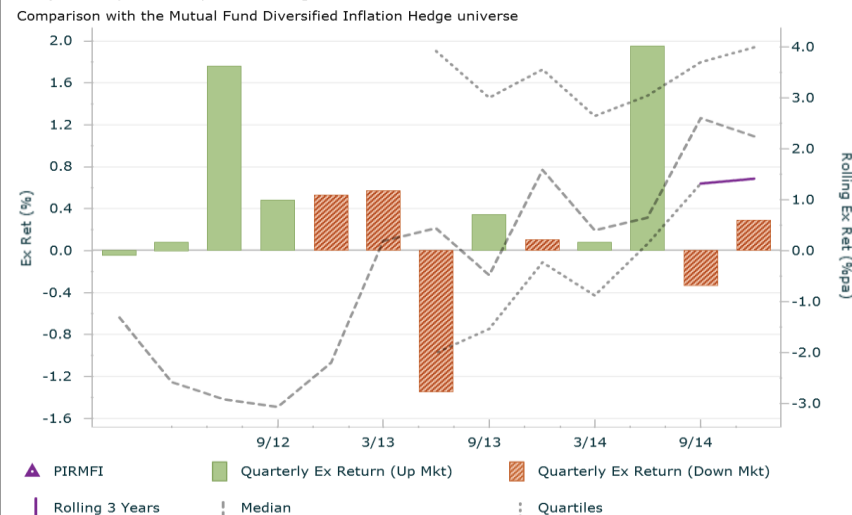
Performance characteristics vs. PIMCO Inflation Response Multi-Asset Index in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund Diversified Inflation Hedge universe (Percentile Ranking)



Return and Std Deviation in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund Diversified Inflation Hedge universe



Quarterly Excess Return vs. PIMCO Inflation Response Multi-Asset Index with rolling 3 yr line in \$US (after fees) over 3 yrs and 1 quarter ending December-14
Comparison with the Mutual Fund Diversified Inflation Hedge universe



Fund Profile

Tier IIB - Balanced - PIMCO Inflation Response Multi-Asset Fund Inst - PIRMX

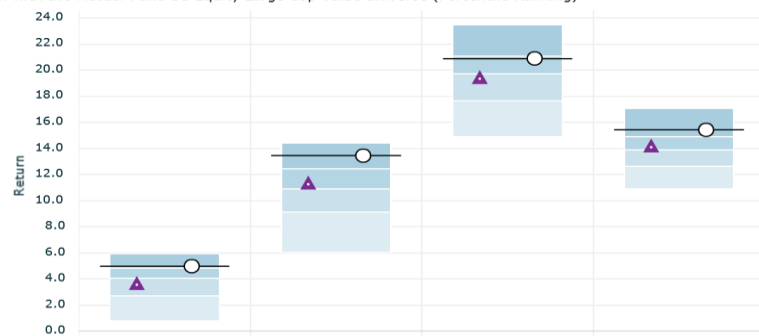
Factor	Rating (-, =, + or ++)	Comments
Idea Generation	++	<p>The strategy's edge lies in the strength and depth of PIMCO's macroeconomic research capabilities. The firm's scale enables it to employ a depth of resources and people globally across multiple market sectors. The firm's Secular and Cyclical Forums bring together trade ideas and outlooks from regional and sector investment teams in a repeatable and well-organized way. PIMCO's investment committee has an established track record of generating macroeconomic views and formulating opinions on the prospective performance of risk factors. The strategy effectively leverages those skills when developing ideas regarding the potential drivers of inflation, the impact of inflation on various asset classes and the performance of asset classes during inflationary periods. In addition to the firm's overall strengths, Worah demonstrates a deep understanding of inflation and its impact on markets. The strategy also effectively utilizes PIMCO's ability to add value from a bottom-up perspective, relying on specialists to manage the underlying sub-strategies.</p> <p>At the end of the day however, PIMCO has relatively limited experience with tactical multi-asset decisions, particularly with this product which was launched only in September 2011. IRMAF's benchmark relative performance has been encouraging to date, while other PIMCO asset allocation strategies have struggled in the past two years.</p>
Portfolio Construction	++	<p>The rationale behind the strategic benchmark index is sound, taking account of both historic asset class return patterns and the directness of their responsiveness to inflation. We think the tactical asset allocation process effectively leverages PIMCO's strength in idea generation, although it is relatively untested in a multi-asset context. Each asset class sleeve is managed by a specialist PIMCO portfolio manager, providing the ability to add value through bottom-up security selection. We believe that Worah should see that custom sleeve ideas are well vetted and tailored to the specific objectives of the strategy. The portfolio also employs tail-risk hedging strategies, which we think can provide further protection when diversification fails.</p>
Implementation	+	<p>Assets in IRMAF have jumped since the strategy was launched in mid-2011 reaching \$1.6bn as of July 2014. Inflation linked bonds and Commodities represent 45% and 20% respectively of IRMAF's strategic allocations. Firm-wide PIMCO has significant exposure to the TIPS/ILB market which precludes us from awarding a higher rating. We harbor concerns on their ability to implement strategies in smaller markets, particularly as they have resisted providing fixed income capacity constraint information. The firm's ability to exit large positions efficiently remains a concern.</p> <p>On the positive side, PIMCO has an appetite for off-benchmark positions and a willingness to use derivatives to gain or hedge exposures. This means it does not need to express all curve or duration trades via cash/physical markets. The liquidity of the inflation linked market and favorable new issuance/supply trends are also considerations.</p> <p>Furthermore, the firm has significant resources to analyze a large number of investment opportunities and is well positioned to achieve desired exposures with trading desks located across the globe. PIMCO has significant influence in structuring deals and setting pricing when approaching issuers with reverse inquiries and can extract pricing concessions when it comes to providing liquidity on the other side of very large trades. A dedicated risk committee assesses counterparties and monitor exposures closely.</p>
Business Management	+	<p>PIMCO is one the largest asset management firms in the world, which carries both advantages and disadvantages. On the positive side, a large asset base provides the firm with extensive resources and contacts, which can be used to develop an informational advantage and conduct an in-depth analysis of a wide range of global investment opportunities. Additionally, the firm can use its size to obtain advantageous pricing in certain markets. On the other hand, a large asset base can hinder its ability to generate alpha by limiting the potential to invest in smaller/niche areas of the market and could create problems in exiting certain positions. PIMCO is also trying to enter new markets (e.g. equity management), which can lead to a potential loss of focus. The firm's culture is ultra-competitive and intense, which, when coupled with its renowned status, can lead to periodic bouts of turnover, but is a net positive as it produces a highly disciplined and thorough investment process.</p> <p>PIMCO's unwillingness to provide capacity guidance for multiple products leads to our belief that the firm is too focused on its own asset goals. The firm's unwillingness to provide transparency on succession planning, capacity, and access to investment team meetings precludes us from awarding a higher factor score.</p>

Overall Rating B+ (W)	The strategy benefits from PIMCO's highly regarded research capabilities. The firm's investment committee demonstrates a strong ability to generate tactical and secular macroeconomic and risk factor forecasts. The firm's asset allocation committee effectively converts those views into asset class risk/return projections. In addition to the firm's overall strengths, the strategy benefits from a dedicated real return team who demonstrate a deep understanding of inflation trends and how to position the portfolio from both a strategic and tactical perspective to benefit from those trends. The dynamic nature of this fund effectively leverages PIMCO's skills and increases its ability to add value. PIMCO also has significant experience managing inflation related strategies. While we have confidence in PIMCO's ability to generate an inflation outlook and gauge the performance of asset classes in that environment, we would like to see further evidence of the fund's ability to hedge inflation and to add value through active asset allocation.
Additional Observations	While the strategy seeks a return in excess of inflation, investors should be aware that CPI is not an investable benchmark and PIMCO does not seek to track it. As such, the shorter-term performance of the strategy will likely be driven by factors other than realized inflation or changes in market inflation expectations. Still, the objective of the strategy is to formulate macroeconomic views regarding potential inflation and then seek exposure to asset classes and investments that should benefit from/protect against inflation and that perform relatively well during periods of rising inflation. While the portfolio is diversified, volatility and downside risk could be higher than expected as many of the underlying asset classes have exposure to common risk factors.

Fund Profile

Tier IIB - Domestic Equity - Vanguard Windsor II Fund Admiral - VWNAX

Return in \$US (after fees) over 3 mths, 1 yr, 3 yrs, 5 yrs ending December-14
Comparison with the Mutual Fund US Equity Large Cap Value universe (Percentile Ranking)



	3 mths (%)	1 yr (%)	3 yrs (%pa)	5 yrs (%pa)
▲ VWIFA	3.6(59)	11.3(42)	19.3(55)	14.1(44)
○ RU1000VUSD	5.0(20)	13.5(12)	20.9(26)	15.4(18)
5th Percentile	6.0	14.4	23.5	17.1
Upper Quartile	4.8	12.4	21.1	14.9
Median	4.1	10.9	19.7	13.9
Lower Quartile	2.7	9.1	17.6	12.6
95th Percentile	0.8	6.0	14.9	10.9
Number	132	127	114	103

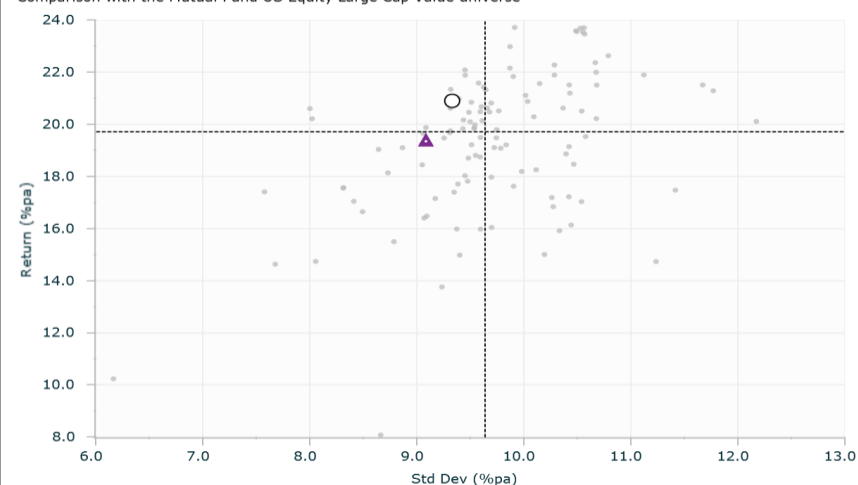
Performance characteristics vs. Russell 1000 Value in \$US (after fees) over 3 yrs ending December-14
(monthly calculations)

Comparison with the Mutual Fund US Equity Large Cap Value universe (Percentile Ranking)



	Ret (%pa)	Std Dev (%pa)	Ret/SD	TE (%pa)	IR
▲ VWIFA	19.3(55)	9.1(82)	2.1(29)	1.9(83)	-0.8(61)
○ RU1000VUSD	20.9(26)	9.3(75)	2.2(12)	0.0(100)	-
5th Percentile	23.5	10.9	2.3	4.7	0.8
Upper Quartile	21.1	10.3	2.2	3.2	0.1
Median	19.7	9.6	2.0	2.7	-0.6
Lower Quartile	17.6	9.3	1.8	2.1	-1.2
95th Percentile	14.9	8.2	1.5	1.3	-1.8
Number	114	114	114	114	114

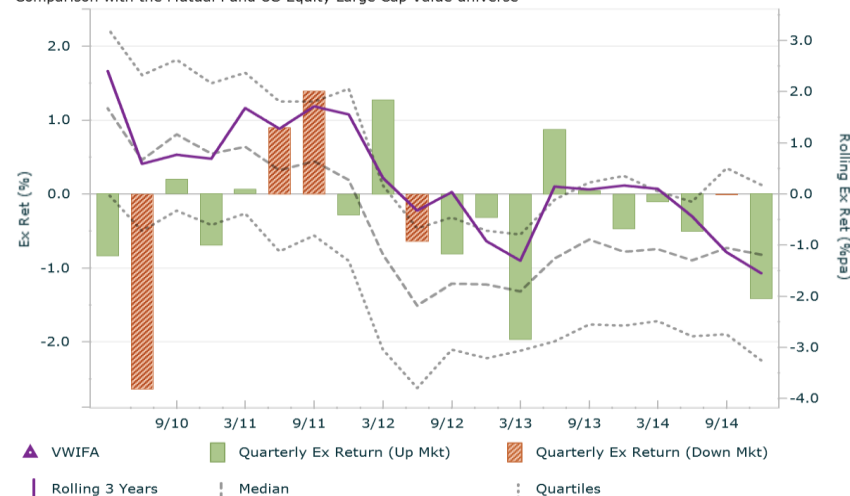
Return and Std Deviation in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund US Equity Large Cap Value universe



▲ VWIFA ○ RU1000VUSD + Median • Universe

Quarterly Excess Return vs. Russell 1000 Value with rolling 3 yr line in \$US (after fees) over 5 yrs ending December-14

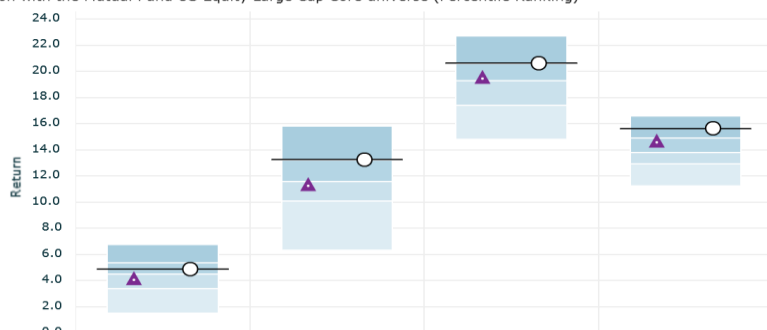
Comparison with the Mutual Fund US Equity Large Cap Value universe



Fund Profile

Tier IIB - Domestic Equity - TIAA-CREF Social Choice Equity Fund Institutional - TISCX

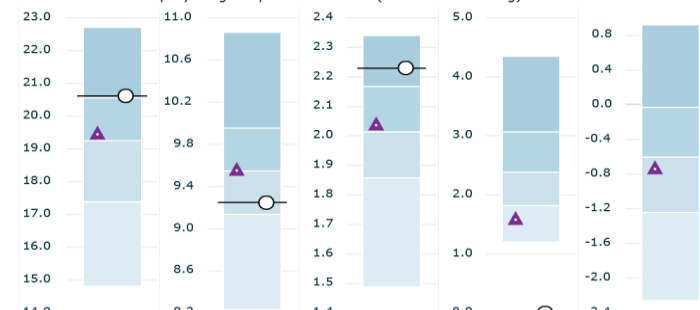
Return in \$US (after fees) over 3 mths, 1 yr, 3 yrs, 5 yrs ending December-14
Comparison with the Mutual Fund US Equity Large Cap Core universe (Percentile Ranking)



	3 mths (%)	1 yr (%)	3 yrs (%opa)	5 yrs (%opa)
▲ TSCEFI	4.1(62)	11.2(54)	19.4(46)	14.6(34)
○ RU1000USD	4.9(37)	13.2(24)	20.6(23)	15.6(15)
5th Percentile	6.7	15.8	22.7	16.6
Upper Quartile	5.4	13.2	20.6	14.9
Median	4.5	11.6	19.3	13.8
Lower Quartile	3.4	10.1	17.4	12.9
95th Percentile	1.5	6.3	14.8	11.2
Number	253	248	230	215

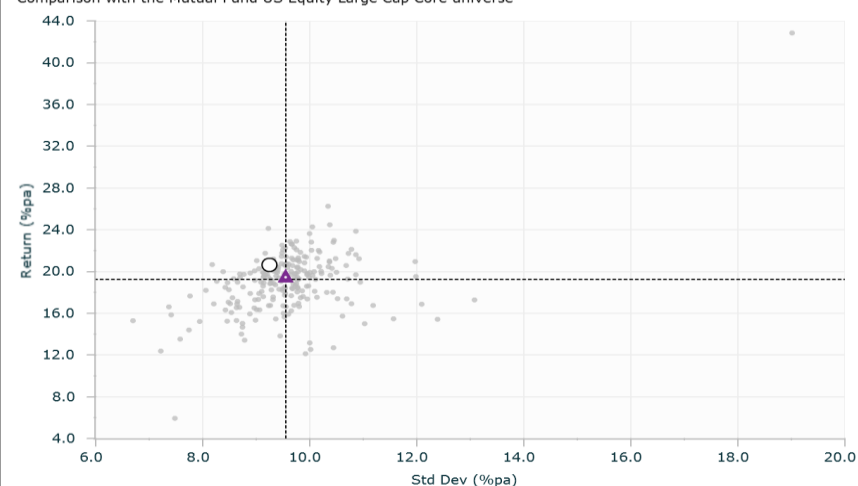
Performance characteristics vs. Russell 1000 in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)

Comparison with the Mutual Fund US Equity Large Cap Core universe (Percentile Ranking)



	Ret (%pa)	Std Dev (%pa)	Ret/SD	TE (%pa)	IR
▲ TSCEFI	19.4(46)	9.6(50)	2.0(45)	1.6(84)	-0.7(55)
○ RU1000USD	20.6(23)	9.2(70)	2.2(17)	0.0(100)	-
5th Percentile	22.7	10.9	2.3	4.3	0.9
Upper Quartile	20.6	10.0	2.2	3.1	0.0
Median	19.3	9.5	2.0	2.4	-0.6
Lower Quartile	17.4	9.1	1.9	1.8	-1.2
95th Percentile	14.8	8.2	1.5	1.2	-2.3
Number	230	230	230	230	230

