

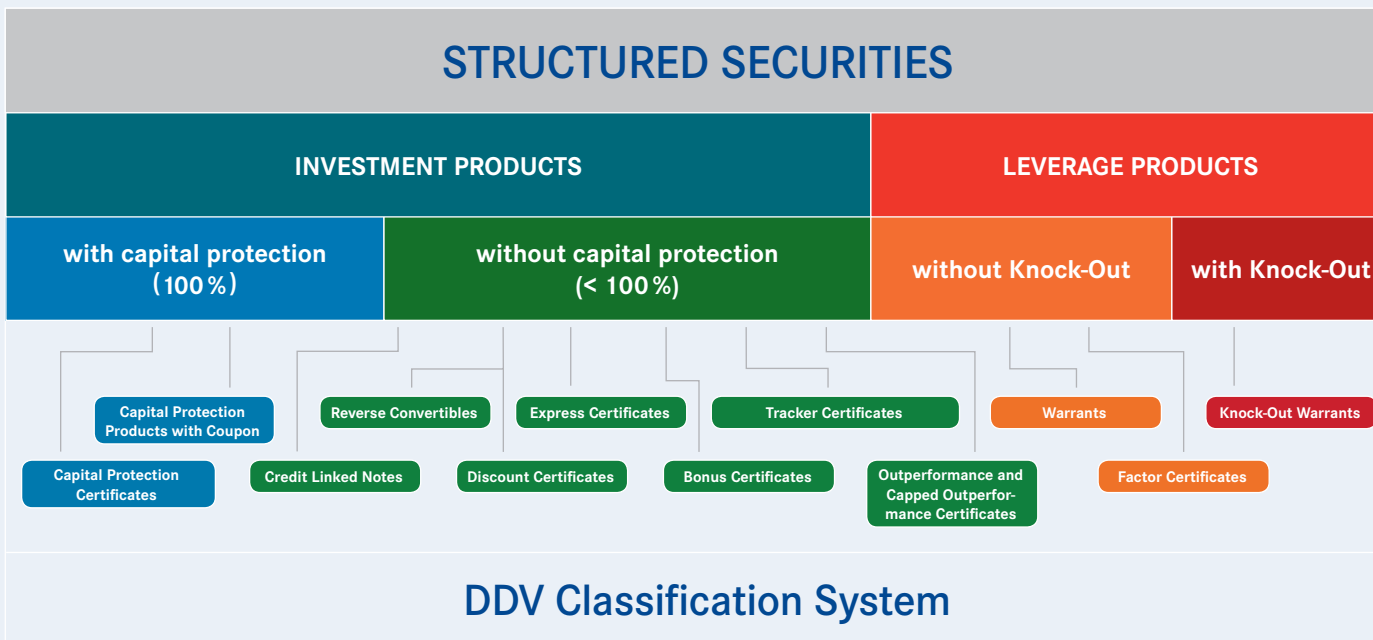
Market Volume

in Derivatives

Structured products market totals EUR 70.7 billion

Particularly strong demand for Bonus Certificates and Capital Protection Products with Coupon

STRUCTURED SECURITIES



DDV Classification System

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November | 2017

- In November, the total volume of the German structured products market stood at EUR 70.7 billion.
- Capital Protection Products with Coupon experienced above-average growth of 0.8 percent, taking their volume to EUR 17.0 billion.
- Investment products with currencies as an underlying recorded a clear rise of 84.5 percent to come in at EUR 105.5 million.
- Leverage products with equities as an underlying experienced growth of 3.1 percent. The volume invested in them totalled EUR 1.4 billion.

Structured products market totals EUR 70.7 billion

Particularly strong demand for Bonus Certificates and Capital Protection Products with Coupon

The outstanding volume of the German structured products market remained relatively constant in November. Extrapolating the figures to all issuers puts the total volume of the German structured products market at EUR 70.7 billion at the end of November 2017. This corresponds to a minimal fall of 0.1 percent on 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. The ratio of investment certificates to leverage products remained unchanged. Investment products accounted for 96.4 percent, while leverage products made up 3.6 percent.

Investment products by product category

A mixed picture emerged in the month under review. Demand was up month on month in some product categories but down in others. **Bonus Certificates** and **Capital Protection Products with Coupon** stood out as experiencing substantial increases in volume. The volume invested in Bonus Certificates climbed to EUR 2.4 billion as a result. 36.7 percent of the market volume was invested in Capital Protection Products with Coupon and Uncapped Capital Protection Certificates in November. Slight growth was also seen in **Discount Certificates**. By contrast, **Credit Linked Notes** registered another decline.

