

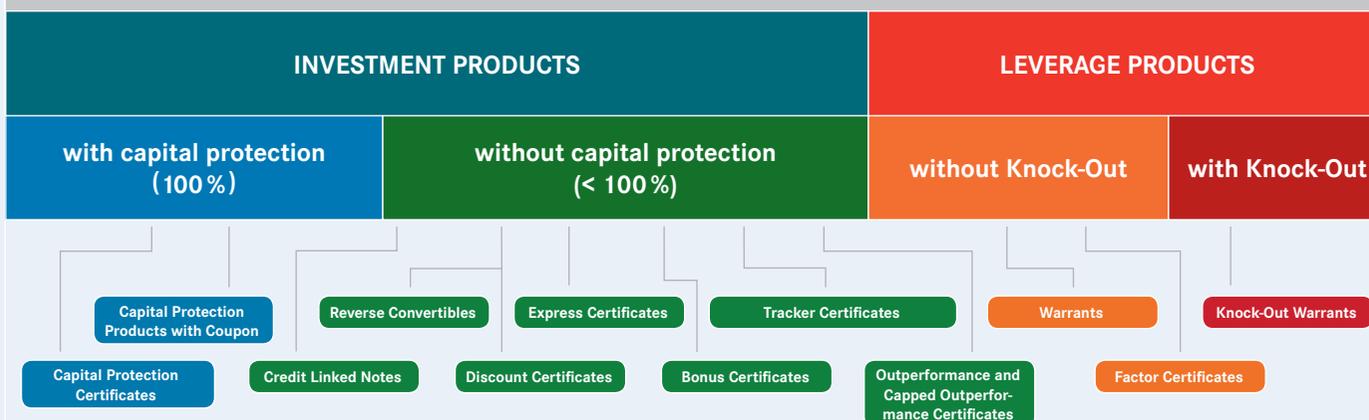
Market Volume

in Derivatives

Positive start into the second quarter

Express and Discount Certificates in particularly high demand

STRUCTURED SECURITIES



DDV Classification System

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April | 2018

- The total volume of the German structured products market rose to EUR 71.2 billion in April.
- Express Certificates saw an above-average growth of 5.5 percent, which brought their volume to EUR 14.3 billion.
- With a plus of 5.6 percent, the market volume of leverage products grew stronger than the market as a whole.
- Leverage products with equities as an underlying recorded a significant growth of 7.0 percent. The volume invested in these products stood at EUR 1.2 billion.

Positive start into the second quarter

Express and Discount Certificates in particularly high demand

The outstanding volume of the German structured products market increased in April 2018. When the figures are extrapolated to all issuers, the total volume of the German structured products market works out at EUR 71.2 billion in April 2018. This represents a month-on-month growth of 2.4 percent, or EUR 1.7 billion. These trends are shown by the latest set of the figures collected each month from 15 banks by the European Derivatives Group (EDG) on behalf of the German Derivatives Association (Deutscher Derivate Verband, DDV). The ratio of investment products to leverage products shifted slightly in favour of leverage products.

Investment products by product category

The overall upward trend meant there was an increase in demand in almost all product categories compared with the previous month. **Express** and **Discount Certificates** recorded particularly strong growth in volumes. The volume invested in **Express Certificates** rose to EUR 14.3 billion. Growth was registered for **Bonus Certificates** as well. In total, 36.9 percent of the market volume was invested in **Capital Protection Products with Coupon** and **Uncapped Capital Protection Certificates**. The volume of **Credit Linked Notes** went down again.

Leverage products by product category

After a downturn in the previous month, the market volume of **leverage products** grew in April and stood at EUR 2.0 billion. All product categories posted considerable increases, but the strongest growth was visible in the Knock-Out Warrants category.

Investment products by underlying

Structured products with **interest rates as an underlying** remained the most popular category in April. After an increase in the previous month, their volume fell to EUR 22.1 billion. Investment products with **equities as an underlying** showed a strong rise and came in second. The volume invested in these products was EUR 21.1 billion. Investment products with **indices as an underlying** also recorded a plus, following a downturn in the previous month. Investment products with **commodities as an underlying** suffered another decline and stood at EUR 595.7 million in April. Investment products with **currencies as an underlying** saw particularly strong growth of 29.8 percent, which brought their volume to EUR 96.2 million.