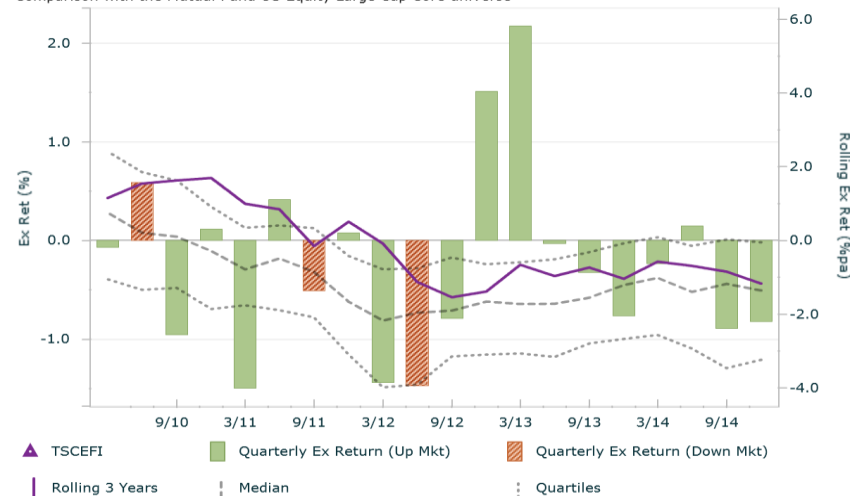
Return and Std Deviation in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund US Equity Large Cap Core universe



▲ TSCEFI ○ RU1000USD --- Median • Universe

Quarterly Excess Return vs. Russell 1000 with rolling 3 yr line in \$US (after fees) over 5 yrs ending December-14

Comparison with the Mutual Fund US Equity Large Cap Core universe



▲ TSCEFI ■ Quarterly Ex Return (Up Mkt) ■ Quarterly Ex Return (Down Mkt)
| Rolling 3 Years | Median | : Quartiles

Fund Profile

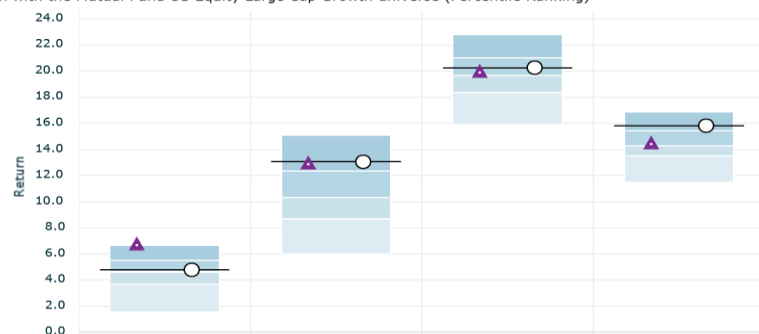
Tier IIB - Domestic Equity - TIAA-CREF Social Choice Equity Fund Institutional - TISCX

Factor	Rating (-, =, + or ++)	Comments
Idea Generation		TCAM rely solely on inputs from KLD for the definition of their investment universe, though they actively liaise with KLD to help shape the social priorities. It is a purely quant process using a model developed internally over 10 years ago so may under perform in periods of unusual market activity when the predictive power of the model is challenged.
Portfolio Construction		The proprietary quantitative model is run daily by TCAM's quant equity team, in the same way as unconstrained portfolios. It incorporates Barra risk factors to minimise tracking error and past performance indicates the model has been consistent in replicating index returns. The managers are conscious of minimising trading costs e.g. through minimum trade sizes.
Implementation		Trading is done centrally by 24-hour desks in New York and San Francisco. Capacity is not an issue.
Business Management		TCAM have long been committed to socially responsible investing; their philosophy of influencing positive change through investing stems from their history as a non-profit organisation, dedicated to the education profession.
Overall Rating N		We have not formally rated this strategy as it will appeal only to a very specific type of investor, i.e. one who wants a passive ethical strategy. TCAM have a clear commitment to SRI; their work in corporate governance and community investing is market leading. The index replication appears to be competently and efficiently executed such that over a full cycle the exclusion of certain sectors should not be a drag on performance.
Additional Observations		A prolonged period of out performance by industrial or larger cap companies would result in underperformance of this strategy due to the exclusionary screens.

Fund Profile

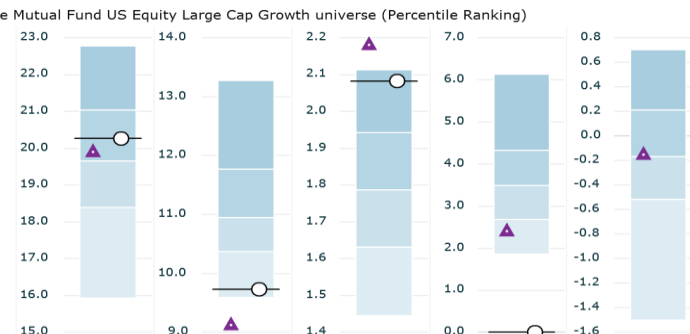
Tier IIB - Domestic Equity - T Rowe Price Growth & Income Fund - PRGIX

Return in \$US (after fees) over 3 mths, 1 yr, 3 yrs, 5 yrs ending December-14
Comparison with the Mutual Fund US Equity Large Cap Growth universe (Percentile Ranking)



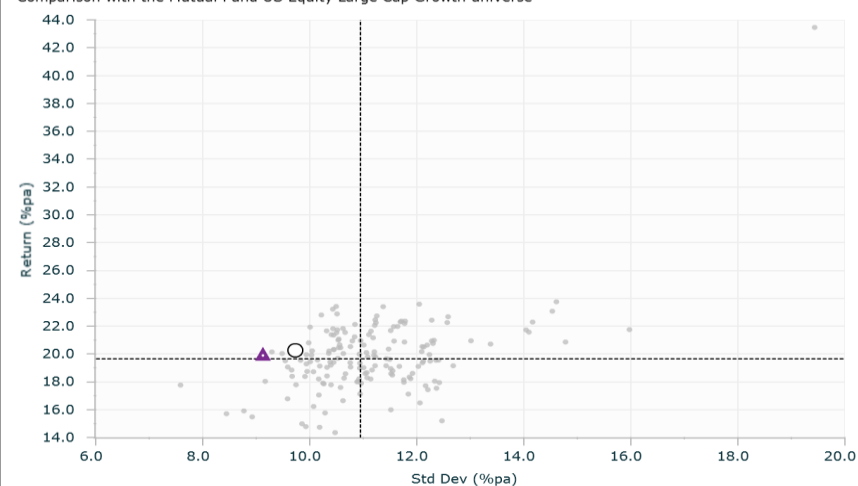
	3 mths (%)	1 yr (%)	3 yrs (%pa)	5 yrs (%pa)
▲ TRPG&IF	6.7(5)	12.9(21)	19.9(48)	14.4(44)
○ RU1000GUSD	4.8(47)	13.1(21)	20.3(39)	15.8(18)
5th Percentile	6.7	15.1	22.8	16.9
Upper Quartile	5.5	12.3	21.0	15.4
Median	4.6	10.3	19.7	14.3
Lower Quartile	3.7	8.7	18.4	13.5
95th Percentile	1.6	6.0	15.9	11.5
Number	184	179	167	150

Performance characteristics vs. Russell 1000 Growth in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund US Equity Large Cap Growth universe (Percentile Ranking)



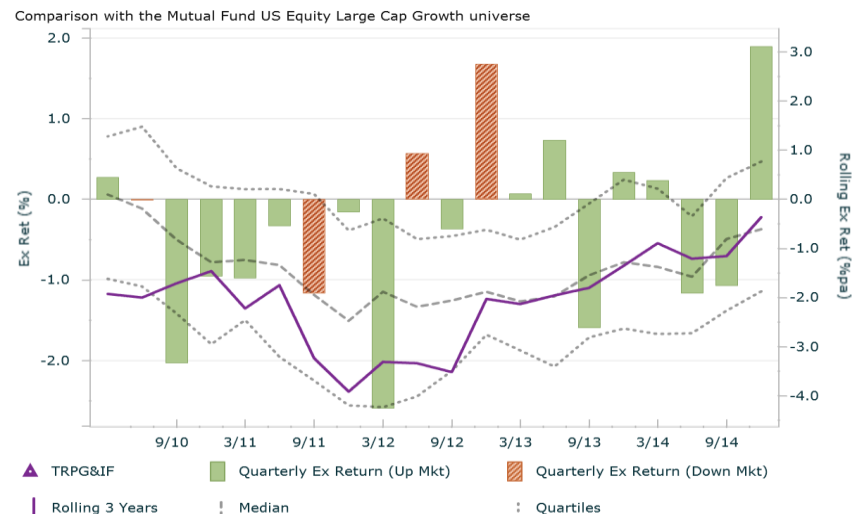
	Ret (%pa)	Std Dev (%pa)	Ret/SD	TE (%pa)	IR
▲ TRPG&IF	19.9(48)	9.1(98)	2.2(3)	2.4(86)	-0.2(49)
○ RU1000GUSD	20.3(39)	9.7(92)	2.1(7)	0.0(100)	-
5th Percentile	22.8	13.3	2.1	6.1	0.7
Upper Quartile	21.0	11.8	1.9	4.3	0.2
Median	19.7	11.0	1.8	3.5	-0.2
Lower Quartile	18.4	10.4	1.6	2.7	-0.5
95th Percentile	15.9	9.6	1.4	1.9	-1.5
Number	167	167	167	167	167

Return and Std Deviation in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund US Equity Large Cap Growth universe



▲ TRPG&IF ○ RU1000GUSD + Median • Universe

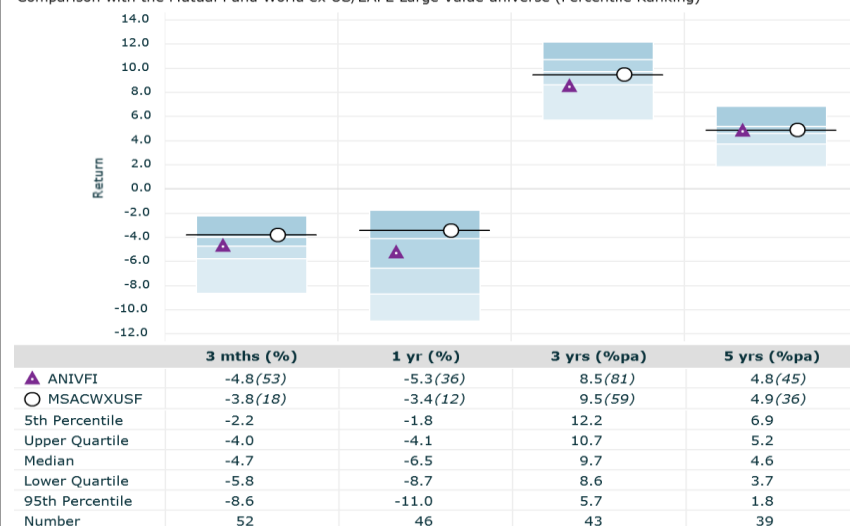
Quarterly Excess Return vs. Russell 1000 Growth with rolling 3 yr line in \$US (after fees) over 5 yrs ending December-14
Comparison with the Mutual Fund US Equity Large Cap Growth universe



Fund Profile

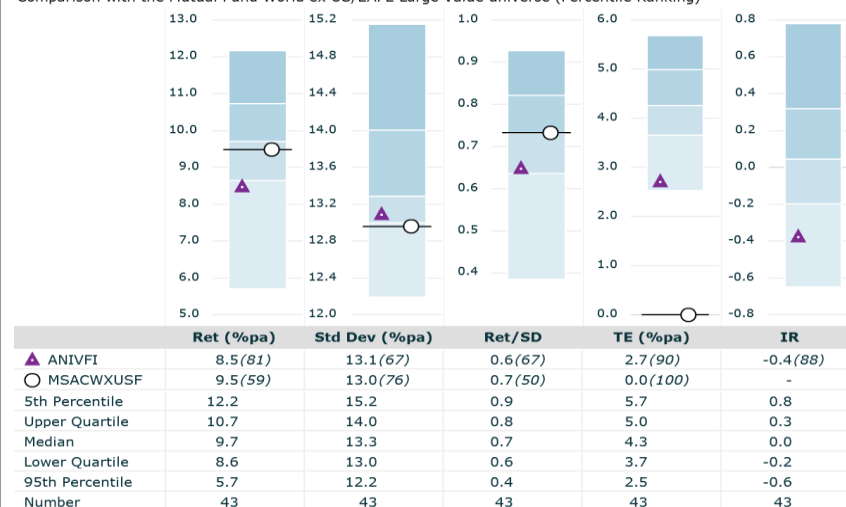
Tier IIB - International Equity - AllianzGI NFJ International Value Fund Inst - ANJIX

Return in \$US (after fees) over 3 mths, 1 yr, 3 yrs, 5 yrs ending December-14
Comparison with the Mutual Fund World ex US/EAFE Large Value universe (Percentile Ranking)

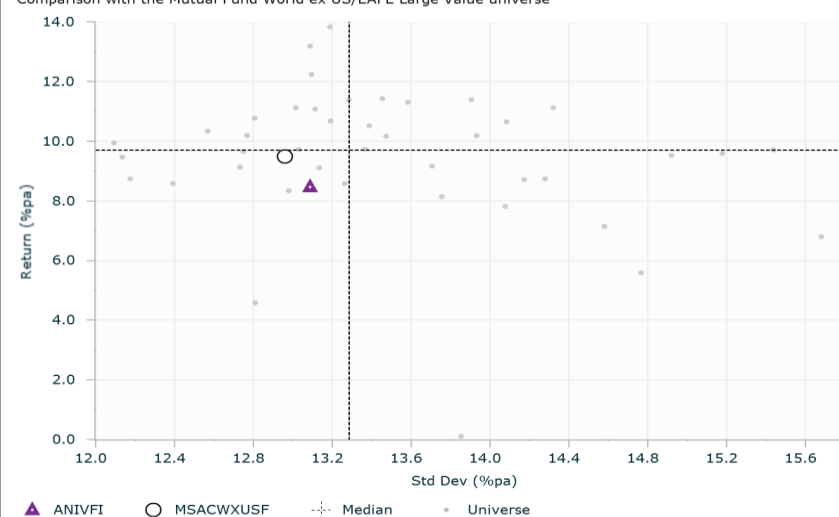


Performance characteristics vs. MSCI AC Wld ex US in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)

Comparison with the Mutual Fund World ex US/EAFE Large Value universe (Percentile Ranking)

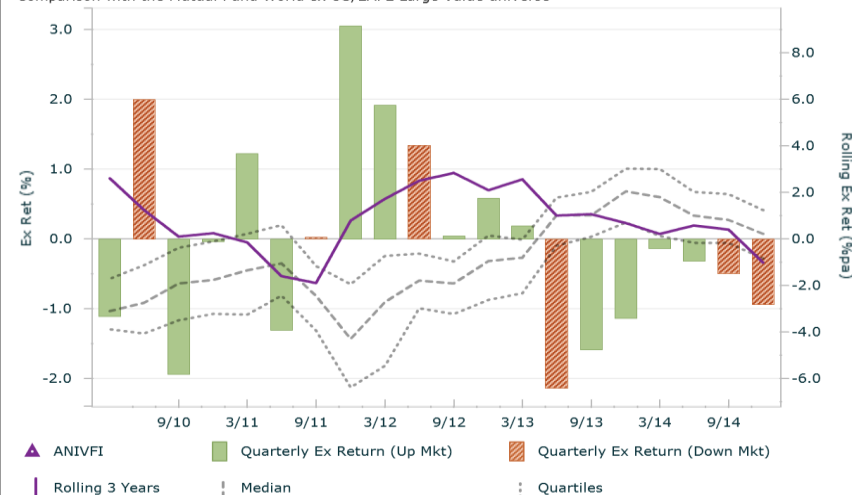


Return and Std Deviation in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund World ex US/EAFE Large Value universe



Quarterly Excess Return vs. MSCI AC Wld ex US with rolling 3 yr line in \$US (after fees) over 5 yrs ending December-14

