

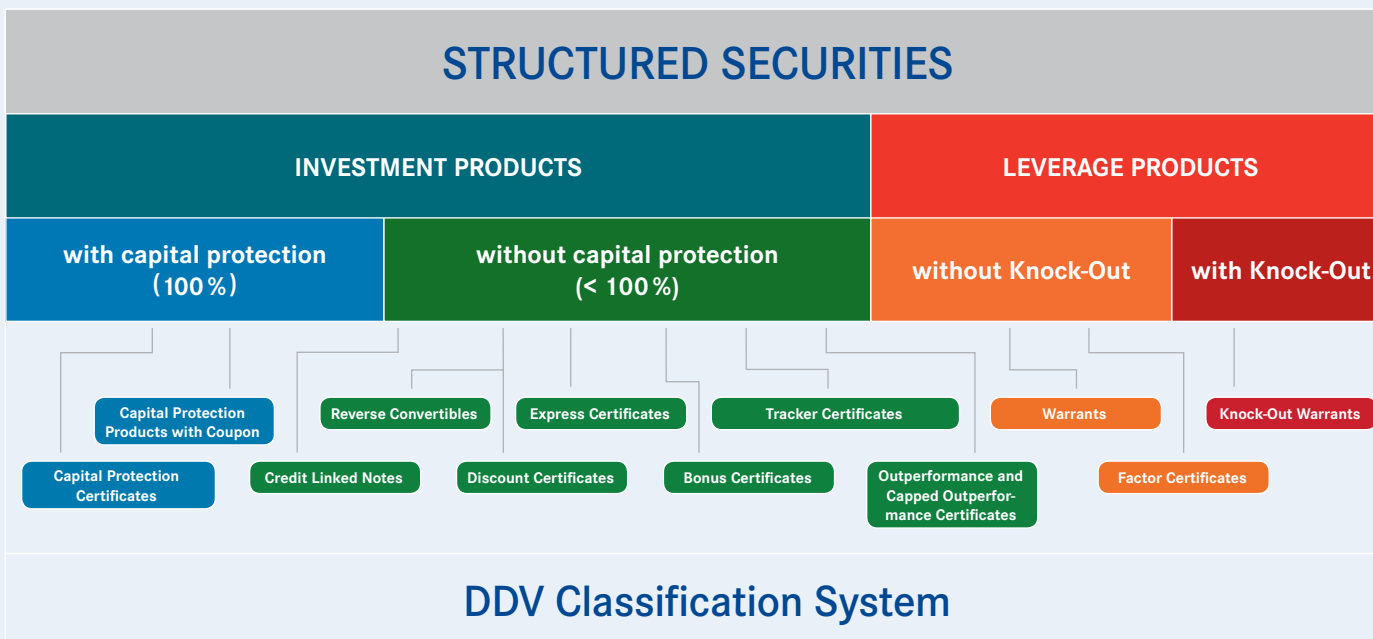
# Market Volume

in Derivatives

## German structured products market at EUR 67.0 billion

Express Certificates gain in attractiveness

### STRUCTURED SECURITIES



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## December | 2016

- The total volume of the German structured products market amounted to EUR 67.0 billion in December.
- Express Certificates accounted for 17.0 percent of the aggregate investment products volume. Their volume increased by 4.9 percent to EUR 10.2 billion in December 2016.
- The volume of Capital Protection Products went down again. Uncapped Capital Protection Certificates and Capital Protection Products with Coupon accounted for 38.3 percent of the total volume.
- At EUR 919.2 million, the market volume of leverage products with equities as an underlying was 4.4 percent above the figure reported for November 2016.

## German structured products market at EUR 67.0 billion

### Express Certificates gain in attractiveness

The outstanding volume of the German structured products market decreased in December 2016. Demand for nearly all product categories slowed down.

