

FLOW OF FUNDS REPORT

TUYID Q4-2018



March, 2019

Dear Readers,

We are happy to present the Flow of Funds Report for the fourth quarter of 2018. Our report offers detailed insight of the institutional ownership 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.

Turkey experienced net inflows, after a experiencing net outflows in Q3-18, with all other regions in this comparison subjected to net outflows over the quarter continuing the negative trend seen in the previous quarter. Regionally, North America and the UK & Ireland were the largest buyers of Turkish equities with net investments of +\$824.6M and +\$81.7M respectively. North American investors also increased their exposure to Russia (+\$367.5M) in addition to Poland (+\$151.6M), while divesting the Hungarian equity market by -\$43.8M.

From an investment style perspective, Growth investors, previously the largest sellers, were the largest buyers of Turkish equities with an investment of +\$415.8M, with all other investment styles reporting net buying over the period.

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

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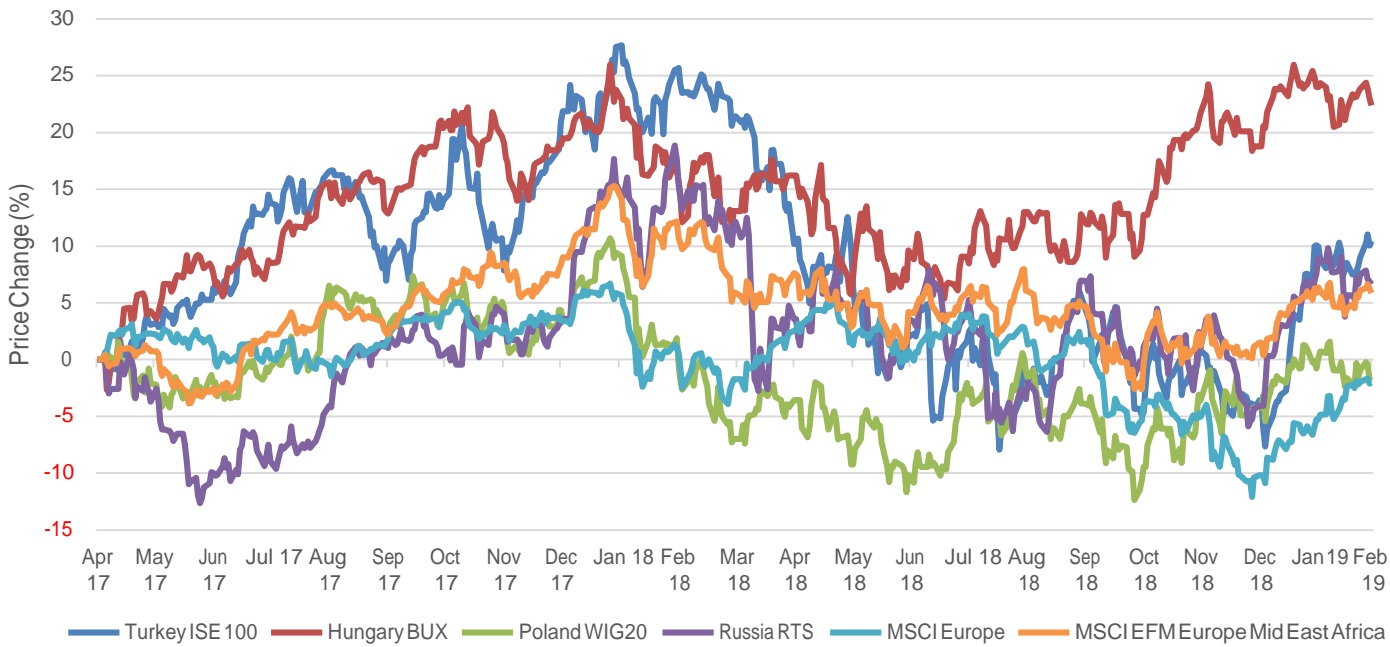


Price performance:

The Turkey BIST 100 index finished the twelve months to end of February at +10.02% making it the second strongest performing index within the basket behind the Hungary BUX, which was the best performing index increasing by +22.97%. The MOEX Russia and the MSCI EFM Europe Mid East Africa also ended the period positively at +7.06% and +6.64%, respectively. The Poland WIG20 and the MSCI Europe index ended the period in negative territory decreasing by -1.68% and -1.73%, respectively.

“Turkish policy makers and politicians recognize that the successful stabilization of the lira will enable the country to rebuild trust with markets and curb inflation from spiraling out of control.”

