

Who owns the German DAX?

The Ownership Structure of the German DAX 30
– A joint study of IHS Markit and DIRK

Sixth Edition – June 2019

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Methodology

- In 2018, IHS Markit and DIRK - German Investor Relations Association analysed the changes within the shareholder structure of the 30 listed DAX companies during the course of 12 months. In particular, the institutional free float of the DAX 30 issuers was considered. Subsequently, trend analyses of institutional investors and benchmarking data will also be included in the study.
- The data was collected and prepared by IHS Markit from public and proprietary data, with all data used in this study being anonymised and aggregated. This is to ensure the confidentiality and sensitivity of the information used in this study. The horizon is set to 48 months between December 2015 and 2018, with a record date of the 31 December each period. The study's focus is the annual perspective and the change between 2017 and 2018. Priority will be given to the relative changes from the previous year, as this study showed an increase in transparency / improvement in data quality.
- The information collected was analysed with regard to the shares held by institutional investors and prepared according to the following parameters:
 - Distribution of free float and strategic shareholdings, the latter being analysed according to investor classifications
 - Geographical distribution of shareholdings (regions, cities).
 - Distribution by investment style of institutional investors.
 - Influence of the institutional investors on the DAX: consideration of the largest investors as well as the largest buyers and sellers including the ESG sensitivity and voting behaviour of the largest investors.
 - Shareholdings by investor group, whereby the overall share of a particular group of investors is shown globally. In this sense, BlackRock, Inc. is a separate focus due of its importance to the DAX.
 - Investments and the influence of sovereign wealth funds were also prominent.
 - Distribution of invested funds and mandates, which have the greatest influence on the capital invested in the DAX.

Methodology

- An analysis of trading venues for German equities is also included to reflect the growing importance of alternative platforms, also in lights of the MiFID II regulations that took effect at the beginning of 2018.
- The respective investments of the institutional investors were presented in US dollars for better comparability, based on the number of shares held at the respective reporting date, the share price at the respective reporting date and the currency conversion rate on the respective reporting date. As a result of currency and share price fluctuations as well as due date-related deviations, there is a fluctuation range in value-based changes which IHS Markit has largely eliminated. Nevertheless, the value comparison is technically not completely possible due to the different release periods.
- In 2018 Covestro AG and Wirecard AG gained entry to the DAX 30 which replace Commerzbank AG and ProSiebenSat1.1 Media SE.

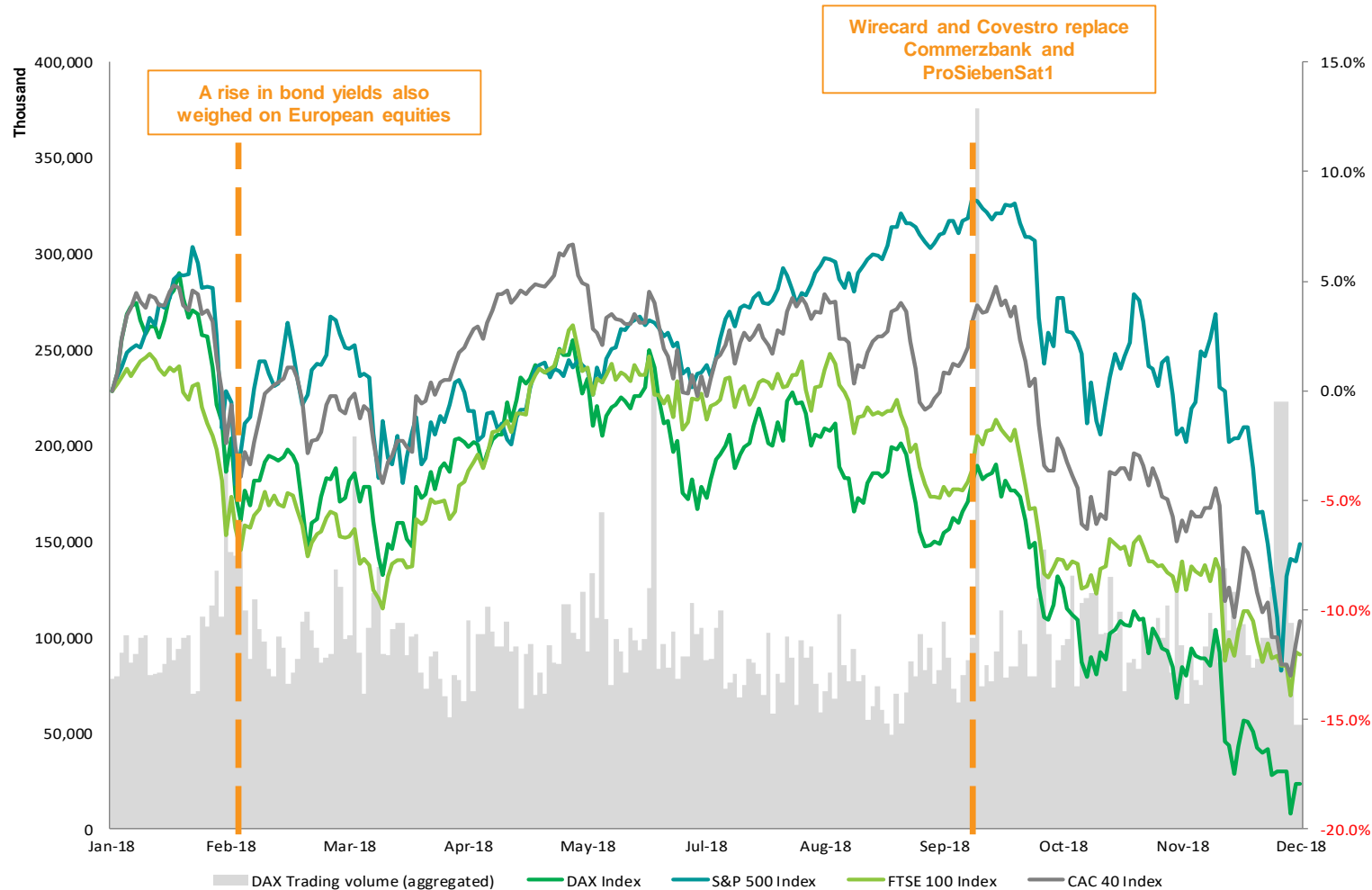
Summary

- **Institutional investors retreat from the DAX in 2018** and decreased their exposure to 60.2% (-1.6pp) from 61.8% in 2017. UK & Irish (-0.9pp) and domestic (-0.6pp) shareholders contribute the most to the development. Meanwhile, North American institutional holders were the largest investors in the DAX with a 1.1pp increase from the previous period.
- **Retail shareholders continue to favour the DAX.** Investments by private individuals (+0.5pp) continue to gain traction in the market with a lower increase than in 2017 (+1.1pp). Despite the market volatility and macroeconomic risks retail shareholders believe in Germany's 30 largest companies amidst low interest rates and record dividends for 2018.
- **German fund managers continue to avoid DAX stocks.** Since 2016 Germany shows a reduced ownership amongst DAX issuers, although the decline in 2018 is mainly driven by passive and ETF portfolios (ca. 95% of German outflows). DWS (-0.1pp) is the largest active seller in the region. The investors suffered massive redemption from its funds and declining profit margins. The decrease of UK & Irish investments (-0.9pp) is primarily driven by passive and index funds in the region.
- **North America supports the DAX** by recording the largest inflows of 1.1pp. The region consistently increased its investment in the DAX, underlining its importance for the benchmark. This development is mirrored amongst the top 15 buyers where a total of nine asset managers are based in North America. Although large ETF funds drive the overall high proportion of US investors, the top buyers list features several active investors: Harris Associates (+0.4pp), FMR (+0.3pp), Templeton Global Advisors (+0.2pp) and CPP Investment (+0.2pp) are all amongst the ten largest buyers of the DAX.
- **BlackRock remains top investor in the DAX**, despite decreased holdings. The investment group's reduction (-0.7pp) contributed to the overall decrease in the institutional shareholder base. BlackRock Deutschland (-0.2pp) and BlackRock UK (-0.2pp) were the largest contributors to this decrease. BlackRock also accounted for 3 out of the top 15 sellers. BlackRock stated in their Q3 2018 financial results that inflows were down \$44bn and \$9bn from Q1 and Q2 respectively. This is due to anxious investors redeeming money from passive and active equity funds.
- **Norges Bank buys back into the DAX** and increased its investment by 0.3pp to 3.9% of the institutional free float of the index. Norges remains the largest invested SWF after reducing its engagement across German issuers in 2017.