Overall, the market volume fell by 2.1 percent or EUR 1.4 billion compared with the previous month. These trends are shown by the latest figures collected each month from 15 banks by the European Derivatives Group (EDG AG) on behalf of Deutscher Derivate Verband (DDV), the German Derivatives Association. Extrapolating these figures to all issuers operating on the market puts the **total volume of the German structured products market at EUR 67.0 billion at the end of December 2016**.

Compared with the previous month, the **ratio of investment products to leverage products** shifted in favour of leverage products. The share of investment products was 97.2 percent, while leverage products made up 2.8 percent of the aggregate market.

#### Investment products by product category

Overall the volume of **Capital Protection Products** went down in the month under review. Compared with the previous month, the market volume of **Capital Protection Products with Coupon** fell by 1.8 percent to EUR 15.7 billion. This cor-

responded to a 26.3 percent share of the investment products market. **Uncapped Capital Protection Certificates** experienced a decline of 0.8 percent to stand at EUR 7.2 billion and thus accounted for a share of 12.0 percent of the investment products market. A total of 38.3 percent of the market volume was invested in these two product categories in December.

The volume of **Reverse Convertibles** dropped by 1.5 percent and stood at EUR 9.0 billion. This corresponded to a share of 15.0 percent.

Contrary to the general trend, **Express Certificates** recorded a significant increase of 4.9 percent to come in at EUR 10.2 billion. Their share was 17.0 percent in December.

**Credit Linked Notes** experienced a 0.9 percent decline to stand at EUR 5.9 billion. They accounted for 9.9 percent of the market volume.

**Discount Certificates** plummeted 15.3 percent to EUR 4.6 billion – a share of 7.7 percent.

The market volume recorded for **Tracker Certificates** increased by a slight 0.1 percentage point to EUR 3.8 billion. Their volume share made up 6.4 percent of the investment products segment.

**Bonus Certificates** registered a loss of 18.5 percent. Their volume went down to EUR 2.2 billion, representing 3.8 percent of the total market.

**Outperformance and Capped Outperformance Certificates** lost 9.3 percentage points taking their volume to EUR 76.2 million. However, as they accounted for just 0.1 percent of the total investment products volume, this category had scarcely any impact on the overall trend.

The volume of **other Yield Enhancement Products** rose by 1.0 percent to EUR 1.1 billion. They contributed a share of 1.8 percent to the total volume.

#### Leverage products by product category

Bucking the general trend, the market volume of **leverage products** rose 2.4 percent to stand at EUR 1.7 billion in December.

The volume invested in **Knock-Out Warrants** increased by 2.3 percent in comparison with the previous month, taking it to EUR 714.7 million. Their share of the leverage products segment was 42.1 percent.



**Warrants** charted a plus of 2.6 percent to come in at EUR 633.6 million. Their market share stood at 37.3 percent.

Investments in **Factor Certificates** climbed by 2.2 percent and stood at EUR 351.3 million. This category accounted for a 20.7 percent share of the leverage products market.

## Investment products by underlying

Despite a decrease of 1.5 percent, structured products with **interest rates as an underlying** remained the most popular category. At EUR 22.2 billion, their investment volume represented a 37.1 percent stake of the market.

Investment products with **indices as an underlying** followed in second place. Their volume decreased by 2.7 percent, taking it to EUR 18.7 billion. This corresponded to 31.2 percent of the total volume.

Investment products with **equities as an underlying** were the third most popular category. Their share of the total volume was 29.8 percent, down 2.6 percent to EUR 17.8 billion.

Following at a considerable distance behind the other asset classes were investment products with **commodities as an underlying**. Their outstanding volume dropped by 3.0 percent, taking it to EUR 783.4 million in December. Their market share accounted for 1.3 percent of the aggregate volume.

Investment products with **investment funds as an underlying** made up a 0.6 percent share. Their volume came in at EUR 380.9 million.

