



FLOW OF FUNDS REPORT

TUYID Q4 2017



February, 2018

Dear Readers,

We are happy to present the Flow of Funds Report for the fourth quarter of 2017. Our report offers detailed insight on the funds flow by investment type and regions as well as top buyers and sellers in the Turkish market. We also provide key investor hubs for road shows and trust the Report will be an important asset in IR planning and investor targeting.

Investment in Turkey remained positive for the fifth consecutive quarter, while all other regions in this comparison experienced at least one quarter of negative sentiment over the same time frame. Passive investors were the largest set of investors offering support to Turkish equities with net inflows of \$442.4M, while their active counterparts made sales of \$248.4M over the same period. Russian equities saw the highest inflows over the quarter with net increases of \$1.7B, Hungarian equities saw increases of \$106.1M while Polish equities witnessed net reductions of \$545.2M, with the bulk of the sales in this market coming from domestic and North American investors.

This Report is prepared quarterly by IPREO, in cooperation with TÜYİD, using IPREO's database. We look forward to any feedback you may have.

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Acknowledgements: We express our gratitude to Dominic Mattiucci from IPREO Global Markets Intelligence and TÜYİD member Işıl Bük for their contributions.

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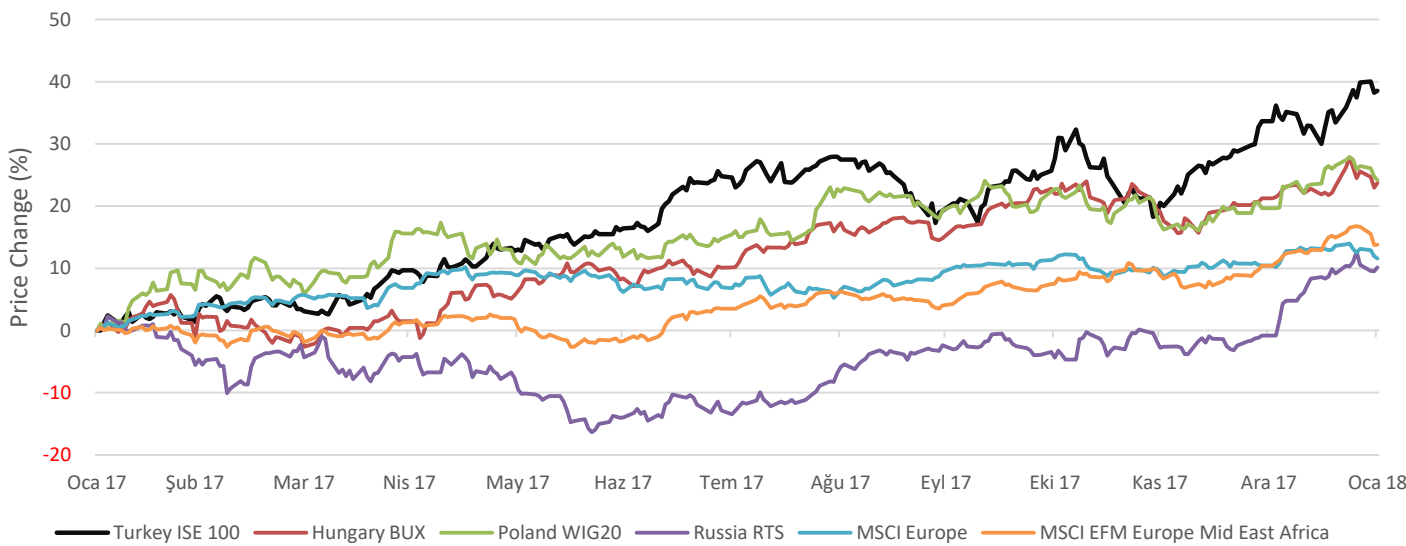
Price performance:

Over the twelve months to the end of January 2018, the Turkey ISE 100 Index rose by 38.51% - by far the highest performer in the comparable basket. The Poland WIG 20 and the Hungary BUX indices performed at similar levels with recorded gains of 24.16% and 23.73% respectively, while the Russia RTS index was a relative laggard with gains of just 10.15%. The two MSCI indices in the comparison performed at the lower end of the scale with the MSCI Europe index rising by 11.58% and the MSCI EFM Europe Mid East Africa index performing marginally better with gains of 13.76%.

“Emerging market equities advanced in December, buoyed by optimism over the health of the global economy and higher demand expectations.... Emerging European equities were the top regional gainers, up 5.4% in December. Greece was the best performing country in the benchmark, up 16.5% on news its government had secured its next tranche of bailout loans. Turkey advanced 13.3%, on reported quarterly economic growth of 11.1% as well as an interest rate hike which at 50bps was half of what the market had expected. Regional heavyweight Russia benefitted from an advancing oil price and was 2.9% higher for the month.”

Allianz Emerging Markets Equity - January 2018

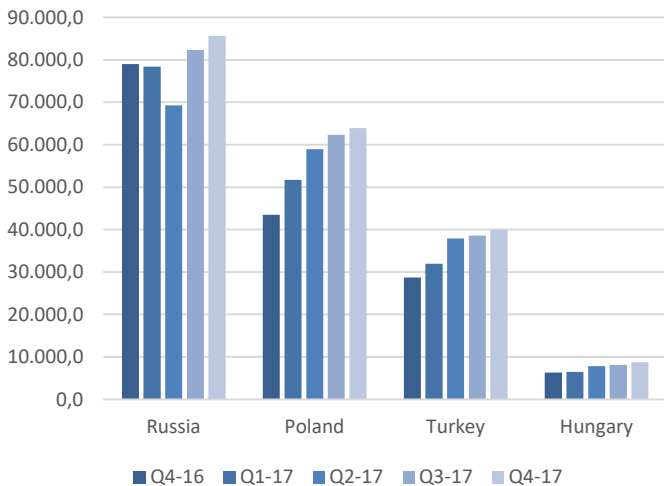
<http://www.allianzglobalinvestors.de/MDBWS/doc/17-1171+Allianz+Emerging+Markets+Equity+-+Commentary+AP1602.pdf?1c89652aa835377ef74b0060587784072ac9972d>