Summary

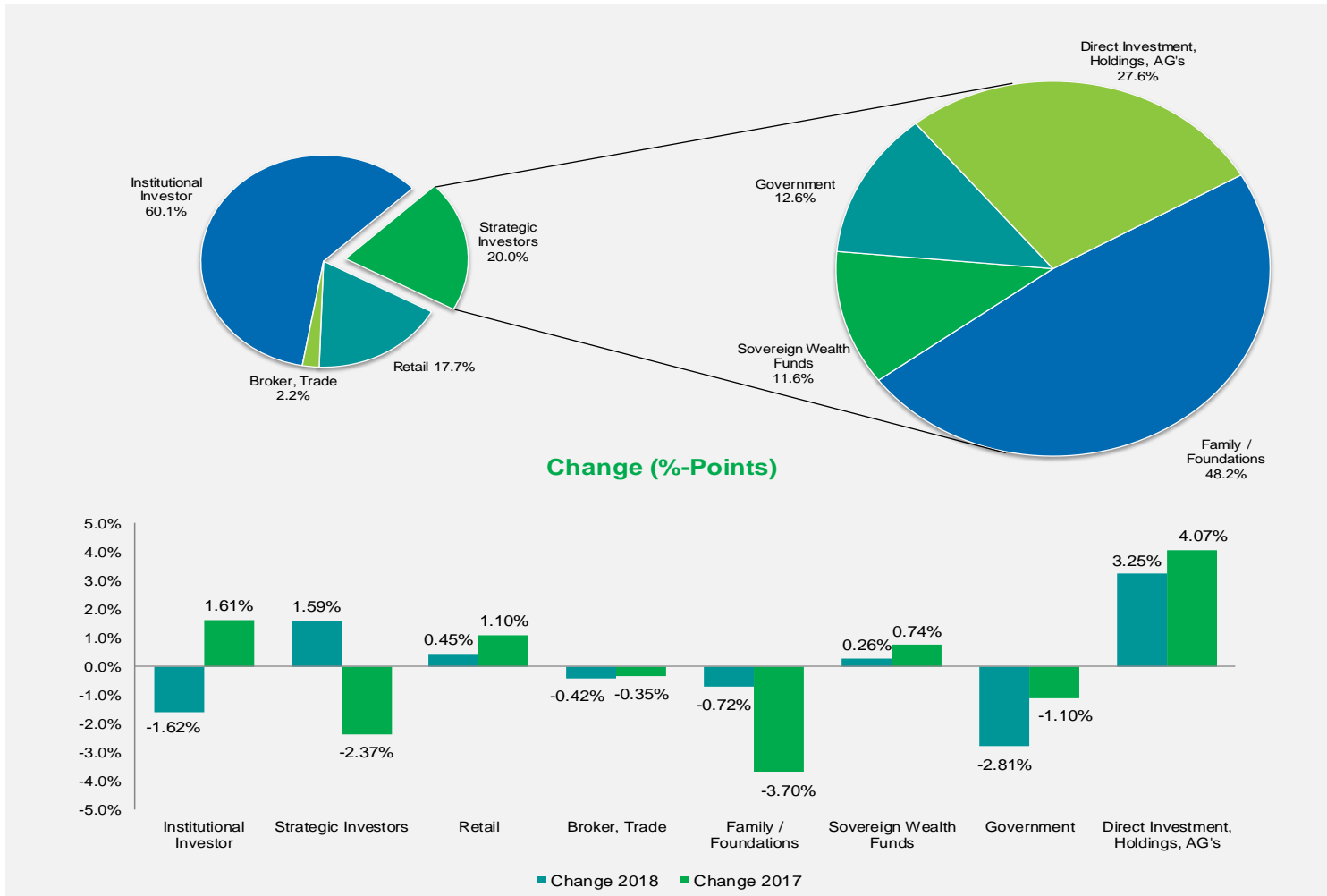
- **Value (+1.3pp) and growth (+0.7pp) investors carry the benchmark**, while index funds declined again. Value investors increased (+1.3 pp) for the first time since 2015. Harris Associates (+0.6pp) and Amundi (+0.4pp) are the largest contributors to this increase. Growth investors (+0.7pp) continue their steady increase and continues to be stable year-on-year. In contrast index investing (-2.3pp) continues its bearish trend with 8 out of top 15 sellers being Index investors.
- **London remains prime location for IR activities despite MiFID II**. The city retains the top spot with regards to both number of investors and invested capital in the DAX, with increased holdings (+0.1pp). A year into MiFID II London-based active investors are returning to the DAX. Frankfurt (-0.2pp) continues to be the second largest invested city regardless of the outflows.
- **Proactive engagement with investors more important than ever** ahead of the AGM. Amongst the top 100 DAX shareholders the number of investors utilising internal voting guidelines only in their decision-making process doubled compared to 2017. The majority of investors still reference proxy advisors (68.4%), but have become more active when exercising their shareholder rights. The implementation of ESG factors into the investment strategy becomes more important to investors. Across the top 100 investors the high and medium ESG-Sensitivity increases by 0.5pp to 76.0%.
- **Electronic OTC-Trading significantly increases as a result of MiFID II regulations**. Systematic Internalisers (SI) made up nearly 50% of OTC trades as MiFID II requires trading firms to leave an audit trail. While trades via Deutsche Börse and other official venues stay fairly stable, SI platforms account for 20% of all visible trades.

Price and Trading Volume History



- The DAX had its worst year in decades in 2018, just avoiding a recession and narrowly avoiding slipping into a bear market which is classified as a decline of 20 percent or more. The global economy was plagued by extreme global stock market volatility, which fed directly into the German economy as the country focuses on exports of highly cyclical goods like cars and machine tools. The Index saw a decline of 18% in 2018 on the back of an increase of 11% in 2017.

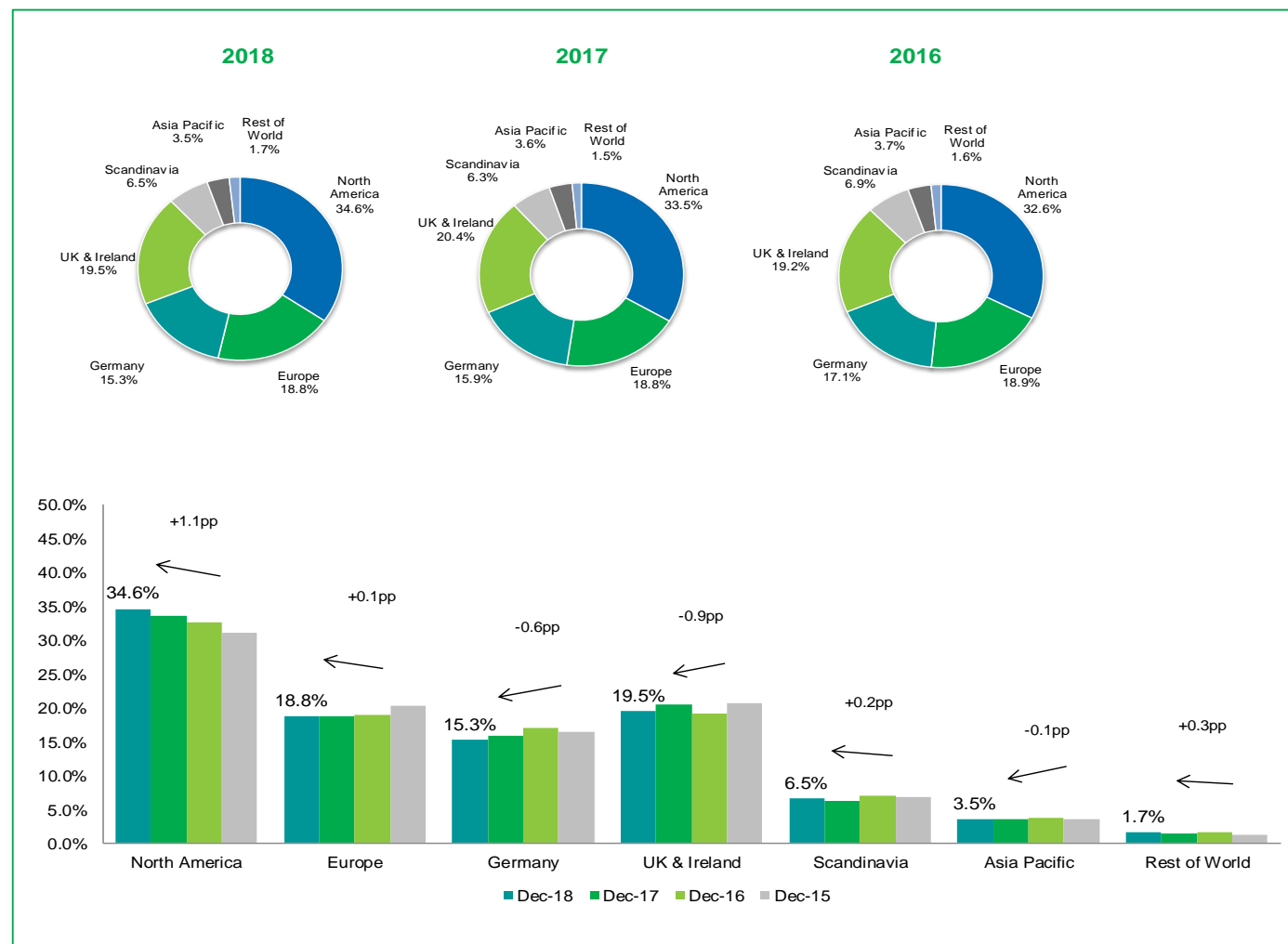
Shareholder Structure of the DAX 30 Constituents



