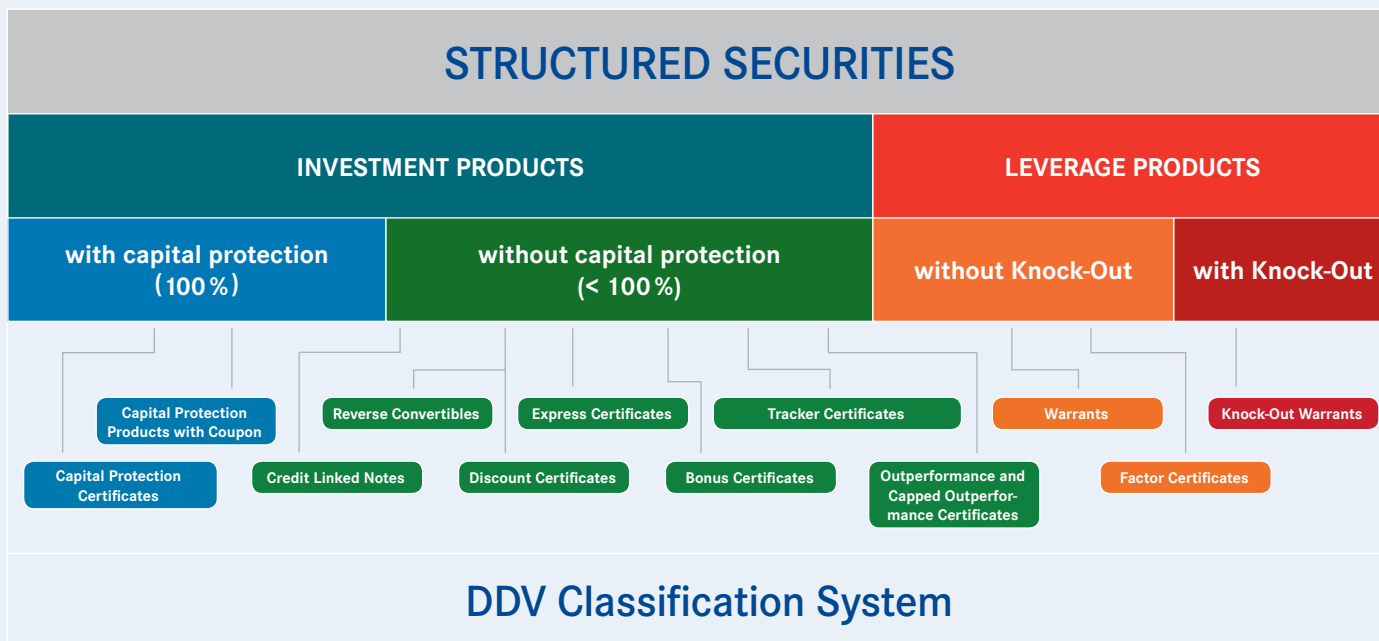


Market Volume

in Derivatives

German structured products market at EUR 68.5 billion

Growth in Capital Protection Products



CONTENTS

Market volume since December 2017	3
Market volume by product class	3
Market volume by product category	4
Change in the market volume by product category	4
Investment products by product category	4
Leverage products by product category	4
Market volume by underlying	5
Change in market volume by underlying	5
Investment products by underlying	5
Leverage products by underlying	5
Collection, validation and analysis methodology	6

December | 2018

- The total volume of the German structured products market fell to EUR 68.5 billion in December.
- Losses were more pronounced for leverage products (down 22.8 percent) than in the general market.
- Bucking the general trend, Capital Protection Products with Coupon gained 1.4 percent and came in with EUR 19.8 billion.
- Investment products with commodities as an underlying went up by a significant 9.0 percent and stood at EUR 491.0 million.

German structured products market at EUR 68.5 billion

Growth in Capital Protection Products

The outstanding volume of the German structured products market fell at the end of 2018. Almost all product categories were affected by this decrease. Extrapolating the figures to all issuers puts the total volume of the German structured products market at EUR 68.5 billion in December 2018. This corresponds to a loss of 4.3 percent or EUR 2.8 billion month on month. These trends are shown by the latest figures collected each month from 16 banks by the European Derivatives Group (EDG AG) on behalf of Deutscher Derivate Verband (DDV), the German Derivatives Association. The ratio of investment products to leverage products shifted slightly in favour of investment products.