Comparison with the Mutual Fund World ex US/EAFE Large Value universe



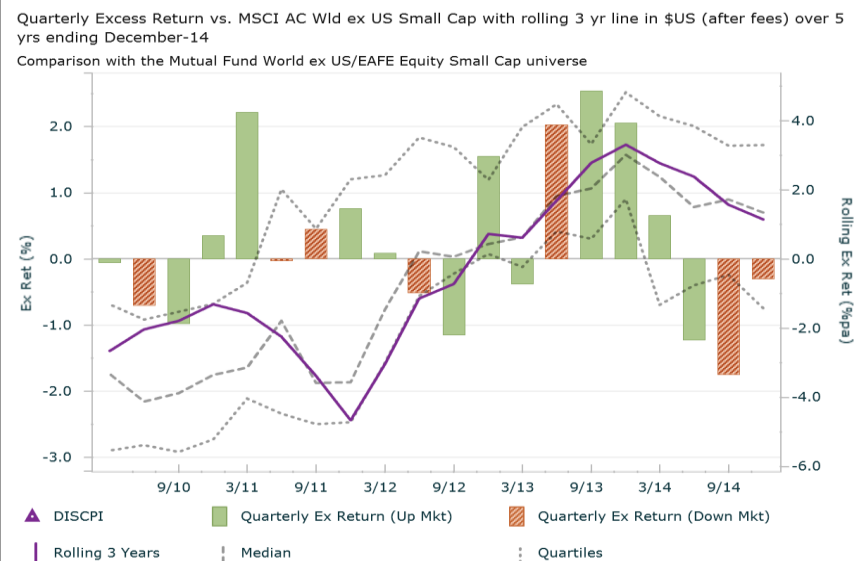
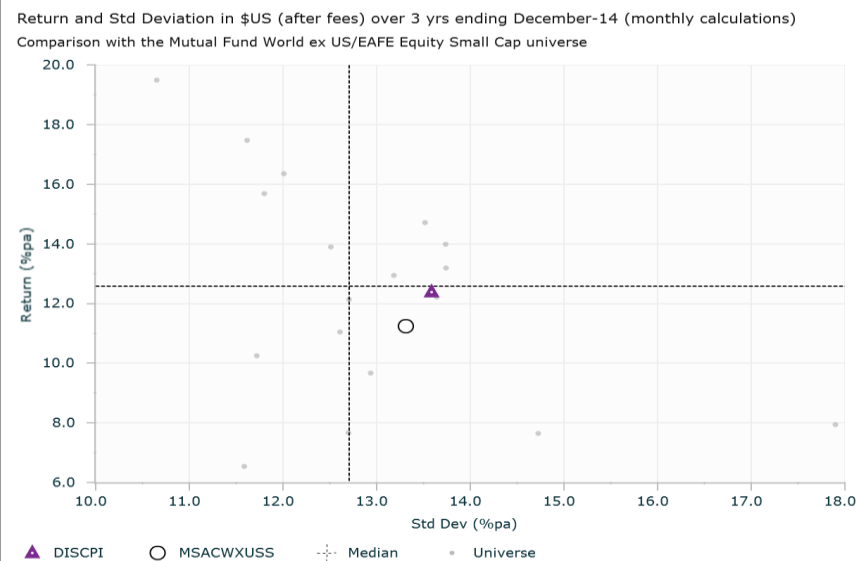
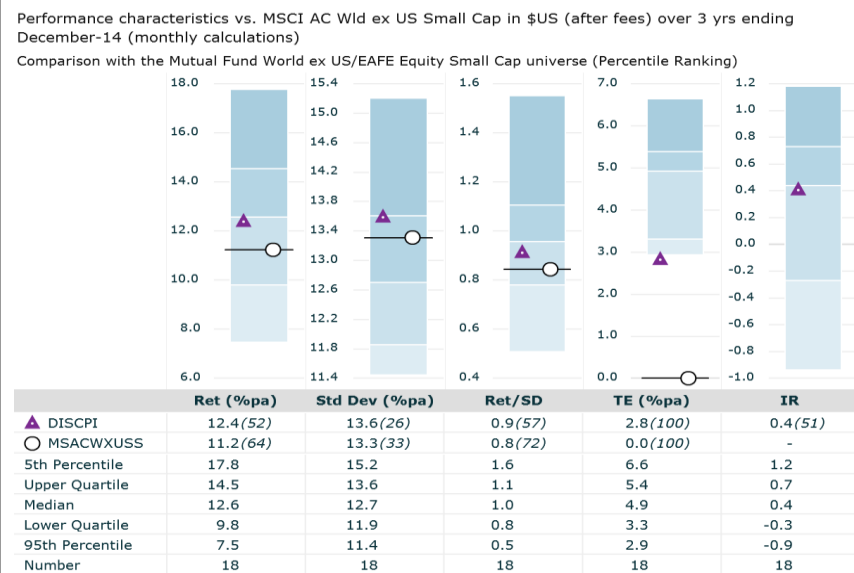
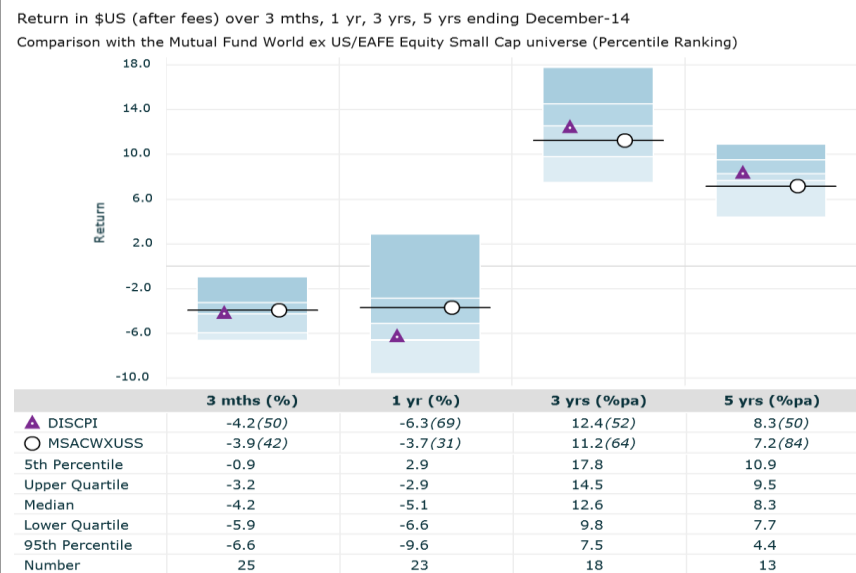
Fund Profile

Tier IIB - International Equity - AllianzGI NFJ International Value Fund Inst - ANJIX

Factor	Rating (-, =, + or ++)	Comments
Idea Generation		While NFJ's investment philosophy, which takes a contrarian approach and focuses on dividend paying companies, is reasonable, the screening process is simplistic and the fundamental research conducted by the team lacks insights on specific companies. The lack of accountability for individual companies throughout the process is also a point of concern. Additionally, the firm's decision to only invest in ADRs limits the investable universe, particularly for smaller capitalization and emerging markets companies. NFJ prefers companies file US financial statements to improve transparency and comparability. However, we believe this approach is driven by the team's unfamiliarity with and limited understanding of the nuances of non-US markets and the companies operating there, and we view this as a detractor from the team's ability to add value through bottom-up fundamental research.
Portfolio Construction		Portfolio construction is adequate and gives reasonable consideration to diversification. The portfolio has significant leeway to allocate to the emerging markets and NFJ utilizes the full range given, which may lead to significant tracking error relative to the index.
Implementation		Assets under management should not pose a challenge to implementing the strategy. NFJ has set a reasonable capacity target for the strategy.
Business Management		NFJ continues to operate as an autonomous organization within parent company Allianz Global Investors (Allianz). Allianz provides marketing and administrative support, thereby allowing NFJ to focus on investment management. Despite lacking the equity incentives of an independently owned firm, NFJ continues to foster a culture that promotes team stability with Allianz offering alternative modes of compensation incentives. NFJ appears to have successfully established its next generation of investment professionals as part of its broader succession plan.
Overall Rating R		NFJ's investment process is simplistic and the dividend requirement is low. The investment process focuses exclusively on companies with ADRs which limits its investable universe. Additionally, the team's inability or unwillingness to analyze financial statements filed outside the US suggests a lack of comfort with IFRS and global markets in general. NFJ lacks a comprehensive understanding of non-US markets and companies, which limits the team's ability to add value through fundamental research. As a result, we are unable to identify an edge to the process that would allow NFJ to consistently add value on a risk adjusted basis.
Additional Observations		NFJ's describes its philosophy as contrarian and focuses on dividend paying companies. The strategy should hold up relatively well when markets reward those characteristics. The portfolio will be concentrated in 40 to 60 stocks and may invest up to 50% in the emerging markets, which may lead to above average tracking error. We would expect the ability to make significant allocations to emerging markets to also be a key driver of performance. This strategy invests exclusively in ADRs.

Fund Profile

Tier IIB - International Equity - DFA International Small Company Portfolio Inst - DFISX



Fund Profile

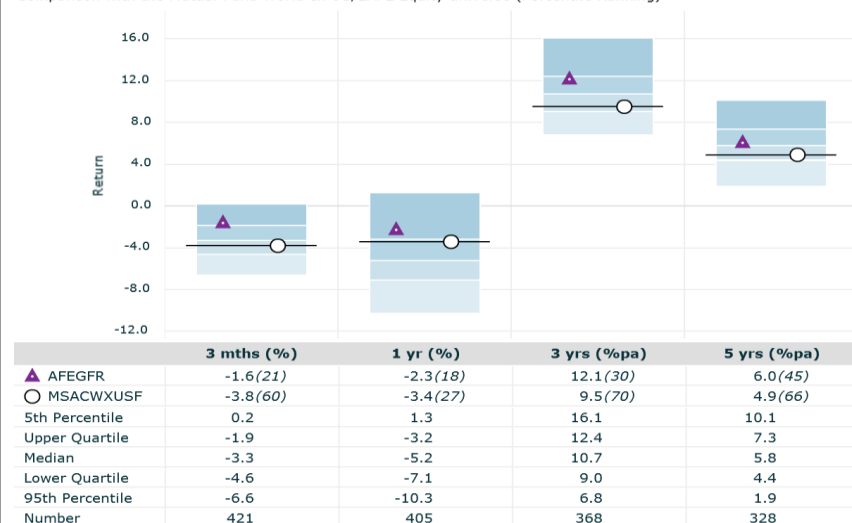
Tier IIB - International Equity - DFA International Small Company Portfolio Inst - DFISX

Factor	Rating (-, =, + or ++)	Comments
Idea Generation	++	All DFA's strategies seek to exploit basic investment principles through the capture of the risk premia of small cap and/or value. These principles are academically supported, and the affiliation of top academic researchers within finance with DFA strengthens the credibility of the adoption of this approach. DFA invests in ongoing academic research as a hallmark of the firm that tests academia and enhances the process over time. The definitions of small size and value are narrow: size is generally smaller than most small cap indices, translating into active risk from size even in a small cap context. Value focuses only on price to book ratios with academic support for the rationale behind this.
Portfolio Construction	+	DFA pay close attention to minimising "leakage" in the capture of the targeted risk premia by adopting boundaries and exclusion rules, and diversifying away stock specific risks despite no fundamental research being undertaken. Active risk is created in the form of tilts to size and value, and despite the large number of holdings these are not passive strategies. The main drawback is that portfolios tend to have very long "tails" of small, relatively illiquid positions.
Implementation	+	DFA's sensitivity to implicit and explicit trading costs has led them to develop strong trading skills and the technology required to access all viable trading channels. The lack of attention to stock selection creates flexibility at the implementation stage, and traders are given scope, within clearly defined boundaries, to choose the most efficient implementation option and use liquidity patterns to the advantage of DFA-managed funds. This is especially seen in areas such as small cap, where the firm accounts for a considerable proportion of trading volume and sensible use is made of "buffers" to control portfolio turnover. Despite this, DFA's asset base has grown quickly, and there is yet to be clear recognition of capacity constraints. We accept that the unique approach to implementation alleviates some of these pressures, but our view remains that DFA could struggle if faced with a period of sustained outflows from these funds
Business Management	+	Although DFA appears to be a well-run firm, providing resources and infrastructure to support growth in its various businesses, there has been a changing of the guard in terms of the firm's leadership. The firm has introduced a more structured approach to business management and promoted the next generation of leaders to key positions. Succession planning appears to have been well thought through, and the transition to the next generation of investors appears to be going smoothly at this point. We note, however, that such change may bring a shift in focus and continued vigilance is required. We would also prefer to see that the ownership of the company is being sufficiently broadened to include the new generation of investors.
Overall Rating A		The beliefs underpinning DFA's approach are robust, and the investment process is well designed and consistently applied. The use of both committees and individuals to manage portfolios creates a direct linkage between research and portfolio management and helps ensure that the firm's best thinking is reflected in its strategies. Trading skills are strong and DFA is committed to remaining at the forefront in this area. While our enthusiasm is tempered by concerns over DFA's willingness to grow capacity constrained product lines, we believe that the firm's range of small cap products are an effective means for clients with a long-term investment horizon to gain exposure to the size and value premia.
Additional Observations		Portfolios will have a bias to smaller companies, even within the small cap universe. The bias to value will vary by strategy depending on the mandate. Portfolios are highly diversified by number of stocks. Deviations from conventional benchmarks at the market and sector level may be pronounced, although in reality tracking errors have been modest, except in the explicitly "value" strategies. The strategies should not be expected to perform well in periods when growth stocks and momentum are driving the market, or when risk aversion is high.

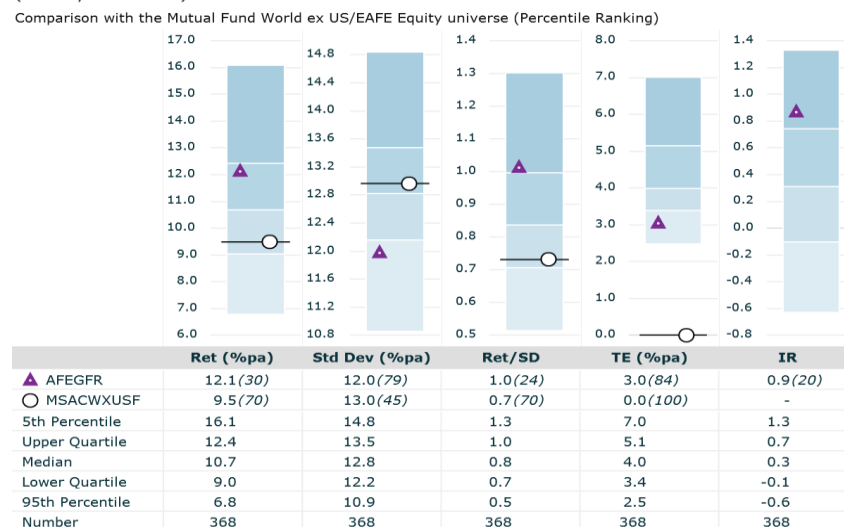
Fund Profile

Tier IIB - International Equity - American Funds EuroPacific Growth Fund R-6 - RERGX

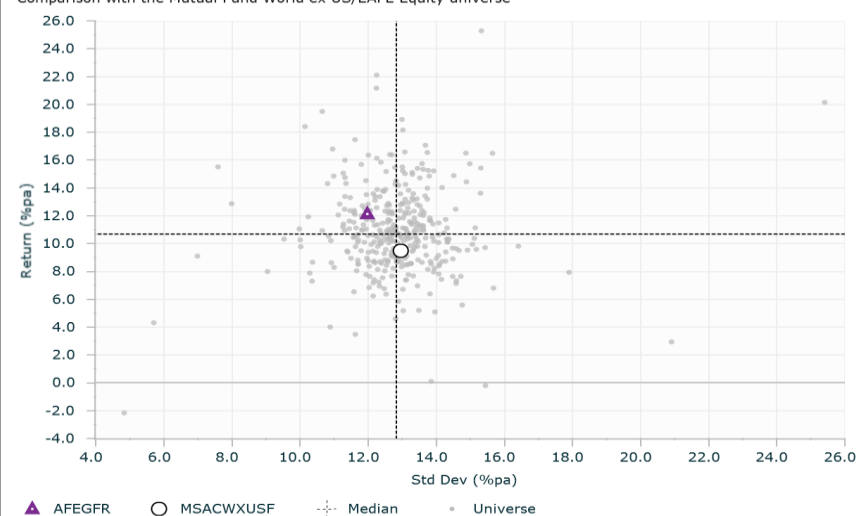
Return in \$US (after fees) over 3 mths, 1 yr, 3 yrs, 5 yrs ending December-14
Comparison with the Mutual Fund World ex US/EAFE Equity universe (Percentile Ranking)



Performance characteristics vs. MSCI AC Wld ex US in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund World ex US/EAFE Equity universe (Percentile Ranking)

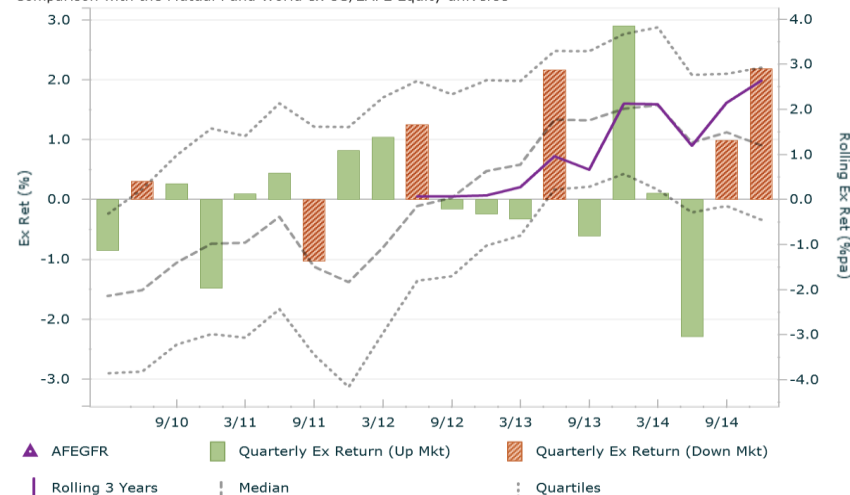


Return and Std Deviation in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund World ex US/EAFE Equity universe



Quarterly Excess Return vs. MSCI AC Wld ex US with rolling 3 yr line in \$US (after fees) over 5 yrs ending December-14

Comparison with the Mutual Fund World ex US/EAFE Equity universe



Fund Profile

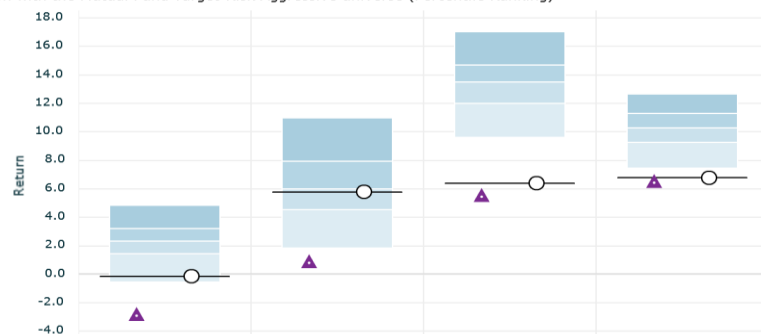
Tier IIB - International Equity - American Funds EuroPacific Growth Fund R-6 - RERGX