- In-line with the bearish sentiment of the DAX Index, Institutional Investment decreased to 60.1% (-1.6pp) from 61.8% in 2017. Conversely Strategic Investors (+1.5pp) is up from its previous bearish sentiment in 2017 (-2.4pp). Retail holders (+0.5pp) continues to gain traction in the market.
- Family and Foundations investment slightly decline 0.7pp to 48.2% of Strategic holdings while Direct Investment increased by 3.3pp.

Shareholder Structure by Region

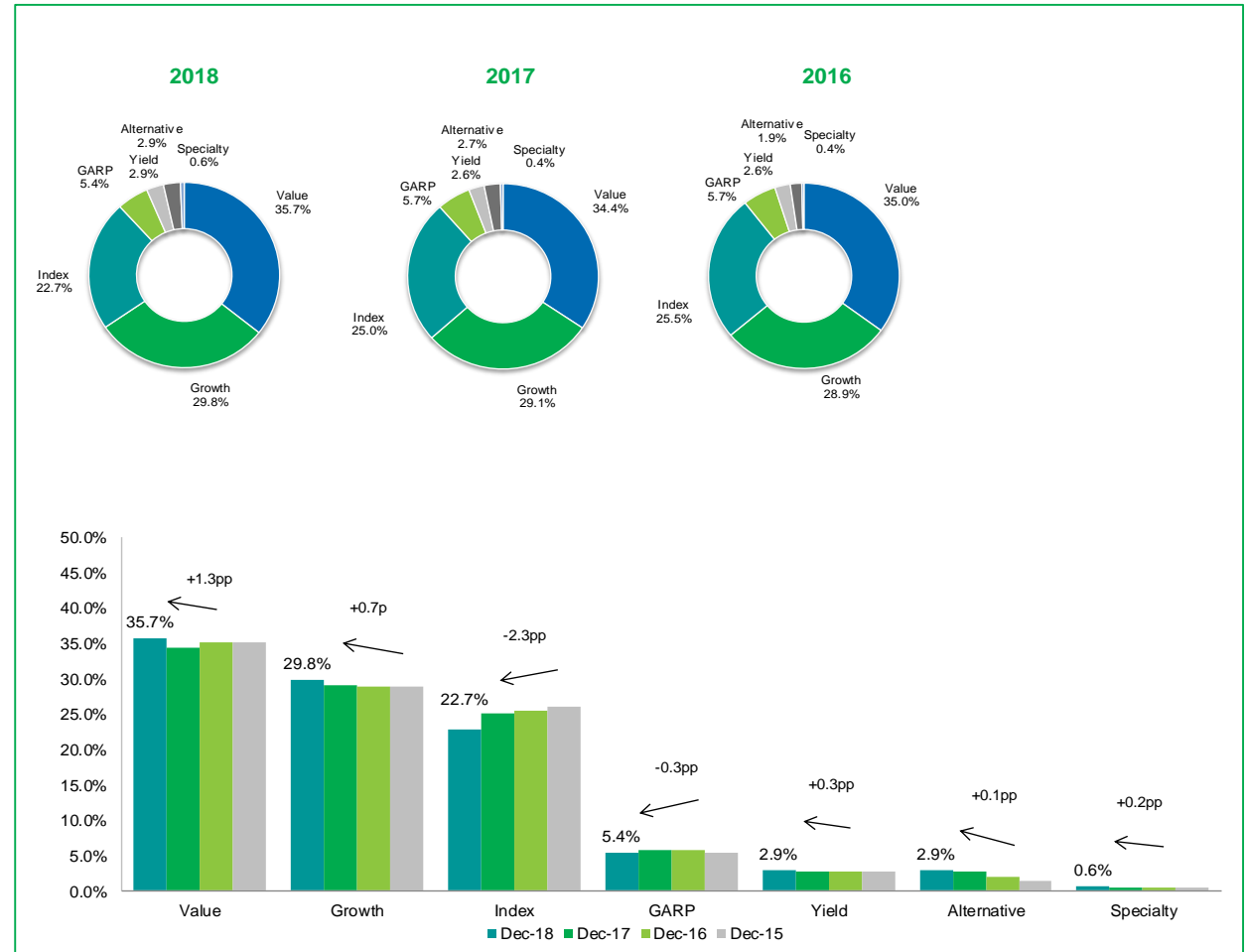
- North American institutional holders were the largest investors in the DAX with a +1.1pp increase from the previous period. North America continues the buying trend from the previous reporting periods. The Vanguard Group (+0.57pp) and Harris Associates (+0.39pp) both top buyers accounted for the increase from the region.
- German holdings continue to decrease (-0.6pp) to hold 15.3% of the DAX and remain the third largest holders. The slight decrease is due to ETF manager Assenagon (-0.2pp) who continues to decrease holdings. BlackRock AM (Deutschland) (-0.2pp) also saw outflows – following the trend of the entire BlackRock Group.
- UK & Ireland had the largest outflows for the period after being the strongest supporter of the index in 2017. Shareholding of the DAX lowered to 19.5% a 0.9pp drop from the previous period. The decrease is due to Aberdeen Standard (U.K) (-0.3pp) and Schroder (-0.3pp).



Percentage point changes relate to 2017 and 2018

Shareholder Structure by Investment Styles

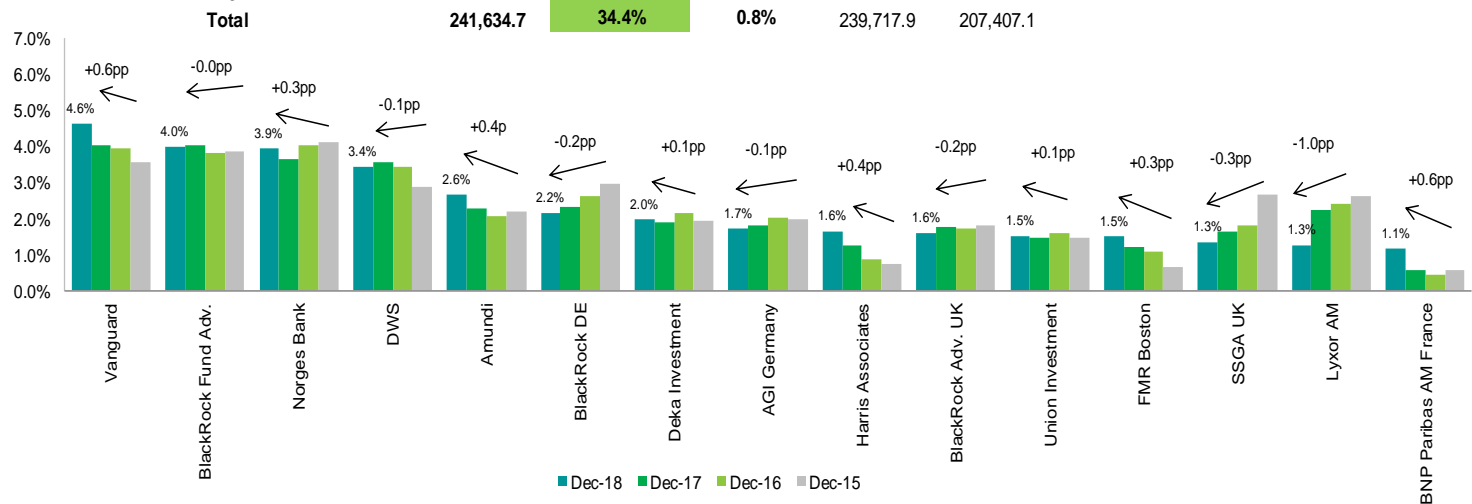
- Value investors continue to have the largest holding of the DAX (35.7%) and increased holding by +1.3pp with the top two Value contributors being Harris Associates (+0.4%) and Amundi AM (+0.3%).
- Growth investors increased slightly from the previous period +0.7pp and remain the second largest holding. The Top buyer in the period is Growth investor BNP Paribas AM (+0.58%).
- The largest movement was seen through Index investors who decreased holdings by -2.3pp and despite the shift remain the third largest with a 22.7% holding. The continued decline was driven by Lyxor AM (-0.96%) which was the largest seller within the DAX overall. The investor entire portfolio is invested through synthetic ETFs and can be subject to increased holdings volatility. The index portfolio of the BlackRock Group (-0.4pp) also contributed to the outflows.