Leverage products by product category

After making gains in the previous month, the market volume of **leverage products** increased again in November, taking

it to EUR 2.3 billion. Growth was registered in **Knock-Out Warrants** and **Factor Certificates**, but **Warrants** were down.

Investment products by underlying

Structured products with **interest rates as an underlying** remained the most popular category in November. Having risen in the previous month, their volume increased again slightly to EUR 22.3 billion. Thanks to some gains, investment products with **equities as an underlying** followed in second place. The volume invested in them totalled EUR 20.6 billion. By contrast, investment products with **indices as an underlying** registered negative growth. Interest in investment products with **commodities as an underlying** fell again in November, taking their total to EUR 697.7 million. Investment products with **currencies as an underlying** posted above-average growth again. At 84.5 percent, this increase took them to EUR 105.5 million.

Leverage products by underlying

The picture was mixed for the main classes of leverage product in the month under review. While the market volume of leverage products with **equities as an underlying** increased to EUR 1.4 billion, the volume invested in leverage products with **indices as an underlying** fell to EUR 660.7 million. The market volume of leverage products with **commodities as an underlying** dropped to EUR 154.6 million, while leverage products with **currencies** or **interest rates as an underlying** registered clear gains. ■



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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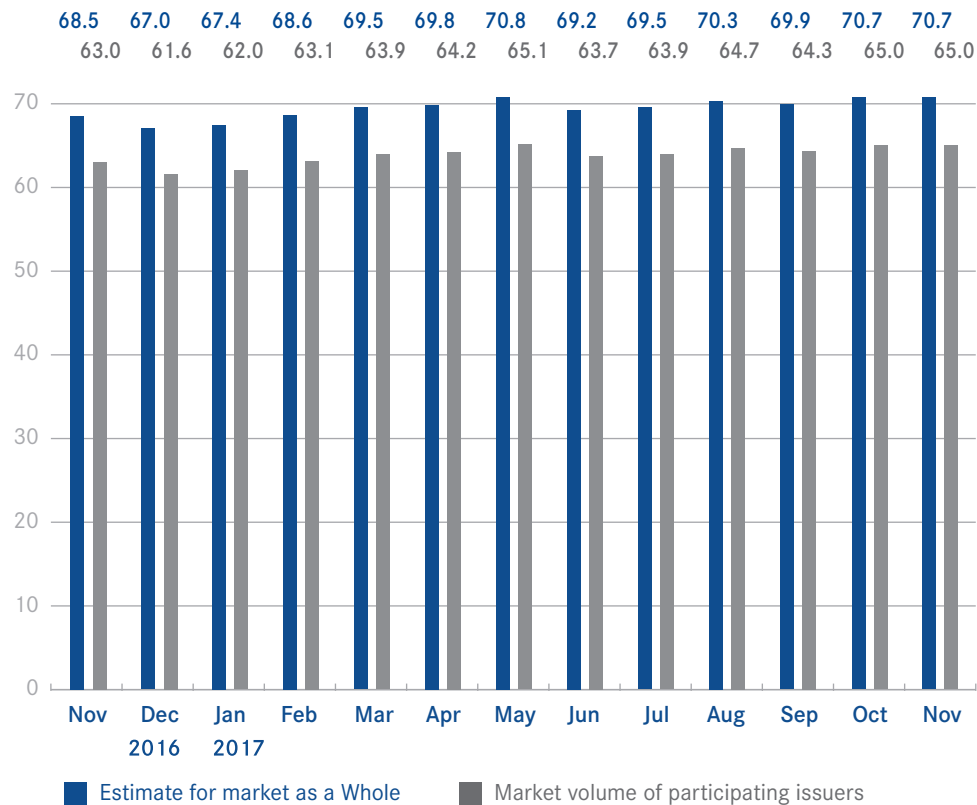
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Market volume since November 2016