Investment products by product category

The negative overall trend meant that demand was down on the previous month in almost all product categories. Volumes in **Discount Certificates** and **Reverse Convertibles**, suffered a particularly strong decline. The volume invested in Reverse Convertibles fell to EUR 7.8 billion. The market volume of **Express Certificates** decreased as well. **Capital Protection Products offering full capital protection** bucked the trend by recording growth. A total of 40.9 percent of the market volume was invested in **Capital Protection Products with Coupon** and **Uncapped Capital Protection Certificates** in December.

Leverage products by product category

The market volume of **leverage products** fell significantly and stood at EUR 1.4 billion in December. There were losses

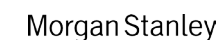
in all product categories, with the strongest drop seen for Knock-Out Warrants.

Investment products by underlying

Structured products with **interest rates as an underlying** remained the most popular category also in December. After gains in the previous month, the volume increased again slightly and stood at EUR 24.4 billion. Despite some losses, investment products with **indices as an underlying** followed in second place. The volume invested in them totalled EUR 18.3 billion. Investment products with **equities as an underlying** suffered a downturn as well. Against the overall trend, a significant increase to EUR 491.0 million was recorded in investment products with **commodities as an underlying** at the end of the year, whereas investment products with **currencies as an underlying** fell once again and stood at EUR 35.6 million.

Leverage products by underlying

Marked losses were seen in all major categories of underlyings of leverage products in December. The market volume of leverage products with **equities as an underlying** decreased to EUR 757.0 million. The volume invested in leverage products with **indices as an underlying** went down to EUR 448.6 million, whilst leverage products with **commodities** or **currencies as an underlying** recorded significant growth. ■



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, DekaBank, Deutsche Bank, DZ BANK, Goldman Sachs, Helaba, HSBC Trinkaus, HypoVereinsbank, LBBW, Morgan Stanley, Société Générale, UBS and Vontobel. Furthermore, the Association's work is supported by seventeen 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.

www.derivateverband.de

Office Berlin, Pariser Platz 3, 10117 Berlin, Germany

Office Frankfurt a.M., Feldbergstr. 38, 60323 Frankfurt a.M., Germany

Your contact:

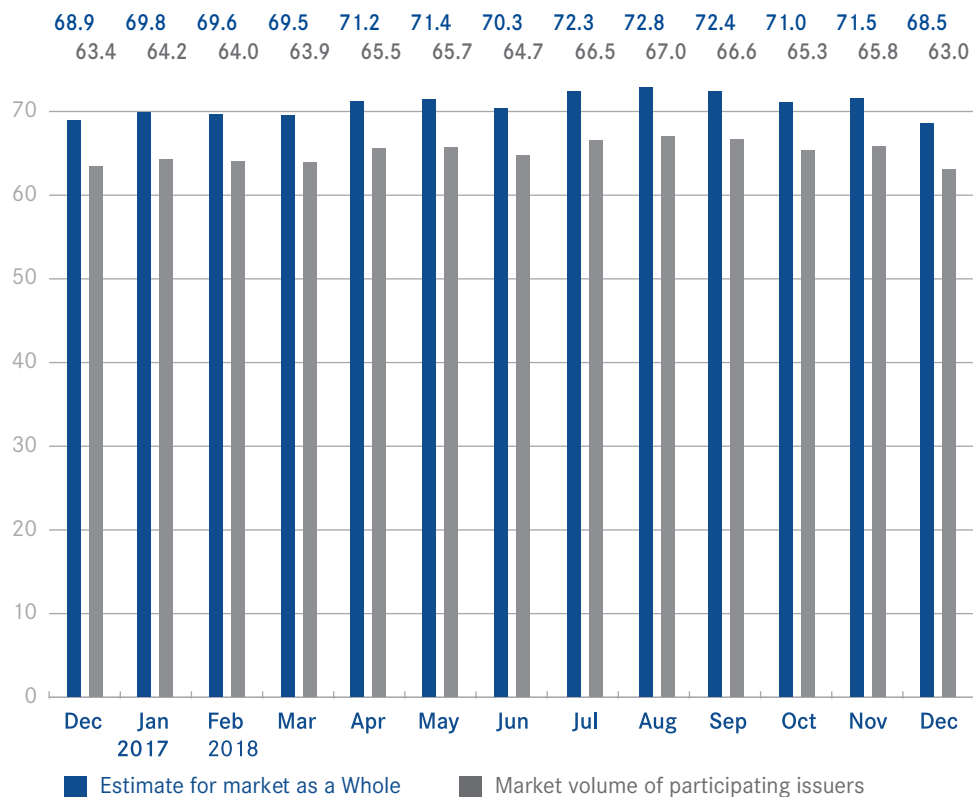
Alexander Heftrich, Media Relations Officer

phone: +49 (0)69 244 33 03 70, mobile phone: +49 (0)160 805 30 34

heftrich@derivateverband.de

Under the heading Presse (Media) our website www.derivateverband.de provides not only our latest media releases but also audio and video recordings for reporting (presently only available on the German website).