With a share of 0.04 percent, investment products with **currencies as an underlying** were fairly insignificant in relation to the general trend. This category gained 8.4 percentage points, taking the invested volume to EUR 25.8 million in the reporting month.

## Leverage products by underlying

The market volume of leverage products with **equities as an underlying** grew by 4.4 percent to EUR 919.2 million. This product category accounts for 54.1 percent of the aggregate leverage products volume.

Leverage products with **indices as an underlying** fell by 0.1 percent to EUR 524.9 million. This corresponded to 30.9 percent of the total volume.

Lagging some way behind leverage products based on equities and indices were those with **commodities as an underlying**. Their volume was up 1.3 percent month on month and came in at EUR 163.1 million. Their market share was 9.6 percent.

Leverage products with **currencies as an underlying** lost 0.6 percent. Their volume stood at EUR 58.5 million, corresponding to a share of 3.4 percent of the total volume.

The market volume of leverage products with **interest rates as an underlying** registered a 0.2 percent minus in December. The volume decreased to EUR 33.8 million. However, since they accounted for only 2.0 percent of the total volume, their impact on the general trend was not significant. ■



## Deutscher Derivate Verband (DDV)

Deutscher Derivate Verband (DDV), the German Derivatives Association, is the industry representative body for the leading issuers of derivative securities in Germany, who represent more than 90 percent of the German structured products market: BayernLB, BNP Paribas, Citigroup, Commerzbank, Deka-Bank, Deutsche Bank, DZ BANK, Goldman Sachs, Helaba, HSBC Trinkaus, HypoVereinsbank, LBBW, Société Générale, UBS and Vontobel. Furthermore, the Association's work is supported by fourteen sponsoring members, which include the Stuttgart and Frankfurt Exchanges, Baader Bank, the direct banks comdirect bank, Consorsbank, DAB Bank, flatex, ING-DiBa and S Broker, as well as finance portals and other service providers.

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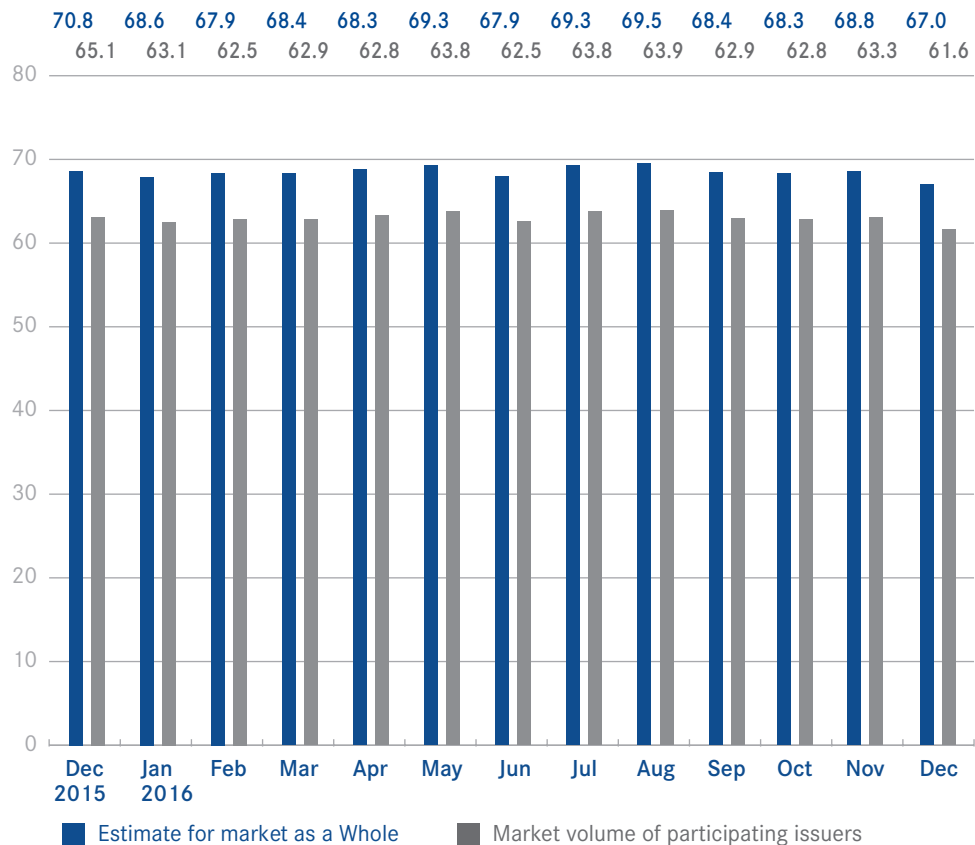
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## Market volume since December 2015



