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INVESTING IN GERMANY USING DAX® – AN ASIAN PERSPECTIVE

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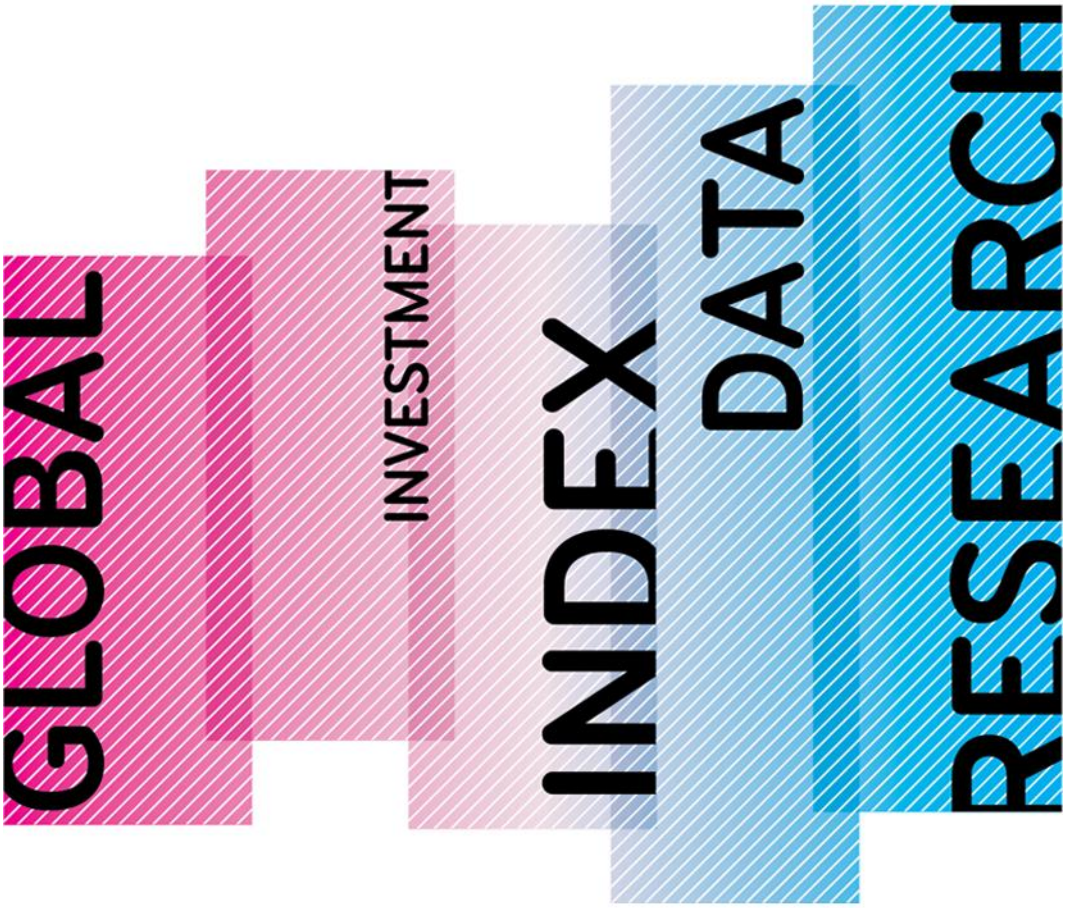

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1 Investing in Germany in 2017

Since the culmination of the global financial crisis in 2008, the German economy has acted as the growth engine of Europe. It did so by delivering strong economic growth despite adverse conditions during the European sovereign debt crisis that caused many European countries to move back into recession.