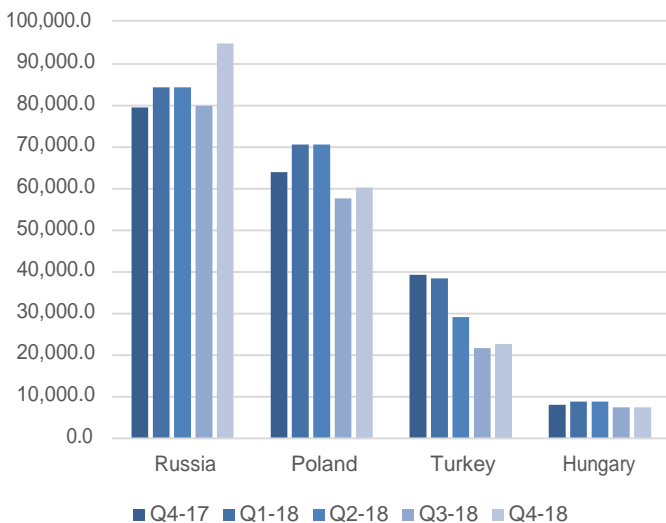
Source: Barings Viewpoints - Turkey: Where from Here (November 2018) - full article overleaf.



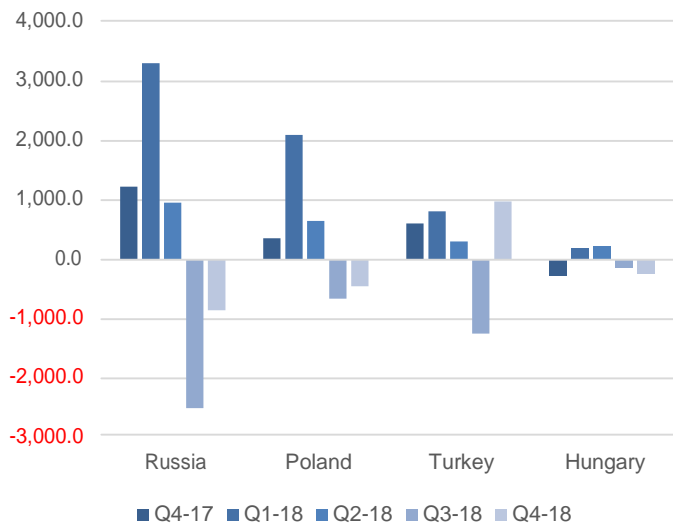
Inflows and Outflows:

Turkish equities experienced net inflows of +\$985.7M following a quarter net divestment of -\$1,334.2M. Russian, Polish and Hungarian equity markets continued to experience net outflows.

Institutional Investment in Region (\$M)



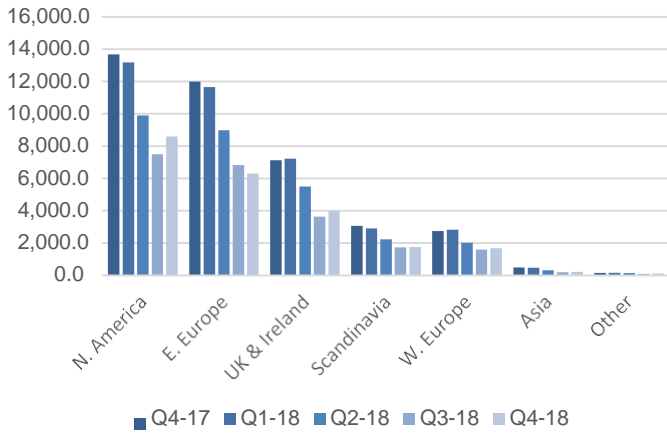
Institutional Investment in Region (\$M Chg)



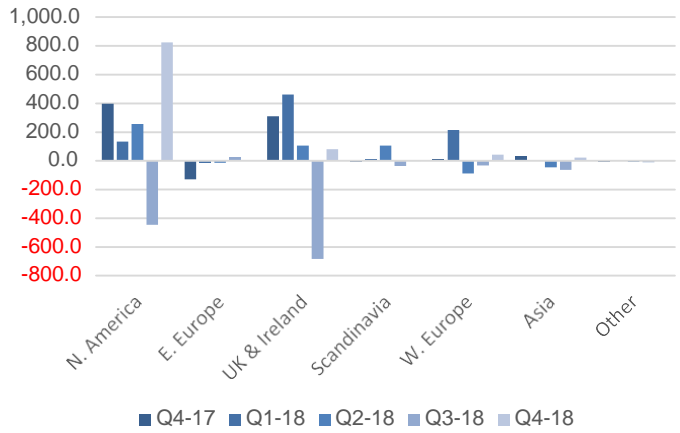
Investment by Investor Region:

The Turkish equity market experienced a net increase of +\$985.7M aggregating all investor regions with significant increases in \$M change driven by North American (+\$824.6M) and UK & Ireland (+\$81.7M) institutional investment each region increasing their aggregate holdings as a result. Marginal increase in aggregate holdings were seen among Scandinavian and Western European investors, while Eastern European aggregated institutional holding continued to decrease in Q4-18.