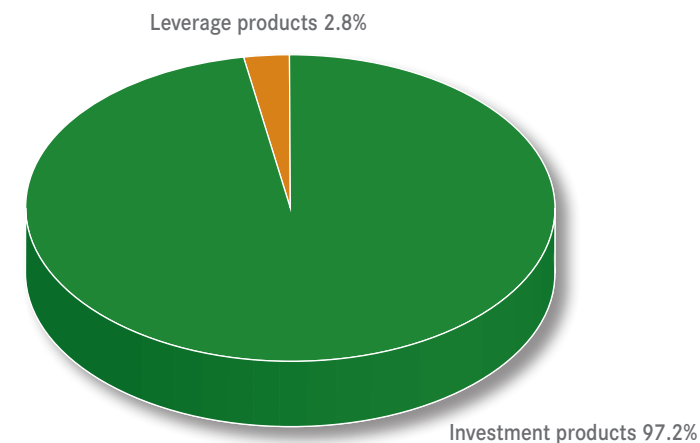
## Product classes

Market volume as at 31 December 2016

Product classes	Market volume	Share
	T€	%
Investment products with capital protection	22,961,845	38.3%
Investment products without capital protection	36,939,103	61.7%
<b>Total Investment products</b>	<b>59,900,948</b>	<b>100.0%</b>
Leverage products without Knock-Out	984,854	57.9%
Leverage products with Knock-Out	714,697	42.1%
<b>Total Leverage products</b>	<b>1,699,551</b>	<b>100.0%</b>
<b>Total Investment products</b>	<b>59,900,948</b>	<b>97.2%</b>
<b>Total Leverage products</b>	<b>1,699,551</b>	<b>2.8%</b>
<b>Total Derivatives</b>	<b>61,600,499</b>	<b>100.0%</b>