Factor	Rating (-, =, + or ++)	Comments
Idea Generation	+	Cap Guardian employs highly experienced analysts whom we perceive generate insightful ideas, and produce in-depth research of a high quality. However, turnover in the analyst team has led us to question whether some of the in-depth knowledge and strong industry relationships of the past have been lost. The analyst team has been reduced from around 70 four years ago to around 50 today. Whilst of itself not an issue, the reassignment of responsibilities we believe loses some experience. In general, we think that the research remains of a high standard, but have not seen this translate into strong performance; we believe that some alpha may be lost between the idea generation and portfolio construction phases.
Portfolio Construction	=	Cap Guardian gives portfolio managers a high degree of freedom and uses the multi-manager approach to smooth out the most aggressive biases. Nevertheless, deviations from benchmarks can be pronounced and positions can be large at the aggregate level. There is some concern that aggregate positions may not be fully intended. Whilst we accept that positions will reflect the conviction level of the team of portfolio managers, this is not managed at an aggregate portfolio level. At the other end of the spectrum this approach also results in a very large tail of small positions which have limited impact on the portfolio. We do not think that the portfolio construction process makes the best use of the ideas generated by the analysts.
Implementation	-	The volume of assets has fallen as a result of market moves and client withdrawals, which has addressed the immediate capacity constraints. While outflows have eased capacity issues somewhat, we do not expect Cap Guardian to do anything but move back into growth mode when performance improves. Whilst they do appear to be taking capacity more seriously and have undertaken a series of studies to determine what they might be able to manage, it remains to be seen if they do actually close strategies when they reach those capacity levels. Additionally the changes to the global portfolio team structure, whereby all three global portfolios will be run in the same manner, and therefore display a higher degree of overlap could lead to increased capacity pressure.
Business Management	+	Cap Guardian has historically been one of the most successfully managed firms in the industry, with high levels of stability and a reward structure that is focused on success. We fear that as Cap Guardian has grown it has become very slow to implement decisions and change course, although they have acknowledged this and are seeking to address it. That said, we worry that this stability, that impressed us previously, could be compromised by the degree of change they have recently been implementing. There have been on-going changes at the investment team level including analyst departures and team reorganisation, as well as at the organisational level, but we are unsure that this will translate into improved investment performance. Whilst we like the partnership structure and compensation arrangements the degree of on-going change and apparent lack of direction leads us to downgrade the business management score.
Overall Rating B		A lack of direction in the management of the team and products, with on-going changes which seem reactionary in nature, lead us to question the ability for the strategy to outperform going forward. Combined with a lack of transparency, this makes it difficult for us to assess what has driven poor performance and whether this is likely to reverse in the future, and leads us to propose a downgrade to this strategy. Although idea generation at the analyst level remains relatively strong this does not seem to translate into high quality portfolios. As such we feel that a B rating is appropriate
Additional Observations		Clients should be aware that there is not a firm-wide investment philosophy that can easily be articulated, but that the portfolio represents an amalgamation of different investment philosophies of individual portfolio managers. While individual sleeves of the portfolio may reflect the views of the portfolio counselors via strong tilts to specific factors, the process should produce a total portfolio that is broadly diversified across companies, sectors, and countries.

Fund Profile

Tier IIB - Balanced - PIMCO All Asset Fund Institutional - PAAIX

Return in \$US (after fees) over 3 mths, 1 yr, 3 yrs, 5 yrs ending December-14
Comparison with the Mutual Fund Target-Risk Aggressive universe (Percentile Ranking)



	3 mths (%)	1 yr (%)	3 yrs (%pa)	5 yrs (%pa)
▲ PAAFI	-2.9(99)	0.8(97)	5.5(100)	6.4(98)
○ CPIUSDP500	-0.1(94)	5.8(55)	6.4(99)	6.8(98)
5th Percentile	4.8	11.0	17.0	12.6
Upper Quartile	3.2	7.9	14.7	11.3
Median	2.3	6.0	13.5	10.3
Lower Quartile	1.5	4.5	12.0	9.3
95th Percentile	-0.6	1.9	9.6	7.5
Number	203	200	192	179

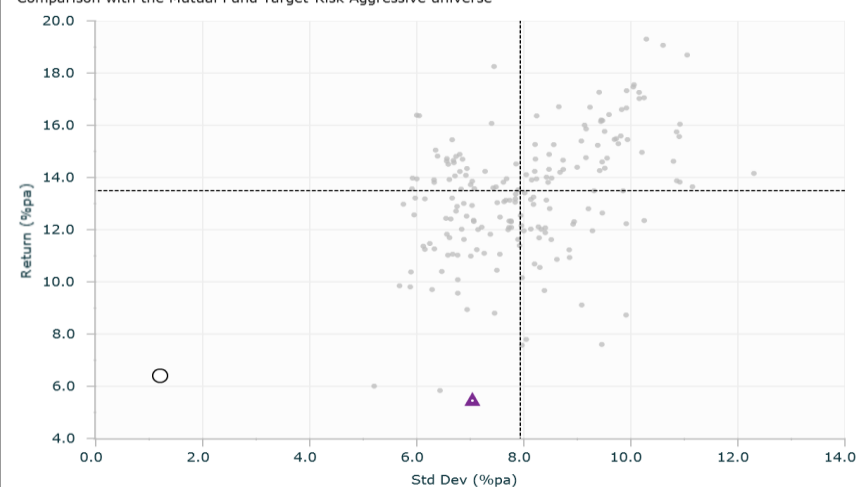
Performance characteristics vs. CPI USD + 500bp in \$US (after fees) over 3 yrs ending December-14
(monthly calculations)

Comparison with the Mutual Fund Target-Risk Aggressive universe (Percentile Ranking)



	Ret (%pa)	Std Dev (%pa)	Ret/SD	TE (%pa)	IR
▲ PAAFI	5.5(100)	7.0(69)	0.8(100)	7.0(71)	-0.1(100)
○ CPIUSDP500	6.4(99)	1.2(100)	5.3(0)	0.0(100)	-
5th Percentile	17.0	10.4	2.2	10.4	1.3
Upper Quartile	14.7	9.1	1.8	9.1	1.0
Median	13.5	7.9	1.7	7.9	0.9
Lower Quartile	12.0	6.8	1.5	6.8	0.7
95th Percentile	9.6	6.0	1.2	6.0	0.4
Number	192	192	192	192	192

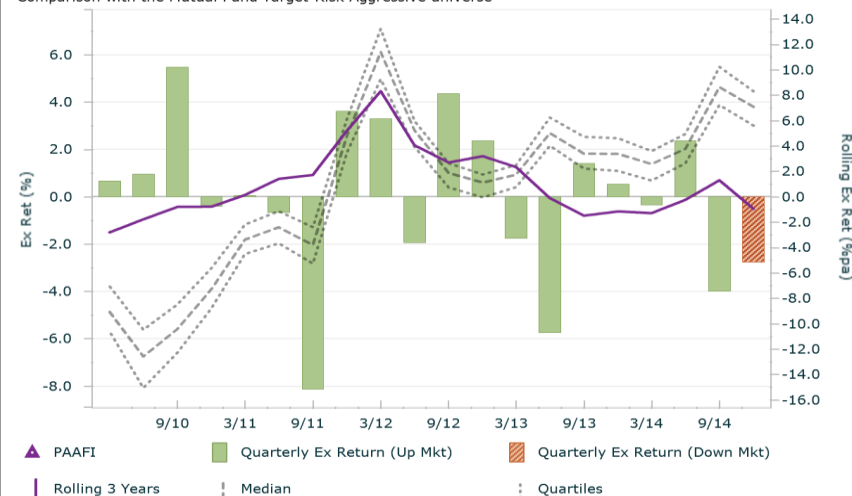
Return and Std Deviation in \$US (after fees) over 3 yrs ending December-14 (monthly calculations)
Comparison with the Mutual Fund Target-Risk Aggressive universe



▲ PAAFI ○ CPIUSDP500 - - - Median • Universe

Quarterly Excess Return vs. CPI USD + 500bp with rolling 3 yr line in \$US (after fees) over 5 yrs ending December-14

Comparison with the Mutual Fund Target-Risk Aggressive universe



Fund Profile

Tier IIB - Balanced - PIMCO All Asset Fund Institutional - PAAIX

Factor	Rating (-, =, + or ++)	Comments
Idea Generation	++	<p>Comprised of a selection of underlying PIMCO funds, this strategy enjoys strong idea generation from two excellent firms. First, Research Affiliates (RA), which controls the portfolio composition, exhibits strength in top down strategic and tactical decisions based on its substantial quantitative research capabilities and talented leader, Rob Arnott. Their investment process is thorough and well-structured, and their models continue to be enhanced.</p> <p>Second, PIMCO, which runs the underlying funds, provides deep research across market sectors and market-leading breadth of coverage globally. The skill, experience, and depth of the investment team are evident in PIMCO's world-class macroeconomic research and ability to generate thematic trade ideas, particularly in fixed income. PIMCO contributes ideas in both top-down and bottom up respects.</p>
Portfolio Construction	+	<p>Portfolio construction by RA is strong, encompassing modern risk budgeting methods.</p> <p>Portfolio construction within the underlying funds is a particular strength of PIMCO's. Proprietary risk management systems are among the best in the industry and allow portfolio managers to segment portfolios into a multitude of practical and novel risk buckets. The sophistication of PIMCO's models and systems allows the management teams of individual funds to accentuate the highest-conviction trade ideas and hedge out unwanted risks.</p>
Implementation	+	<p>All trades are implemented via available PIMCO mutual funds, with RA's orders handled on the PIMCO platform equally to those of any other client. With a few exceptions, PIMCO's fund line-up is fairly comprehensive and should be able to accommodate the top down ideas that Research Affiliates currently articulates. Further, free flowing discussion between the firms make it likely that the PIMCO fund offering will evolve in line with the needs of All Asset/All Asset All Authority (AA/AAAA). However, there is a risk that some future idea may not be expressible in the available PIMCO line-up. Additionally, and more difficult to detect, there is a risk that Research Affiliates may filter out ideas that are not implementable in PIMCO funds.</p> <p>PIMCO's huge size is both an advantage, and at times, a disadvantage. On the positive side, the firm has significant resources to analyze a large number of investment opportunities and is well positioned to achieve desired exposures through cash market and synthetic instruments, with trading desks located across the globe. On the other hand, PIMCO's size may impact execution in certain physical credit markets (namely high yield and emerging markets) for traditional fixed income mandates. Capacity may become constrained in specific funds.</p> <p>Somewhat off-setting the capacity concern is the fact that RA's asset allocation approach is value oriented. This increases the likelihood that AA/AAAA will be exiting markets as they get crowded and entering them as they get cheap.</p>
Business Management	+	<p>PIMCO is one the largest asset management firms in the world, which carries both advantages and disadvantages. On the positive side, a large asset base provides the firm with extensive resources and contacts, which can be used to develop an informational advantage and conduct an in-depth analysis of a wide range of global investment opportunities. Additionally, the firm can use its size to obtain advantageous pricing in certain markets. On the other hand, a large asset base can hinder its ability to generate alpha by limiting the potential to invest in smaller/niche areas of the market and could create problems in exiting certain positions. PIMCO is also trying to enter new markets (e.g. equity management), which can lead to a potential loss of focus. The firm's culture is ultra-competitive and intense, which, when coupled with its renowned status, can lead to periodic bouts of turnover, but is a net positive as it produces a highly disciplined and thorough investment process.</p> <p>PIMCO's unwillingness to provide capacity guidance for multiple products leads to our belief that the firm is too focused on its own asset goals. The firm's unwillingness to provide transparency on succession planning, capacity, and access to investment team meetings precludes us from awarding a higher factor score.</p>

Overall Rating
B+

Among multi-asset balanced mutual fund products, AA/AAAA are leading competitors which combine the strengths of two solid organizations. Top down decisions benefit from Research Affiliates' resources and experience in tactical allocation, while security selection draw on PIMCO's many strengths. These include depth of research, sophisticated quantitative and credit analysis, extensive use of synthetic instruments, and a robust risk control framework incorporated into the portfolio construction process.

The products are ultimately constrained by the funds available at PIMCO. Although this is a wide opportunity set, tactical calls of Research Affiliates may push at the edges of this spectrum. The strategies' value orientation and broad diversification help mitigate some of our concerns about PIMCO's large asset base.

Additional Observations

AA and AAAA are broadly diversified multi-asset strategies which are distinct in two ways. First, they are essentially real return-oriented products. Second, they may also act as alternatives to traditional balanced or GTAA strategies.

AA targets CPI + 5% with risk of 6-8%. It has a secondary benchmark of the Barclays 1-10 year TIPS index, and it shares features with a GTAA strategy that has no short selling capabilities.

AAAA targets CPI + 6.5% with risk of 8-10%. It has a secondary benchmark of the S&P 500 index, and it has more in common with a global macro strategy, in that it has some short selling capability.

Investment Expense Analysis

Analysis reflects investment expenses only and does not include an evaluation of plan recordkeeping costs.

Fund	Style	Fund Balance	Estimated Fund Expense	Fund Net Expense Ratio	Total Expense Ratio ²	Median Net Expense Ratio [*]	Net Expense Diff.
Wells Fargo Advantage Dow Jones Tgt Today Fd R6	Target-Date	\$11,393	\$34	0.30%	0.79%	0.16%	0.63%
Wells Fargo Advantage Dow Jones Tgt 2020 Fund R6	Target-Date	\$186,665	\$653	0.35%	0.84%	0.17%	0.67%
Wells Fargo Advantage Dow Jones Tgt 2030 Fund R6	Target-Date	\$109,690	\$395	0.36%	0.85%	0.17%	0.68%
Wells Fargo Advantage Dow Jones Tgt 2040 Fund R6	Target-Date	\$88,953	\$329	0.37%	0.86%	0.17%	0.69%
Wells Fargo Advantage Dow Jones Tgt 2050 Fund R6	Target-Date	\$18,200	\$67	0.37%	0.86%	0.17%	0.69%
Vanguard Short-Term Bond Index Fund Admiral	US Fixed	\$55,260	\$55	0.10%	0.59%	0.20%	0.39%
Vanguard 500 Index Fund Admiral	US Large Cap Equity	\$176,598	\$88	0.05%	0.54%	0.20%	0.34%
Vanguard Mid-Cap Index Fund Admiral	US Mid Cap Equity	\$31,889	\$29	0.10%	0.59%	0.25%	0.34%
Vanguard Small-Cap Index Fund Admiral	US Small Cap Equity	\$26,657	\$24	0.10%	0.59%	0.30%	0.29%
Vanguard Total International Stock Index Fund Adm	International Equity	\$30,814	\$43	0.14%	0.63%	0.00%	0.63%
TIAA Stable Value	Other	\$50,993	\$173	0.34%	0.39%	0.46%	-0.07%
JPMorgan Core Bond Fund R6	US Fixed	\$67,184	\$275	0.41%	0.90%	0.51%	0.39%
PIMCO Inflation Response Multi-Asset Fund Inst	Balanced	\$0	\$0	0.90%	1.39%	0.89%	0.50%
PIMCO All Asset Fund Institutional	Balanced	\$2,710	\$24	0.89%	1.38%	0.94%	0.44%
Vanguard Windsor II Fund Admiral	US Large Cap Equity	\$33,786	\$95	0.28%	0.77%	0.76%	0.01%
TIAA-CREF Social Choice Equity Fund Institutional	US Large Cap Equity	\$78	\$0	0.19%	0.68%	0.78%	-0.10%
T Rowe Price Growth & Income Fund	US Large Cap Equity	\$5,037	\$35	0.69%	1.03%	0.81%	0.22%
AllianzGI NFJ International Value Fund Inst	International Equity	\$662	\$6	0.93%	1.32%	0.99%	0.33%
DFA International Small Company Portfolio Inst	International Equity	\$71	\$0	0.56%	1.05%	1.20%	-0.15%
American Funds EuroPacific Growth Fund R-6	International Equity	\$2,933	\$15	0.50%	0.99%	0.99%	0.00%
TIAA Real Estate Account	Real Estate	\$22,291	\$201	0.90%	1.15%	0.99%	0.16%
Total		\$921,864	\$2,543	0.28%	0.74%	0.27%	0.47%

² Includes program administrative fee

^{*} Median institutional share class net expense ratio as defined by the respective Mercer Mutual Fund Universe

RESEARCH VIEW

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Manager:	Pacific Investment Management Company			
Title:	Multi-Asset downgrades post-Gross resignation			
Date:	1 October 2014			
Author:	Peter Willett			
Peer reviewer:	Shaum Shrinivas			
Strategies reviewed in this note:				
Product group/ category	Strategy name	Current rating	Recommended rating (*)	ESG rating (**)
International Multi-asset - Core Diversified Growth/Global Balanced	Global Multi-Asset (GMAF)	B (P)	B	ESG3
International Multi-asset - Diversified Inflation	Inflation Response Multi-Asset (IRMAF)	B+ (P)	B+ (W)	N
International Multi-asset - Idiosyncratic Diversified Growth	All Asset (AA)	A (P)	B+	ESG3
International Multi-asset - Idiosyncratic Diversified Growth	All Asset All Authority (AAAA)	A (P)	B+	ESG3
<i>(*) The recommended ratings in this document are subject to an approval process and may be subject to change. For the most recent approved ratings please refer to your consultant or to GIMD as appropriate. A Research Note will not be produced to confirm these rating proposals. The proposals will be added to the 'proposed rating' section of GIMD and will go to the Ratings Review Committee for formal approval.</i>				
<i>(**) For more information on ESG ratings please refer to your consultant or to the 'Guide to Mercer Ratings' on GIMD as appropriate.</i>				
Details of research meeting(s) covered by this note:				
Date	Location	On-site?		
29 September 2014 (1)	Conference call	No		
30 September 2014 (2)	Conference call	No		
Manager attendees:				
Doug Hodge – CEO (1) Dan Ivascyn – Group CIO (1) Mark Kiesel – CIO Global Credit (1) Scott Mather – CIO US Core Strategies(1) Mihir Worah – CIO Real Return (1) Jay Jacobs – President(1) Marta Beozari – Consultant Relations (2)				
Mercer attendees:				

Manager:	Pacific Investment Management Company
Bryon Willy (1) Paul Kirby (1) Tom Raftery (1) Peter Willett (1 and 2)	

Reason for Rating

- We propose downgrading PIMCO's All Asset (AA) and All Asset All Authority (AAAA) strategies from A (P) to B+, while restoring PIMCO's Inflation Response Multi-Asset Fund (IRMAF) to B+ (W) and the Global Multi-Asset Fund (GMAF) to B. These new Multi-Asset strategy rating recommendations follow from the decision to rate all PIMCO fixed income strategies as B or B+. (See other Research Views posted 29 September 2014). The Multi-Asset strategies are all directly or indirectly linked to underlying PIMCO strategies.
- The fixed income downgrades were based on significant shifts in key decision makers following Bill Gross' resignation, and the relatively high level of organizational instability over the last year. We believe a sustained period of stability among senior ranks must be demonstrated before these strategies can regain our highest conviction.