Leverage products by underlying

The dominant classes of underlyings for leverage products generated considerable growth in the beginning of the second quarter. The market volume of leverage products with **equities as an underlying** climbed to EUR 1.2 billion, while the volume invested in leverage products with **indices as an underlying** rose to EUR 561.1 million. The market volume of leverage products with **commodities as an underlying** went up to EUR 143.4 million, whereas leverage products with **currencies as an underlying** suffered losses. Leverage Products with **interest rates as an underlying** saw particularly strong growth of 18.7 percent, which brought their volume to EUR 36.3 million. ■



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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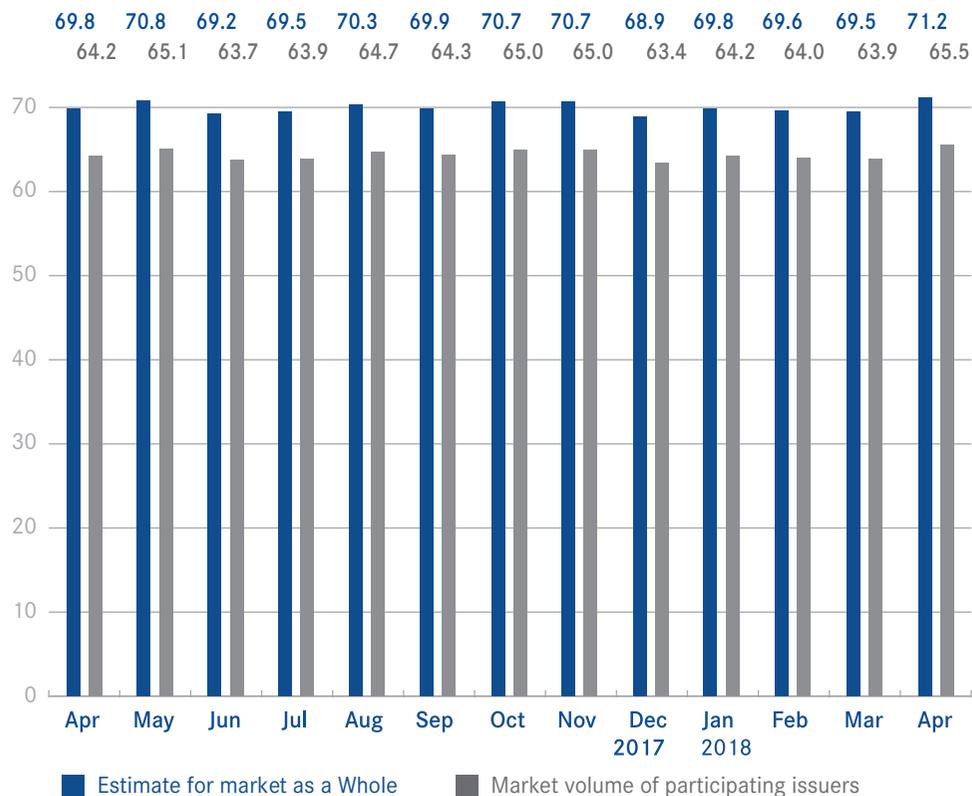
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Market volume since April 2017