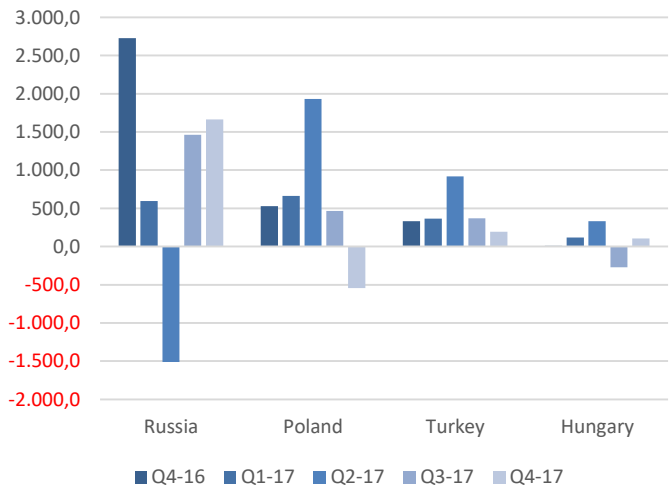
Inflows and Outflows:

Sentiment towards Turkey remained positive for the fifth consecutive quarter with a net investment of \$194.0M in Q4-17. Led by North American investors, attitude to Russian equities remained positive (+\$1.7B) while investors (mainly domestic) retreated from Poland with net sales of \$545.2M. There was a positive swing in Hungarian equities with net purchases of \$106.1M – the bulk of which coming from UK based investors.

Institutional Investment in Region (\$M)



Institutional Investment in Region (\$M Chg)





Investment by Investor Region:

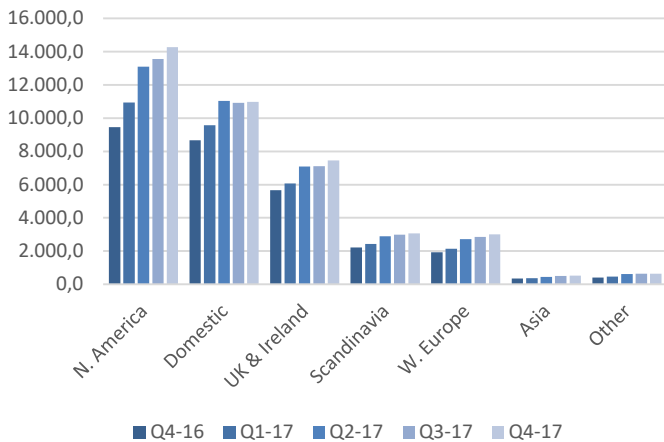
Support for the market was dominated by North American investors which made net contributions of \$204.4M. However, active investors from this region were net sellers with reductions of \$185.8M over the period, while passive investments increased by \$390.2M. Regionally, passive investment from all regions was positive over the quarter; while active investors from all regions were on the whole net sellers, with the exceptions of the UK & Ireland and Asia based active investors which showed signs of positivity with net purchases of \$62.6M (passive: +\$21.2M) and \$26.4M (passive: +\$0.1M) respectively.

"After several months of very volatile period for Turkish lira the last month of the year was relatively stable and with some positive movements. In December Turkish lira strengthened vs euro by 2.7%. Solving of visa crises with US and returning to full, normal visa regulation improved sentiment. In the fund's investment region Turkey was the best performing market returning +14% in euro terms, the next performer was Poland with +2.8% return, followed by Hungary with +2.6% and Czech with +1.6%(all in euro terms). YTD Turkish stocks have appreciated +59.2% in Turkish lira and in euro terms +30%."

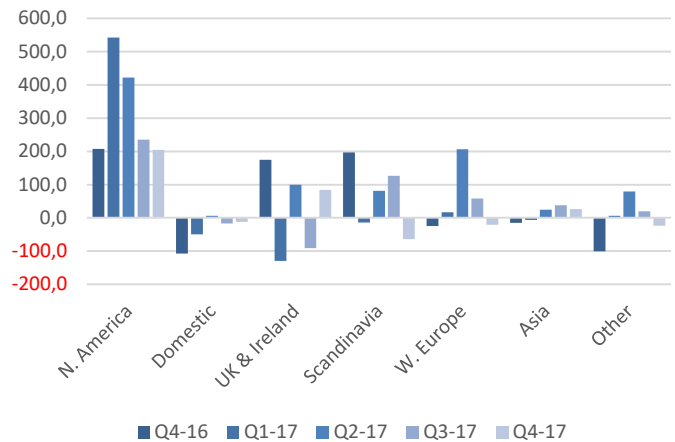
Swedbank Eastern Europe Equity Fund - December 2017

https://www.swedbank.ee/static/investor/funds/SEEEF_raport_eng.pdf

Institutional Investment by Region (\$M)



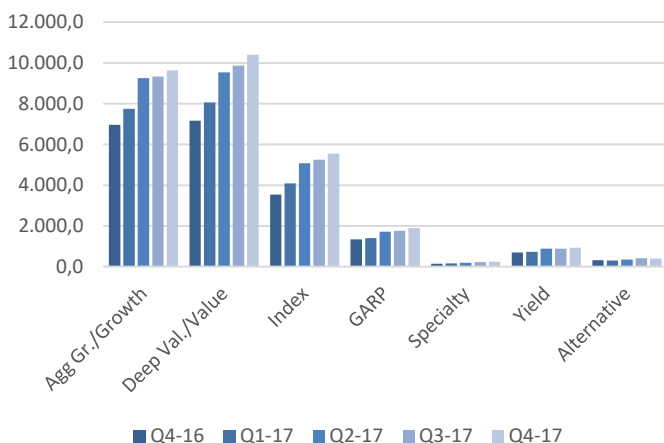
Institutional Investment by Region (\$M Chg)