Meeting highlights

- Following Bill Gross' resignation, PIMCO has announced several organizational changes, as communicated in several recent News Items. Mercer has had discussions with PIMCO across multiple regions to ascertain the implications for the firm and its strategies.
- In subsequent Research Views, we have provided further background to Gross' departure and the process to elect a Group CIO. We have commented on portfolio management going forward, including redemption and liquidity management and ongoing event management/public relations.
- Mihir Worah, who previously served as a Deputy CIO, was promoted to CIO, Real Return and Asset Allocation. Worah was also appointed as a co-portfolio manager for the US Total Return Fund, formerly managed by Bill Gross. Earlier in 2014, Worah had taken over as co-portfolio manager of GMAF. This was in addition to his duties as team head running all Real Return (including inflation linked bond and commodities based products) and Asset Allocation (including AA/AAAA, IRMAF, and GMAF) strategies.

All Asset / All Authority

- In defence of AA/AAAA, PIMCO asserts as follows:

The majority of the returns in the All Asset strategies are driven by the asset allocation decisions of Research Affiliates LLC (the sub-adviser of both funds), not by PIMCO's active management views within the underlying funds. For example, since inception of the strategy 12 years ago, the PIMCO All Asset Fund has returned 8.5% after-fees. Of that, 7.1% (or 84% of the total) is attributable to the asset allocation decisions by Research Affiliates LLC. The remaining 1.4% (or 16% of the total) is attributable to PIMCO's active management alpha within the underlying funds.

- PIMCO further notes that:

Regarding the underlying PIMCO funds, bond funds managed by Bill Gross represented 6.5% of total assets of the PIMCO All Asset Fund, and 6.2% of total assets of the PIMCO All Asset All Authority Fund (as of 6/30/14). Bill was also lead PM on several equity overlay funds used by the two All Asset funds. Critically, the majority of risk and return in these strategies is driven by the equity index position, not the bond collateral. Further, most of the equity exposure in All Asset Funds is obtained through RAFI strategies which are sub-advised by Research Affiliates.

- We think there is merit in these historical performance and asset allocation arguments. However, part of the value proposition for the All Asset funds stemmed from their ability to add value on both a top-down allocation basis and a bottom-up underlying funds basis. Consequently, when viewing these products as the sum of their parts, we can no longer maintain our highest level of conviction in the funds and believe it appropriate to downgrade them to a B+ rating. With our confidence in the underlying strategies reduced, we have reduced confidence on the fund itself.

Inflation Response Multi-Asset and Global Multi-Asset Funds

- By virtue of its separate account sleeve structure, IRMAF is only indirectly affected by the redemptions that will likely hit the pooled funds over coming weeks and months. (GMAF uses a blended pooled / separate account sleeve approach, and so is partially impacted.)
- Ultimately however, these strategies cannot escape the effects of the firm-wide pressures impacting the underlying components. As such we have diminished confidence in these bottom-up elements of IRMAF and GMAF.
- Furthermore, Mihir Worah's new duties will doubtless pull him away from IRMAF and GMAF, leaving more responsibility in the hands of his team. We think these individuals are as capable as the rest of their PIMCO peers, but time will be needed to consider how they collectively adapt to the new situation. In all, it makes sense to restore the prior ratings of B for GMAF and B+ (W) for IRMAF. (These ratings were assigned earlier in 2014 following Mohamed El-Erian's departure.)

Issues to watch

Noted by our Fixed Income colleagues

- Turnover is a continued possibility. Other team members may feel slighted by recent promotions, fatigued by the constant commotion, or they may pursue the opportunity to re-join Gross.
- Redemptions may have proved manageable so far; however, should redemptions prove heavier than PIMCO has forecasted, we cannot rule out the need for gates, or other redemption fees to control outflows.
- Headlines and continued chatter about PIMCO may have some negative impact on the firm's reputation. Namely, PIMCO's ability to recruit top tier investment professionals may be constrained for the near to mid-term.
- Although PIMCO states that Allianz remains a supportive parent, we believe Allianz may have no choice but to assert some level of control over PIMCO, given the amount of instability it has exhibited over the last year and resultant moves in Allianz's stock price.

Multi-Asset challenges

- Earlier Multi-Asset ambitions have faltered. When Mohamed El-Erian re-joined PIMCO in 2008, he was the champion of the “endowment-style fund for the masses”. Six years later, that ideal is being pushed to the side as the organization battens down the hatches to ride out the current storm. The Real Return and Asset Allocation group led by Worah will need to compete for shrinking resources that may be rationed to favor strategies with greater revenues.

Next steps

- We will continue to monitor progress at PIMCO as the new management structure takes hold. In particular, we will be watchful of outflows and resultant impacts on all aspects of the business.
- We will continue to meet with PIMCO as our schedule dictates, in order to revisit our ratings on the various strategies covered by this Research View.

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- The value of stocks and shares, including unit trusts, can go down as well as up and you may not get back the amount you have invested.
- The value of Gilts, bonds, and other fixed income investments including unit trusts can go down as well as up and you may not get back the amount you have invested.
- Investments denominated in a foreign currency will fluctuate with the value of the currency.
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- Certain investments, such as illiquid, leveraged or high-yield instruments or funds and securities issued by small capitalization and emerging market issuers, carry additional risks that should be considered before choosing an investment manager or making an investment decision.
- For higher volatility investments, losses on realisation may be high because their value may fall suddenly and substantially.
- Where investments are not domiciled and regulated locally, the nature and extent of investor protection will be different to that available in respect of investments domiciled and regulated locally. In particular, the regulatory regimes in some domiciles are considerably lighter than others, and offer substantially less investor protection. Where an investor is considering whether to make a commitment in respect of an investment which is not domiciled and regulated locally, we recommend that legal advice is sought prior to the commitment being made.

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Manager:	Dimensional Fund Advisors			
Title:	Global & European Equity Update			
Author:	Suzanne Lubbe			
Peer reviewer:	Anthony Corrigan			
Strategies reviewed in this note:				
Product group/ category	Strategy name	Current rating	Recommended rating (*)	ESG rating (**)
International Equity - Global Equity - Core	All Country All Cap Core Equity Strategy	N	B+	ESG4
International Equity - Global Equity - Core	World All Cap Core Strategy	R	B+	ESG4
International Equity - World ex US/EAFE Equity - Core	World ex US Large Cap Value Strategy	B+ (T)	B+ (T)	ESG4
International Equity - Global Equity - Small Cap	World SMID Cap Value Strategy	A (T)	A (T)	ESG4
International Equity - Global Equity - Small Cap	World Small Cap Strategy	A	A	ESG4
International Equity - World ex US/EAFE Equity - Small Cap	World ex US Small Cap Strategy	A	A	ESG4
International Equity - World ex US/EAFE Equity - Small Cap	World ex US Small Cap Value Strategy	A (T)	A (T)	ESG4
Europe - Europe inc UK Small Cap Equity	Europe Small Cap Strategy	A	A	ESG4
Europe - Europe ex UK Small Cap Equity	Europe ex UK Small Cap Strategy	A	A	ESG4
(*) The recommended ratings in this document may be subject to an approval process and may be subject to change. For the most recent approved ratings please refer to your consultant or to GIMD as appropriate. (**) For more information on ESG ratings please refer to your consultant or to the 'Guide to Mercer Ratings' on GIMD as appropriate.				
Details of research meeting(s) covered by this note:				
Date	Location	On-site?		
25 September 2014	London	Yes		

Manager:	Dimensional Fund Advisors
Manager attendees:	
Art Barlow – Managing Director and Senior Portfolio Manager John Romiza – Head of International Trading Nathan Lacaze – Portfolio Manager Tim Brown – Head of Consultant Relations, EMEA	
Mercer attendees:	
Suzanne Lubbe Anthony Corrigan	

Reason for Rating

The style factors of value and size have long been accepted as risk premia that are rewarded in the market, with strong academic evidence supporting this view. DFA provides exposure to these style factors in a way that has been tested by robust research and protects returns from erosion by other factors (such as idiosyncratic risk or trading costs).

The recent addition of profitability as a specific factor in the process recognises the impact of the predictability of cash flows on the pricing of stocks. It influences the sizing of positions rather than the inclusion of stocks in portfolios. We believe it will not significantly detract from the value and small size exposure DFA has always offered.

Although this research note contains a number of new ratings recommendations, our underlying view of DFA has not changed. These recommendations are the direct result of DFA's entries on GIMD changing to facilitate a recent exercise they undertook to bring the performance track records in line with GIPS standards.

Mercer Evaluation Summary

Factor	Rating (-, =, + or ++)	Comments
Idea Generation	+	All DFA's strategies seek to exploit basic investment principles through the capture of the risk premia of small cap and/or value. These principles are academically supported, and the affiliation of top academic researchers within finance with DFA strengthens the credibility of the adoption of this approach. DFA invests in ongoing academic research as a hallmark of the firm that tests academia and enhances the process over time. The definitions of small size and value are narrow: size is generally smaller than most small cap indices, translating into active risk from size even in a small cap context. Value focuses only on price to book ratios with academic support for the rationale behind this.
Portfolio Construction	+	DFA pay close attention to minimising "leakage" in the capture of the targeted risk premia by adopting boundaries and exclusion rules, and diversifying away stock specific risks despite no fundamental research being undertaken. Active risk is created in the form of tilts to size and value, and despite the large number of holdings these are not passive strategies. The main drawback is that portfolios tend to have very long "tails" of small, relatively illiquid positions.
Implementation	+	DFA's sensitivity to implicit and explicit trading costs has led them to develop strong trading skills and the technology required to access all viable trading channels. The lack of attention to stock selection creates flexibility at the implementation stage, and traders are given scope, within clearly defined boundaries, to choose the most efficient implementation option and use liquidity patterns to the advantage of DFA-managed funds. This is especially seen in areas such as small cap, where the firm accounts for a considerable proportion of trading volume and sensible use is made of "buffers" to control portfolio turnover. Despite this, DFA's asset base has grown quickly, and there is yet to be clear recognition of capacity constraints. We accept that the unique approach to implementation alleviates some of these pressures, but our view remains that DFA could struggle if faced with a period of sustained outflows from these funds.
Business Management	+	Although DFA appears to be a well-run firm, providing resources and infrastructure to support growth in its various businesses, there has been a changing of the guard in terms of the firm's leadership. The firm has introduced a more structured approach to business management and promoted the next generation of leaders to key positions. Succession planning appears to have been well thought through, and the transition to the next generation of investors appears to be going smoothly at this point. We note, however, that such change may bring a shift in focus and continued vigilance is required. We would also prefer to see that the ownership of the company is being sufficiently broadened to include the new generation of investors.

Overall Rating (A, B+, B or C) A	<p>The beliefs underpinning DFA's approach are robust, and the investment process is well designed and consistently applied. The use of both committees and individuals to manage portfolios creates a direct linkage between research and portfolio management and helps ensure that the firm's best thinking is reflected in its strategies. Trading skills are strong and DFA is committed to remaining at the forefront in this area. While our enthusiasm is tempered by concerns over DFA's willingness to grow capacity constrained product lines, we believe that the firm's range of small cap products are an effective means for clients with a long-term investment horizon to gain exposure to the size and value premia.</p>
A (T)	<p>The strategies with a specified value focus may display a high tracking error against traditional benchmarks, indicated by the (T) designation. This is heightened in the case of the SMID Cap Value Strategy, where a SMID benchmark is more appropriate.</p>
B+ (T)	<p>In the case of the global equity strategies, greater conviction in other offerings in this space prevents us from assigning our highest rating.</p>
Additional Observations	<p>Portfolios will have a bias to smaller companies, even within the small cap universe. The bias to value will vary by strategy depending on the mandate. Portfolios are highly diversified by number of stocks. Deviations from conventional benchmarks at the market and sector level may be pronounced, although in reality tracking errors have been modest, except in the explicitly "value" strategies. The strategies should not be expected to perform well in periods when growth stocks and momentum are driving the market, or when risk aversion is high.</p>

Key product details

	International Equity - Global Equity - Core - All Country All Cap Core Equity Strategy	International Equity - Global Equity - Core - World All Cap Core Strategy	International Equity - Global Equity - Small Cap - World SMID Cap Value Strategy
Inception Year	2012	2008	2008
Assets under management in strategy	\$801 million as at 30 September 2014	\$1.1 billion as at 30 September 2014	\$1.3 billion as at 30 September 2014
Estimated capacity	Not disclosed		
Open/Closed	Open to All Investors		
Most suitable benchmark index for strategy	MSCI AC World	MSCI World	MSCI World SMID Value Index
Outperformance target (% per annum) - Manager's estimate	1 – 2	1 – 2	1 – 2
Expected tracking error range (%) - Manager's estimate	2 – 4	2 – 4	2 – 4
	International Equity - Global Equity - Small Cap - World Small Cap Strategy	International Equity - World ex US/EAFE Equity - Core - World ex US Large Cap Value Strategy	International Equity - World ex US/EAFE Equity - Small Cap - World ex US Small Cap Strategy
Inception Year	2011	1994	1995
Assets under management in strategy	\$423 million as at 30 September 2014	\$17.3 billion as at 30 September 2014	\$10.8 billion as at 30 September 2014
Estimated capacity	Not disclosed		
Open/Closed	Open to All Investors		
Most suitable benchmark index for strategy	MSCI World Small Cap Index	MSCI World ex USA Value Index (net dividends)	MSCI World ex USA Small Cap Index (net dividends)
Outperformance target (% per annum) - Manager's estimate	1 – 2	2 – 4	1 – 2
Expected tracking error range (%) - Manager's estimate	2 – 4	4 – 8	2 – 4

	International Equity - World ex US/EAFE Equity - Small Cap - World ex US Small Cap Value Strategy	Europe - Europe inc UK Small Cap Equity - Europe Small Cap Strategy	Europe - Europe ex UK Small Cap Equity - Europe ex UK Small Cap Strategy
Inception Year	1995	2004	1988
Assets under management in strategy	\$13.5 billion as at 30 September 2014	€189 million as at 30 September 2014	€2.5 billion as at 30 September 2014
Estimated capacity	Not disclosed		
Open/Closed	Open to All Investors		
Most suitable benchmark index for strategy	MSCI World ex USA Small Cap Value Index (net dividends)	MSCI Europe Small Cap Index	MSCI Europe ex-UK Small Cap Index
Outperformance target (% per annum) - Manager's estimate	2 – 4	1 – 2	1 – 2
Expected tracking error range (%) - Manager's estimate	4 – 8	2 – 4	2 – 4

Issues to watch

- The size of assets across DFA is high and the firm appears ambitious to grow further. DFA's process is clearly scalable and can be tailored to multiple mandates. However in certain areas, such as non-US small cap, their asset level raises liquidity questions.
- To what extent will the introduction of a Profitability factor diminish the exposure to size and/ or value across DFA's portfolios over time?
- What impact will the generational change in leadership have on the firm? Will there be a similar transition in ownership? Will the wider business become frustrated if not?

Highlights

- This was our annual update meeting with Dimensional Fund Advisors (DFA). We met with newly appointed CEO for the UK business, Art Barlow. Barlow has been with DFA for 25 years, but relocated to London on the departure of his predecessor. Speaking to someone with such a long history with the business was helpful to understand the journey the business has taken over the years and the underlying approach to managing the growth of the business.
- DFA has recently introduced a profitability factor, and we discussed this again (it has been the topic of a number of conversations with DFA; see recent research reports on GIMD). Barlow believes that the three factor model (value, size and market) has the power to explain 95% of outperformance of any given index, but the power of the profitability factor is in reducing the volatility of returns. DFA has shown sensitivity in the implementation of the profitability factor to the exposure expectations of clients, and does not expect the tilts to value and small size to significantly change. Our analysis does not show a significant change at this point in time, but we wonder the extent to which this may shift over time. Given the profitability factor impacts portfolios through

adjusting the weighting of stocks, rather than changing the basket of stocks that can be purchased, we think the likelihood that the exposure will change significantly is small. The rationale for the profitability factor and the research process that led to its inclusion is discussed under Further Details.