Institutional Investment by Region (\$M)



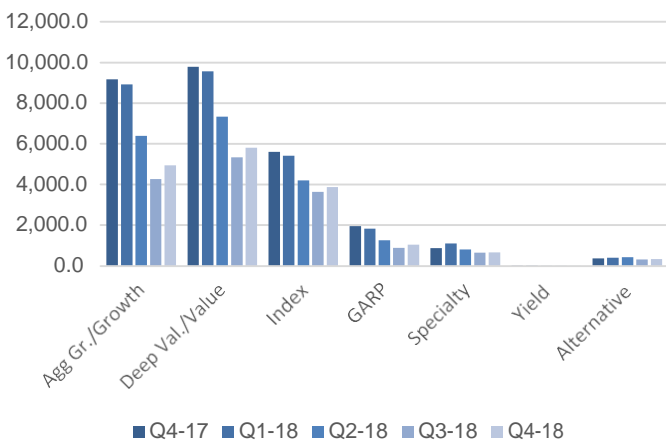
Institutional Investment by Region (\$M Chg)



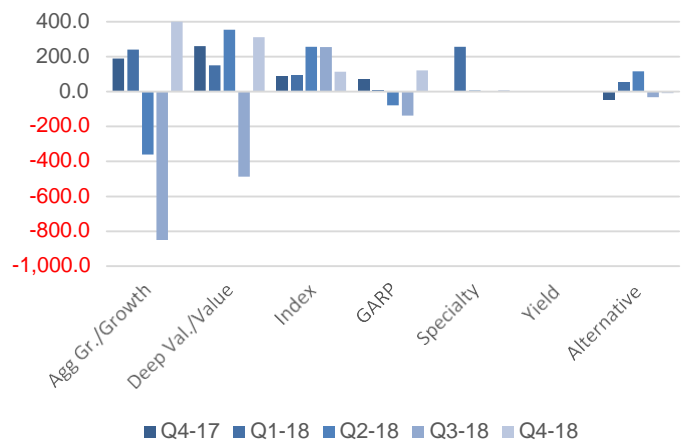
Investment by Style:

All institutional investors by style showed net increases in their aggregate (\$M) Turkish equity holdings, with the largest change (\$M) seen in Growth orientated investment strategies (+\$425.9M) followed by Value (+\$313.7M). The buying seen in Growth investment was driven by U.S. investors OppenheimerFunds, Inc (+\$313.4M) and Allianz Global Investors U.S., LLC (+\$24.1M) who both more than doubled their (\$M) exposure in the Turkish equity market. The increase in Value investment was also dominated by U.S. investors namely Capital World Investors (U.S.) (+\$167.6M) and Grantham Mayo Van Otterloo & co., LLC (+\$152.1M).

Institutional Investment by Style (\$M)



Institutional Investment by Style (\$M Chg)