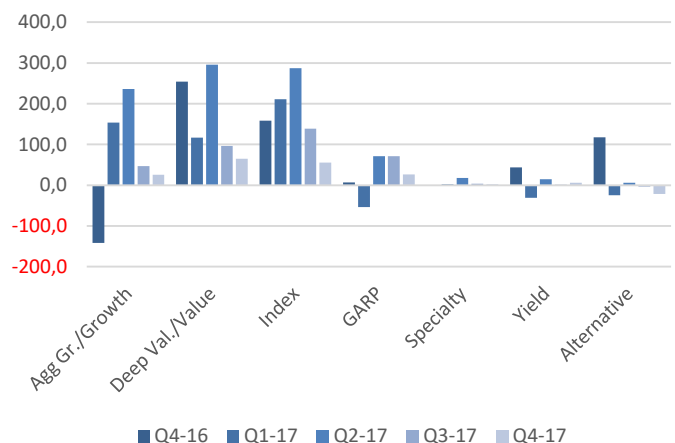
Investment by Style:

Value investors continue to dominate the ownership of the market with 35.8% of the investments, with growth investors a very close second controlling 33.2% of the investments. Index investors are the only other set to control double-digit investments with 19.1% of the ownership. While all styles were buyers, apart from alternative with sales of \$21.8M, GARP investors were the largest buyers in percentage terms with net increases of 1.42% or \$26.5M (similar to growth investors which had net buys of \$25.9M). In dollar terms, value investors dominate the purchases with increases of \$65.2M (0.63% increase), with US based AllianceBernstein. L.P. (U.S) leading the purchases with increases of \$43.1M.

Institutional Investment by Style (\$M)



Institutional Investment by Style (\$M Chg)





Top Active Holders, Buyers & Sellers

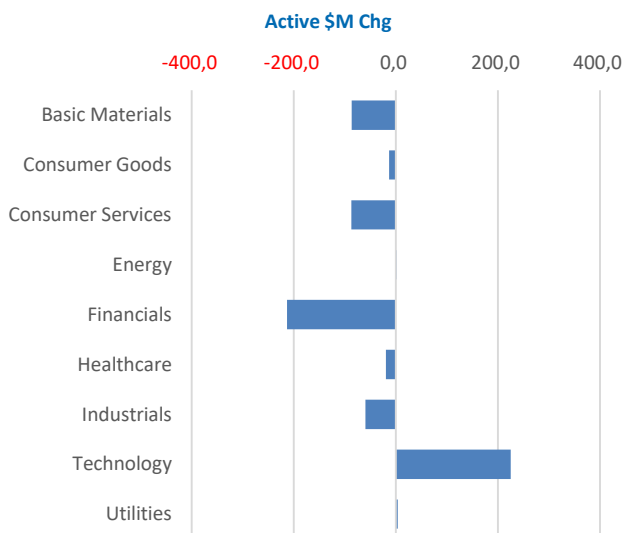
TOP HOLDERS	Country	Style	Turnover	Equity Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
Aberdeen Asset Managers, LTD (U.K.)	United Kingdom	Growth	Low	103,618.5	1,286.9	-166.8	1.2	-11.5
Norges Bank Investment Management (Norway)	Norway	Value	Low	654,159.2	1,259.4	8.5	0.2	0.7
Lazard Asset Management, LLC (U.S.)	United States	Value	Medium	99,318.4	1,242.7	-9.1	1.3	-0.7
APG Asset Management N.V.	Netherlands	Yield	Low	174,688.4	865.1	0.0	0.5	0.0
Genesis Investment Management, LLP	United Kingdom	Growth	Low	26,608.4	822.4	38.3	3.1	4.9
Fidelity Management & Research Company	United States	Growth	Low	939,371.8	524.1	2.8	0.1	0.5
OppenheimerFunds, Inc	United States	Growth	Medium	167,556.6	483.9	0.1	0.3	0.0
Silchester International Investors, LLP	United Kingdom	Value	Low	21,176.4	453.5	5.9	2.1	1.3
Invesco Advisers, Inc.	United States	Growth	Low	180,448.6	447.0	14.9	0.2	3.4
Fidelity International Limited - FIL Investment Services (L	United Kingdom	Growth	Medium	107,146.7	423.4	300.9	0.4	245.5
				7,808.4	195.6			

TOP BUYERS	Country	Style	Turnover	Equity Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
Fidelity International Limited - FIL Investment Services (L	United Kingdom	Growth	Medium	107,146.7	423.4	300.9	0.4	245.5
AllianceBernstein, L.P. (U.S.)	United States	Value	Medium	169,128.2	175.2	43.1	0.1	32.6
Genesis Investment Management, LLP	United Kingdom	Growth	Low	26,608.4	822.4	38.3	3.1	4.9
Pictet Asset Management S.A.	Switzerland	GARP	Low	75,344.5	83.6	30.9	0.1	58.6
TIAA-CREF Investment Management, LLC	United States	Growth	Low	322,537.3	205.6	28.0	0.1	15.7
Brades Investment Partners, L.P.	United States	Deep Value	Low	17,119.9	129.9	22.3	0.8	20.8
Danske Capital (Denmark)	Denmark	Growth	Medium	25,009.6	94.6	18.1	0.4	23.7
Hermes Investment Management, LTD	United Kingdom	GARP	Medium	15,027.9	15.6	15.6	0.1	Buy-in
Invesco Advisers, Inc.	United States	Growth	Low	180,448.6	447.0	14.9	0.2	3.4
Schroder Investment Management, LTD	United Kingdom	GARP	Medium	127,163.4	385.6	14.8	0.3	4.0
				2,782.9	526.9			