Market volume since December 2017



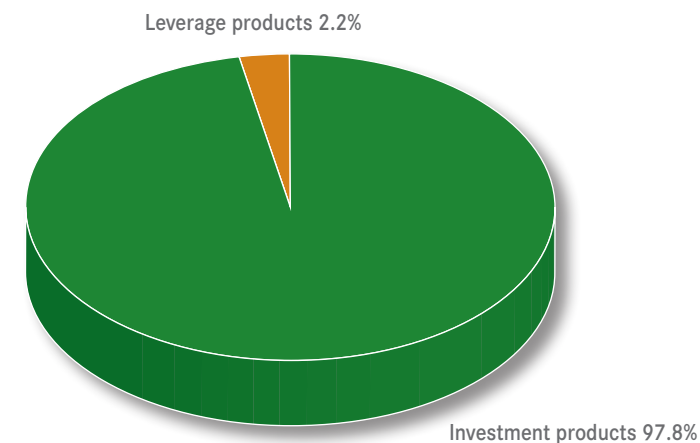
Product classes

Market volume as at 31 December 2018

Product classes	Market volume	Share
	T€	%
Investment products with capital protection	25,174,590	40.9%
Investment products without capital protection	36,408,040	59.1%
Total Investment products	61,582,630	100.0%
Leverage products without Knock-Out	788,857	57.0%
Leverage products with Knock-Out	594,541	43.0%
Total Leverage products	1,383,399	100.0%
Total Investment products	61,582,630	97.8%
Total Leverage products	1,383,399	2.2%
Total Derivatives	62,966,029	100.0%

Product classes

Market volume as at 31 December 2018

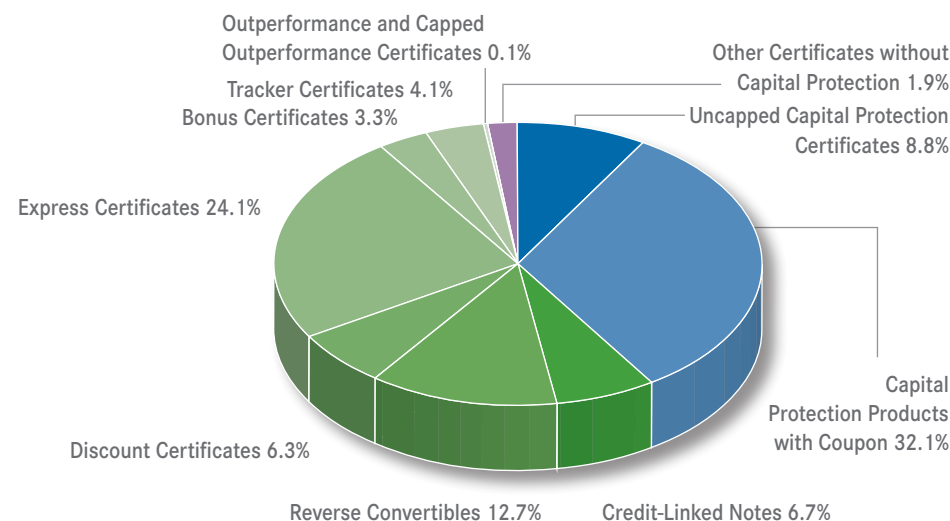


Market volume by product category as at 31 December 2018

Product categories	Market volume		Market volume price-adjusted		Number of Products	
	T€	in %	T€	in %	#	in %
■ Uncapped Capital Protection Certificates	5,395,590	8.8%	5,416,484	8.5%	1,443	0.3%
■ Capital Protection Products with Coupon	19,778,999	32.1%	19,887,348	31.4%	3,897	0.7%
■ Credit-Linked Notes	4,111,965	6.7%	4,115,958	6.5%	2,448	0.5%
■ Reverse Convertibles	7,809,649	12.7%	8,187,621	12.9%	117,896	21.9%
■ Discount Certificates	3,882,302	6.3%	4,016,734	6.3%	195,935	36.4%
■ Express Certificates	14,845,004	24.1%	15,764,405	24.9%	14,057	2.6%
■ Bonus Certificates	2,024,699	3.3%	2,100,777	3.3%	199,630	37.0%
■ Tracker Certificates	2,535,959	4.1%	2,666,063	4.2%	1,304	0.2%
■ Outperformance and Capped Outperformance Certificates	52,446	0.1%	56,142	0.1%	686	0.1%
■ Other Certificates without Capital Protection	1,146,017	1.9%	1,177,475	1.9%	1,562	0.3%
Investment products total	61,582,630	97.8%	63,389,007	97.3%	538,858	32.0%
■ Warrants	543,982	39.3%	722,260	41.7%	620,641	54.1%
■ Factor Certificates	244,875	17.7%	336,955	19.4%	23,395	2.0%
■ Knock-Out Warrants	594,541	43.0%	673,466	38.9%	503,623	43.9%
Leverage products total	1,383,399	2.2%	1,732,681	2.7%	1,147,659	68.0%
Total	62,966,029	100.0%	65,121,689	100.0%	1,686,517	100.0%