## Product classes

Market volume as at 31 December 2016

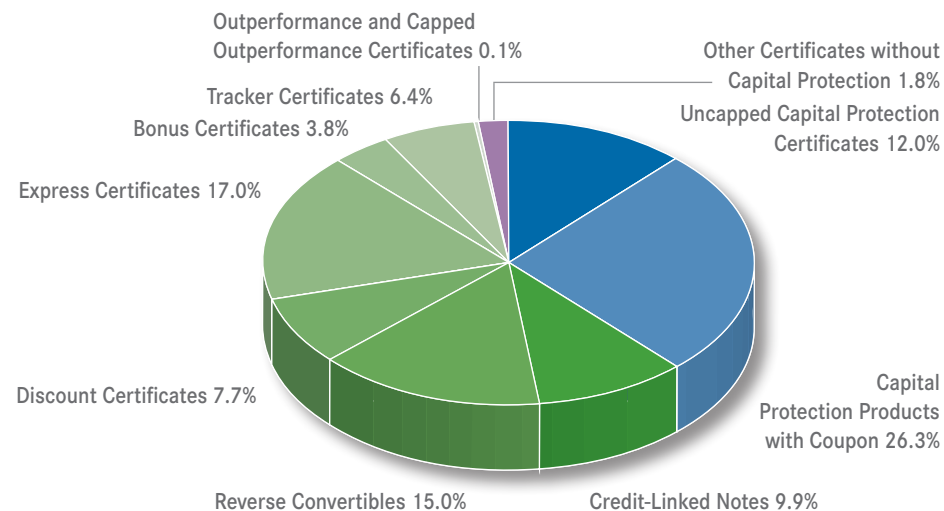


## Market volume by product category as at 31 December 2016

Product categories	Market volume		Market volume price-adjusted		Number of Products	
	T€	in %	T€	in %	#	in %
■ Uncapped Capital Protection Certificates	7,215,231	12.0%	7,176,570	12.2%	2,054	0.4%
■ Capital Protection Products with Coupon	15,746,615	26.3%	15,739,464	26.7%	2,481	0.5%
■ Credit-Linked Notes	5,915,474	9.9%	5,902,466	10.0%	2,347	0.5%
■ Reverse Convertibles	9,002,402	15.0%	8,804,437	14.9%	109,895	21.7%
■ Discount Certificates	4,586,326	7.7%	4,510,902	7.7%	153,266	30.3%
■ Express Certificates	10,196,435	17.0%	9,782,573	16.6%	9,617	1.9%
■ Bonus Certificates	2,248,475	3.8%	2,215,437	3.8%	222,940	44.0%
■ Tracker Certificates	3,824,004	6.4%	3,693,485	6.3%	1,758	0.3%
■ Outperformance and Capped Outperformance Certificates	76,195	0.1%	71,051	0.1%	1,446	0.3%
■ Other Certificates without Capital Protection	1,089,792	1.8%	1,068,683	1.8%	853	0.2%
<b>Investment products total</b>	<b>59,900,948</b>	<b>97.2%</b>	<b>58,965,067</b>	<b>97.3%</b>	<b>506,657</b>	<b>38.9%</b>
■ Warrants	633,569	37.3%	587,008	36.4%	439,256	55.2%
■ Factor Certificates	351,285	20.7%	349,474	21.7%	4,423	0.6%
■ Knock-Out Warrants	714,697	42.1%	675,235	41.9%	352,328	44.3%
<b>Leverage products total</b>	<b>1,699,551</b>	<b>2.8%</b>	<b>1,611,717</b>	<b>2.7%</b>	<b>796,007</b>	<b>61.1%</b>
<b>Total</b>	<b>61,600,499</b>	<b>100.0%</b>	<b>60,576,784</b>	<b>100.0%</b>	<b>1,302,664</b>	<b>100.0%</b>