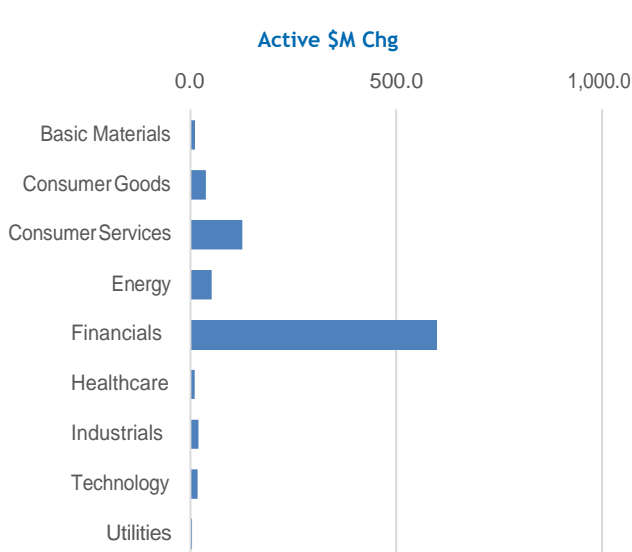


Top Active Holders, Buyers & Sellers

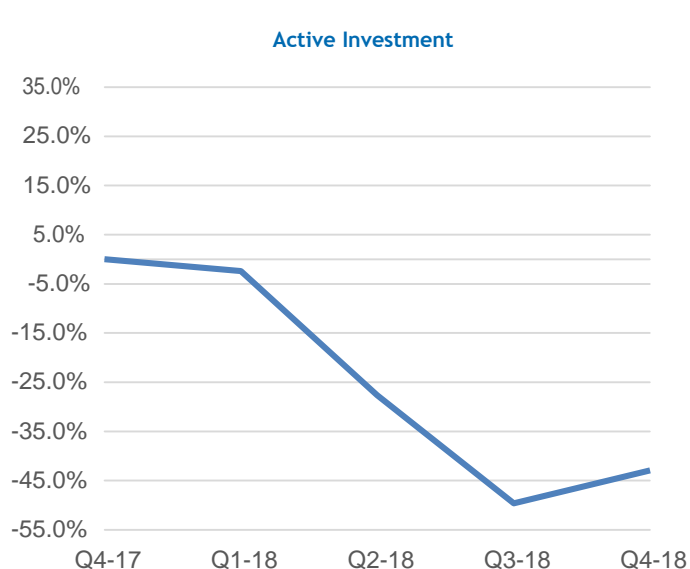
TOPHOLDERS	Country	Style	Turnover	Equity Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
Norges Bank Investment Management (Norway)	Norway	Value	Low	627,885.6	732.6	0.0	0.1	0.0
OppenheimerFunds, Inc	United States	Growth	Medium	140,098.9	600.4	313.4	0.4	109.2
Genesis Investment Management, LLP	United Kingdom	Growth	Medium	15,856.3	600.0	-2.1	3.8	-0.3
Lazard Asset Management, LLC (U.S.)	United States	Value	Medium	84,166.6	558.0	-20.7	0.7	-3.6
Grantham Mayo Van Otterloo & Co., LLC	United States	Value	Medium	29,372.4	514.2	152.1	1.8	42.0
APG Asset Management N.V.	Netherlands	Specialty	Medium	147,890.0	500.7	0.0	0.3	0.0
Invesco Advisers, Inc.	United States	Growth	Low	138,403.9	279.6	-13.9	0.2	-4.7
Schroder Investment Management, LTD	United Kingdom	GARP	Medium	108,449.1	267.9	36.5	0.2	15.8
Silchester International Investors, LLP	United Kingdom	Value	Low	18,530.2	254.8	0.0	1.4	0.0
Capital World Investors (U.S.)	United States	Value	Medium	588,100.3	243.3	167.6	0.0	221.5
				4,551.6	633.0			
TOPBUYERS	Country	Style	Turnover	Equity Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
OppenheimerFunds, Inc	United States	Growth	Medium	140,098.9	600.4	313.4	0.4	109.2
Capital World Investors (U.S.)	United States	Value	Medium	588,100.3	243.3	167.6	0.0	221.5
Grantham Mayo Van Otterloo & Co., LLC	United States	Value	Medium	29,372.4	514.2	152.1	1.8	42.0
Baring Asset Management, LTD (U.K.)	United Kingdom	GARP	Medium	8,784.2	118.9	39.5	1.4	49.8
Capital Research Global Investors (U.S.)	United States	GARP	Medium	399,599.2	57.3	36.5	0.0	175.1
Schroder Investment Management, LTD	United Kingdom	GARP	Medium	108,449.1	267.9	36.5	0.2	15.8
Hermes Investment Management, LTD	United Kingdom	GARP	Medium	14,202.5	26.3	26.3	0.2	Buy-in
Allianz Global Investors U.S., LLC	United States	Growth	Medium	59,406.1	29.0	24.1	0.0	491.9
Eastspring Investments (Singapore), LTD	Singapore	Growth	Low	21,611.8	30.2	22.8	0.1	307.1
M&G Investment Management, LTD	United Kingdom	Growth	Low	54,689.2	148.8	22.4	0.3	17.8
				2,036.4	841.2			
TOPSELLERS	Country	Style	Turnover	Equity Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
Fidelity International Limited - FIL Investment Services	United Kingdom	Growth	Medium	91,834.3	11.9	-25.0	0.0	-67.8
Nordea Investment Management (Denmark)	Denmark	Value	Medium	65,011.8	207.9	-24.3	0.3	-10.5
Aberdeen Standard Investments (U.K.)	United Kingdom	Growth	Medium	122,305.2	181.6	-23.9	0.1	-11.6
Lazard Asset Management, LLC (U.S.)	United States	Value	Medium	84,166.6	558.0	-20.7	0.7	-3.6
SKAGENAS	Norway	Value	Medium	6,139.0	33.6	-19.8	0.5	-37.1
Kairos Investment Management, LTD	United Kingdom	Alternative	Medium	1,526.5	148.3	-17.5	9.7	-10.5
SEB Varahaldus AS	Estonia	Growth	Medium	853.2	53.6	-17.2	6.3	-24.3
Goldman Sachs Asset Management, L.P. (U.S.)	United States	GARP	Medium	134,953.6	22.5	-14.7	0.0	-39.6
Invesco Advisers, Inc.	United States	Growth	Low	138,403.9	279.6	-13.9	0.2	-4.7
J.P. Morgan Investment Management, Inc.	United States	Growth	Medium	246,591.5	36.4	-13.8	0.0	-27.5
				1,533.4	-190.7			