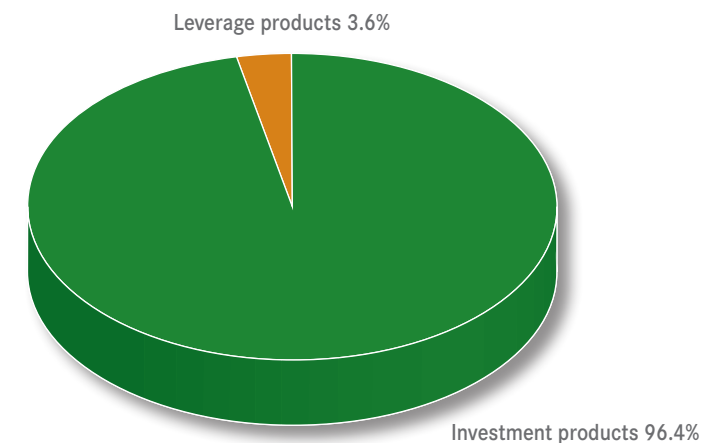
Product classes

Market volume as at 30 November 2017

Product classes	Market volume	Share
	T€	%
Investment products with capital protection	22,965,038	36.6%
Investment products without capital protection	39,695,806	63.4%
Total Investment products	62,660,844	100.0%
Leverage products without Knock-Out	1,250,951	53.4%
Leverage products with Knock-Out	1,092,758	46.6%
Total Leverage products	2,343,709	100.0%
Total Investment products	62,660,844	96.4%
Total Leverage products	2,343,709	3.6%
Total Derivatives	65,004,553	100.0%

Product classes

Market volume as at 30 November 2017

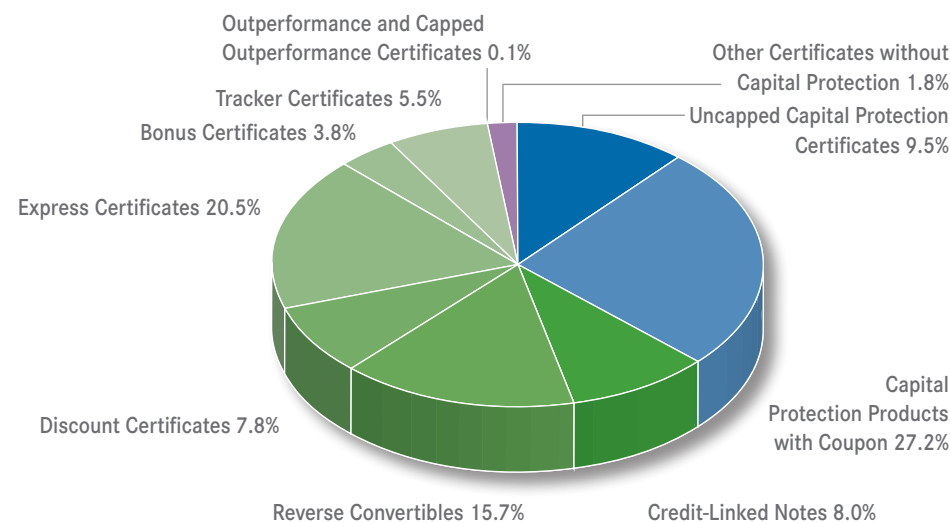


Market volume by product category as at 30 November 2017

Product categories	Market volume		Market volume price-adjusted		Number of Products	
	T€	in %	T€	in %	#	in %
■ Uncapped Capital Protection Certificates	5,931,841	9.5%	5,948,177	9.5%	1,682	0.3%
■ Capital Protection Products with Coupon	17,033,198	27.2%	17,036,107	27.1%	3,042	0.6%
■ Credit-Linked Notes	5,026,547	8.0%	5,049,950	8.0%	2,328	0.5%
■ Reverse Convertibles	9,866,236	15.7%	9,910,786	15.8%	129,417	25.2%
■ Discount Certificates	4,912,037	7.8%	4,932,482	7.9%	150,803	29.4%
■ Express Certificates	12,840,620	20.5%	12,885,631	20.5%	11,130	2.2%
■ Bonus Certificates	2,366,723	3.8%	2,376,117	3.8%	211,871	41.2%
■ Tracker Certificates	3,452,975	5.5%	3,445,789	5.5%	1,506	0.3%
■ Outperformance and Capped Outperformance Certificates	80,976	0.1%	82,985	0.1%	1,034	0.2%
■ Other Certificates without Capital Protection	1,149,693	1.8%	1,157,378	1.8%	883	0.2%
Investment products total	62,660,844	96.4%	62,825,402	96.2%	513,696	32.4%
■ Warrants	871,000	37.2%	941,992	37.9%	610,849	57.1%
■ Factor Certificates	379,951	16.2%	407,699	16.4%	5,613	0.5%
■ Knock-Out Warrants	1,092,758	46.6%	1,133,145	45.6%	453,540	42.4%
Leverage products total	2,343,709	3.6%	2,482,836	3.8%	1,070,002	67.6%
Total	65,004,553	100.0%	65,308,239	100.0%	1,583,698	100.0%