## Investment products by product category

Market volume as at 31 December 2016

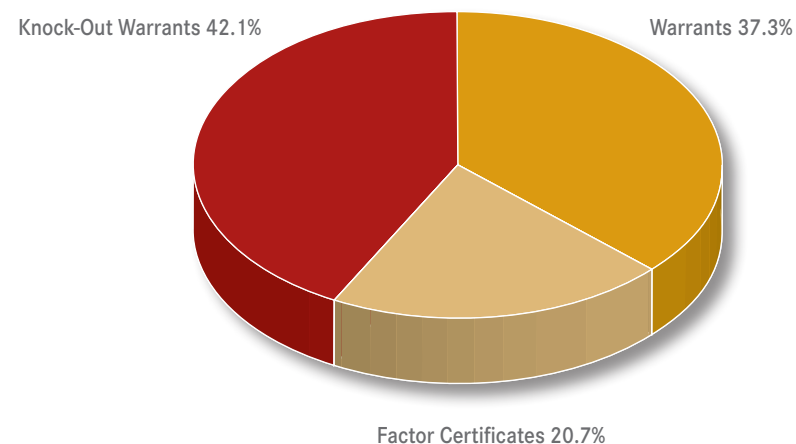


## Change in market volume by product category in comparison with previous month

Product categories	Change		Change price-adjusted		Price effect	
	T€	in %	T€	in %	T€	in %
■ Uncapped Capital Protection Certificates	-55,573	-0.8%	-94,235	-1.3%	38,662	0.5%
■ Capital Protection Products with Coupon	-285,093	-1.8%	-292,244	-1.8%	7,151	0.0%
■ Credit-Linked Notes	-56,615	-0.9%	-69,623	-1.2%	13,008	0.2%
■ Reverse Convertibles	-138,972	-1.5%	-336,937	-3.7%	197,965	2.2%
■ Discount Certificates	-831,348	-15.3%	-906,773	-16.7%	75,425	1.4%
■ Express Certificates	478,096	4.9%	64,234	0.7%	413,862	4.3%
■ Bonus Certificates	-511,342	-18.5%	-544,379	-19.7%	33,037	1.2%
■ Tracker Certificates	4,652	0.1%	-125,867	-3.3%	130,519	3.4%
■ Outperformance and Capped Outperformance Certificates	-7,856	-9.3%	-13,000	-15.5%	5,144	6.1%
■ Other Certificates without Capital Protection	11,182	1.0%	-9,926	-0.9%	21,108	2.0%
<b>Investment products total</b>	<b>-1,392,868</b>	<b>-2.3%</b>	<b>-2,328,749</b>	<b>-3.8%</b>	<b>535,011</b>	<b>1.5%</b>
■ Warrants	16,127	2.6%	-30,435	-4.9%	46,562	7.5%
■ Factor Certificates	7,592	2.2%	5,781	1.7%	1,811	0.5%
■ Knock-Out Warrants	15,743	2.3%	-23,719	-3.4%	39,462	5.6%
<b>Leverage products total</b>	<b>39,461</b>	<b>2.4%</b>	<b>-48,373</b>	<b>-2.9%</b>	<b>87,833</b>	<b>5.3%</b>
<b>Total</b>	<b>-1,353,407</b>	<b>-2.1%</b>	<b>-2,377,122</b>	<b>-3.8%</b>	<b>622,844</b>	<b>1.6%</b>

## Leverage products by product category

Market volume as at 31 December 2016



## Market volume by underlying asset as at 31 December 2016

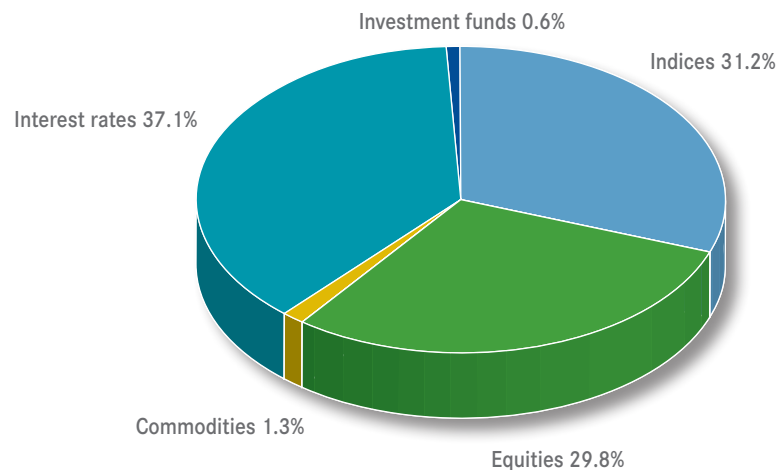
Underlying	Market volume		Market volume price-adjusted*		Number of Products	
	T€	%	T€	%	#	%
<b>Investment products</b>						
Indices	18,666,698	31.2%	18,314,712	31.1%	125,244	24.7%
Equities	17,848,517	29.8%	17,310,145	29.4%	373,948	73.8%
Commodities	783,364	1.3%	763,647	1.3%	2,366	0.5%
Currencies	25,780	0.0%	25,096	0.0%	19	0.0%
Interest rates	22,195,706	37.1%	22,174,023	37.6%	4,926	1.0%
Investment funds	380,885	0.6%	377,444	0.6%	154	0.0%
	<b>59,900,948</b>	<b>97.2%</b>	<b>58,965,067</b>	<b>97.3%</b>	<b>506,657</b>	<b>38.9%</b>
<b>Leverage products</b>						
Indices	524,937	30.9%	545,107	33.8%	179,071	22.5%
Equities	919,248	54.1%	797,014	49.5%	529,001	66.5%
Commodities	163,121	9.6%	173,391	10.8%	40,898	5.1%
Currencies	58,454	3.4%	57,637	3.6%	43,649	5.5%
Interest rates	33,770	2.0%	38,546	2.4%	3,380	0.4%
Investment funds	21	0.0%	21	0.0%	8	0.0%
	<b>1,699,551</b>	<b>2.8%</b>	<b>1,611,717</b>	<b>2.7%</b>	<b>796,007</b>	<b>61.1%</b>
<b>Total</b>	<b>61,600,499</b>	<b>100.0%</b>	<b>60,576,784</b>	<b>100.0%</b>	<b>1,302,664</b>	<b>100.0%</b>