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

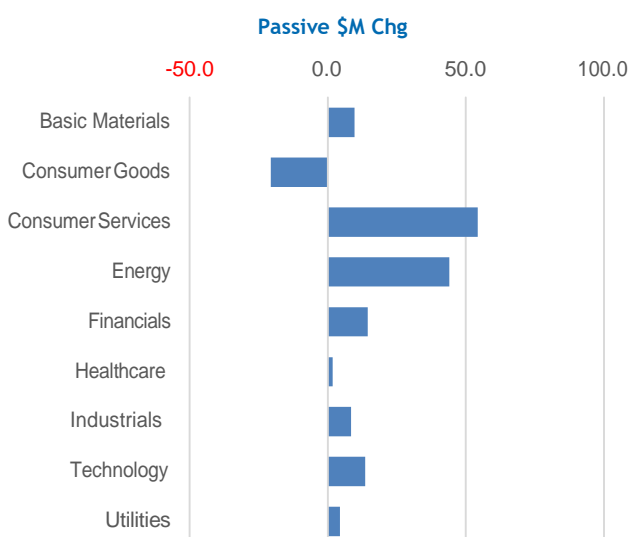
TOP HOLDERS	Country	Style	Turnover	Equity Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
The Vanguard Group, Inc.	United States	Index	Low	2,814,778.7	1,415.0	38.7	0.1	2.8
BlackRock Fund Advisors	United States	Index	Low	1,863,178.2	1,118.9	38.6	0.1	3.6
BlackRock Advisors (U.K.), LTD	United Kingdom	Index	Low	137,115.0	355.4	3.9	0.3	1.1
Arrowstreet Capital, L.P.	United States	Deep Value	Very High	46,443.0	348.2	0.3	0.7	0.1
Dimensional Fund Advisors, L.P. (U.S.)	United States	Value	Low	293,806.5	199.2	-9.9	0.1	-4.7
Acadian Asset Management, LLC	United States	Deep Value	Medium	36,825.0	198.2	8.1	0.5	4.3
California Public Employees Retirement System	United States	Index	Low	75,681.5	171.5	0.0	0.2	0.0
Parametric Portfolio Associates, LLC	United States	GARP	Low	106,614.0	167.6	-19.7	0.2	-10.5
Stewart Investors (U.K.)	United Kingdom	Growth	Low	5,621.1	114.7	0.0	2.0	0.0
Mellon Investments Corporation	United States	Index	Low	164,767.3	110.0	35.5	0.1	47.7
					4,198.8	95.5		

TOP BUYERS	Country	Style	Turnover	Equity Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
The Vanguard Group, Inc.	United States	Index	Low	2,814,778.7	1,415.0	38.7	0.1	2.8
BlackRock Fund Advisors	United States	Index	Low	1,863,178.2	1,118.9	38.6	0.1	3.6
Mellon Investments Corporation	United States	Index	Low	164,767.3	110.0	35.5	0.1	47.7
Numeric Investors, LLC	United States	Alternative	Very High	17,058.0	30.8	13.1	0.2	73.7
Research Affiliates, LLC	United States	Index	Low	3,925.9	51.3	10.2	1.3	24.7
TOBAM	France	Specialty	Medium	5,708.6	58.2	9.5	1.0	19.5
First Trust Advisors, L.P.	United States	Growth	Medium	47,283.5	51.7	9.4	0.1	22.1
Acadian Asset Management, LLC	United States	Deep Value	Medium	36,825.0	198.2	8.1	0.5	4.3
State Street Global Advisors France S.A.	France	Index	Low	17,959.7	33.0	6.5	0.2	24.3
Vector Asset Management S.A.	Luxembourg	Specialty	Very High	295.8	5.4	5.4	1.8	Buy-in
					3,072.5	174.8		

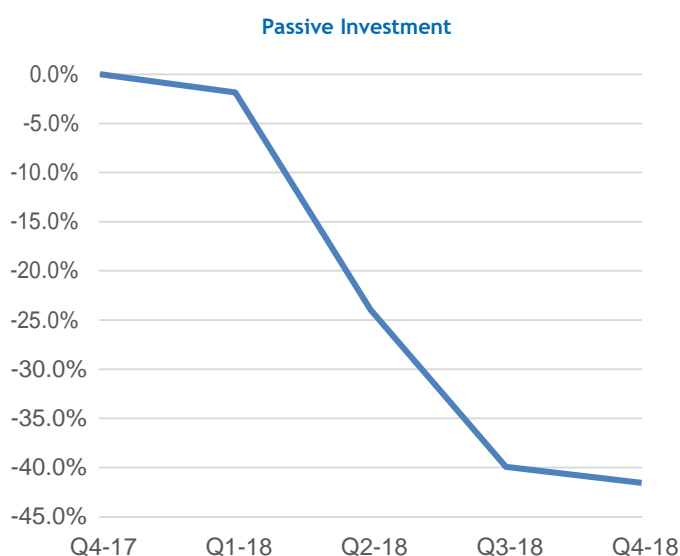
TOP SELLERS	Country	Style	Turnover	Equity Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
Parametric Portfolio Associates, LLC	United States	GARP	Low	106,614.0	167.6	-19.7	0.2	-10.5
Dimensional Fund Advisors, L.P. (U.S.)	United States	Value	Low	293,806.5	199.2	-9.9	0.1	-4.7
Russell Investments, LTD	United Kingdom	Externally Ma	Medium	10,810.8	98.6	-5.6	0.9	-5.4
Managed Account Advisors, LLC	United States	Specialty	Low	217,268.4	0.0	-5.5	0.0	-100.0
Geode Capital Management, LLC	United States	Index	Low	374,328.8	52.6	-5.3	0.0	-9.1
AQR Capital Management, LLC	United States	Alternative	Medium	99,032.1	21.6	-4.5	0.0	-17.4
Two Sigma Investments, L.P.	United States	Alternative	Very High	23,414.7	0.0	-3.9	0.0	-100.0
Sjunde AP-Fonden (AP 7)	Sweden	Index	Low	49,327.3	49.0	-3.4	0.1	-6.4
Northern Trust Investments, Inc.	United States	Index	Low	343,508.3	43.8	-2.8	0.0	-6.0
Sunamerica Asset Management, LLC	United States	Index	Low	25,726.6	1.8	-2.6	0.0	-59.8
					634.1	-63.1		