Percentage point changes relate to 2017 and 2018

Top 15 DAX Investors

Rank	Firm Name	DAX Value in \$M Dec-18	% Share DAX Insti.	% Share Change (pp)	DAX Value in \$M Dec-17	DAX Value in \$M Dec-16	Total Equity Assets in \$M	Style	City
1	The Vanguard Group, Inc.	32,377.9	4.6%	0.6%	28,804.3	23,967.1	3,172,307.1	Index	USA - Malvern, PA
2	BlackRock Fund Advisors	28,026.8	4.0%	-0.0%	28,667.7	23,400.3	2,051,676.7	Index	USA - San Francisco, CA
3	Norges Bank Investment Management (Norway)	27,638.6	3.9%	0.3%	25,905.0	24,544.7	675,503.6	Value	NOR - Oslo
4	DWS Investment GmbH	24,104.8	3.4%	-0.1%	25,391.7	20,941.3	100,345.8	Value	DEU - Frankfurt
5	Amundi Asset Management S.A.	18,524.6	2.6%	0.4%	16,314.7	12,644.2	111,336.6	Value	FRA - Paris
6	BlackRock Asset Management (Deutschland) AG	15,103.6	2.2%	-0.2%	16,583.3	15,901.6	40,104.8	Index	DEU - Munich
7	Deka Investment GmbH	13,745.8	2.0%	0.1%	13,481.7	13,082.3	47,750.7	Value	DEU - Frankfurt
8	Allianz Global Investors GmbH	11,914.5	1.7%	-0.1%	12,944.6	12,201.6	71,060.7	Growth	DEU - Frankfurt
9	Harris Associates, L.P.	11,522.3	1.6%	0.4%	8,954.6	5,366.9	97,754.8	Value	USA - Chicago, IL
10	BlackRock Advisors (U.K.), LTD	11,147.8	1.6%	-0.2%	12,569.0	10,513.0	128,617.3	Index	GBR - London
11	Union Investment Privatfonds GmbH	10,700.1	1.5%	0.1%	10,296.0	9,713.5	55,299.5	GARP	DEU - Frankfurt
12	Fidelity Management & Research Company	10,527.2	1.5%	0.3%	8,454.1	6,667.5	927,376.7	Growth	USA - Boston, MA
13	State Street Global Advisors, LTD	9,456.5	1.3%	-0.3%	11,500.4	11,109.0	99,315.6	Index	GBR - London
14	Lyxor Asset Management SAS	8,806.1	1.3%	-1.0%	15,813.5	14,669.3	67,532.3	Index	FRA - Paris
15	BNP Paribas Asset Management France	8,038.0	1.1%	0.6%	4,037.4	2,684.8	47,806.3	Growth	FRA - Paris
Total		241,634.7	34.4%	0.8%	239,717.9	207,407.1			



Percentage point changes relate to 2017 and 2018

- Vanguard remains the largest investor in the DAX, while continuing to show increased holdings by 0.6pp. It mainly invests via its top rated Vanguard Total International Stock Index Fund and as a firm has crossed the \$5 trillion managed assets mark. In 2018 Vanguard benefitted from massive money inflows by investors and a jump in revenue/profit.
- Norges Bank (+0.3pp) displaced BlackRock Fund Advisors as the second largest investor as the BlackRock group has accounted for outflows in 2018.
- The Top 15 investor list remains very stable with only one new entry, BNP Paribas AM France (+0.6pp) at rank 15. State Street Global Advisors (SSgA) dropped out of the Top 15, while being one of the largest seller in the period (-0.25pp).

Top 15 Buyers & Sellers

Rank	Firm Name	DAX Value in \$M Dec-18	% Share DAX Insti.	% Share Change (pp)	DAX Value in \$M Dec-17	DAX Value in \$M Dec-16	Total Equity Assets in \$M	Style	City
1	BNP Paribas Asset Management France	8,038.0	1.15%	0.58%	4,037.4	2,684.8	47,806.3	Growth	FRA - Paris
2	The Vanguard Group, Inc.	32,377.9	4.61%	0.57%	28,804.3	23,967.1	3,172,307.1	Index	USA - Malvern, PA
3	Harris Associates, L.P.	11,522.3	1.64%	0.39%	8,954.6	5,366.9	97,754.8	Value	USA - Chicago, IL
4	Amundi Asset Management S.A.	18,524.6	2.64%	0.35%	16,314.7	12,644.2	111,336.6	Value	FRA - Paris
5	Fidelity Management & Research Company	10,527.2	1.50%	0.31%	8,454.1	6,667.5	927,376.7	Growth	USA - Boston, MA
6	Jupiter Asset Management, LTD (U.K.)	3,989.4	0.57%	0.31%	1,813.0	1,456.5	31,273.9	Growth	GBR - London
7	Norges Bank Investment Management (Norway)	27,638.6	3.94%	0.30%	25,905.0	24,544.7	675,503.6	Value	NOR - Oslo
8	Templeton Global Advisors, LTD	1,589.8	0.23%	0.21%	92.5	675.3	35,392.1	Value	BHS - Nassau
9	CPP Investment Board	2,721.2	0.39%	0.20%	1,357.6	833.3	106,543.7	Growth	CAN - Toronto, ON
10	Flossbach von Storch AG	2,919.4	0.42%	0.17%	1,745.9	975.4	22,315.3	Growth	DEU - Cologne
11	Primecap Management Company	1,796.3	0.26%	0.13%	887.2	74.4	138,716.3	Growth	USA - Pasadena, CA
12	Geode Capital Management, LLC	3,567.9	0.51%	0.13%	2,703.0	1,758.0	440,724.6	Index	USA - Boston, MA
13	Wellington Management Company, LLP	3,063.1	0.44%	0.12%	2,261.3	2,865.9	503,467.2	Value	USA - Boston, MA
14	Invesco Advisers, Inc.	3,013.2	0.43%	0.12%	2,233.7	2,068.0	150,588.1	Growth	USA - Atlanta, GA
15	APG Asset Management N.V.	3,188.4	0.45%	0.11%	2,424.5	2,030.7	162,114.6	Yield	NLD - Amsterdam
	Total	134,477.5	19.16%	4.02%	107,988.7	88,612.7			