\*Market volume adjusted for price changes = quantity outstanding as at 31 December 2016 x price as at 30 November 2016

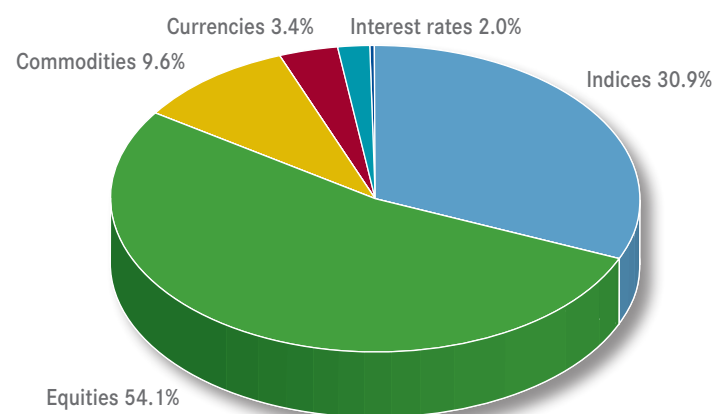
## Change in the market volume by underlying asset in comparison with previous month

Underlying	Change		Change price-adjusted		Price effect
	T€	%	T€	%	
<b>Investment products</b>					
Indices	-521,422	-2.7%	-873,407	-4.6%	1.8%
Equities	-473,073	-2.6%	-1,011,445	-5.5%	2.9%
Commodities	-24,073	-3.0%	-43,789	-5.4%	2.4%
Currencies	2,006	8.4%	1,323	5.6%	2.9%
Interest rates	-326,656	-1.5%	-348,339	-1.5%	0.1%
Investment funds	-49,651	-11.5%	-53,092	-12.3%	0.8%
	<b>-1,392,868</b>	<b>-2.3%</b>	<b>-2,328,749</b>	<b>-3.8%</b>	<b>1.5%</b>
<b>Leverage products</b>					
Indices	-579	-0.1%	19,591	3.7%	-3.8%
Equities	38,365	4.4%	-83,868	-9.5%	13.9%
Commodities	2,078	1.3%	12,348	7.7%	-6.4%
Currencies	-323	-0.6%	-1,140	-1.9%	1.4%
Interest rates	-79	-0.2%	4,697	13.9%	-14.1%
Investment funds	0	0.0%	0	0.0%	0.0%
	<b>39,461</b>	<b>2.4%</b>	<b>-48,373</b>	<b>-2.9%</b>	<b>5.3%</b>
<b>Total</b>	<b>-1,353,407</b>	<b>-2.1%</b>	<b>-2,377,122</b>	<b>-3.8%</b>	<b>1.6%</b>

## Investment products by underlying asset Market volume as at 31 December 2016



## Leverage products by underlying asset Market volume as at 31 December 2016



## Collection, validation and analysis methodology

### 1. Calculation of the market volume

In calculating the outstanding volume, the first step is to establish the market volume for an individual issue by multiplying the quantity outstanding by the market price on the last trading day of the month under review. The total market volume is calculated by adding the individual values. The price-adjusted figure is obtained by valuing the outstanding quantities at the market prices on the last trading day of the previous month. Newly launched products are valued at the price on the last trading day in the month under review.