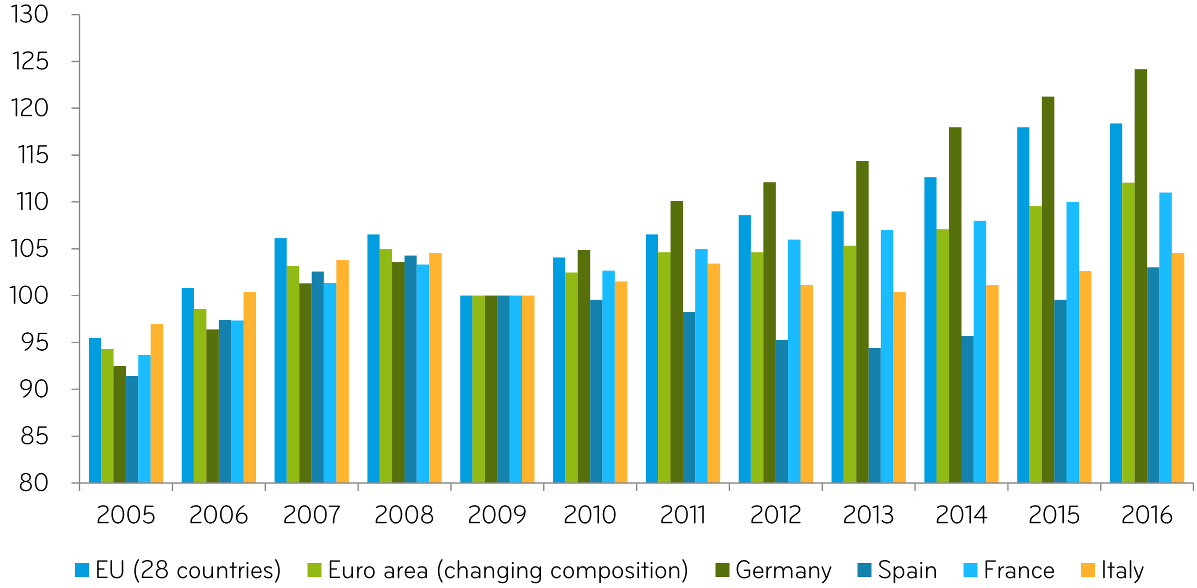
Germany's GDP per capita growth has by far outpaced that of the Eurozone as a whole since the advent of the global financial crisis. Figure 1, below, illustrates the development of GDP per capita growth from 2005 through 2016. Since 2009, Germany's GDP per capita has grown by 24%, double that of the Eurozone (12%).

Unlike its peers, Germany has been able to further increase its competitiveness during the past several years. Recent research showed that while unit labour costs (ULCs) in the OECD and Eurozone increased by 28% and 27%, respectively, between 2000 and 2016, they rose by less than 17% in Germany. Consequently, Germany stands among the most competitive countries on a global level as evidenced in its high rank in the Global Competitiveness Index (GCI), compiled by the World Economic Forum. Germany is currently No. 5, behind Switzerland, Singapore, the United States and the Netherlands.

Furthermore, the political scene in Germany has been remarkably stable over the last 12 years, with the CDU's Angela Merkel as acting chancellor since 2005.

In terms of economic growth, the OECD forecast in June 2017 that Germany's economy is expected to grow by 2.0% in 2017 and 2018, whereas the Eurozone is expected to grow by only 1.8% in both years.

FIGURE 1: DEVELOPMENT OF GDP PER CAPITA GROWTH (INDEXED TO 100 IN 2009)



Source: Eurostat. 2005 to 2017

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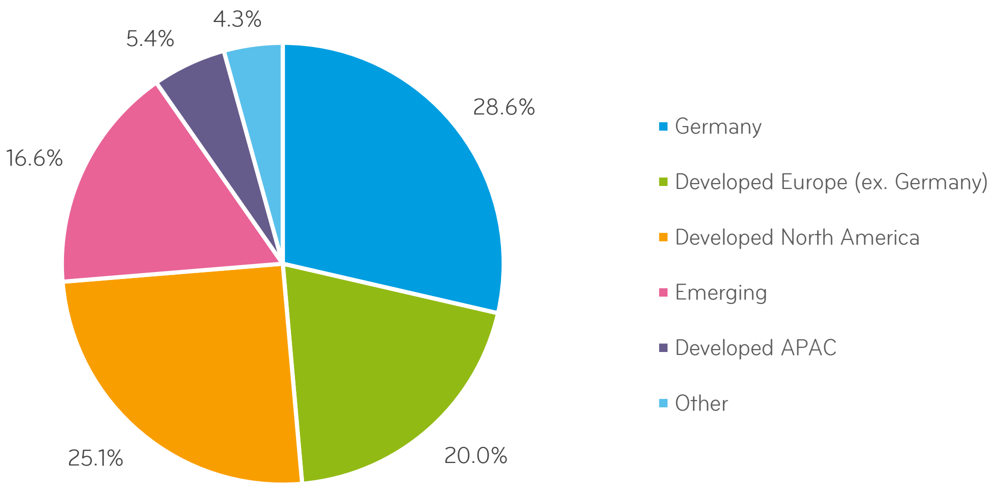
2 DAX in the spotlight

Since its launch in 1988, the DAX index has been representing the performance of Germany's largest and most liquid companies.

DAX, despite being a single country index, represents a pool of large-cap corporations with a high degree of global diversification. Based on the STOXX TRU® methodology, which calculates economic exposure not based on a company's listing, but on the origin of its revenues, we note that 28.6% of DAX companies' revenues are derived from Germany directly. Developed Europe (excluding Germany) accounts for 20.0% and developed North America for 25.1% of the DAX-listed companies' revenues. This enables investors to not only gain significant exposure to the German economy but to also access a geographically diversified stream of revenues.