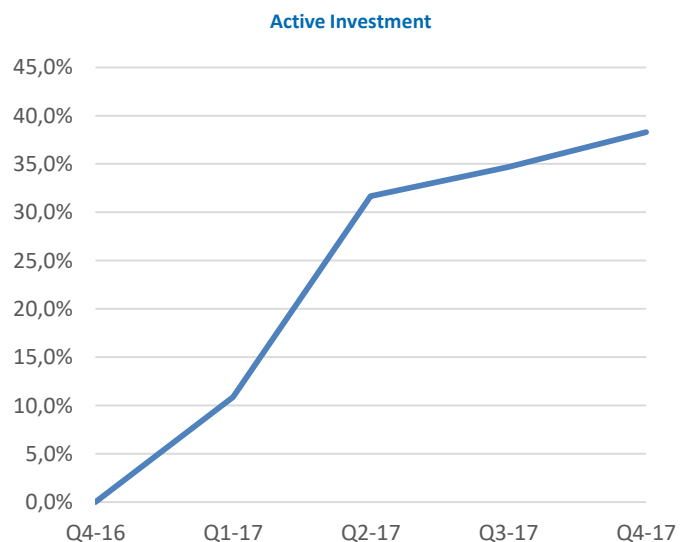
TOP SELLERS	Country	Style	Turnover	Equity Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
Aberdeen Asset Managers, LTD (U.K.)	United Kingdom	Growth	Low	103,618.5	1,286.9	-166.8	1.2	-11.5
Grantham Mayo Van Otterloo & Co., LLC	United States	Value	Medium	39,108.8	394.6	-116.1	1.0	-22.7
BlackRock Investment Management (U.K.), LTD	United Kingdom	Growth	Low	401,126.9	356.9	-64.5	0.1	-15.3
Goldman Sachs Asset Management International	United Kingdom	Growth	High	17,606.7	222.8	-63.5	1.3	-22.2
Dodge & Cox	United States	Value	Low	190,462.4	257.4	-43.1	0.1	-14.3
Robeco Institutional Asset Management BV	Netherlands	Value	Medium	45,204.9	348.3	-42.8	0.8	-10.9
SKAGEN AS	Norway	Value	Medium	8,698.2	285.2	-39.3	3.3	-12.1
Nordea Investment Management (Denmark)	Denmark	Value	Medium	75,747.3	372.7	-36.5	0.5	-8.9
William Blair & Company, LLC (Investment Management)	United States	Agg. Growth	Medium	52,825.4	61.6	-26.3	0.1	-29.9
Pine River Capital Management, L.P.	United States	Alternative	Very High	190.3	18.8	-23.9	9.9	-56.0
				3,605.3	-622.9			

Includes Investors with EUM greater than \$100M; Excludes Passive/Index Investors

Sector Inflows/Outflows



% Change in Active Investment vs 5 Previous Quarters





Top Passive Holders, Buyers & Sellers

TOP HOLDERS	Country	Style	Turnover	Equity Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
The Vanguard Group, Inc.	United States	Index	Low	2,917,052.8	2,318.1	40.2	0.1	1.8
BlackRock Fund Advisors	United States	Index	Low	1,994,223.0	1,422.6	36.6	0.1	2.6
Dimensional Fund Advisors, L.P. (U.S.)	United States	Value	Low	417,352.7	1,092.6	-5.3	0.3	-0.5
Arrowstreet Capital, L.P.	United States	Deep Value	Very High	53,090.7	557.9	298.5	1.1	115.1
BlackRock Advisors (U.K.), LTD	United Kingdom	Index	Low	150,448.7	351.3	-25.1	0.2	-6.7
Parametric Portfolio Associates, LLC	United States	GARP	Medium	108,624.6	265.7	3.8	0.2	1.5
Acadian Asset Management, LLC	United States	Deep Value	Medium	38,455.1	246.7	10.1	0.6	4.2
California Public Employees Retirement System	United States	Index	Low	133,693.8	246.4	0.0	0.2	0.0
State Street Global Advisors (SSgA)	United States	Index	Low	1,321,029.0	148.1	9.4	0.0	6.8
Stewart Investors (U.K.)	United Kingdom	Growth	Low	6,542.9	141.2	2.4	2.2	1.7
				6,790.7	370.7			

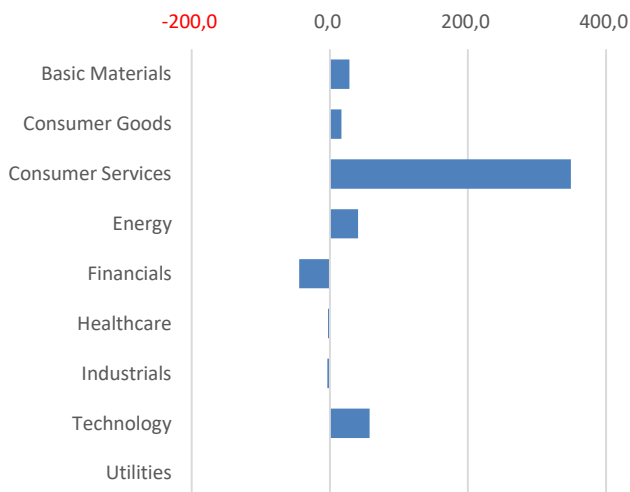
TOP BUYERS	Country	Style	Turnover	Equity Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
Arrowstreet Capital, L.P.	United States	Deep Value	Very High	53,090.7	557.9	298.5	1.1	115.1
The Vanguard Group, Inc.	United States	Index	Low	2,917,052.8	2,318.1	40.2	0.1	1.8
BlackRock Fund Advisors	United States	Index	Low	1,994,223.0	1,422.6	36.6	0.1	2.6
Sjunde AP-Fonden (AP 7)	Sweden	Index	Low	44,324.7	78.2	28.4	0.2	57.0
First Trust Advisors, L.P.	United States	Growth	Medium	47,424.9	57.6	21.9	0.1	61.5
Renaissance Group, LLC	United States	Growth	Low	2,961.3	17.4	17.4	0.6	Buy-in
Acadian Asset Management, LLC	United States	Deep Value	Medium	38,455.1	246.7	10.1	0.6	4.2
State Street Global Advisors (SSgA)	United States	Index	Low	1,321,029.0	148.1	9.4	0.0	6.8
Deutsche Asset Management (UK), LTD	United Kingdom	Index	Very High	20,649.1	12.8	8.6	0.1	202.0
Sunamerica Asset Management, LLC	United States	Index	Low	32,070.0	8.0	5.3	0.0	199.8
				4,867.6	476.5			