### 2. Calculation of the turnover

Turnover is calculated at the relevant exercise price by aggregating the individual trades per issue and period and then adding them up. Purchases and sales are included at their relevant absolute amounts. The only turnover recorded is that relating to end customers. Also, issues are not classified as turnover until their value dates. By contrast, repayments are not included in the turnover figures, since they do not constitute actual trades. This means that there is a natural outflow of funds at the maturity date of the products, although this is offset by new issues if investors continue to invest in these investment classes. This turnover calculation can lead to inflows of funds in one investment class in one month that exceed the turnover recorded for that month in terms of their amounts. Also, large price fluctuations can lead to a change in the market volume that exceeds the turnover amount in terms of its amount.

### 3. Definition of the retail products covered

The collection and analysis process covers market volume and turnover in retail products that are publicly offered and listed on at least one German stock exchange in the relevant survey period. Private placements, institutional transactions and white-label trading are not covered. The possibility that parts of an issue may be bought by institutional investors, for instance through the stock exchange, cannot be ruled out.

### 4. DDV classification system (Derivatives League)

The product classification system used is based on DDV's Derivatives League concept. Investment products include Uncapped Capital Protection Certificates, Capital Protection Products with Coupon, Reverse Convertibles, Discount Certificates, Express Certificates, Bonus Certificates, Tracker Certificates, Outperformance and Capped Outperformance Certificates, as well as other investment products without capital protection. Leverage products comprise Warrants and Knock-Out Warrants. (For further details please refer to [http://www.derivateverband.de/DE/MediaLibrary/Document/ddv\\_klassifizierung\\_final.pdf](http://www.derivateverband.de/DE/MediaLibrary/Document/ddv_klassifizierung_final.pdf)).

### 5. Differentiation by investment class

Retail products are differentiated by the investment class of the underlying. All products with an equity component are included among the equity-based investment or leverage products. Products with a purely bond-based underlying (e.g. index certificates based on the German REX bond index, capital protected certificates based on the EURIBOR Euro Interbank Offered Rate) are included in the investment class of bonds. The currencies and commodities investment class comprises products based on goods, commodities and currencies. Hedge fund products are also shown separately.

### 6. Collection of the data

Each month, the issuers provide the relevant data in a specified scope and format from their internal systems (trading, risk management and pricing systems etc.). The mandatory information comprises ISIN, product type, asset class of the underlying, product category, turnover, market volume, quantity outstanding, maturity date of the products, product name, issue date, issue volume (quantity issued). The optional information includes details of the underlying, the knock-out thresholds, market prices and listings on German stock exchanges.

### 7. Monitoring of compliance with the self-commitment

Compliance with the code of conduct is monitored by means of on-site and off-site inspection of data and systems. Random sampling and targeted requests for selected information are backed up by cross-checking of data using stock exchange data, information services and the websites of issuers. In particular, the data are reconciled on a regular basis in cooperation with Boerse Stuttgart, with the main focus on stock exchange listing, the categorisation of products and the substantiation of figures for turnover and outstanding volumes.

### DISCLAIMER

EDG AG regularly checks the methods and analyses on which this interpretation is based. However, it does not guarantee the correctness of the analyses. By signing up to the voluntary agreement, the issuers have agreed to ensure the correctness of the transaction data provided by them, and on which the analysis is based. However, EDG AG cannot guarantee the correctness or the completeness of the data from the issuers.

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