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

Sector Inflows/Outflows



% Change in Passive Investment vs 5 Previous Quarters



Road show:

Both London and New York continue to be the largest institutional investment centres, they switched from net sellers in Q3-18 to being net buyers on a city level largely attributed to OppenheimerFunds, Inc. and Baring Asset Management, LTD (U.K.). Los Angeles and Boston based investors are the second and third largest buyers by city driven by Capital World Investors (U.S.) and Grantham Mayo Van Otterloo & Co, LLC. Copenhagen conversely was the largest seller by city led by Nordea Investment Management (Denmark).

Most Invested

Country/City	Total Equity Assets (\$M)	Value (\$M)	Activity (\$M)	# Firms
United Kingdom (London)	1,741,784.2	2,728.7	104.0	75
United States (New York)	2,300,808.5	1,679.1	313.0	48
Norway (Oslo)	660,871.5	743.3	-0.9	4
United States (Boston)	1,969,000.2	703.0	172.9	12
Netherlands (Amsterdam)	152,128.2	503.3	1.7	4
Sweden (Stockholm)	234,749.4	474.6	34.1	13
United States (Los Angeles)	1,031,628.8	397.7	202.6	6
United States (Atlanta)	149,889.8	283.2	-18.1	3
United Kingdom ()	18,530.2	254.8	0.0	1
Canada (Toronto)	467,823.1	233.7	-6.4	10
Turkey (Istanbul)	244.6	229.5	9.9	9
United Kingdom (Edinburgh)	280,182.0	228.2	-20.9	5
Denmark (Copenhagen)	81,255.4	218.3	-22.5	7
Germany (Frankfurt)	258,349.9	181.4	22.8	7
Canada (Montreal)	93,266.7	173.3	0.0	3
Netherlands (Rotterdam)	45,002.3	147.3	-10.6	1
Switzerland (Geneva)	103,934.1	141.7	-0.1	12
United States (San Francisco)	529,195.1	132.0	2.7	5
United States (San Diego)	78,977.6	121.3	24.8	4
Austria (Vienna)	10,785.4	113.4	-3.1	6
<i>Excludes Passive/Index Investors</i>		9,687.9	806.0	235

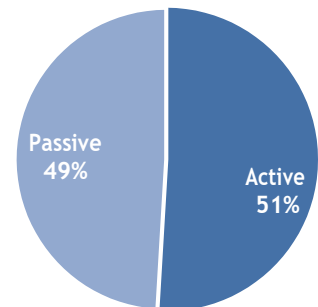
Most Investors

Country/City	Total Equity Assets (\$M)	Value (\$M)	Activity (\$M)	# Firms
United Kingdom (London)	1,741,784.2	2,728.7	104.0	75
United States (New York)	2,300,808.5	1,679.1	313.0	48
France (Paris)	251,659.5	86.4	2.6	14
Japan (Tokyo)	754,246.6	68.2	0.0	14
Poland (Warsaw)	17,995.3	62.1	-0.3	14
Sweden (Stockholm)	234,749.4	474.6	34.1	13
United States (Boston)	1,969,000.2	703.0	172.9	12
Switzerland (Geneva)	103,934.1	141.7	-0.1	12
Singapore (Singapore)	127,920.1	99.9	22.5	11
United States (Chicago)	244,608.4	45.8	9.9	11
South Korea (Seoul)	34,828.7	6.1	-0.1	11
Canada (Toronto)	467,823.1	233.7	-6.4	10
Turkey (Istanbul)	244.6	229.5	9.9	9
Taiwan (Taipei)	8,773.9	9.6	2.2	8
Denmark (Copenhagen)	81,255.4	218.3	-22.5	7
Germany (Frankfurt)	258,349.9	181.4	22.8	7
Switzerland (Zürich)	131,760.0	66.9	4.2	7
United States (Los Angeles)	1,031,628.8	397.7	202.6	6
Austria (Vienna)	10,785.4	113.4	-3.1	6
Finland (Helsinki)	14,225.0	46.0	0.4	6
<i>Excludes Passive/Index Investors</i>		7,592.2	868.7	301