TOP SELLERS	Country	Style	Turnover	Equity Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
Mellon Capital Management Corporation	United States	Index	Low	179,187.7	116.6	-49.0	0.1	-29.6
BlackRock Advisors (U.K.), LTD	United Kingdom	Index	Low	150,448.7	351.3	-25.1	0.2	-6.7
Invesco PowerShares Capital Management, LLC	United States	Index	Low	115,224.4	40.8	-11.0	0.0	-21.3
Vident Investment Advisory, LLC	United States	Index	High	4,806.3	72.6	-6.2	1.5	-7.9
Dimensional Fund Advisors, L.P. (U.S.)	United States	Value	Low	417,352.7	1,092.6	-5.3	0.3	-0.5
Northern Trust Global Investments, LTD	United Kingdom	Index	Low	73,635.4	38.6	-4.7	0.1	-10.9
INVESCO Asset Management Deutschland GmbH	Germany	Value	Medium	10,831.1	5.9	-2.2	0.1	-26.9
AQR Capital Management, LLC	United States	Alternative	Medium	109,484.2	33.8	-1.8	0.0	-5.0
Vector Asset Management S.A.	Luxembourg	Specialty	Very High	316.2	7.1	-1.3	2.2	-16.0
Quantitative Management Associates, LLC	United States	Index	Medium	74,840.4	18.0	-1.3	0.0	-6.6
				1,777.1	-107.9			

Includes Investors with EUM greater than \$100M; Excludes Active Investors

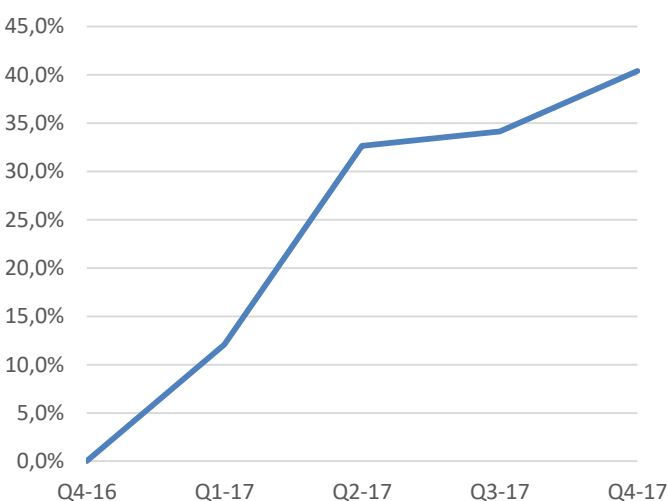
Sector Inflows/Outflows

Passive \$M Chg



% Change in Passive Investment vs 5 Previous Quarters

Passive Investment





Road show:

Although having less investors than in the previous report, London (72 investors versus 74 previously) and New York (45 vs 46) continue to be the dominant investment hubs to the region. Both sets of investors showed support to the market over the quarter with London based Fidelity International Limited (FIL) increasing its exposure to the market by \$300.9M. Boston based investors swung to negative to make them the largest net sellers with Grantham Mayo Van Otterloo & Co., LLC reducing its portfolio by \$116.1M (after being a net buyer in Q3).

Most Invested

Country / City	Total Equity Assets (\$M)	Value (\$M)	Activity (\$M)	# Firms
United Kingdom (London)	2,105,085.7	6,397.9	77.6	72
United States (New York)	2,640,233.3	2,687.1	33.7	45
Norway (Oslo)	685,491.2	1,274.2	9.2	3
United States (Boston)	2,294,260.1	1,101.4	-138.8	14
Netherlands (Amsterdam)	180,210.9	869.9	0.0	4
United States (Los Angeles)	1,266,682.4	520.8	7.6	8
United States (Atlanta)	193,418.9	484.0	16.1	2
Sweden (Stockholm)	218,859.1	431.6	-25.0	11
Denmark (Copenhagen)	99,335.1	379.4	-35.6	6
Netherlands (Rotterdam)	45,204.9	348.3	-42.8	1
Switzerland (Geneva)	103,012.8	348.2	31.7	9
Canada (Toronto)	525,620.7	334.9	-4.0	12
United States (San Francisco)	373,500.2	299.4	-51.3	5
Turkey (Istanbul)	295.9	295.7	-12.3	9
Norway (Stavanger)	8,698.2	285.2	-39.3	1
United States (Bridgewater)	37,761.1	267.2	4.8	1
Germany (Frankfurt)	315,272.9	265.6	16.3	8
Singapore (Singapore)	154,920.6	246.5	18.7	9
Sweden (Solna)	39,498.7	237.5	-21.0	1
Canada (Victoria)	43,600.9	207.2	0.0	1
<i>Excludes Passive/Index Investors</i>		17,282.2	-154.3	222