- We have often presented DFA as an effective means of gaining exposure to the factors they access in their approach. They believe that they present a hybrid of two ends of the spectrum of active management – they are not stock pickers, believing the pricing mechanism in the market is relatively accurate and quick to respond to new information. However, they are also not index providers in their view, with their focus on gaining exposure to dimensions of return (or factors) within the universe – risk factors that demand a higher return. DFA believes their approach is differentiated in the market place with very few managers offering similar products given the diversified nature of the portfolios and their solutions-based perspective. Barlow understood the comparison to smart beta products, but believes that DFA has a systematic way of beating the market rather than simply keeping pace with a specific market or set of exposures. In our view, the level of research supporting these strategies and adding to their ongoing success through enhancements, and the flexible approach to trading that ensures effective implementation, makes these products superior to many of the passively implemented fundamental indexation options available to clients.
- Barlow spoke of his history with the business from when he joined 25 years ago, and how the business has grown and developed. His experience indicates the strength of the culture instilled by the founders, and we continue to wonder the extent to which this has been passed on to the next generation. Barlow believes that, despite moving to a more professional approach to management that has allowed the business to grow to the extent it has, the founders have always sought to pass on the excitement of their entrepreneurial venture in the implementation of good academic research, and they trust the individuals they have appointed to be guardians of their process. Eduardo Repetto and Gerard O'Reilly were classmates at university and share a common set of values and the desire to carry the vision forward. According to Barlow, David Booth is passionate about passing the baton on to the next generation. Having said that, the physical ownership of the majority of the business remains firmly with Booth and Rex Sinquefeld, and there has been no development on the wider distribution of the ownership. We continue to be concerned about the exit strategy for these individuals when the time comes.
- Performance over the past five years has been lacklustre across the strategies when measured against style agnostic benchmarks. Over the market cycle, DFA expects their strategies to deliver between 1% and 2% ahead of the market through the capture of the value and small cap risk premia, and Barlow believes their global core strategy captures DFA's beliefs best with the most flexibility for implementation (given the widest universe/opportunity set). Whilst we agree with Barlow's view in principle, we note that this strategy has struggled to really reflect the risk premia capture in their returns. We do note that the longer term record of the European small cap strategy was particularly impacted by the events of 2009, when the index rebalancing caught out a larger number of active managers.

Firm background and history

Dimensional Fund Advisors (DFA) is a private corporation founded in 1981 to provide investment services to institutional investors. Rex Sinquefeld, David Booth, directors, and officers together own the majority of DFA's outstanding stock and exercise control over operation of the firm. External shareholders own 25% of the business, and approximately 20% is held by firm staff through its Long Term Incentive Plan. The firm is headquartered in Austin, Texas and has offices in London, Sydney, Tokyo, Singapore and Santa Monica, California.

Key decision makers

David Booth co-founded DFA along with Rex Sinquefeld in 1981. Sinquefeld retired as co-Chairman in 2005, and Booth remains Chairman. He shares the CEO role with Eduardo Repetto, who joined DFA in 2001 with a background in engineering. Repetto shares the CIO role with Gerard O'Reilly, who is also the Head of Research. Booth, Repetto and O'Reilly are located in Santa Monica.

DFA's investment strategies are managed at both the committee and individual level. The firm's Investment Policy Committee (IPC), chaired by Kenneth French, is the guardian of the philosophy and process. The IPC focuses on the long term, recommending strategy enhancements as well as new products. The Investment Committee (IC) approves strategy implementations and maintains daily oversight of the firm's strategies. Additionally, local Investment Committees are used to oversee implementation at a local level.

Investment style/philosophy

DFA's investment philosophy is rooted in a set of core beliefs developed from academic research: markets are efficient, effectively pricing risk in different areas of the market over the long term through higher expected returns than the broader market. The most persistent risk premia are in small company and value stocks, and it is in these areas that DFA seeks to capture the higher expected returns. They will therefore reflect exposures to small cap and value styles. DFA believes that the profitability of a business is related to the risk of the business, and will therefore look to skew portfolios to more profitable businesses within the small company and value stocks identified by the philosophy.

Investment process

DFA's focus is to capture the return premia for small cap companies and value stocks through a diversified portfolio, rather than superior stock selection. Extensive use is made of screens, first to identify the defined universe according to the risk exposures they seek to exploit and then to exclude companies that pollute the capture of the risk premia. They apply a disciplined process to define the universe and pay close attention to maximising the efficiency of the trading function.

For the size risk premium, DFA defines their own size universe in the first stage of the process by screening developed markets for eligible companies. The globe is split into five regions; North America, Europe, UK, Japan and Pacific Rim. Within each region companies are ranked by market cap, and a break-point selected to determine those defined as small cap. The break-points are adapted to account for differences in the structure of individual markets but is typically the bottom 12.5% of each country or region, as defined by market

capitalization. Companies valued at less than \$25 million (a minimum of \$100 million may be used in segregated accounts) are excluded.

For the value premium, stocks outside the cheapest 25% (by size) in terms of book to price ratio are excluded. The value filter for the SMID Value strategy is unique: stocks in the bottom 10% of the market (by size) ranked below the top 50% in terms of the book to market ratio within each country are excluded. Companies in the next 10% of the market ranked below the top 25% in terms of the book to market ratio are also dropped.

DFA apply rules to exclude companies whose stock prices are expected to be driven primarily by extraneous factors. These rules eliminate investment funds, holding companies, companies in which the government is a majority owner and regulated utilities. In 2008, DFA stopped excluding government controlled companies from core portfolios on the basis that these companies have, over time, become more focused on creating value for external shareholders.

A further series of exclusion rules eliminates acquisition targets, companies in financial distress, suspended or de-listed shares, companies with inadequate (less than 10%) free floats and shares trading on exchanges which are perceived to be relatively inefficient in institutional terms, such as AIM in the UK.

After these exclusions, DFA is left with a "buy" list. The Direct Profitability measure (operating income before depreciation & amortisation less interest expense/book) is also incorporated to emphasise more profitable companies with similar valuation, impacting the sizing of positions.

DFA is very conscious of the cost of trading smaller companies, especially at the bottom-end of the universe, and seeks to control transaction costs by limiting turnover and trading patiently to capture the benefits of momentum. Trades in new positions, and stocks to be sold, are implemented gradually. Transactions are executed by regional teams using the techniques most relevant to their markets. Program and block trades are used where possible, but DFA also maintains relationships with local brokers where they are an important source of liquidity.

Portfolios are broadly diversified at the stock level; small cap strategies have over 2,000 positions and large cap strategies have approximately 500 positions. Market and sector exposure are residuals of the stock selection process, but high level guidelines are applied to ensure that portfolios do not become overly skewed to sectors or markets which may account for an unusually large proportion of the universe of companies passing value tests. Within these controls, divergences from standard index weights can be pronounced. Cash is limited to less than 5% of the value of the portfolio. Currency exposure is not hedged.

DFA's sell discipline is designed to minimize transaction costs and reduce portfolio turnover. On a continuous basis, the firm reviews holdings and determines which no longer meet size and value requirements. Stocks are sold when on a market capitalization basis they are more than one full decile larger than the company with the largest capitalization that is eligible for inclusion in a particular regional portfolio.

Portfolio holdings analysis

The consistent approach applied to a number of different markets and universes creates a significant number of strategies that clients can access. Whilst we have tried to ensure the ratings on all of DFA's strategies are reflective of our view of the approach and the universe within which they operate, to reflect all the analysis undertaken would be impractical. Below, we have highlighted some of the key characteristics and comments on strategies we believe are suitably representative of DFA's offerings.

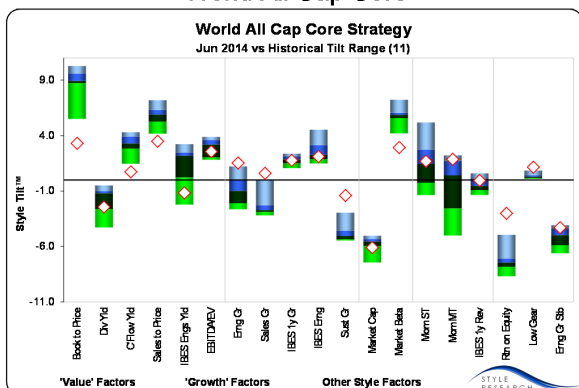
Across the strategies, the style biases show definite exposure to book to price as a factor and significant smaller cap exposure. This is in line with our expectations given the focus on value and small cap of DFA's approach. The tilts also show persistency for those strategies where we have historical data.

The tracking error of the portfolios is not dominated by any specific factors, being spread across currency, market, sector, style and equity. This is as we would expect, given the diversification of the portfolios.

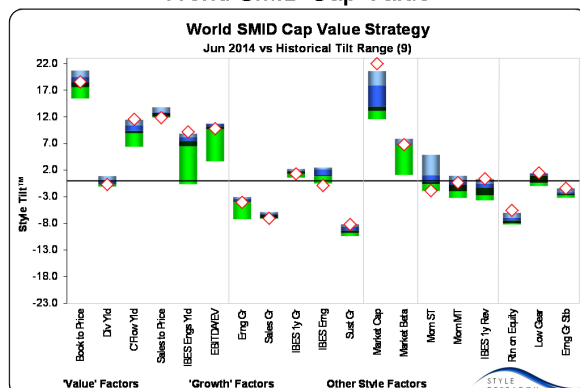
	World All Cap Core Strategy	World SMID Cap Value Strategy	World Small Cap Strategy
Date of analysis	30-Jun-14	30-Jun-14	30-Jun-14
Benchmark used for analysis	MSCI World Free	MSCI World Small Value	MSCI World Small Cap
Number of stocks	5381	4293	6915
Predicted tracking error (%)	1.1	1.6	0.6
Coverage (% overlap with benchmark)	74.1	48.2	73.7
Predicted beta	1.02	1.03	1
Average value score	1.1	10	3.3
Average growth score	0.9	-3.8	-1.1
Adjustment used for Style Tilts	No Adjustment	No Adjustment	No Adjustment
Cash (%)			

	World ex US Large Cap Value	World ex US Small Cap Value	World ex US Small Cap Strategy
Date of analysis	31-Dec-2013	30-Jun-2014	30-Sep-14
Benchmark used for analysis	MSCI EAFE	S&P Developed Ex-U.S, SmallCap Value	MSCI EAFE Small Cap
Number of stocks	515	2109	4065
Predicted tracking error (%)	3.9	2.5	1.6
Coverage (% overlap with benchmark)	33.5	27.9	67.7
Predicted beta	1.12	1.04	1.01
Average value score	4.3	5.2	2.3
Average growth score	-0.8	-1.1	-0.2
Adjustment used for Style Tilts	No Adjustment	No Adjustment	No Adjustment
Cash (%)	0.3	1.2	

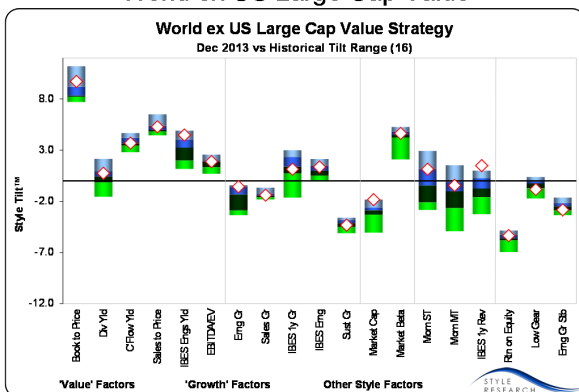
World All Cap Core



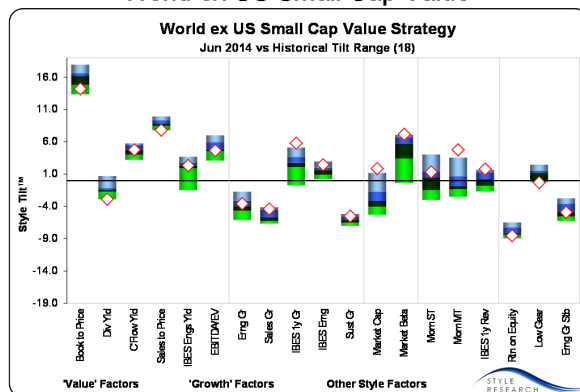
World SMID Cap Value



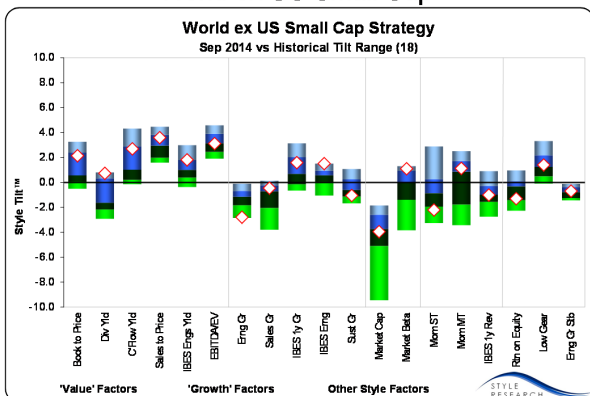
World ex US Large Cap Value



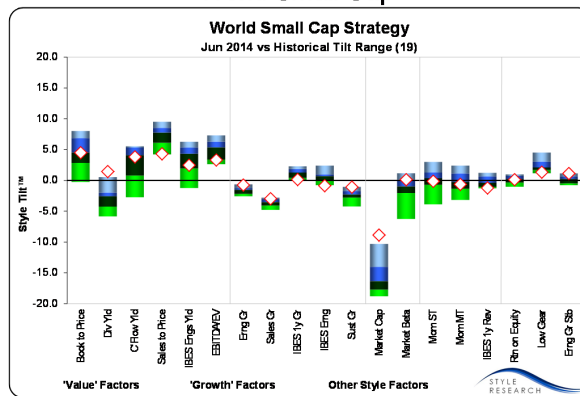
World ex US Small Cap Value



World ex US Small Cap

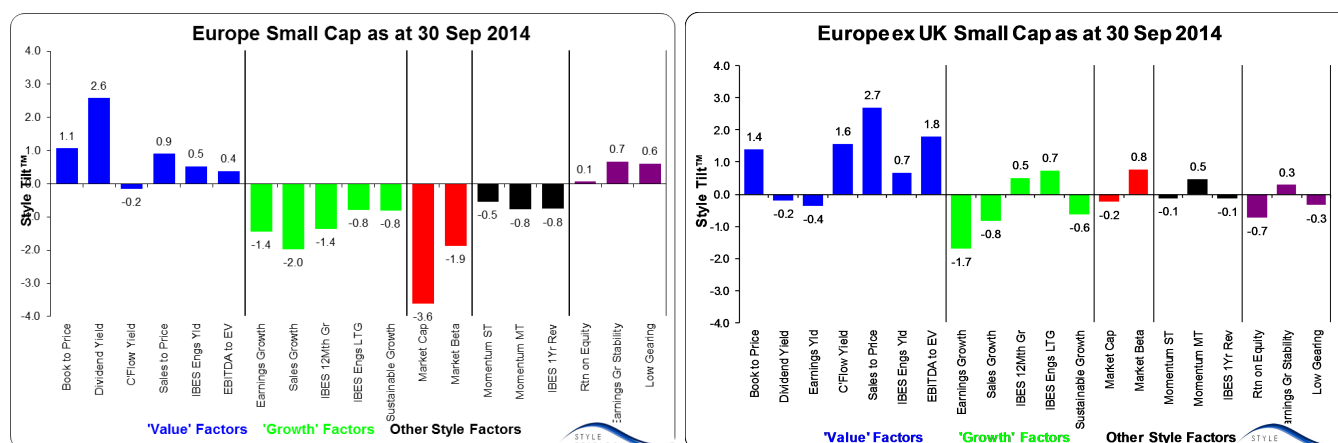


World Small Cap



	Europe - Europe inc UK Small Cap Equity - Europe Small Cap Strategy	Europe - Europe ex UK Small Cap Equity - Europe ex UK Small Cap Strategy
Date of analysis	30 September 2014	30 September 2014
Benchmark used for analysis	MSCI Europe Small Cap	MSCI Eur ex UK Small Cap
Number of stocks	1228	1143
Predicted tracking error (%)	0.9	1.1
Coverage (% overlap with benchmark)	77.6	72.0
Predicted beta	0.98	0.99
Average value score	0.9	1.1
Average growth score	-1.3	-0.4
Adjustment used for Style Tilts	No Adjustment	No Adjustment
Cash (%)	-	-

The following chart shows the 'style tilts' for the portfolios.



Past performance

Performance over the past five years has not been particularly strong for the strategies offered by DFA, with few if any returning benchmark-beating returns over a five-year period to 30 September 2014. Although global value indices have been in line with the broader market benchmarks, book to price as a factor has underperformed significantly, according to analysis provided by Style Research. As DFA relies on this metric in their definition of value, it is not unexpected that the strategies have struggled. This narrow definition of value is one of the reasons the global products have not attracted our highest rating. That said, our ratings continue to signify that we believe these strategies will add value over a market cycle.

Over the past twelve months, the performance of the strategies was more mixed – small cap on a global basis outperformed their larger cap counterparts but this was not the case in the US. As a result, the “ex-US” strategies with a small cap bias have performed more strongly than the global strategies or those with a large cap bias. In particular, small cap and value performed strongly in Europe. Over the market cycle, DFA expects the strategies to deliver between 1% and 2% ahead of the market through the capture of the value and small cap risk premia.