Investment products by product category

Market volume as at 31 December 2018

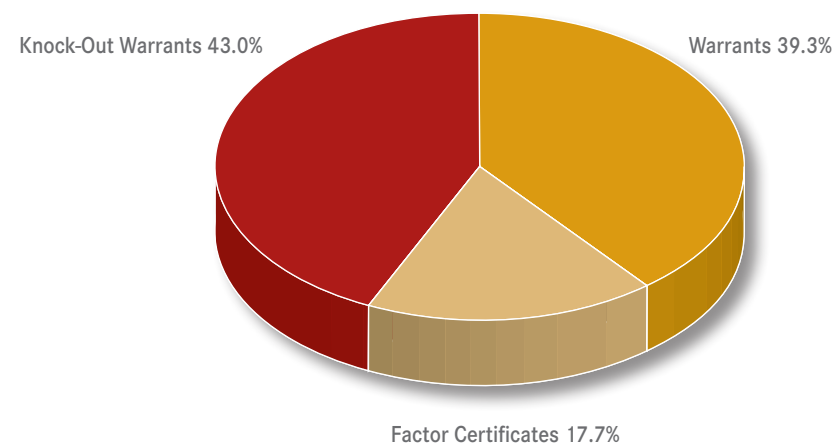


Change in market volume by product category in comparison with previous month

Product categories	Change		Change price-adjusted		Price effect	
	T€	in %	T€	in %	T€	in %
■ Uncapped Capital Protection Certificates	16,360	0.3%	37,253	0.7%	-	-0.4%
■ Capital Protection Products with Coupon	278,060	1.4%	386,409	2.0%	-	-0.6%
■ Credit-Linked Notes	-30,587	-0.7%	-26,594	-0.6%	-	-0.1%
■ Reverse Convertibles	-806,456	-9.4%	-428,484	-5.0%	-	-4.4%
■ Discount Certificates	-490,389	-11.2%	-355,956	-8.1%	-	-3.1%
■ Express Certificates	-813,058	-5.2%	106,343	0.7%	-	-5.9%
■ Bonus Certificates	-367,296	-15.4%	-291,218	-12.2%	-	-3.2%
■ Tracker Certificates	-129,576	-4.9%	528	0.0%	-	-4.9%
■ Outperformance and Capped Outperformance Certificates	-15,253	-22.5%	-11,557	-17.1%	-	-5.5%
■ Other Certificates without Capital Protection	-31,476	-2.7%	-18	0.0%	-	-2.7%
Investment products total	-2,389,672	-3.7%	-583,295	-0.9%	-	-2.8%
■ Warrants	-158,187	-22.5%	20,091	2.9%	-	-25.4%
■ Factor Certificates	-72,393	-22.8%	19,687	6.2%	-	-29.0%
■ Knock-Out Warrants	-177,537	-23.0%	-98,612	-12.8%	-	-10.2%
Leverage products total	-408,117	-22.8%	-58,834	-3.3%	-	-19.5%
Total	-2,797,788	-4.3%	-642,128	-1.0%	-	-3.3%