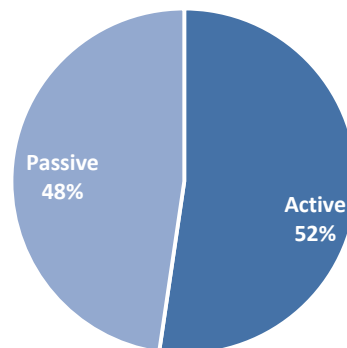
Most Investors

Country / City	Total Equity Assets (\$M)	Value (\$M)	Activity (\$M)	# Firms
United Kingdom (London)	2,105,085.7	6,397.9	77.6	72
United States (New York)	2,640,233.3	2,687.1	33.7	45
Poland (Warsaw)	21,478.4	199.3	0.0	17
France (Paris)	268,534.2	178.5	-1.9	16
United States (Boston)	2,294,260.1	1,101.4	-138.8	14
Japan (Tokyo)	695,994.8	116.1	2.0	14
South Korea (Seoul)	57,850.9	16.5	0.0	14
Canada (Toronto)	525,620.7	334.9	-4.0	12
United States (Chicago)	307,691.7	155.9	-25.3	12
Sweden (Stockholm)	218,859.1	431.6	-25.0	11
Switzerland (Geneva)	103,012.8	348.2	31.7	9
Turkey (Istanbul)	295.9	295.7	-12.3	9
Singapore (Singapore)	154,920.6	246.5	18.7	9
Taiwan (Taipei)	12,784.3	20.8	-1.7	9
United States (Los Angeles)	1,266,682.4	520.8	7.6	8
Germany (Frankfurt)	315,272.9	265.6	16.3	8
Finland (Helsinki)	18,024.4	91.0	0.6	8
Switzerland (Zürich)	260,805.2	161.6	1.6	7
Hong Kong (Central)	75,529.8	74.6	9.1	7
Denmark (Copenhagen)	99,335.1	379.4	-35.6	6
<i>Excludes Passive/Index Investors</i>		14,023.6	-45.7	307

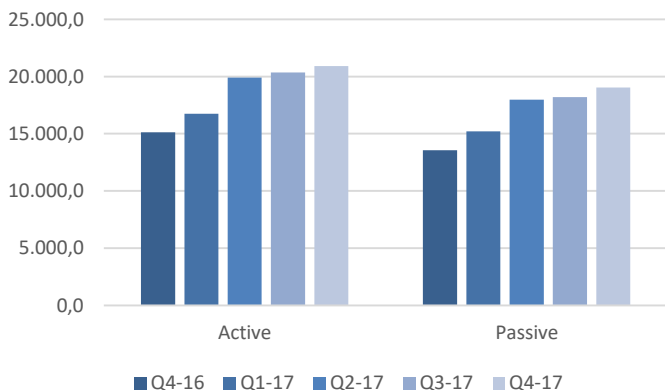
Active vs. Passive investors

Ownership by active versus passive investors narrowed in Q4-17 to represent an almost parity in the market. Passive investors made inroads of \$442.4M into Turkish equities, while their active counterparts decreased their exposure to the market by \$248.4M over the same period. The bulk of the passive increase can be attributed to Boston based Arrowstreet Capital, L.P. which increased its position in the market by \$298.5M; while the active decreases are led by UK based Aberdeen Asset Managers, LTD (U.K.) which reduced the exposure in its portfolio by \$166.8M.

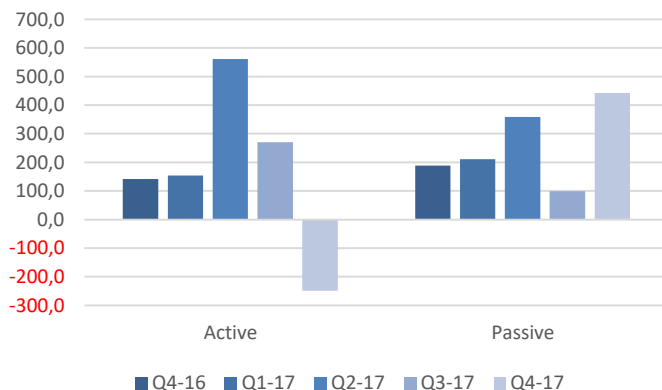
Active vs Passive Split



Active vs Passive (\$M)



Active vs Passive (\$M Chg)