Top 15 Sellers

Rank	Firm Name	DAX Value in \$M Dec-18	% Share DAX Insti.	% Share Change (pp)	DAX Value in \$M Dec-17	DAX Value in \$M Dec-16	Total Equity Assets in \$M	Style	City
1	Lyxor Asset Management SAS	8,806.1	1.25%	-0.96%	15,813.5	14,669.3	67,532.3	Index	FRA - Paris
2	China SAFE	7,939.2	1.13%	-0.37%	10,688.0	10,182.0	160,992.8	Growth	CHN - Beijing
3	MFS Investment Management	3,704.3	0.53%	-0.34%	6,200.2	6,346.1	283,507.4	Value	USA - Boston, MA
4	Aberdeen Standard Investments (U.K.)	2,769.5	0.39%	-0.33%	5,134.2	4,323.7	132,085.0	Growth	GBR - Edinburgh
5	Schroder Investment Management, LTD	3,071.7	0.44%	-0.32%	5,397.5	3,586.7	115,240.3	GARP	GBR - London
6	State Street Global Advisors, LTD	9,456.5	1.35%	-0.27%	11,500.4	11,109.0	99,315.6	Index	GBR - London
7	Janus Henderson Investors (U.K.)	2,899.1	0.41%	-0.25%	4,752.8	4,976.0	37,461.3	Growth	GBR - London
8	State Street Global Advisors (SSgA)	6,603.5	0.94%	-0.25%	8,481.0	5,992.1	1,356,933.3	Index	USA - Boston, MA
9	Assenagon GmbH	3,512.5	0.50%	-0.22%	5,129.5	6,578.0	16,055.9	Index	DEU - Munich
10	Dimensional Fund Advisors, L.P. (U.S.)	5,013.4	0.71%	-0.20%	6,543.9	4,854.2	315,067.0	Value	USA - Austin, TX
11	BlackRock Advisors (U.K.), LTD	11,147.8	1.59%	-0.17%	12,569.0	10,513.0	128,617.3	Index	GBR - London
12	BlackRock Asset Management (Deutschland) AG	15,103.6	2.15%	-0.17%	16,583.3	15,901.6	40,104.8	Index	DEU - Munich
13	BlackRock Advisors, LLC	3,981.7	0.57%	-0.14%	5,044.9	5,026.0	309,809.7	Value	USA - New York, NY
14	Mellon Investments Corporation	3,767.5	0.54%	-0.13%	4,736.3	4,384.9	179,825.5	Index	USA - Boston, MA
15	DWS Investment GmbH	24,104.8	3.43%	-0.13%	25,391.7	20,941.3	100,345.8	Value	DEU - Frankfurt
	Total	111,881.3	15.94%	-4.25%	143,966.1	129,383.9			

- The North American increase (+1.1pp) was accounted for by seven of the top fifteen buyers being North American institutions. Aside from The Vanguard Group and Harris Associates, Fidelity (+0.31pp), PrimeCap (+0.13pp), Geode Capital Management (+0.13pp) and Wellington (+0.12pp) were the other top North American investors.
- German and UK & Ireland regions decreased holding in the DAX and eight of the top fifteen sellers were from these regions. The top three sellers for the period were Lyxor (-0.96pp), China Safe (-0.37pp) and MFS Investment Management (-0.34pp).
- The BlackRock Group accounted for three of the top fifteen sellers for the period.
- Index features 40% of the top 15 sellers list, while merely ca. 14% of the top 15 buyers replicate an index benchmark.

Top 20 DAX Investors at a Group Level

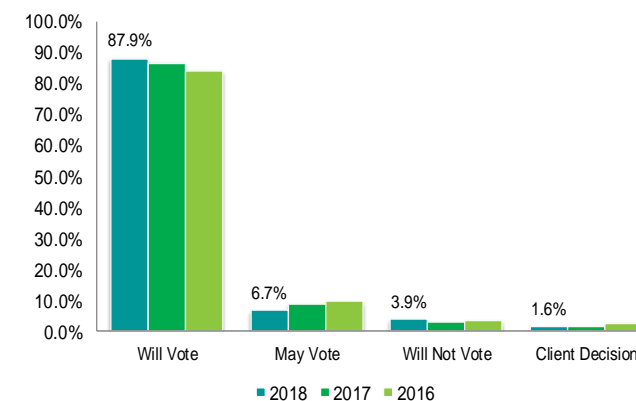
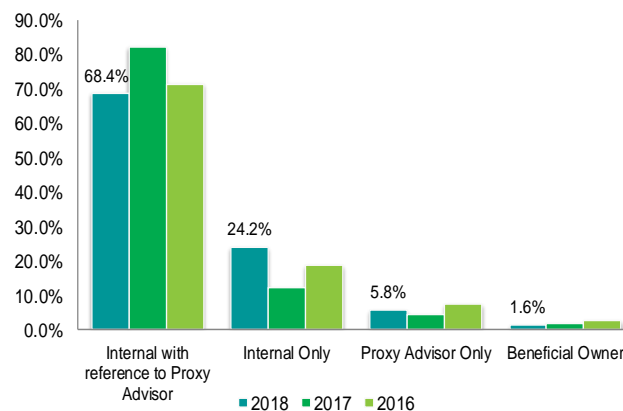
- The top 20 group investor composition remained largely the same except for J.P. Morgan Chase and Legal & General who dropped out of the Top investor list by parent group due to outflows in 2018 - they were replaced by Franklin Resources and Invesco.
- Credit Agricole (Amundi) drove the largest increase (+0.7pp), followed by Vanguard (+0.6pp) and BPCE (Harris Associates) (+0.4pp). The largest group detractors are Societe Generale (Lyxor) (-1.0pp). The BlackRock Group (-0.7pp) and State Street Corporation (-0.6pp) were the next largest sellers.
- Amundi benefitted from inflows through its ETF portfolios, while the actively managed proportion remained fairly stable during 2018.

Rank	Firm Name	DAX Value in \$M Dec-18	% Share DAX Insti.	% Share Change (pp)	DAX Value in \$M Dec-17	DAX Value in \$M Dec-16	Orientation	Country
1	BlackRock, Inc.	66,325.5	9.4%	-0.7%	72,152.0	62,128.4	Active & Passive	USA
2	The Vanguard Group, Inc.	33,443.1	4.8%	0.6%	29,802.5	24,964.4	Passive	USA
3	Norges Bank (Norway)	27,624.6	3.9%	0.3%	25,905.0	24,544.7	Active & Passive	Norway
4	Deutsche Bank AG	25,384.4	3.6%	-0.5%	29,254.2	23,362.1	Active & Passive	Germany
5	Credit Agricole (Amundi)	22,127.5	3.2%	0.7%	17,529.8	13,678.2	Active & Passive	France
6	State Street Corporation	18,778.9	2.7%	-0.6%	23,417.8	20,391.0	Passive	USA
7	BPCE S.A. (Harris Associates)	18,326.0	2.6%	0.4%	15,541.2	10,953.2	Active	France
8	UBS AG	15,500.5	2.2%	0.0%	15,470.6	13,898.3	Active & Passive	Switzerland
9	DekaBank Deutsche Girozentrale	13,800.0	2.0%	0.1%	13,536.3	13,121.2	Active & Passive	Germany
10	Allianz SE	13,498.6	1.9%	-0.2%	14,826.7	14,408.9	Active	Germany
11	The Capital Group Companies, Inc.	12,737.1	1.8%	0.0%	12,838.2	11,275.0	Active	USA
12	FMR, LLC	12,097.9	1.7%	0.4%	9,773.4	8,052.7	Active	USA
13	Union Asset Management Holding AG	11,253.7	1.6%	0.1%	10,778.1	10,136.1	Active & Passive	Germany
14	BNP Paribas S.A.	10,177.2	1.4%	-0.1%	11,180.9	9,200.6	Active & Passive	France
15	Societe Generale (Lyxor)	8,921.3	1.3%	-1.0%	15,904.6	14,780.6	Passive	France
16	Northern Trust Corporation	8,057.2	1.1%	-0.0%	8,342.7	5,519.0	Passive	USA
17	China SAFE	7,935.2	1.1%	-0.4%	10,688.1	10,182.0	Active	China
18	Sun Life Financial, Inc. (MFS)	7,703.3	1.1%	-0.3%	9,930.1	9,455.3	Active	Canada
19	Franklin Resources, Inc.	7,676.2	1.1%	0.1%	6,847.9	9,169.3	Active & Passive	USA
20	Invesco, LTD	7,273.9	1.0%	0.2%	6,299.5	5,148.0	Active & Passive	USA
	Total	348,642.1	49.7%	-0.8%	360,019.7	314,369.0		

Focus: Voting Behaviour of the Top Investors in the DAX

- 87.9% of the top 100 DAX investors actively vote their portion of managed equities at German general meetings – a slight increase of 1.6pp compared to 2017.
- 68.4% of top 100 investors obtain advice from at least one proxy advisor, showing a significant decrease, while the percentages of investors following in-house guidelines only considerably increases.
- This development shows the importance of actively engaging with investors about both their voting intentions and guidelines throughout the year (not only prior to the AGM). Proxy Voting is recommended to form an integral part of the IR communication.