FIGURE 2: DAX COMPANIES HAVE GLOBALLY DIVERSIFIED REVENUE STREAMS



Source: STOXX. Values are calculated as free-float market-cap-weighted averages of company revenues. Revenues refer to the 2015 fiscal year. Cut-off date for index weights is Jun. 30, 2017.

In terms of industries, DAX is also highly diversified. Basic Materials represents the largest industry with a 20.6% allocation, with Consumer Goods and Financials coming in second and third, weighted at 20.1% and 17.3%, respectively (see Figure 3). The allocation of Financials, which – prior to the global financial crisis – represented the largest sector in DAX, has decreased significantly from its pre-crisis peak of 27.7%. Within the same timeframe, allocation to Information Technology has more than doubled, driven in particular by the success of SAP and Infineon.

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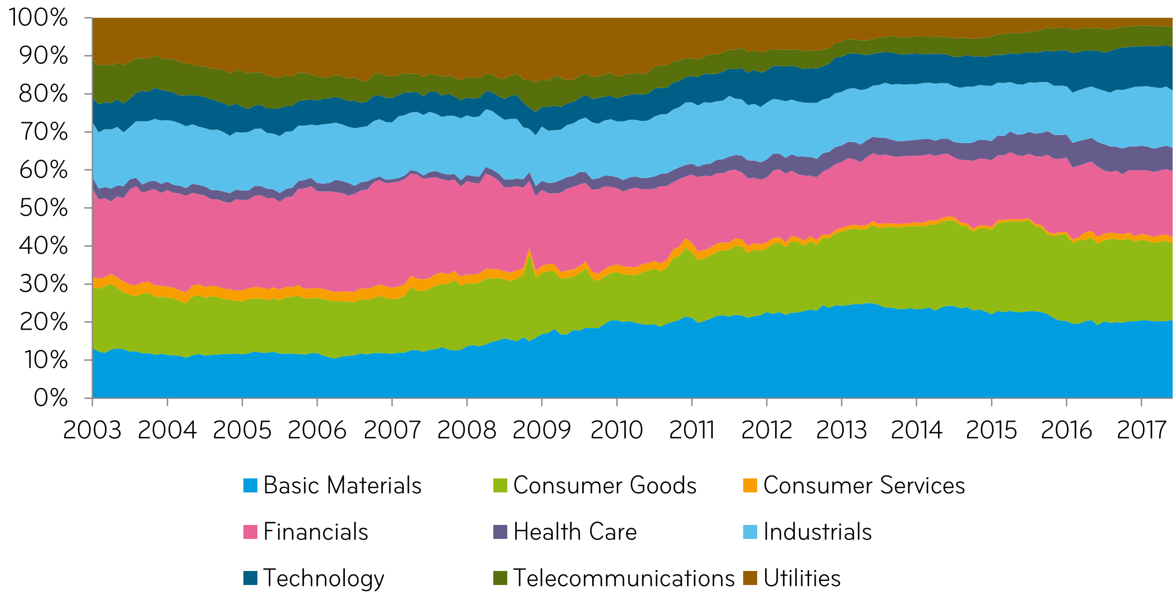
FIGURE 3: BROAD INDUSTRY DIVERSIFICATION, WITH NO SINGLE SECTOR ABOVE 25% (AS OF JUN. 17, 2017)



Source: STOXX. Time period: 01/2003 – 06/2017

The DAX index is comprised of highly liquid large caps, which include companies with globally successful brands such as Mercedes, Adidas and Aspirin, to name a few (see Table 1).

TABLE 1: DAX TOP 10 CONSTITUENTS

#	Name	Weight	Market cap. in EUR bn	Industry
1	Bayer	10.0%	104.0	Basic Materials
2	Siemens	9.5%	98.3	Industrials
3	SAP	8.9%	92.6	Technology
4	Allianz	8.0%	82.9	Financials
5	BASF	7.8%	80.8	Basic Materials
6	Daimler	6.6%	68.0	Consumer Goods
7	Deutsche Telekom	5.3%	54.6	Telecommunications
8	Fresenius	3.2%	32.7	Health Care
9	Adidas	3.1%	32.2	Consumer Goods
10	Deutsche Post	3.1%	31.9	Industrials

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Source: STOXX, as of Jun. 16, 2017

On aggregate, all DAX components represent about 1.0 trillion euros in free-float market capitalization, or approximately 75% of Germany's total stock market capitalization. Hence, by investing in Germany's largest and most liquid 30 stocks, investors gain exposure to three fourths of all equities listed in Germany.