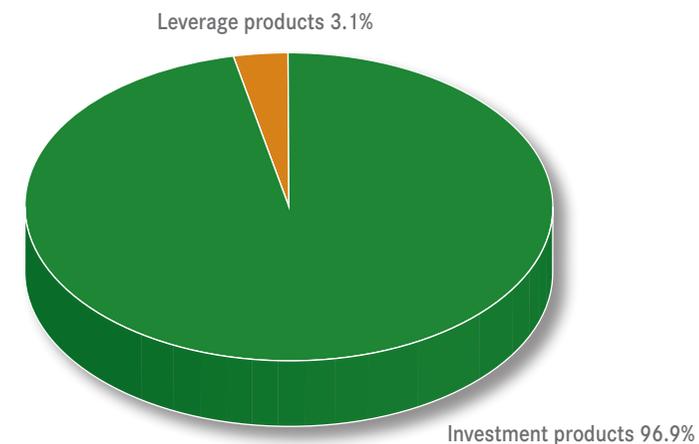
Product classes

Market volume as at 30 April 2018

Product classes	Market volume	Share
	T€	%
Investment products with capital protection	23,396,304	36.9%
Investment products without capital protection	40,060,993	63.1%
Total Investment products	63,457,297	100.0%
Leverage products without Knock-Out	1,132,538	55.8%
Leverage products with Knock-Out	898,065	44.2%
Total Leverage products	2,030,603	100.0%
Total Investment products	63,457,297	96.9%
Total Leverage products	2,030,603	3.1%
Total Derivatives	65,487,900	100.0%

Product classes

Market volume as at 30 April 2018

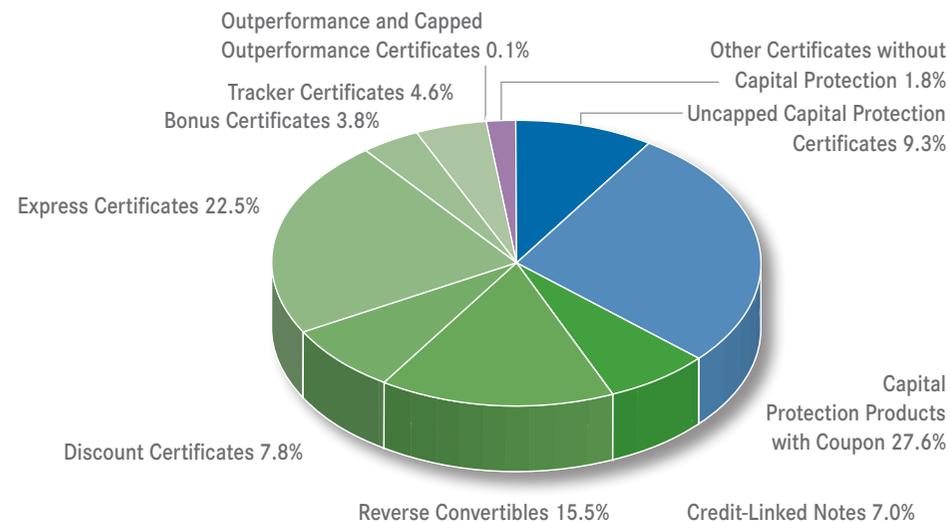


Market volume by product category as at 30 April 2018

Product categories	Market volume		Market volume price-adjusted		Number of Products	
	T€	in %	T€	in %	#	in %
■ Uncapped Capital Protection Certificates	5,901,341	9.3%	5,871,665	9.4%	1,579	0.3%
■ Capital Protection Products with Coupon	17,494,963	27.6%	17,507,114	28.0%	3,319	0.7%
■ Credit-Linked Notes	4,434,427	7.0%	4,435,757	7.1%	2,354	0.5%
■ Reverse Convertibles	9,851,632	15.5%	9,709,093	15.5%	124,666	25.9%
■ Discount Certificates	4,931,649	7.8%	4,837,637	7.7%	143,905	30.0%
■ Express Certificates	14,278,705	22.5%	13,888,756	22.2%	11,892	2.5%
■ Bonus Certificates	2,424,216	3.8%	2,349,613	3.8%	189,135	39.4%
■ Tracker Certificates	2,916,759	4.6%	2,828,113	4.5%	1,393	0.3%
■ Outperformance and Capped Outperformance Certificates	65,752	0.1%	62,286	0.1%	1,255	0.3%
■ Other Certificates without Capital Protection	1,157,852	1.8%	1,139,456	1.8%	914	0.2%
Investment products total	63,457,297	96.9%	62,629,490	96.8%	480,412	32.2%
■ Warrants	797,650	39.3%	865,386	41.8%	555,986	54.9%
■ Factor Certificates	334,888	16.5%	332,780	16.1%	6,670	0.7%
■ Knock-Out Warrants	898,065	44.2%	871,181	42.1%	450,048	44.4%
Leverage products total	2,030,603	3.1%	2,069,347	3.2%	1,012,704	67.8%
Total	65,487,900	100.0%	64,698,837	100.0%	1,493,116	100.0%