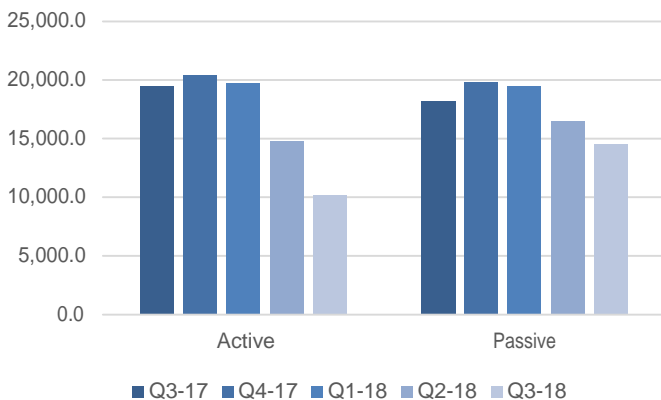
Active vs. Passive investors

Passive orientated investors continued to be net buyers in Turkey with an increase +\$124.1M led by The Vanguard Group, Inc. Active orientated investors were previously net sellers drove the buying through OppenheimerFunds, Inc., Capital World Investors (U.S.) and Grantham Mayo Van Otterloo & Co, LLC who bought an aggregated +\$633.1M in Q4-18.

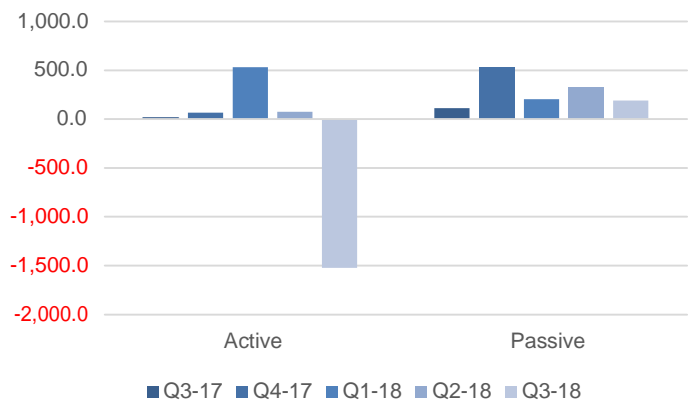
Active vs Passive Split



Active vs Passive (\$M)



Active vs Passive (\$M Chg)





Top Holders, Buyers & Sellers - Corporate Debt

TOPHOLDERS	Country	City	Turnover	FI Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
TIAA-CREF Investment Management, LLC	United States	New York	Very High	330,472.1	396.6	0.6	0.1	0.1
Ashmore Investment Management, LTD	United Kingdom	London	Medium	26,773.4	389.2	26.8	1.5	7.4
Pictet Asset Management, LTD	United Kingdom	London	Medium	20,302.0	375.8	56.6	1.9	17.7
Fidelity International Limited - FIL Investment Services (U	United Kingdom	London	High	35,564.4	310.2	36.0	0.9	13.1
Lord, Abbott & Co., LLC (Asset Management)	United States	Jersey City	Very High	123,968.7	285.8	-61.6	0.2	-17.7
Amundi Ireland, LTD (London)	United Kingdom	London	Medium	7,553.3	234.8	-83.0	3.1	-26.1
Dimensional Fund Advisors, L.P. (U.S.)	United States	Austin	High	86,787.6	200.8	200.8	0.2	Buy-in
Credit Suisse Asset Management (Schweiz) AG	Switzerland	Zürich	Low	59,245.2	178.4	36.6	0.3	25.8
Union Investment Privatfonds GmbH	Germany	Frankfurt	Low	53,058.4	173.1	-11.0	0.3	-6.0
Neuberger Berman Europe, LTD (Netherlands)	Netherlands	The Hague	High	5,786.8	169.0	-6.9	2.9	-3.9
					2,713.7	195.1		

TOPBUYERS	Country	City	Turnover	FI Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
Dimensional Fund Advisors, L.P. (U.S.)	United States	Austin	High	86,787.6	200.8	200.8	0.2	Buy-in
Pictet Asset Management, LTD	United Kingdom	London	Medium	20,302.0	375.8	56.6	1.9	17.7
Credit Suisse Asset Management (Schweiz) AG	Switzerland	Zürich	Low	59,245.2	178.4	36.6	0.3	25.8
Fidelity International Limited - FIL Investment Services (U	United Kingdom	London	High	35,564.4	310.2	36.0	0.9	13.1
Ashmore Investment Management, LTD	United Kingdom	London	Medium	26,773.4	389.2	26.8	1.5	7.4
Baillie Gifford & Company	United Kingdom	Edinburgh	Low	9,596.6	29.9	13.2	0.3	78.4
Grantham Mayo Van Otterloo & Co., LLC	United States	Boston	Medium	9,172.5	21.5	10.4	0.2	92.8
Fidelity Investments Money Management, Inc.	United States	Merrimack	High	539,933.7	66.2	10.1	0.0	18.0
Eurizon SLJ Capital, LTD	United Kingdom	London	Very High	830.4	31.5	8.8	3.8	38.7
Fideuram Asset Management (Ireland), DAC	Ireland	Dublin	Low	18,820.6	32.3	5.2	0.2	19.3
					1,636.0	404.6		