Investment products by product category

Market volume as at 30 November 2017

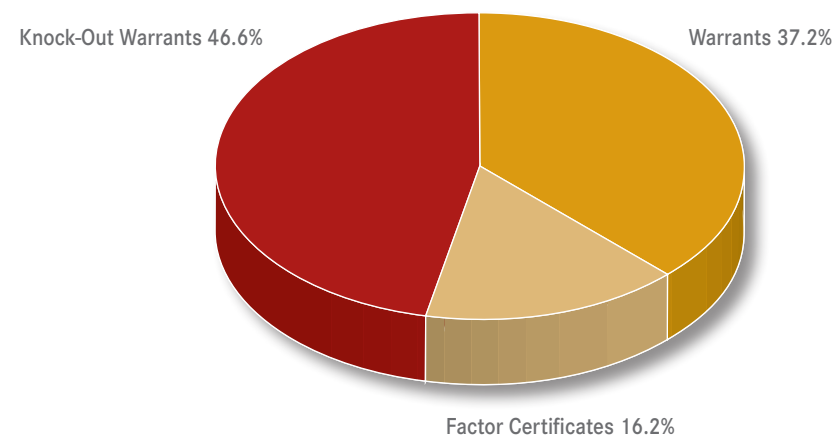


Change in market volume by product category in comparison with previous month

Product categories	Change		Change price-adjusted		Price effect	
	T€	in %	T€	in %	T€	in %
■ Uncapped Capital Protection Certificates	-137,144	-2.3%	-120,808	-2.0%	-16,336	-0.3%
■ Capital Protection Products with Coupon	138,563	0.8%	141,472	0.8%	2,909	0.0%
■ Credit-Linked Notes	-46,726	-0.9%	-23,322	-0.5%	-23,404	-0.5%
■ Reverse Convertibles	-6,106	-0.1%	38,445	0.4%	44,551	-0.5%
■ Discount Certificates	25,297	0.5%	45,742	0.9%	20,445	-0.4%
■ Express Certificates	-36,703	-0.3%	8,308	0.1%	-45,011	-0.3%
■ Bonus Certificates	43,336	1.9%	52,730	2.3%	9,394	-0.4%
■ Tracker Certificates	-273	0.0%	-7,459	-0.2%	-7,186	0.2%
■ Outperformance and Capped Outperformance Certificates	-6,599	-7.5%	-4,590	-5.2%	-1,999	-2.3%
■ Other Certificates without Capital Protection	-7,922	-0.7%	-236	0.0%	-7,686	-0.7%
Investment products total	-34,277	-0.1%	130,282	0.2%	164,559	-0.3%
■ Warrants	-5,038	-0.6%	65,955	7.5%	70,993	-8.1%
■ Factor Certificates	14,653	4.0%	42,401	11.6%	27,748	-7.6%
■ Knock-Out Warrants	8,700	0.8%	49,087	4.5%	40,387	-3.7%
Leverage products total	18,315	0.8%	157,442	6.8%	139,127	-6.0%
Total	-15,961	0.0%	287,724	0.4%	153,166	-0.5%