Rank	Firm Name	Voting Status	DAX Value in \$M Dec-18	% Share DAX Insti.	% Share Change (pp)	DAX Value in \$M Dec-17	DAX Value in \$M Dec-16	Total Managed Assets in \$M	Style	Turnover	City
1	The Vanguard Group, Inc.	Will Vote	32,377.9	4.6%	0.6%	28,804.3	23,967.1	3,172,307.1	Index	Low	USA - Malvern, PA
2	Norges Bank Investment Management (Norway)	Will Vote	27,638.6	3.9%	0.3%	25,905.0	24,544.7	675,503.6	Value	Low	NOR - Oslo
3	BlackRock Fund Advisors	Will Vote	25,643.5	3.7%	-0.4%	28,667.7	23,400.3	2,051,676.7	Index	Low	USA - San Francisco, CA
4	DWS Investment GmbH	Will Vote	24,104.8	3.4%	-0.1%	25,391.7	20,941.3	100,345.8	Value	Low	DEU - Frankfurt
5	Amundi Asset Management S.A.	Will Vote	18,524.6	2.6%	0.4%	16,314.7	12,644.2	111,336.6	Value	Low	FRA - Paris
6	BlackRock Asset Management (Deutschland) AG	Will Vote	15,103.6	2.2%	-0.2%	16,583.3	15,901.6	40,104.8	Index	Moderate	DEU - Munich
7	Deka Investment GmbH	Will Vote	13,745.8	2.0%	0.1%	13,481.7	13,082.3	47,750.7	Value	Moderate	DEU - Frankfurt
8	Allianz Global Investors GmbH	Will Vote	11,914.5	1.7%	-0.1%	12,944.6	12,201.6	71,060.7	Growth	Moderate	DEU - Frankfurt
9	Harris Associates, L.P.	Will Vote	11,522.3	1.6%	0.4%	8,954.6	5,366.9	97,754.8	Value	Low	USA - Chicago, IL
10	BlackRock Advisors (U.K.), LTD	Will Vote	11,070.9	1.6%	-0.2%	12,569.0	10,513.0	128,617.3	Index	Low	GBR - London
Total			191,646.5	27.3%	0.7%	189,616.5	162,563.0				

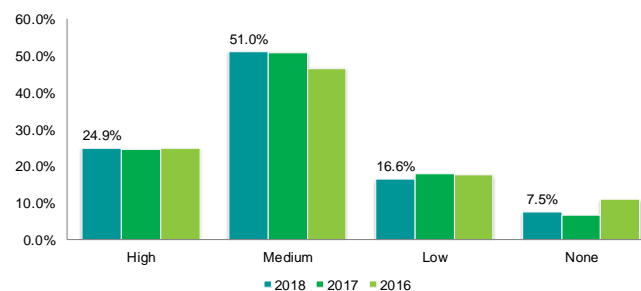


Focus: ESG Sensitivity of the Top Investors in the DAX

- The topic of ESG, the integration of environment, social and governance criteria into investment strategy, continues to be a major focal point for investors. Large numbers of investors now integrate ESG criteria into their investment decisions, causing the importance of ESG to rise.
- Within the top 100 investors of the DAX, 24.9% now indicates a high importance on ESG integration across their entire portfolio. Those investors who feel ESG is of low importance dropped to 16.6% (-1.2pp).
- This increase is in-line with international developments and we will continue to see investors making ESG investing a priority.

Rank	Firm Name	ESG Sensitivity	DAX Value in \$M Dec-	% Share DAX Insti.	% Share Change (pp)	DAX Value in \$M Dec-17	DAX Value in \$M Dec-16	Total Equity Assets in \$M	Style	City
1	The Vanguard Group, Inc.	Medium	32,377.9	4.6%	0.6%	28,804.3	23,967.1	3,172,307.1	Index	USA - Malvern, PA
2	Norges Bank Investment Management (Norway)	High	27,638.6	3.9%	0.3%	25,905.0	24,544.7	675,503.6	Value	NOR - Oslo
3	BlackRock Fund Advisors	Medium	25,643.5	3.7%	-0.4%	28,667.7	23,400.3	2,051,676.7	Index	USA - San Francisco, CA
4	DWS Investment GmbH	Medium	24,104.8	3.4%	-0.1%	25,391.7	20,941.3	100,345.8	Value	DEU - Frankfurt
5	Amundi Asset Management S.A.	High	18,524.6	2.6%	0.4%	16,314.7	12,644.2	111,336.6	Value	FRA - Paris
6	BlackRock Asset Management (Deutschland) AG	Medium	15,103.6	2.2%	-0.2%	16,583.3	15,901.6	40,104.8	Index	DEU - Munich
7	Deka Investment GmbH	Medium	13,745.8	2.0%	0.1%	13,481.7	13,082.3	47,750.7	Value	DEU - Frankfurt
8	Allianz Global Investors GmbH	High	11,914.5	1.7%	-0.1%	12,944.6	12,201.6	71,060.7	Growth	DEU - Frankfurt
9	Harris Associates, L.P.	Low	11,522.3	1.6%	0.4%	8,954.6	5,366.9	97,754.8	Value	USA - Chicago, IL
10	BlackRock Advisors (U.K.), LTD	Medium	11,147.8	1.6%	-0.2%	12,569.0	10,513.0	128,617.3	Index	GBR - London
Total			191,723.4	27.3%	0.7%	189,616.5	162,563.0			

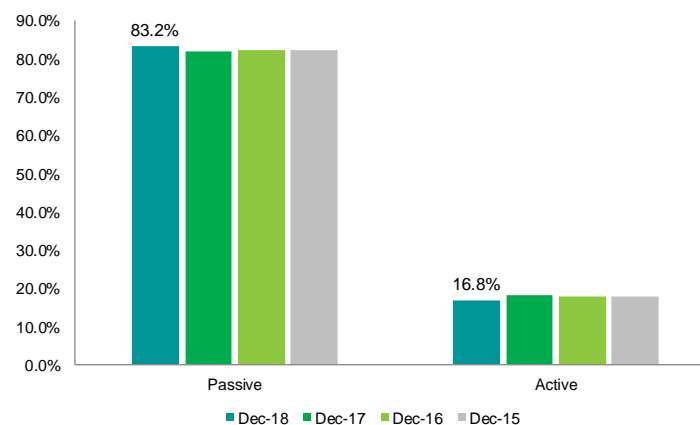
ESG Sensitivity: Top 100 DAX Investors



Focus: Investor Group BlackRock, Inc.

- After increasing its exposure to the DAX in 2017, the BlackRock Group now recorded outflows across its entire fund range. Nonetheless, the world's largest investment group remains the Top investor in the DAX.
- “BlackRock announced major changes in its upper management structure, aimed at growing both its presence in alternative investments and with institutional investors. At the end of 2018, the asset management firm had just less than \$6 trillion in assets under management. Last year saw BlackRock bring in its lowest net asset flows, \$123.6 billion, since 2013, and only about one-third of its 2017 haul. As a percentage of its beginning assets under management, those net flows were just under less than 2%, well below its six-year trend. The world's largest asset manager sold an overall total of \$59 billion in stock, bonds, and other long-term funds.”*

Rank	Firm Name	DAX Value in \$M Dec-18	% Share DAX F/F	% Share DAX Insti.	% Share Change (pp)	DAX Value in \$M Dec-17	DAX Value in \$M Dec-16	Style	Orientation	Country
1	BlackRock Fund Advisors	28,026.8	3.3%	4.0%	-0.0%	28,669.7	23,400.5	Index	Passive	USA
2	BlackRock Asset Management (Deutschland) AG	15,103.6	1.8%	2.2%	-0.2%	16,583.3	15,901.6	Index	Passive	Germany
3	BlackRock Advisors (U.K.), LTD	11,147.8	1.3%	1.6%	-0.2%	12,615.0	10,525.8	Index	Passive	UK
4	BlackRock Investment Management (U.K.), LTD	6,327.9	0.7%	0.9%	-0.1%	7,055.3	5,534.5	Growth	Active	UK
5	BlackRock Advisors, LLC	3,981.7	0.5%	0.6%	-0.1%	5,044.9	5,028.3	Value	Active	USA
6	BlackRock International, LTD	863.6	0.1%	0.1%	-0.0%	1,008.9	555.2	Value	Active	UK
7	BlackRock Japan Company, LTD	628.0	0.1%	0.1%	-0.0%	834.9	766.7	Index	Passive	Japan
8	BlackRock Asset Management Canada, LTD	150.9	0.0%	0.0%	-0.0%	239.7	312.0	Index	Passive	Canada
9	BlackRock Asset Management (Australia), LTD	95.2	0.0%	0.0%	-0.0%	100.3	103.9	Index	Passive	Australia
Total BlackRock, Inc.		66,325.5	7.7%	9.4%	-0.7%	72,152.0	62,128.4			