Investment products by product category

Market volume as at 30 April 2018

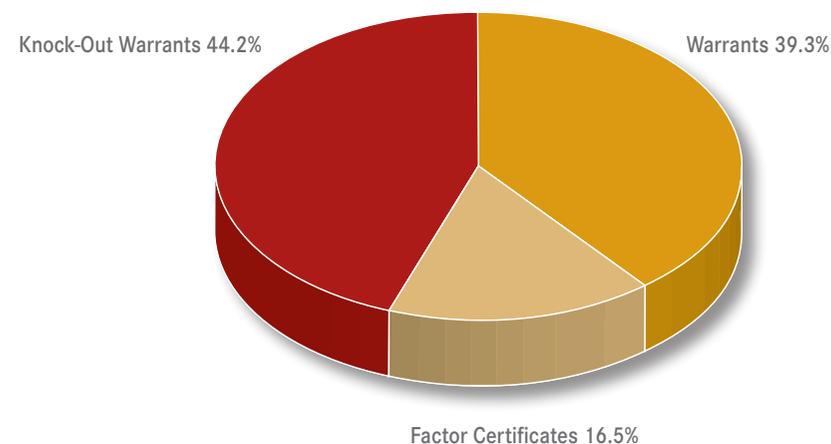


Change in market volume by product category in comparison with previous month

Product categories	Change		Change price-adjusted		Price effect
	T€	in %	T€	in %	in %
■ Uncapped Capital Protection Certificates	133,696	2.3%	104,020	1.8%	0.5%
■ Capital Protection Products with Coupon	331,919	1.9%	344,070	2.0%	-0.1%
■ Credit-Linked Notes	-501,077	-10.2%	-499,747	-10.1%	0.0%
■ Reverse Convertibles	316,508	3.3%	173,968	1.8%	1.5%
■ Discount Certificates	240,533	5.1%	146,521	3.1%	2.0%
■ Express Certificates	746,032	5.5%	356,082	2.6%	2.9%
■ Bonus Certificates	115,472	5.0%	40,869	1.8%	3.2%
■ Tracker Certificates	39,949	1.4%	-48,697	-1.7%	3.1%
■ Outperformance and Capped Outperformance Certificates	4,223	6.9%	757	1.2%	5.6%
■ Other Certificates without Capital Protection	17,686	1.6%	-710	-0.1%	1.6%
Investment products total	1,444,940	2.3%	617,134	1.0%	1.3%
■ Warrants	13,614	1.7%	81,351	10.4%	-8.6%
■ Factor Certificates	13,088	4.1%	10,980	3.4%	0.7%
■ Knock-Out Warrants	81,044	9.9%	54,159	6.6%	3.3%
Leverage products total	107,747	5.6%	146,491	7.6%	-2.0%
Total	1,552,687	2.4%	763,624	1.2%	1.2%