Period Return to 30 September 2014

Name	3 mths (%)	1 yr (%)	2 yrs (%pa)	3 yrs (%pa)	5 yrs (%pa)
Dimensional - All Country All Cap Core Equity Strategy (US Bias)	-3.3	12.1	18.0	20.4	12.9
Dimensional - World All Cap Core Strategy	-3.6	11.0	16.9	18.5	11.0
Dimensional - World SMID Cap Value Strategy	-7.4	7.6	18.9	19.7	11.2
Dimensional - World Small Cap Strategy	-7.0	6.7	17.4	19.0	
Dimensional - World ex US All Cap Core Strategy	-7.1	4.8	14.7	14.6	7.5
Dimensional - World ex US Large Cap Value Strategy	-6.4	4.6	14.6	13.7	5.7
Dimensional - World ex US Small Cap Value Strategy	-8.4	7.4	20.1	18.3	9.6
Dimensional - World ex US Small Cap Strategy	-8.4	4.9	15.8	15.1	9.9
Dimensional - Europe Small Cap Strategy	-10.3	6.1	20.5	19.5	10.5
Dimensional - Europe ex UK Small Cap Strategy	-11.9	6.6	21.5	17.9	8.3
Indices					
MSCI AC World	-2.2	11.9	15.1	17.2	10.6
MSCI World	-2.1	12.8	16.8	18.6	11.5
MSCI World Value	-2.7	13.1	17.6	18.7	10.7
MSCI World Small Cap	-6.5	7.0	17.1	19.2	13.2
MSCI World Small Value	-6.8	8.1	17.9	19.9	12.6
MSCI EAFE	-5.8	4.7	14.1	14.2	7.0
MSCI EAFE Value	-6.1	6.2	15.2	14.6	6.1
MSCI EAFE Small Cap	-7.8	3.3	15.8	14.9	9.3
MSCI Europe	-7.0	6.4	15.3	16.2	7.5
MSCI Europe Value	-7.0	8.9	17.1	16.6	5.8
MSCI Europe Small Cap	-10.5	3.0	17.0	16.9	8.2
MSCI Europe Small Value	-11.1	5.6	23.3	20.8	9.9
MSCI Europe ex UK	-7.4	6.5	17.3	17.1	6.7
MSCI Europe ex UK Value	-7.6	10.8	20.5	17.3	4.4
MSCI Europe ex UK Small Cap	-11.8	6.5	21.3	18.8	8.9

MSCI Europe ex UK Small Value	-12.5	6.4	23.1	17.4	6.5
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Risk/return characteristics

Strategy	Benchmark	Ret (%pa)	Bench-mark Return	Std Dev (%pa)	Bench-mark Std Dev	Excess Return (%pa)	TE (%pa)	IR
All Country All Cap Core Equity ¹	MSCI AC World	16.5	15.1	9.2	7.6	1.4	3.1	0.5
World All Cap Core Strategy	MSCI World Free	11.0	11.5	16.3	15.1	-0.5	1.8	-0.3
World SMID Cap Value Strategy	MSCI World Small Value	11.2	12.6	19.2	17.6	-1.4	2.5	-0.5
World Small Cap Strategy ²	MSCI World Small Cap	19.0	19.2	13.0	12.9	-0.2	1.0	-0.2
World ex US Small Cap Strategy	MSCI EAFE Small Cap	9.9	9.3	18.7	18.6	0.6	1.9	0.3
World ex US Large Cap Value	MSCI EAFE	5.7	7.0	19.2	16.7	-1.3	3.5	-0.4
World ex US Small Cap Value	S&P Developed Ex-U.S. SmallCap Value	9.6	9.4	20.9	18.9	0.2	3.2	0.1
Europe Small Cap Strategy	S&P Europe SmallCap	10.5	10.9	22.7	21.9	-0.4	1.5	-0.2
Europe ex UK Small Cap Strategy	HSCB Smaller Europe ex UK	8.3	7.3	24.4	24.5	1.0	1.3	0.8

Notes:

Risk/Return data as at 30 September 2014, based on quarterly calculations in USD

1. Risk/Return over 2 years ending September 2014

2. Risk/Return over 3 years ending September 2014

International Equity - Global Equity - Core - World All Cap Core Strategy

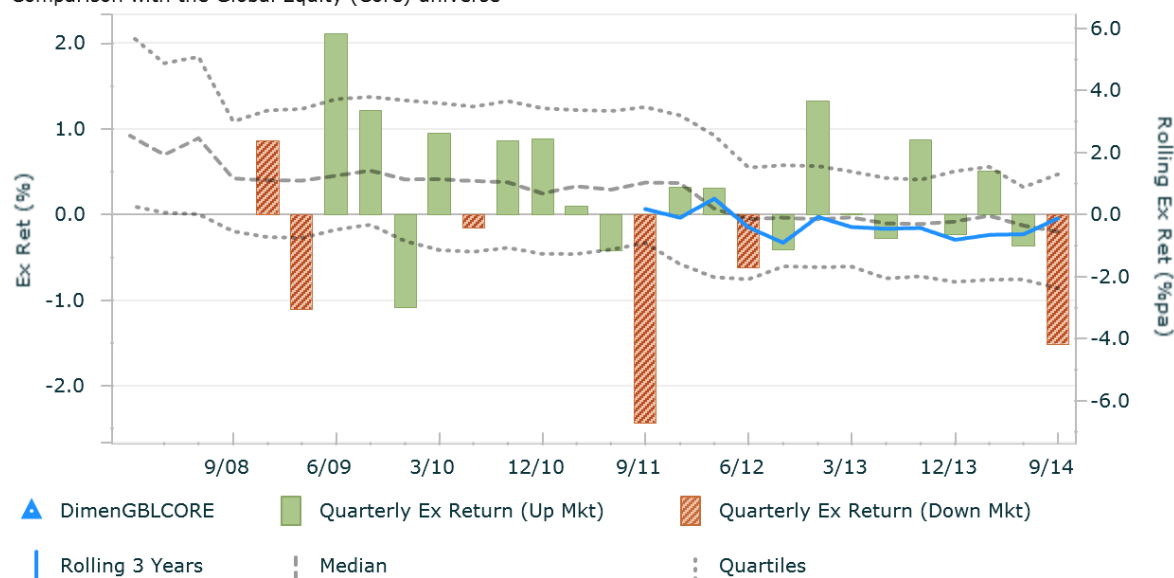
Track Record	World All Cap Core Equity Composite
Base Currency	\$US
Benchmark	MSCI World Free
Mercer Universe	Global Equity (Core)
Track record type	Composite
Track Record Assets	\$US1.1 billion as at 30 September 2014

Rolling period chart

Dimensional - World All Cap Core Strategy

Quarterly Excess Return vs. MSCI World Free with rolling 3 yr line in \$US (before fees) over 7 yrs ending September-14

Comparison with the Global Equity (Core) universe



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International Equity - Global Equity - Small Cap - World Small Cap Strategy

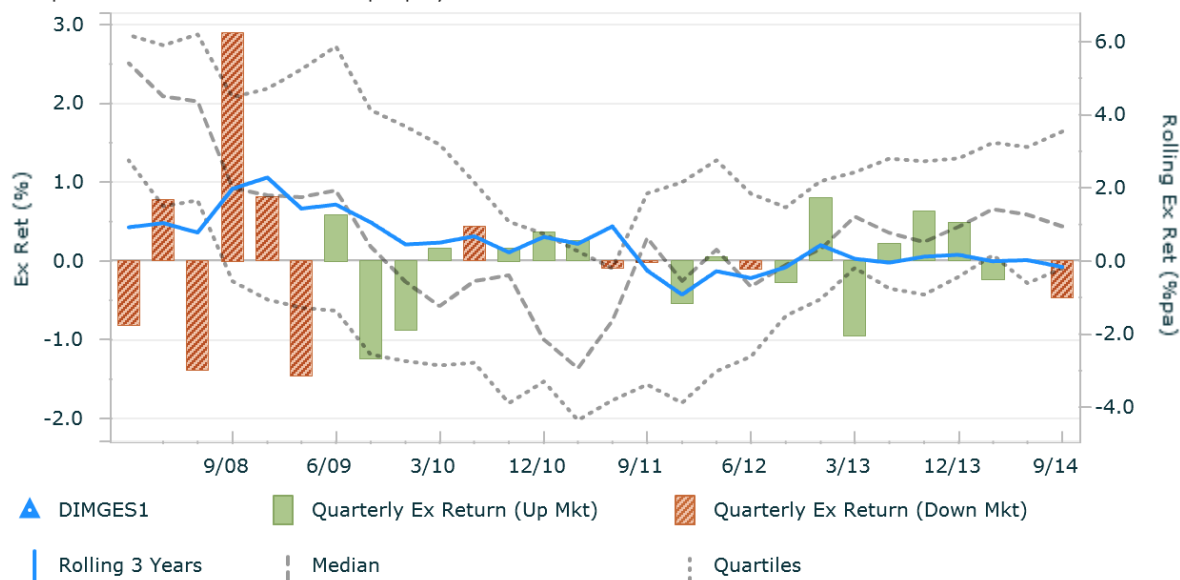
Track Record	Global Small Companies Fund
Base Currency	\$US
Benchmark	MSCI World Small Cap
Mercer Universe	Global Small Cap Equity
Track record type	Representative Account
Track Record Assets	\$US345 million as at 30 September 2014

Rolling period chart

Dimensional - World Small Cap Strategy

Quarterly Excess Return vs. MSCI World Small Cap with rolling 3 yr line in \$US (before fees) over 7 yrs ending September-14

Comparison with the Global Small Cap Equity universe



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International Equity - World ex US/EAFE Equity - Small Cap - World ex US Small Cap Strategy

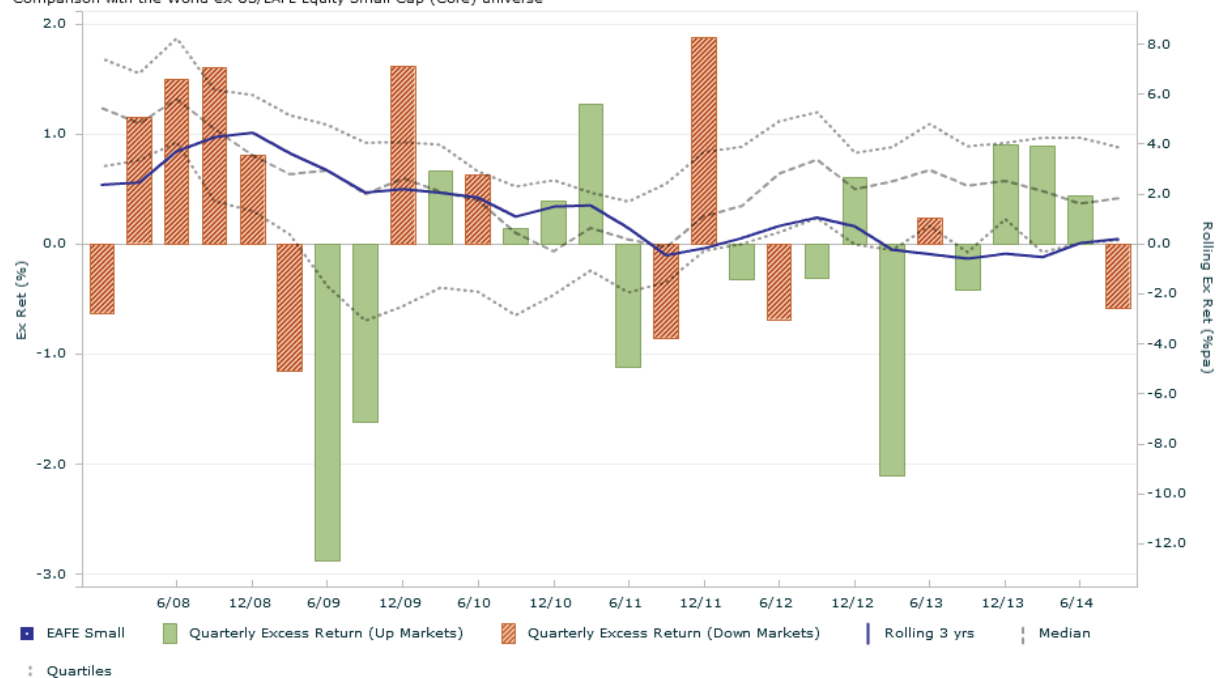
Track Record	World ex US Small Cap Equity Composite
Base Currency	\$US
Benchmark	S&P Developed Ex-U.S. SmallCap
Mercer Universe	World ex US/EAFE Equity Small Cap
Track record type	Composite
Track Record Assets	\$US10.8 billion as at 30 September 2014

Rolling period chart

Dimensional - World ex US Small Cap Strategy

Quarterly Excess Return vs. MSCI EAFE Small Cap with rolling 3 yr line in \$US (before fees) over 7 yrs ending September-14

Comparison with the World ex US/EAFE Equity Small Cap (Core) universe



International Equity - World ex US/EAFE Equity - Core - World ex US Large Cap Value Strategy

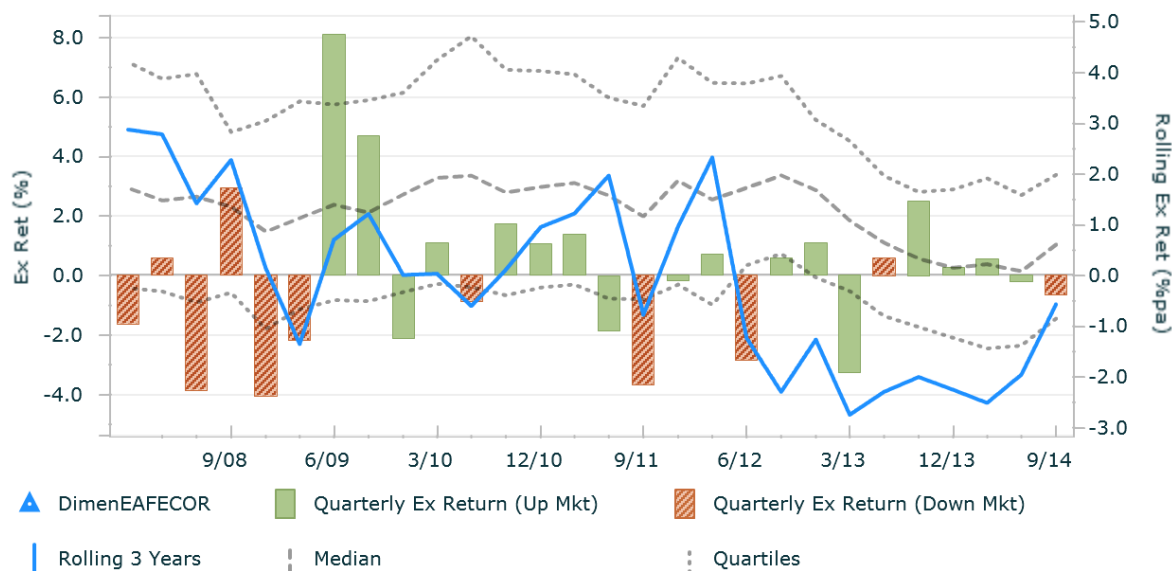
Track Record	World ex US Large Cap Value Equity Composite
Base Currency	\$US
Benchmark	MSCI EAFE
Mercer Universe	World ex US/EAFE Equity (Core)
Track record type	Composite
Track Record Assets	\$US17.3 billion as at 30 September 2014

Rolling period chart

Dimensional - World ex US Large Cap Value Strategy

Quarterly Excess Return vs. MSCI EAFE with rolling 3 yr line in \$US (before fees) over 7 yrs ending September-14

Comparison with the World ex US/EAFE Equity (Core) universe



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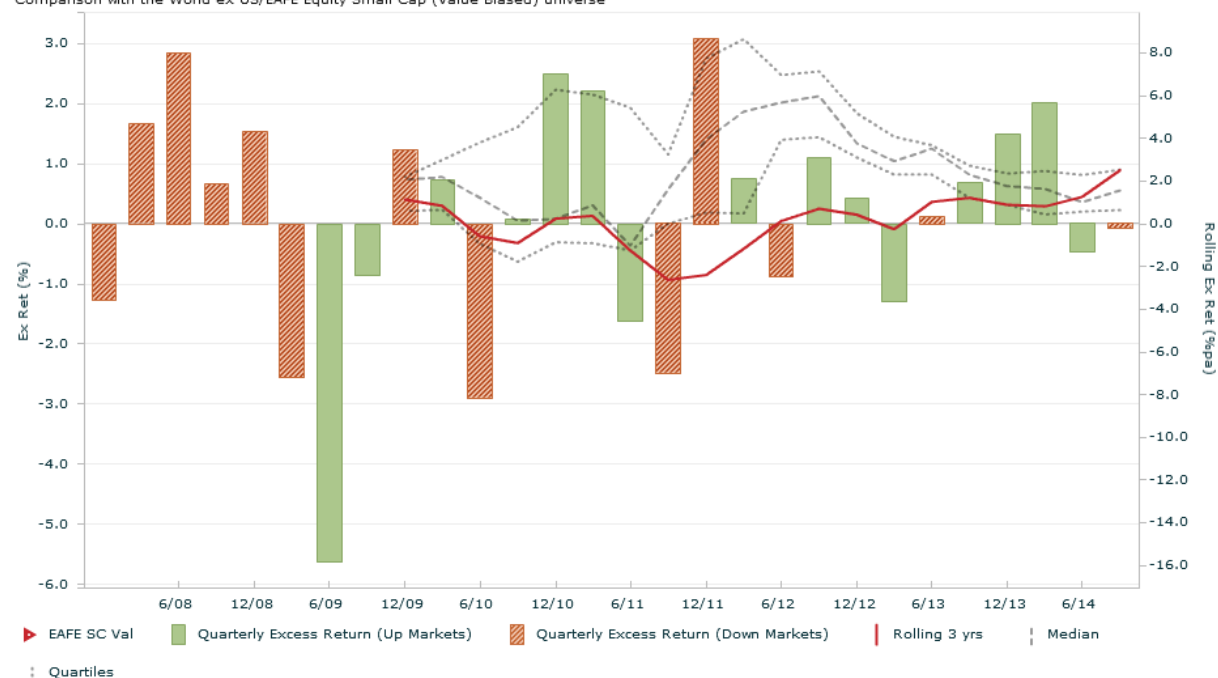
International Equity - World ex US/EAFE Equity - Small Cap - World ex US Small Cap Value Strategy