* Funds Europe Online

Focus: Top 10 Sovereign Wealth Funds in the DAX

Rank	Sovereign Wealth Fund	DAX Value in \$M Dec-18	% Share DAX Insti.	% Share Change (pp)	DAX Value in \$M Dec-17	DAX Value in \$M Dec-16	Management	Country
1	Norges Bank (Norway)	27,638.6	3.9%	0.3%	25,905.0	24,544.7	Internal & External	Norway
2	China SAFE	7,939.2	1.1%	-0.4%	10,688.0	10,182.0	Internal & External	China
3	Kuwait Investment Office/Authority	4,832.0	0.7%	-0.0%	5,204.0	3,195.8	Internal & External	Kuwait
4	Qatar Investment Authority	3,478.9	0.5%	0.1%	3,100.0	3,532.2	Internal & External	Qatar
5	GIC Singapore/UK	3,191.4	0.5%	0.0%	3,080.0	2,042.2	Internal & External	Singapore
6	Abu Dhabi Investment Authority	2,505.8	0.4%	-0.0%	2,746.0	1,912.0	Internal & External	UAE
7	Libyan Investment Authority	1,650.7	0.2%	0.0%	1,607.0	1,420.5	Internal & External	Libya
8	AP 1-7 Fonds	1,273.6	0.2%	0.0%	1,083.0	1,055.8	Internal & External	Sweden
9	Saudi Arabian Monetary Agency	478.9	0.1%	-0.0%	586.0	556.7	Internal & External	Saudi Arabia
10	Brunei Investment Agency	36.8	0.0%	-0.0%	48.0	35.8	Internal & External	Brunei
	Total	53,026.1	7.6%	-0.0%	54,047.0	48,477.6		

- Norges Bank, which is a \$1 trillion wealth fund investing in over 9,000 firms across 72 countries, remains the largest invested SWF which was slightly bullish in 2018 (+0.3%).
- The top invested SWF's remained flat overall, with China SAFE (-0.4%) driving the largest outflows due to continued economic stabilisation.
- SWF's are trending to security lending, particularly in the low rate environment, to improve yields - "Sovereign wealth funds continue to be interested in ways to maximise their risk-adjusted returns over the long term. Adopting new asset utilisation practices can make investment execution more efficient and help them to boost returns without a significant impact on a fund's risk profile," said Duncan Bonfield, CEO, International Forum of Sovereign Wealth Funds (IFSFW).

Focus: Top 25 Investment Funds and Managers of the DAX

- The table shows the largest invested funds in the DAX according to recent public information. Hence, holdings discrepancies compared to other slides in this study may be possible.
- The top two investment funds by Norges and Vanguard remain unchanged in rank despite experiencing outflows.
- Due to the fund outflow from the Oakmark International Fund (-0.4pp) which is managed by Harris Associates, the fund dropped in rank which made way for the iShares Core DAX UCITS ETF (DE) fund and the Vanguard Developed Markets Index Fund to gain rank 3 and 4. In 2017 the Oakmark International Fund was the top gainer (+0.9pp) in the top 25 list.
- The top 25 accounted for an overall outflow (-2.0pp) which is in-line with the overall market contraction.

Rank	Fund Name	Investor name	DAX Value in \$M Dec-18 *	%Share DAX Insti.	%Share Change (pp)	DAX Value in \$M Dec-17 *	Number of DAX Equities	Orientation	Type	Country
1	The Government Pension Fund - Global	Norges Bank Investment Management (Norway)	24,097.6	3.4%	-1.0%	31,640.9	30	Active & Passive	Pension	Norway
2	Vanguard Total International Stock Index Fund	The Vanguard Group, Inc.	15,623.0	2.2%	-0.0%	16,124.9	30	Passive	ETF	USA
3	iShares Core DAX UCITS ETF (DE)	BlackRock Asset Management (Deutschland) AG	7,630.1	1.1%	-0.0%	8,065.2	30	Passive	ETF	Germany
4	Vanguard Developed Markets Index Fund	The Vanguard Group, Inc.	6,182.2	0.9%	-0.0%	6,491.0	29	Passive	ETF	USA
5	Oakmark International Fund	Harris Associates, L.P.	5,528.1	0.8%	-0.4%	8,721.3	6	Active	Mutual Fund	USA
6	American Funds EuroPacific Growth Fund	Capital World Investors (U.S.)	4,954.1	0.7%	0.0%	4,696.8	14	Active	Mutual Fund	USA
7	DWS Deutschland	DWS Investment GmbH	4,691.6	0.7%	-0.2%	6,167.5	23	Active	Mutual Fund	Germany
8	iShares MSCI EAFE ETF	BlackRock Fund Advisors	4,498.8	0.6%	-0.2%	6,065.8	30	Passive	ETF	USA
9	Xtrackers DAX UCITS ETF	DWS Investment GmbH	4,316.5	0.6%	-0.0%	4,467.5	30	Passive	ETF	Germany
10	iShares Core MSCI EAFE ETF	BlackRock Fund Advisors	3,919.6	0.6%	0.0%	3,898.6	30	Passive	ETF	USA
11	DekaFonds CF	Deka Investment GmbH	3,544.5	0.5%	-0.0%	3,955.2	30	Active	Mutual Fund	Germany
12	Stichting Pensioenfonds ABP (Global Equity Portfolio)	APG Asset Management N.V.	3,079.1	0.4%	0.1%	2,305.5	24	Active	Pension	Netherlands
13	California Public Employees' Retirement System	California Public Employees Retirement System	3,061.4	0.4%	0.1%	2,255.6	29	Active & Passive	Pension	USA
14	Dodge & Cox International Stock Fund	Dodge & Cox	3,033.1	0.4%	-0.1%	3,562.8	3	Active	Mutual Fund	USA
15	Artisan International Fund	Artisan Partners, L.P.	2,625.3	0.4%	0.0%	2,442.7	7	Active	Mutual Fund	USA
16	Alectia Pension	Alectia Pensionsförsäkring AB (Asset Management)	2,596.5	0.4%	0.1%	2,255.5	5	Active	Pension	Sweden
17	DWS Investa	DWS Investment GmbH	2,595.4	0.4%	-0.1%	3,257.2	27	Active	Mutual Fund	Germany
18	Amundi Index Solutions - Amundi MSCI Emerging Markets UCITS	Amundi Asset Management S.A.	2,572.3	0.4%	-0.0%	2,700.6	19	Passive	ETF	France
19	Canada Pension Plan	CPP Investment Board	2,451.2	0.3%	-0.0%	2,608.3	24	Active	Pension	Canada
20	DWS Aktien Strategie Deutschland	DWS Investment GmbH	2,292.9	0.3%	-0.0%	2,572.4	19	Active	Mutual Fund	Germany
21	iShares EURO STOXX50 UCITS ETF (DE)	BlackRock Asset Management (Deutschland) AG	2,271.1	0.3%	-0.1%	3,074.3	14	Passive	ETF	Germany
22	UniFonds	Union Investment Privatfonds GmbH	2,220.7	0.3%	0.0%	2,124.9	23	Active	Mutual Fund	USA
23	UBS ETFs PLC - MSCI ACWI SF UCITS ETF	UBS Asset Management (U.K.), LTD	2,132.0	0.3%	0.1%	1,165.9	27	Passive	ETF	Switzerland
24	iShares MSCI Germany ETF	BlackRock Fund Advisors	2,128.1	0.3%	-0.1%	3,206.9	3	Passive	ETF	USA
25	Deka DAX ETF	Deka Investment GmbH	2,125.5	0.3%	-0.0%	2,219.0	30	Passive	ETF	Germany
			120,170.8	17.1%	-2.0%	136,046.6				