Top Holders, Buyers & Sellers – Corporate Debt

TOP HOLDERS	Country	City	Turnover	FI Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
TIAA-CREF Investment Management, LLC	United States	New York	Very High	327,109.8	397.0	2.2	0.1	0.5
Fidelity International Limited - FIL Investment Services (L	United Kingdom	London	Medium	42,123.7	361.3	-7.0	0.9	-1.9
Pioneer Investment Management, LTD (U.K.)	United Kingdom	London	High	8,170.5	349.3	-60.2	4.3	-14.7
Pictet Asset Management, LTD	United Kingdom	London	Medium	24,037.1	349.1	81.3	1.5	30.4
Pioneer Investment Management, LTD (Ireland)	Ireland	Dublin	Medium	23,148.8	216.2	-22.3	0.9	-9.3
Union Investment Privatfonds GmbH	Germany	Frankfurt	Low	57,715.7	214.4	15.2	0.4	7.6
Deutsche Asset Management Investment GmbH	Germany	Frankfurt	Medium	76,822.8	212.3	-1.9	0.3	-0.9
Metlife Investment Advisors, LLC	United States	Boston	Medium	311,005.2	208.4	0.0	0.1	0.0
Eurizon Capital SGR S.p.A.	Italy	Milan	High	32,694.2	191.1	-4.7	0.6	-2.4
J.P. Morgan Investment Management, Inc.	United States	New York	Medium	122,126.3	188.4	33.4	0.2	21.6
					2,687.5	36.0		
TOP BUYERS	Country	City	Turnover	FI Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
Pictet Asset Management, LTD	United Kingdom	London	Medium	24,037.1	349.1	81.3	1.5	30.4
J.P. Morgan Investment Management, Inc.	United States	New York	Medium	122,126.3	188.4	33.4	0.2	21.6
HSBC Global Asset Management (USA), Inc.	United States	New York	Very High	41,212.3	101.9	23.8	0.2	30.5
Millennium Towarzystwo Funduszy Inwestycyjnych S.A.	Poland	Warsaw	High	749.3	57.7	23.3	7.7	67.7
Asset Plus Fund Management Company, LTD	Thailand	Bangkok	Low	51.3	23.1	19.5	45.1	534.5
Neuberger Berman Europe, LTD (Netherlands)	Netherlands	The Hague	Very High	4,622.1	176.0	18.4	3.8	11.6
Sumus Capital SA	Switzerland	Geneva	Low	188.1	16.7	16.7	8.9	Buy-in
Union Investment Privatfonds GmbH	Germany	Frankfurt	Low	57,715.7	214.4	15.2	0.4	7.6
Muzinich & Co., LTD (London)	United Kingdom	London	Very High	18,835.8	75.5	15.1	0.4	25.0
AIG Asset Management (U.S.), LLC	United States	New York	Low	154,327.6	105.3	14.8	0.1	16.4
					1,308.3	261.6		
TOP SELLERS	Country	City	Turnover	FI Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
Lord, Abnett & Co., LLC (Asset Management)	United States	Jersey City	High	112,727.3	163.3	-105.3	0.1	-39.2
BZWBK TFI S.A.	Poland	Poznan	Medium	2,775.3	163.6	-94.7	5.9	-36.7
Pioneer Investment Management, LTD (U.K.)	United Kingdom	London	High	8,170.5	349.3	-60.2	4.3	-14.7
BlueBay Asset Management, LLP	United Kingdom	London	Very High	38,412.7	115.3	-48.2	0.3	-29.5
Fidelity Management & Research Company	United States	Boston	Low	80,073.6	31.4	-42.5	0.0	-57.5
Aviva Investors Global Services, LTD (U.K.)	United Kingdom	London	High	21,038.2	31.2	-35.4	0.1	-53.2
TCW Investment Management Company, LLC	United States	Los Angeles	Very High	117,162.6	21.8	-28.8	0.0	-56.9
UBS Asset Management (Deutschland) GmbH	Germany	Frankfurt	High	2,037.5	10.6	-25.3	0.5	-70.5
Credit Suisse (Luxembourg) S.A.	Luxembourg	Luxembourg	Low	17.9	0.0	-22.9	0.0	-100.0
Pioneer Investment Management, LTD (Ireland)	Ireland	Dublin	Medium	23,148.8	216.2	-22.3	0.9	-9.3
					1,102.7	-485.5		

Corporate Debt – City Analysis

Most Invested					Most Investors				
Country / City	Total FI Assets (\$M)	Value (\$M)	Activity (\$M)	# Firms	Country / City	Total FI Assets (\$M)	Value (\$M)	Activity (\$M)	# Firms
United Kingdom (London)	1,103,439.0	2,357.8	-94.6	64	United Kingdom (London)	1,103,439.0	2,357.8	-94.6	64
United States (New York)	1,951,402.0	1,303.8	43.1	27	United States (New York)	1,951,402.0	1,303.8	43.1	27
Germany (Frankfurt)	211,640.3	609.4	-9.4	8	Spain (Madrid)	91,296.6	115.1	6.0	23
Italy (Milan)	143,329.6	450.6	-7.3	11	Switzerland (Zürich)	227,786.6	276.9	-12.0	16
United States (Boston)	1,208,402.3	426.9	-63.9	14	Taiwan (Taipei)	5,773.9	100.7	4.7	16
Switzerland (Zürich)	227,786.6	276.9	-12.0	16	United States (Boston)	1,208,402.3	426.9	-63.9	14
Ireland (Dublin)	44,186.4	259.3	-22.3	4	Italy (Milan)	143,329.6	450.6	-7.3	11
Poland (Warsaw)	5,902.6	254.0	25.0	9	Austria (Vienna)	32,566.0	121.3	-9.6	11
Singapore (Singapore)	18,584.1	226.9	6.1	7	Switzerland (Lugano)	3,339.7	100.0	-1.2	10
Netherlands (The Hague)	31,182.4	194.1	11.0	2	Poland (Warsaw)	5,902.6	254.0	25.0	9
Poland (Poznan)	2,775.3	163.6	-94.7	1	Switzerland (Geneva)	70,227.6	118.0	33.1	9
United States (Jersey City)	112,727.3	163.3	-105.3	1	Luxembourg (Luxembourg)	25,000.3	73.8	-10.8	9
United States (Charlotte)	136,007.1	142.8	0.8	2	Germany (Frankfurt)	211,640.3	609.4	-9.4	8
United States (Atlanta)	186,554.0	122.4	-4.2	2	Singapore (Singapore)	18,584.1	226.9	6.1	7
Austria (Vienna)	32,566.0	121.3	-9.6	11	Japan (Tokyo)	44,924.5	11.7	-0.0	6
Switzerland (Geneva)	70,227.6	118.0	33.1	9	Canada (Toronto)	104,718.1	46.6	-0.5	5
Spain (Madrid)	91,296.6	115.1	6.0	23	Germany (Hamburg)	5,077.8	20.0	0.1	5
United States (Newport Beach)	749,263.6	111.2	0.0	2	Germany (Munich)	20,327.9	17.6	0.6	5
Taiwan (Taipei)	5,773.9	100.7	4.7	16	France (Paris)	83,840.4	10.8	7.4	5
Switzerland (Lugano)	3,339.7	100.0	-1.2	10	Ireland (Dublin)	44,186.4	259.3	-22.3	4
7,618.3					6,901.5				
-294.5					-105.3				
239					264				



GLOSSARY

Institutional Investment Styles

Aggressive Growth – Investors in this category invest in companies that have very high revenue, EPS growth rates and multiples relative to the overall market. These companies usually do not pay any dividends and are at the early stages of growth. Aggressive Growth investors exhibit a higher portfolio turnover than other styles of investors.