Leverage products by product category

Market volume as at 30 April 2018



Market volume by underlying asset as at 30 April 2018

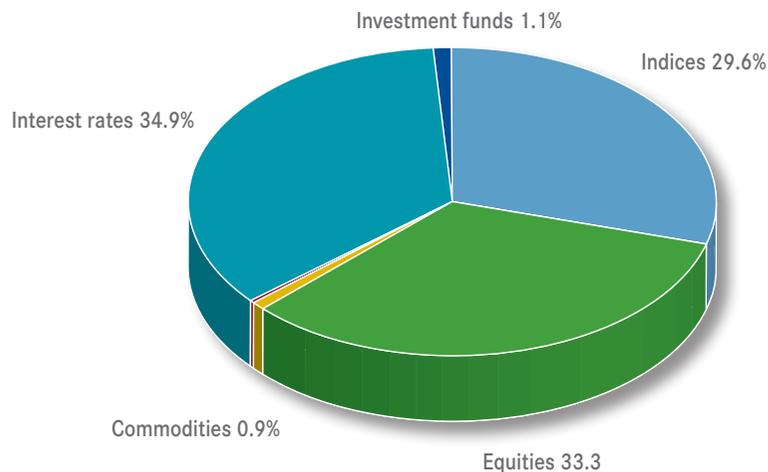
Underlying	Market volume		Market volume price-adjusted*		Number of Products	
	T€	%	T€	%	#	%
Investment products						
Indices	18,799,611	29.6%	18,459,063	29.5%	109,144	22.7%
Equities	21,138,024	33.3%	20,682,489	33.0%	362,692	75.5%
Commodities	595,669	0.9%	574,020	0.9%	2,596	0.5%
Currencies	96,179	0.2%	76,733	0.1%	19	0.0%
Interest rates	22,147,216	34.9%	22,160,757	35.4%	5,733	1.2%
Investment funds	680,598	1.1%	676,428	1.1%	228	0.0%
	63,457,297	96.9%	62,629,490	96.8%	480,412	32.2%
Leverage products						
Indices	561,100	27.6%	611,621	29.6%	224,608	22.2%
Equities	1,238,086	61.0%	1,223,812	59.1%	676,596	66.8%
Commodities	143,404	7.1%	145,825	7.0%	50,201	5.0%
Currencies	51,728	2.5%	53,990	2.6%	54,932	5.4%
Interest rates	36,285	1.8%	34,099	1.6%	6,367	0.6%
Investment funds	0	0.0%	0	0.0%	0	0.0%
	2,030,603	3.1%	2,069,347	3.2%	1,012,704	67.8%
Total	65,487,900	100.0%	64,698,837	100.0%	1,493,116	100.0%

*Market volume adjusted for price changes = quantity outstanding as at 30 April 2018 x price as at 31 March 2018

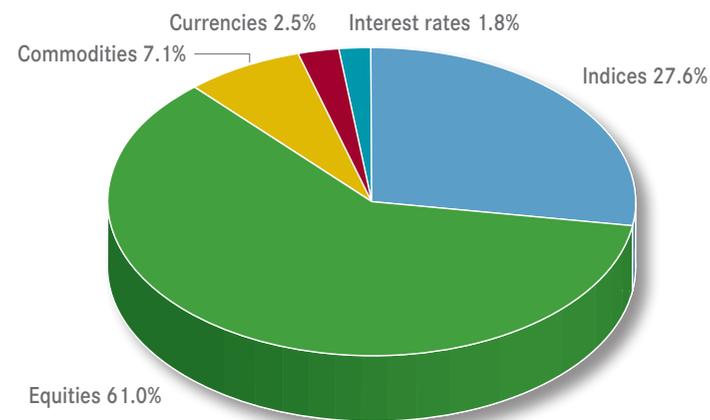
Change in the market volume by underlying asset in comparison with previous month

Underlying	Change		Change price-adjusted		Price effect
	T€	%	T€	%	
Investment products					
Indices	501,179	2.7%	160,631	0.9%	1.9%
Equities	1,058,202	5.3%	602,668	3.0%	2.3%
Commodities	-8,127	-1.3%	-29,776	-4.9%	3.6%
Currencies	22,091	29.8%	2,645	3.6%	26.2%
Interest rates	-155,510	-0.7%	-141,969	-0.6%	-0.1%
Investment funds	27,104	4.1%	22,934	3.5%	0.6%
	1,444,940	2.3%	617,134	1.0%	1.3%
Leverage products					
Indices	23,526	4.4%	74,047	13.8%	-9.4%
Equities	81,101	7.0%	66,827	5.8%	1.2%
Commodities	6,346	4.6%	8,767	6.4%	-1.8%
Currencies	-8,942	-14.7%	-6,680	-11.0%	-3.7%
Interest rates	5,716	18.7%	3,530	11.5%	7.1%
Investment funds	0	n. a.	0	n. a.	n. a.
	107,747	5.6%	146,491	7.6%	-2.0%
Total	1,552,687	2.4%	763,624	1.2%	1.2%

Investment products by underlying asset Market volume as at 30 April 2018



Leverage products by underlying asset Market volume as at 30 April 2018



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).

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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