Focus: Top Roadshow Destinations in the DAX

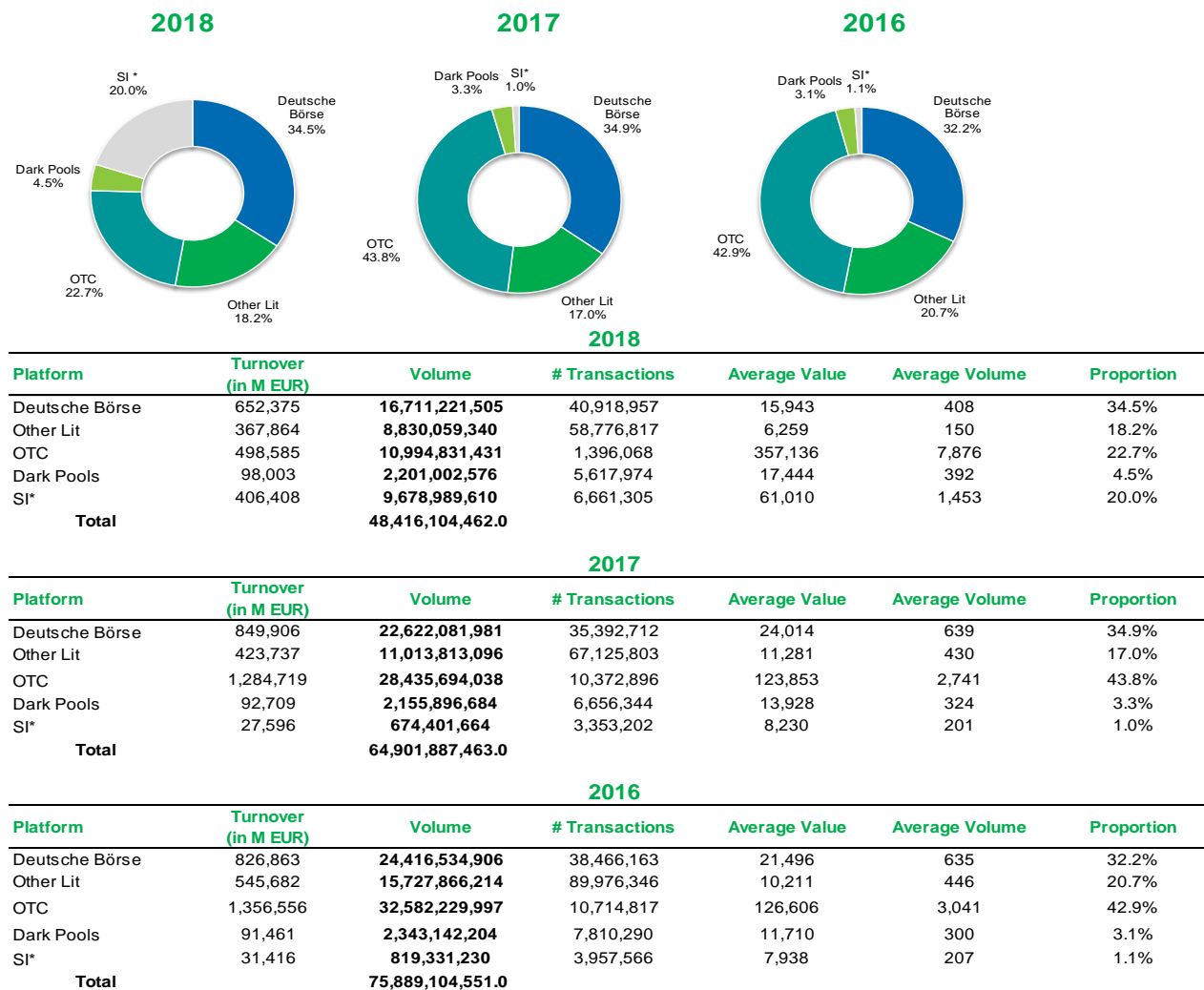
City	Total Equity Assets in \$M	DAX Value in \$M Dec-18	% Share DAX Insti.	% Share Change (pp)	DAX Value in \$M Dec-17	DAX Value in \$M Dec-16	# Firms
London	2,212,282.1	88,037.2	12.5%	0.1%	88,818.5	74,794.8	204
Frankfurt	315,339.1	66,134.5	9.4%	-0.4%	70,095.6	62,760.3	53
Paris	476,024.3	53,621.2	7.6%	0.9%	48,028.1	37,687.7	161
Oslo	722,547.4	28,622.3	4.1%	0.3%	26,813.2	25,383.1	14
New York, NY	3,235,014.3	26,822.4	3.8%	0.1%	26,294.3	23,458.7	126
Boston, MA	2,371,948.3	25,305.7	3.6%	-0.1%	26,139.8	25,297.1	36
Zürich	277,428.0	16,368.9	2.3%	0.5%	13,225.3	15,165.0	58
Chicago, IL	431,203.9	16,046.9	2.3%	0.3%	13,891.7	9,297.9	28
Los Angeles, CA	1,258,016.5	14,458.5	2.1%	0.1%	14,294.3	12,079.6	19
Brussels	82,798.4	9,776.8	1.4%	0.2%	8,596.7	6,697.0	16
Stockholm	333,280.1	8,549.2	1.2%	-0.0%	8,686.4	7,970.5	36
Toronto, ON	780,337.7	8,532.5	1.2%	0.3%	6,706.4	5,498.5	40
Beijing	179,236.9	7,939.4	1.1%	-0.1%	8,566.2	8,258.2	4
Edinburgh	402,964.0	7,398.4	1.1%	-0.4%	10,630.8	5,344.0	17
Tokyo	968,642.2	6,837.6	1.0%	0.1%	6,580.1	5,336.6	46
Total	14,047,063.1	384,451.5	54.8%	1.9%	377,367.5	325,028.9	858

City	Total Equity Assets in \$M	DAX Value in \$M Dec-18	% Share DAX Insti.	% Share Change (pp)	DAX Value in \$M Dec-17	DAX Value in \$M Dec-16	# Firms
London	2,212,282.1	88,037.2	12.5%	0.1%	88,818.5	74,794.8	204
Paris	476,024.3	53,621.2	7.6%	0.9%	48,028.1	37,687.7	161
New York, NY	3,235,014.3	26,822.4	3.8%	0.1%	26,294.3	23,458.7	126
Madrid	72,662.7	4,327.1	0.6%	0.0%	4,055.2	3,651.2	70
Zürich	277,428.0	16,368.9	2.3%	0.5%	13,225.3	15,165.0	58
Frankfurt	315,339.1	66,134.5	9.4%	-0.4%	70,095.6	62,760.3	53
Tokyo	968,642.2	6,837.6	1.0%	0.1%	6,580.1	5,336.6	46
Geneva	120,684.4	4,520.5	0.6%	-0.0%	4,643.1	3,314.8	42
Toronto, ON	780,337.7	8,532.5	1.2%	0.3%	6,706.4	5,498.5	40
Luxembourg	33,922.9	1,119.7	0.2%	0.0%	955.2	568.3	38
Boston, MA	2,371,948.3	25,305.7	3.6%	-0.1%	26,139.8	25,297.1	36
Stockholm	333,280.1	8,549.2	1.2%	-0.0%	8,686.4	7,970.5	36
Milan	73,334.3	4,227.4	0.6%	0.1%	3,749.2	3,428.9	30
Chicago, IL	431,203.9	16,046.9	2.3%	0.3%	13,891.7	9,297.9	28
Hong Kong	119,959.0	277.5	0.0%	-0.3%	2,432.1	2,071.3	23
Total	11,822,063.1	330,728.2	47.1%	1.6%	324,301.1	280,301.6	991

- London remains the top roadshow destination for another period despite uncertainties around Brexit. This is mainly due to the active entity of the BlackRock which leads the investment, followed by UBS and JP Morgan AM.
- Overall the top RS destinations remain bullish (+1.9%) due to positive sentiment from Paris (+0.9pp) and Zurich (+0.5pp).
- The main cities which showed a outflows of investment were in Frankfurt (-0.4pp) and Hong Kong (-0.3pp).

Focus: Trading Venues of German Shares

- In 2018, the official trading venues account for 52.8% (previous year: 51.8%). The largest trading venue was the Deutsche Börse, accounting for 34.5% of the trades, marginally down by 1.0% from 2017.
- OTC was significantly lower from 43.8% in 2017 to 22.7% in 2018, this marks a 21.1pp decrease from 2017.
- Systematic Internalisers (electronic and automated trading; SI) considerably increased 19 pp to 20% of all trades outside the regulated market. This is a direct result of the MiFID II implementation as it requires traders document every trade and leave an audit trail. SI trades now account for nearly half of all OTC trades.
- Dark pools saw a slight increase of 1.2pp year-on-year.
- The data excludes trades without visibility.



* Systematic Internaliser refers to frequent, systematic trading on behalf of clients outside the regulated market. Sources: IHS Markit, Fidessa, FactSet

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