Alternative – Primarily used to classify hedge funds that use various strategies that fall outside the traditional investment strategies that can be categorized as the above. A catch-all for lightly regulated investment vehicles that have the ability to "go-anywhere" and invest long or short in any type of security – equity, debt, commodity, options, currency, etc. Hedge funds seek to earn above market returns for their clients while at the same time controlling risk factors. Hedge funds have grown in prominence over the years as their returns net of fees (typically 2% management, 20% incentive) have outperformed mutual fund and pension managers performance. Recently, many hedge funds have gained notoriety as "activists" demanding change (leadership or strategic) at companies in North America, Europe and Asia.

Asset Allocation – Asset allocation managers allocate their investments among stocks, bonds, and cash equivalents, among others. It is primarily dictated by the various needs of clients and used by many smaller firms and banks.

Deep Value – Investors in this category employ an extreme style of value investing where they invest in companies with very low valuations versus their own historic valuation, and in relation to the overall market. Usually the companies or the industries they are in have been out of favour in the marketplace for an extended period of time.

GARP – These institutions seek to add growth stocks to their portfolios, but will not pay a premium price to obtain the securities. Thus, investors of this type are categorized as GARP, or "growth at a reasonable price," investors. Investors utilizing this investment approach will use methodologies and indicators favoured by both growth and value investors, but neither of the aforementioned styles dominates the process.

Growth – These institutions place the greatest emphasis in their selection process on the growth prospects of a company's earnings. Growth investors prefer companies where bottom line growth will average at least 15% annually and are willing to pay above market average multiples for a stock. At the first sign of an earnings slow-down, however, growth investors are often the quickest to sell.

Index – These institutions strive to match the performance of an equity index such as the MSCI EAFE Index or the S&P 500 Index, while at the same time keeping trading costs at a minimum. An institution accomplishes this by holding the stocks that comprise the index in its portfolio at the same proportion as the index. Indexing is a passive style of investing; stocks are bought and sold based upon their inclusion in an index and not on their fundamentals. Please note, index investors are not familiar with the companies in which they have made investments and are therefore considered investor relations immune.

Other – This style is applied to companies that are not investment firms, such as public companies.

Private Equity – This style is applied to firms that are private equity investors and their public equity holdings are the result of pre-IPO holdings.

Specialty – Applied to firms with investment strategies that cannot be categorized due to the specific nature of their focus. Industry or sector specific focus is the most common example of a Specialty investor.

Value – Value-oriented institutions prefer stocks that are trading at undervalued levels relative to some valuation such as a stock's intrinsic value or a company's free cash flow. Value investors tend to have longer-term investment horizons than their growth counterparts as they wait for the convergence of value and price.

Venture Capital – This style is applied to firms that are venture capital investors and their public equity holdings are the result of pre-IPO holdings.

Yield – Yield investors are sensitive to a high dividend yield and invest in companies with yield levels very high compared to the market yield, and have a history of paying and increasing dividends over time.

Orientation

Active – Indicates that the final investment decision making process at an institution is enacted by a portfolio manager or analyst. While computer screening models may be used in the investment process they are not utilized to make the final investment decision.

Passive – This category primarily captures index and quantitative investors. These investors utilize computer models to define an investable universe and make final portfolio decisions. Investor relations officers cannot influence these investment decisions.

Turnover

Portfolio Equity Turnover is the measure of how frequently a portfolio buys or sells securities over a 12 month period. It is calculated as the sum of the dollar values of buys and sells over a given period, divided by the sum of the beginning and ending equity assets over the same period, reported as an annualized percentage.

A portfolio with a turnover rate of 100% replaces its entire portfolio throughout the course of a 12-month period, whereas, a portfolio with a turnover rate of 50% replaces half of its holdings during the same time.

- Low Turnover (0-33.3% per year)
- Medium Turnover (33.3 -66.6% per year)
- High Turnover (66.6-100% per year)
- Very High Turnover (Over 100% per year)



GLOSSARY

Equity Assets (\$M) – The market value of all current publicly disclosed ownership of equity securities held by an account/institution as identified by Ipreo, expressed in millions of USD.

Value (\$M) – Total value invested in a company/country/region by an institution

Equation: $(\sum \text{All Shares Held Owned Over Period} \times \text{End-of-Period Security Price})$

Change (\$M) - Measures the actual buying/selling activity of institutions (excluding changes in the price of the underlying security). Throughout the report, Net Buy/Sell Activity may be displayed as a value or on a percent change .

Equation: $[(\sum \text{All Shares Bought Over Period} \times \text{End-of-Period Security Price}) - (\sum \text{All Shares Sold Over Period} \times \text{End-of-Period Security Price})]$

% Portfolio - The % of a Buy side institution's position in a company/country/region based on an institution's total portfolio value (Equity Assets (\$M)).

% Portfolio Change – The % change of the institution in the company/country/region

Equation: $[(\sum \text{Value} (\$M)) / ((\sum \text{Value} (\$M) - (\sum \text{Change} (\$M)) \times 100)]$

Ipreo's institutional ownership data is based on publicly-disclosed information, collected from such sources as regulatory ownership filings (including SEC forms 13F/D/G), disclosures made by mutual funds / pension funds to their beneficiaries, registration statements, news releases, and other sources. It should be noted that regulatory filings and other ownership sources vary widely country-by-country as to their completeness and timeliness. When an institutional investor's complete ownership is not disclosed by requirement, Ipreo aggregates and sums the publicly-filed portfolio information from the investor to arrive at a disclosed total equity figure. Data for the beginning and end of Q3 2017 can be considered a snapshot of the most current positions.