Lastly and very importantly from a practitioner's perspective, DAX is a highly liquid index. In the first half of 2017 alone, over 22 million options and futures contracts based on DAX[1] were traded. This high degree of liquidity means that DAX-based products can be hedged at extremely attractive costs.

3 DAX from an Asian perspective

Having discussed the characteristics of DAX, the question arises of how the index stacks up against Asian blue-chip indices.

The industry allocation represented by DAX can bring significant diversification benefits from the perspective of selected Asian markets. Table 2 provides an overview of the industry allocations of five major Asian markets as well as of DAX.

The high representation of the Consumer Goods sector in DAX may be a very beneficial complement for Hong Kong- or Singapore-domiciled investors whose home markets are comparatively underrepresented in this particular sector. The significance of the Health Care sector in DAX (6.2%) offers additional potential for diversification. Across the five Asian markets included in our study, only the TOPIX has a comparable exposure to this sector. The FTSE TWSE Taiwan 50, the Hang Seng as well as the Straits Times index display no exposure to Health Care companies at all.

TABLE 2: INDUSTRY ALLOCATIONS OF DAX AND MAJOR ASIAN BLUE-CHIP INDICES

	DAX	FTSE TWSE Taiwan 50	Hang Seng	TOPIX	Straits Times Index	FTSE China A50
Oil & Gas	0.00%	0.88%	5.35%	0.80%	4.33%	2.08%
Basic Materials	19.63%	9.33%	0.72%	6.84%	0.00%	1.88%
Industrials	15.38%	17.11%	5.80%	22.99%	12.08%	12.86%
Consumer Goods	19.90%	6.97%	3.11%	23.11%	6.43%	13.71%
Health Care	6.20%	0.00%	0.00%	6.17%	0.00%	1.37%
Consumer Services	1.76%	1.87%	3.29%	11.21%	9.06%	0.00%
Telecommunications	4.97%	4.47%	6.94%	5.61%	10.94%	1.33%
Utilities	2.67%	0.00%	5.49%	1.87%	0.00%	2.13%
Financials	18.54%	16.69%	58.76%	16.07%	57.16%	63.44%
Technology	10.95%	42.68%	10.54%	5.33%	0.00%	1.18%

Sources: STOXX, Bloomberg, as of Jul. 7, 2017

[1] Sources: STOXX, Deutsche Börse AG

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While industry and country allocations are important characteristics of an index, investors are typically even more interested in the resulting risk and return characteristics. Table 3 provides an overview of risk and return figures as well as of correlations of the DAX index with the selected five benchmarks.

TABLE 3: RISK AND RETURN CHARACTERISTICS

	DAX	FTSE TWSE Taiwan 50	Hang Seng	TOPIX	Straits Times Index	FTSE China A50
Return annualized	7.2%	10.0%	5.7%	7.6%	5.5%	2.2%
Volatility annualized	23.6%	18.5%	18.4%	19.1%	15.3%	24.6%
Maximum drawdown	-37.4%	-28.6%	-33.4%	-22.0%	-31.7%	-44.8%
Correlation to DAX (daily return)	1.00	0.33	0.36	0.16	0.54	0.17
Correlation to DAX (weekly return)	1.00	0.63	0.59	0.56	0.67	0.31

Source: STOXX, Bloomberg. Daily data (price return) for the period from Nov. 30, 2009 to Jun. 22, 2017 in USD

Measured over the last 7.5 years, we find that DAX generated an attractive return of 7.2% per annum (measured in USD). This return has been achieved with volatility levels that were, on average, slightly higher than that of the average Asian market. However, the volatility level observed over the course of our analysis was partly driven by the USD/EUR exchange rate. Measured in euro, the annualized volatility was comparably low with only 16.2%.

However, the value added by DAX – especially from an Asian perspective – lies in its very low correlations to its Asian benchmarks. Measured based on weekly returns, correlation figures range from a minimum of 0.31 (DAX and FTSE China A50) to a maximum of 0.67 (DAX and Straits Times Index). Thus, DAX is an ideal investment for Asian investors who seek low correlations in order to decrease their diversifiable risk.

4 Conclusion

As highlighted, the Eurozone as represented by the DAX index can provide access to globally successful brands with a wide diversification among industries and companies not as readily accessible in the Asian market. Furthermore, the size of Germany's listed equity markets translates to a deep and liquid market, meaning DAX-based products can be hedged at extremely attractive costs. Lastly, the DAX index exhibits very low correlations to Asian benchmarks, which makes it an ideal investment for diversification purposes.

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