TOPSELLERS	Country	City	Turnover	FI Assets (\$M)	Value (\$M)	Change (\$M)	% Portfolio	% Portfolio Chg
Santander TFI S.A.	Poland	Poznan	Medium	3,865.3	14.0	-141.3	0.4	-91.0
Amundi Ireland, LTD (London)	United Kingdom	London	Medium	7,553.3	234.8	-83.0	3.1	-26.1
Lord, Abbott & Co., LLC (Asset Management)	United States	Jersey City	Very High	123,968.7	285.8	-61.6	0.2	-17.7
Quercus Towarzystwo Funduszy Inwestycyjnych S.A.	Poland	Warsaw	Low	392.1	11.6	-42.1	3.0	-78.4
AZ Fund Management S.A.	Luxembourg	Luxembourg	Low	1,798.6	3.4	-25.4	0.2	-88.3
Eurizon Capital SGR S.p.A.	Italy	Milan	High	28,027.2	84.9	-24.6	0.3	-22.4
Wellington Management Company, LLP	United States	Boston	Medium	191,689.5	24.4	-19.2	0.0	-44.0
TCW Investment Management Company, LLC	United States	Los Angeles	Very High	98,871.1	51.9	-13.3	0.1	-20.4
Newfleet Asset Management, LLC	United States	Hartford	Medium	9,523.9	10.9	-12.5	0.1	-53.5
Millennium Towarzystwo Funduszy Inwestycyjnych S.A.	Poland	Warsaw	Medium	815.7	43.2	-12.0	5.3	-21.7
					764.8	-434.8		

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)	975,140.9	2,338.4	20.4	56	United Kingdom (London)	975,140.9	2,338.4	20.4	56
United States (New York)	1,987,099.2	1,093.4	-10.7	27	United States (New York)	1,987,099.2	1,093.4	-10.7	27
Germany (Frankfurt)	202,590.1	429.7	-18.3	9	Spain (Madrid)	69,684.1	71.2	-4.7	20
Switzerland (Zürich)	142,219.4	362.5	28.8	14	Taiwan (Taipei)	6,043.1	97.7	2.4	16
United States (Jersey City)	123,968.7	285.8	-61.6	1	Switzerland (Zürich)	142,219.4	362.5	28.8	14
Italy (Milan)	135,720.5	278.9	-18.3	13	United States (Boston)	1,187,812.8	255.6	-7.4	14
United States (Boston)	1,187,812.8	255.6	-7.4	14	Italy (Milan)	135,720.5	278.9	-18.3	13
United States (Austin)	86,787.6	200.8	200.8	1	France (Paris)	221,126.2	107.8	5.8	11
Singapore (Singapore)	23,711.4	189.2	-5.7	8	Austria (Vienna)	28,113.0	92.5	-3.6	10
Netherlands (The Hague)	40,476.2	173.2	-6.0	3	Switzerland (Lugano)	3,665.7	79.5	-4.0	10
United States (Charlotte)	150,504.7	168.8	0.6	2	Luxembourg (Luxembourg)	23,700.3	57.4	-25.0	10
United States (Newport Beach)	815,303.4	162.1	0.3	2	Germany (Frankfurt)	202,590.1	429.7	-18.3	9
Ireland (Dublin)	39,731.2	158.4	-0.2	4	Poland (Warsaw)	8,084.5	125.2	-75.0	9
Poland (Warsaw)	8,084.5	125.2	-75.0	9	Singapore (Singapore)	23,711.4	189.2	-5.7	8
United States (Baltimore)	172,663.5	108.2	-1.6	1	Switzerland (Geneva)	28,925.0	89.2	-7.2	7
France (Paris)	221,126.2	107.8	5.8	11	United States (Chicago)	30,212.1	13.3	4.8	6
United States (Atlanta)	198,710.8	103.0	-1.7	2	Switzerland (Zurich)	53,618.9	75.6	-0.3	5
Taiwan (Taipei)	6,043.1	97.7	2.4	16	Ireland (Dublin)	39,731.2	158.4	-0.2	4
Austria (Vienna)	28,113.0	92.5	-3.6	10	Germany (Munich)	4,255.1	17.4	0.8	4
United Kingdom (Edinburgh)	116,306.7	90.5	12.0	3	Germany (Hamburg)	4,303.7	9.1	-0.1	4
		6,821.6	60.9	206			5,942.1	-117.7	257



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 2018 can be considered a snapshot of the most current positions.