Leverage products by product category

Market volume as at 30 November 2017



Market volume by underlying asset as at 30 November 2017

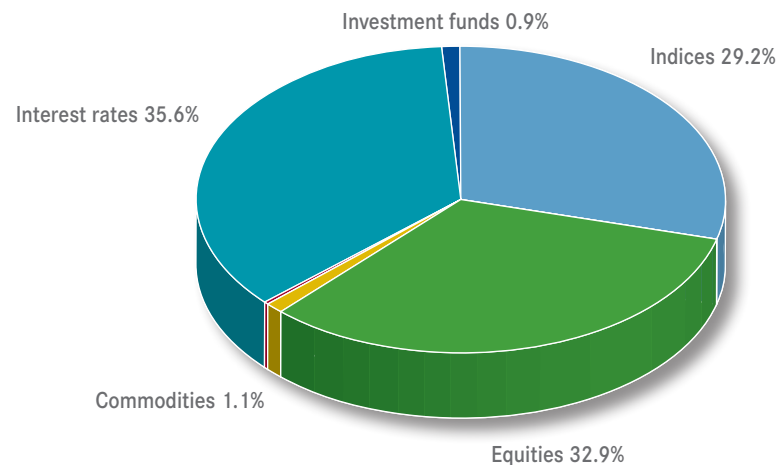
Underlying	Market volume		Market volume price-adjusted*		Number of Products	
	T€	%	T€	%	#	%
Investment products						
Indices	18,320,762	29.2%	18,403,839	29.3%	115,608	22.5%
Equities	20,605,922	32.9%	20,693,917	32.9%	389,813	75.9%
Commodities	697,668	1.1%	697,460	1.1%	2,608	0.5%
Currencies	105,481	0.2%	71,266	0.1%	28	0.0%
Interest rates	22,337,332	35.6%	22,364,679	35.6%	5,439	1.1%
Investment funds	593,679	0.9%	594,242	0.9%	200	0.0%
	62,660,844	96.4%	62,825,402	96.2%	513,696	32.4%
Leverage products						
Indices	660,679	28.2%	735,276	29.6%	228,188	21.3%
Equities	1,435,300	61.2%	1,485,032	59.8%	726,810	67.9%
Commodities	154,598	6.6%	164,759	6.6%	48,076	4.5%
Currencies	51,698	2.2%	54,974	2.2%	61,149	5.7%
Interest rates	41,410	1.8%	42,770	1.7%	5,771	0.5%
Investment funds	24	0.0%	24	0.0%	8	0.0%
	2,343,709	3.6%	2,482,836	3.8%	1,070,002	67.6%
Total	65,004,553	100.0%	65,308,239	100.0%	1,583,698	100.0%

*Market volume adjusted for price changes = quantity outstanding as at 30 November 2017 x price as at 31 October 2017

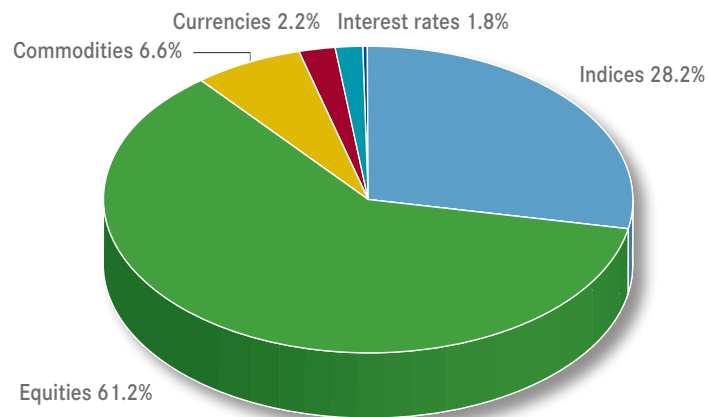
Change in the market volume by underlying asset in comparison with previous month

Underlying	Change		Change price-adjusted		Price effect
	T€	%	T€	%	
Investment products					
Indices	-222,021	-1.2%	-138,944	-0.7%	-0.4%
Equities	111,864	0.5%	199,858	1.0%	-0.4%
Commodities	-36,480	-5.0%	-36,687	-5.0%	0.0%
Currencies	48,323	84.5%	14,108	24.7%	59.9%
Interest rates	69,554	0.3%	96,901	0.4%	-0.1%
Investment funds	-5,517	-0.9%	-4,954	-0.8%	-0.1%
	-34,277	-0.1%	130,282	0.2%	-0.3%
Leverage products					
Indices	-28,664	-4.2%	45,933	6.7%	-10.8%
Equities	43,502	3.1%	93,233	6.7%	-3.6%
Commodities	-10,551	-6.4%	-390	-0.2%	-6.2%
Currencies	4,834	10.3%	8,110	17.3%	-7.0%
Interest rates	9,196	28.5%	10,557	32.8%	-4.2%
Investment funds	0	-1.6%	0	0.0%	-1.6%
	18,315	0.8%	157,442	6.8%	-6.0%
Total	-15,961	0.0%	287,724	0.4%	-0.5%

Investment products by underlying asset Market volume as at 30 November 2017



Leverage products by underlying asset Market volume as at 30 November 2017



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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