Leverage products by product category

Market volume as at 31 December 2018



Market volume by underlying asset as at 31 December 2018

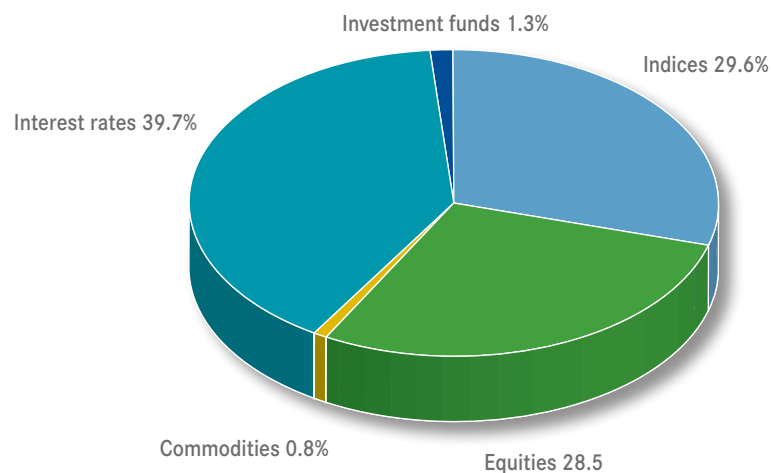
Underlying	Market volume		Market volume price-adjusted*		Number of Products	
	T€	%	T€	%	#	%
Investment products						
Indices	18,250,733	29.6%	18,880,974	29.8%	115,042	21.3%
Equities	17,569,258	28.5%	18,620,667	29.4%	414,806	77.0%
Commodities	490,991	0.8%	497,545	0.8%	2,286	0.4%
Currencies	35,583	0.1%	36,500	0.1%	13	0.0%
Interest rates	24,429,853	39.7%	24,543,394	38.7%	6,443	1.2%
Investment funds	806,212	1.3%	809,927	1.3%	268	0.0%
	61,582,630	97.8%	63,389,007	97.3%	538,858	32.0%
Leverage products						
Indices	448,639	32.4%	506,846	29.3%	278,649	24.3%
Equities	756,953	54.7%	1,049,917	60.6%	741,267	64.6%
Commodities	126,864	9.2%	121,229	7.0%	57,354	5.0%
Currencies	35,922	2.6%	37,155	2.1%	61,446	5.4%
Interest rates	15,021	1.1%	17,535	1.0%	8,949	0.8%
Investment funds	0	0.0%	0	0.0%	0	0.0%
	1,383,399	2.2%	1,732,681	2.7%	1,147,665	68.0%
Total	62,966,029	100.0%	65,121,689	100.0%	1,686,523	100.0%

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

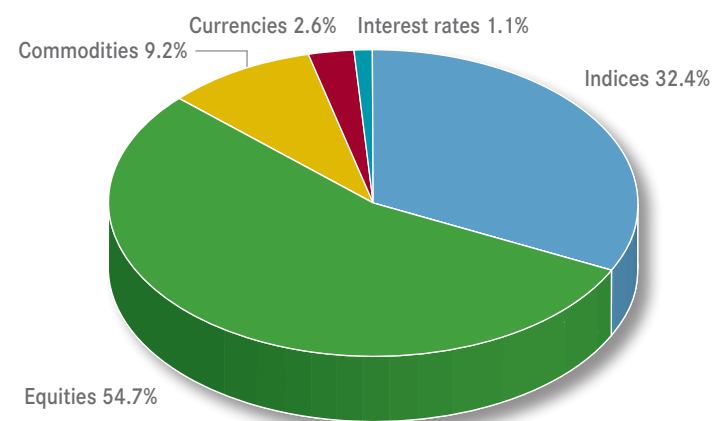
Change in the market volume by underlying asset in comparison with previous month

Underlying	Change		Change price-adjusted		Price effect
	T€	%	T€	%	
Investment products					
Indices	208,311	1.1%	184,654	1.0%	0.1%
Equities	-179,099	-0.9%	141,347	0.7%	-1.6%
Commodities	-54,465	-10.8%	-13,149	-2.6%	-8.2%
Currencies	-18,789	-33.3%	206	0.4%	-33.7%
Interest rates	562,409	2.4%	503,618	2.1%	0.2%
Investment funds	-12,519	-1.5%	1,064	0.1%	-1.6%
	505,849	0.8%	817,739	1.3%	-0.5%
Leverage products					
Indices	-15,665	-3.0%	28,401	5.5%	-8.5%
Equities	-42,863	-3.7%	166,336	14.2%	-17.8%
Commodities	-4,171	-3.7%	18,614	16.4%	-20.1%
Currencies	-3,840	-10.3%	528	1.4%	-11.7%
Interest rates	-2,117	-9.7%	830	3.8%	-13.5%
Investment funds	0	n. a.	0	n. a.	n. a.
	-68,656	-3.7%	214,710	11.5%	-15.2%
Total	437,193	0.7%	1,032,449	1.6%	-0.9%

Investment products by underlying asset Market volume as at 31 December 2018



Investment products by underlying asset Market volume as at 31 December 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.

Copyright

These statistics may not be copied, used or quoted without reference to the source text (Deutscher Derivate Verband: The German Derivatives Market, December 2018).