Track Record	World ex US Small Cap Value Equity Composite
Base Currency	\$US
Benchmark	MSCI EAFE Small Cap Value Index
Mercer Universe	World ex US/EAFE Equity Small Cap
Track record type	Composite
Track Record Assets	\$US13.5 billion as at 30 September 2014

Rolling period chart

Dimensional - World ex US Small Cap Value Strategy

Quarterly Excess Return vs. MSCI EAFE Small Cap Value Index with rolling 3 yr line in \$US (before fees) over 7 yrs ending September-14
Comparison with the World ex US/EAFE Equity Small Cap (Value Biased) universe



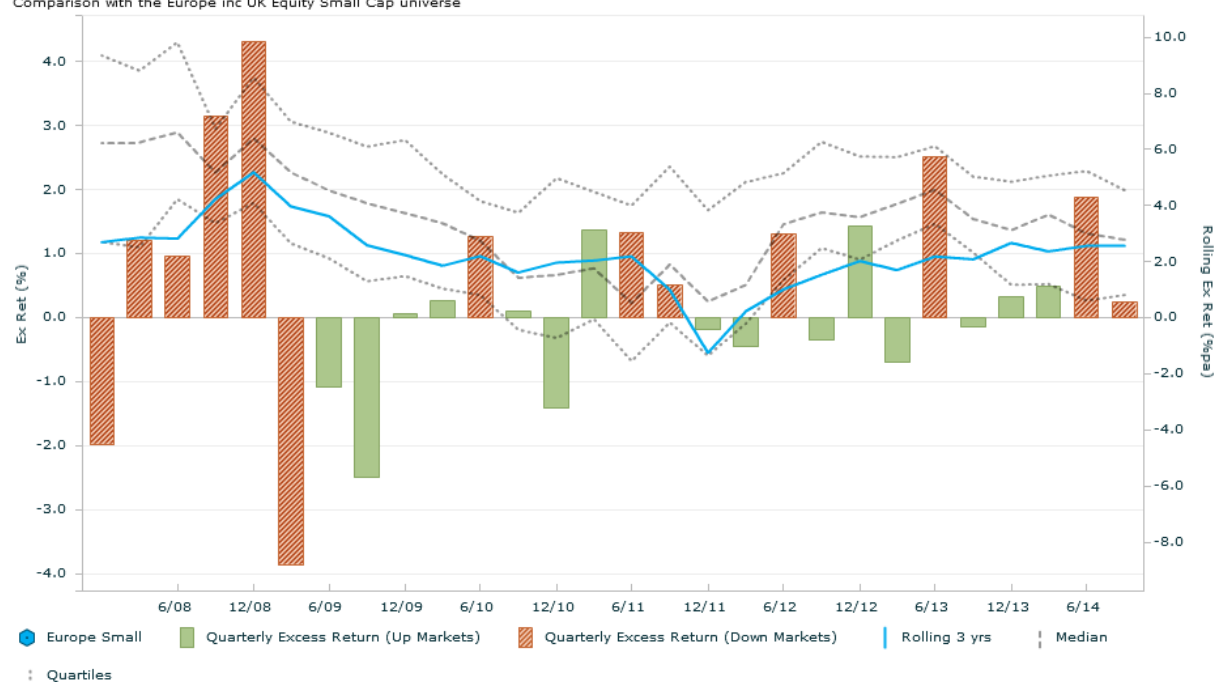
Europe - Europe inc UK Small Cap Equity - Europe Small Cap Strategy

Track Record	Europe Small Cap Equity Composite
Base Currency	Euro
Benchmark	MSCI Europe Small Cap
Mercer Universe	Europe inc UK Equity Small Cap
Track record type	Composite
Track Record Assets	€189 million as at 30 September 2014

Rolling period chart

Dimensional - Europe Small Cap Strategy

Quarterly Excess Return vs. MSCI Europe Small Cap with rolling 3 yr line in \$US (before fees) over 7 yrs ending September-14
Comparison with the Europe inc UK Equity Small Cap universe



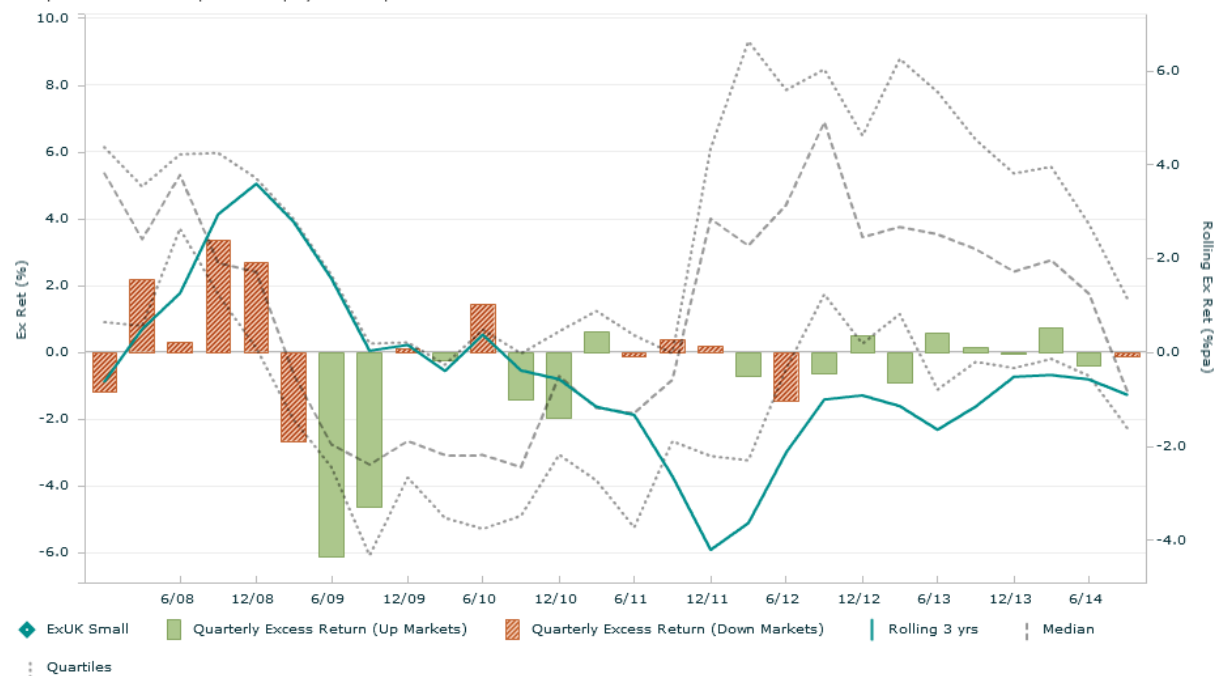
Europe - Europe ex UK Small Cap Equity - Europe ex UK Small Cap Strategy

Track Record	Europe ex UK Small Cap Equity Composite
Base Currency	Euro
Benchmark	MSCI Europe ex UK Small Cap
Mercer Universe	Europe ex UK Equity Small Cap
Track record type	Composite
Track Record Assets	€3.2 billion as at 30 September 2014

Rolling period chart

Dimensional - Europe ex UK Small Cap Strategy

Quarterly Excess Return vs. MSCI Europe ex UK Small Cap with rolling 3 yr line in \$US (before fees) over 7 yrs ending September-14
Comparison with the Europe ex UK Equity Small Cap universe



Further Detail

ESG and Active Ownership

DFA makes a conscious effort to consider corporate governance in its strategies, and participates in proxy voting, engagement, internal projects, research, and industry surveys and events. The firm is a signatory to the UNPRI. Even so, DFA manages a quantitatively driven process that seeks to capture risk premia rather than differentiate stocks on fundamental business characteristics and the firm does not focus on ESG issues on an individual stock basis. Therefore, we believe the strategies warrant an ESG4 rating.

Business Update

On a global basis, AUM is just shy of \$400 billion. Although institutional clients account for only 40% of AUM, Barlow tells us that the Financial Advisor business, which accounts for most of the other 60%, tends to be stable as DFA 'pre-screens' their clients to ensure a similar mindset. Sovereign wealth funds and DC pension schemes are a natural area of growth for the business and DFA is seeing increased interest from these quarters.

Flows have been across all product lines, with fixed income products seeing marginally more interest from clients than the other offerings. This is potentially because these products are newer to DFA, although we did not explore this in the meeting. Of the 22 new products launched by DFA over the past five years (according to GIMD), more than half are fixed income products. DFA told us that they have also looked at frontier markets within the past five years, with the potential of launching a product, but they do not believe this is a viable option as yet. This was mentioned to reassure us that all products launched are research led, identifying some persistent market phenomenon or risk factor that can be exploited over the longer term. Whilst we agree that DFA's research is robust and thorough prior to any product launch, we wonder the degree to which the growth ambitions of the business and leadership influence this.

Growth of the business has been rapid: 6 years ago, there were only 30 individuals in the London office, now 100 and 800 members of staff globally. However, according to Barlow, DFA successfully navigated a growth spurt in 2004/2005, where the size of the business in the US doubled. Whilst recognising the challenges, DFA believes they have become adept in dealing with growth. This rapid growth is something we have highlighted in the past as an issue to watch, and we remain mindful of it. However, we also acknowledge that the strategies offered by DFA are scalable.

Growth has, according to Barlow, come to DFA and has not been sought by them. In the past, we can see this is true, but we wonder about the business going forward. There is, apparently, no target for the AUM of the business, but we still do not see any evidence that DFA has thought about any limitations to their growth, nor that they have undertaken any serious analysis of capacity constraints. This remains an issue to watch.

Idea Generation

According to Barlow, the research team look at hundreds of data anomalies. Where these make sense, the vast majority are impractical to take advantage of. Many times, the opportunity is limited by the trading costs. DFA tells us that the team were surprised by the persistence of profitability as a factor, which showed statistically significant sustainable

returns over a 40-50 year time horizon. However, the key benefit to portfolios of the inclusion of this factor is the risk reduction – this factor did not add to the return as much as it reduced the volatility of the returns through the exclusion of the least profitable 7-8% of the universe. This is similar to DFA's past approach of excluding extremely small growth stocks, and similarly reduces the volatility of returns, thereby enhancing the risk adjusted return of the portfolios. According to Barlow, the profitability factor is most often seen to impact the portfolio through the weighting of stocks: the same basket of stocks is held for most strategies but the weightings to the stocks is adjusted to take into account profitability.

Barlow explained that, whilst value and size factors relate to the price of a business (as in the stock price) the profitability factor relates to the return required by investors in the business. This is represented in the denominator of the typical value equation where future cash flows are discounted by the required rate of return. The profitability factor relates to the certainty of the expectations of the cash flows. According to DFA, the historical profitability rankings (based on past 12 months' cash flow) is stable and predictive of future profitability, with 70% of returns explained one year out and 30% of returns explained 7 years out. DFA's definition of profitability is earnings before interest, tax, depreciation and amortisation, less the interest charge. According to Barlow, this scales the profitability to take into account the leverage in the business.

In the roll-out of the profitability factor, DFA has been sensitive to clients' expectations, acknowledging that clients have invested to meet specific exposure needs. The profitability factor is not, according to Barlow, intended to change these exposures, but is expected to dampen the volatility of the returns profile. In addition, DFA has been sensitive in the implementation of this factor, implementing dependent on the client mandate. In addition, regulatory considerations in different jurisdictions have had an impact on the implementation of the profitability factor. It is expected that all mandates and portfolios will have implemented this factor by the end of December 2014.

The difference to portfolios introduced by the profitability factor is the weighting of stocks. According to Barlow, there is little difference in turnover, although there will be some level of one-off turnover to shape the portfolio appropriately. DFA will use natural cash flow. For the global core strategy, the turnover to introduce the profitability factor has been in the region of 5% - 10%. However, Barlow also pointed out that there is a natural volatility in turnover, depending on the market environment.

As already mentioned, according to DFA all new products or changes to existing products are research-led. This is backed by a strongly-held belief, as expressed by Barlow, that investors want to see evidence that new proposals are valid. However, the research will also investigate the practicalities of the proposal and the flexibility to effective implementation. This is explained through the example of a recent research project: the impact a company's level of investment has on the future returns of the business. According to Barlow, there is evidence that suggests that investment can lead to lower returns. This research is still in the early stages, but focuses on the market in aggregate rather than individual stocks. This, and any other data anomaly that the research group finds to be of interest and persistent, is then tested for monotony, i.e. whether it is systematic across all universes and regions. In addition, the impact of an opportunity on the turnover of the portfolio and momentum exposure is tested along with sensitivity to macro events and other similar risk and practical considerations.

The internal research group "kicks the tyres" on the academic findings by simulating a portfolio to test these more practical aspects of the implementation of an idea. The research team has three dedicated streams: the market research, which tests the academic evidence and recent research; portfolio strategy, which tests whether a product can be designed

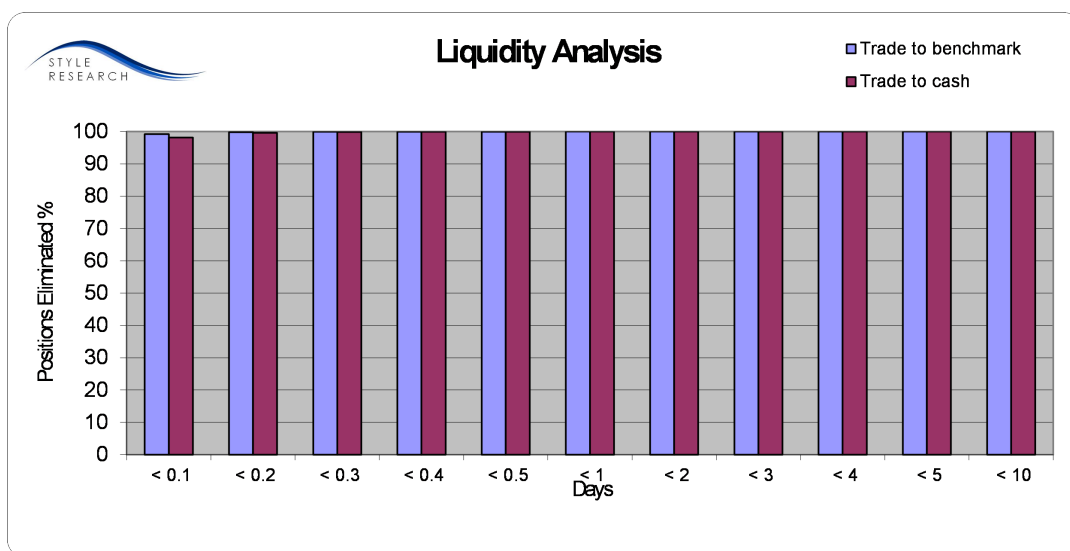
around the academic research; and implementation, which focuses on the practicalities of trading the idea. There is also a group dedicated to the collection, cleaning and management of the data used within DFA. As at the date of our meeting, the research group was 45-individuals strong, but DFA expects this to grow to more than 50. Specifically, there may be regional teams developed for the support of the regional data requirements.

The research agenda is triggered by interactions with clients, DFA and other practitioners, the research group and academic studies. DFA assured us that they do look at a lot of ideas that are not implemented. One of the topics DFA had looked at but rejected was the low volatility anomaly which they believe is value driven. Other topics of interest were around mean reversion (which they concluded is persistent, but is not necessarily predictive); political risk in emerging markets (which they believe is priced in) and market timing (where they have not been able to come to any reliable conclusions). If there aren't any reliable conclusions from research, the team will not implement an idea.

Implementation

The chart below shows the days to trade the World All Cap Core portfolio as at 30 September 2014 to cash and benchmark using a maximum of 20% of the average daily trading volume and \$1.1 billion as AUM (the level of assets in the portfolio as at that date). The analysis shows the portfolio as highly liquid and that there is no specific cause for concern on the capacity of the strategy. However, we note that this is the strategy with the widest opportunity set and, even for a concentrated portfolio (which this certainly is not) the level of assets is low.

It is difficult to get a more precise picture of the liquidity challenges the DFA strategies in aggregate face or to estimate the levels of overlap between portfolios. However, DFA does fish in a reasonably constrained area of the market (smaller cap) where liquidity levels generally have to be considered. DFA is aware of the challenges of their chosen market place and the diversification of the portfolios and the attention they pay to implementing the strategies mitigate some of the risks. In aggregate, across their equity strategies, the firm manages \$284 billion as at 30 September 2014, and implementation remains an issue to watch.



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Risk warnings

- The value of stocks and shares, including unit trusts, can go down as well as up and you may not get back the amount you have invested.
- Investments denominated in a foreign currency will fluctuate with the value of the currency.
- Certain investments, such as illiquid, leveraged or high-yield instruments or funds and securities issued by small capitalization and emerging market issuers, carry additional risks that should be considered before choosing an investment manager or making an investment decision.
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