

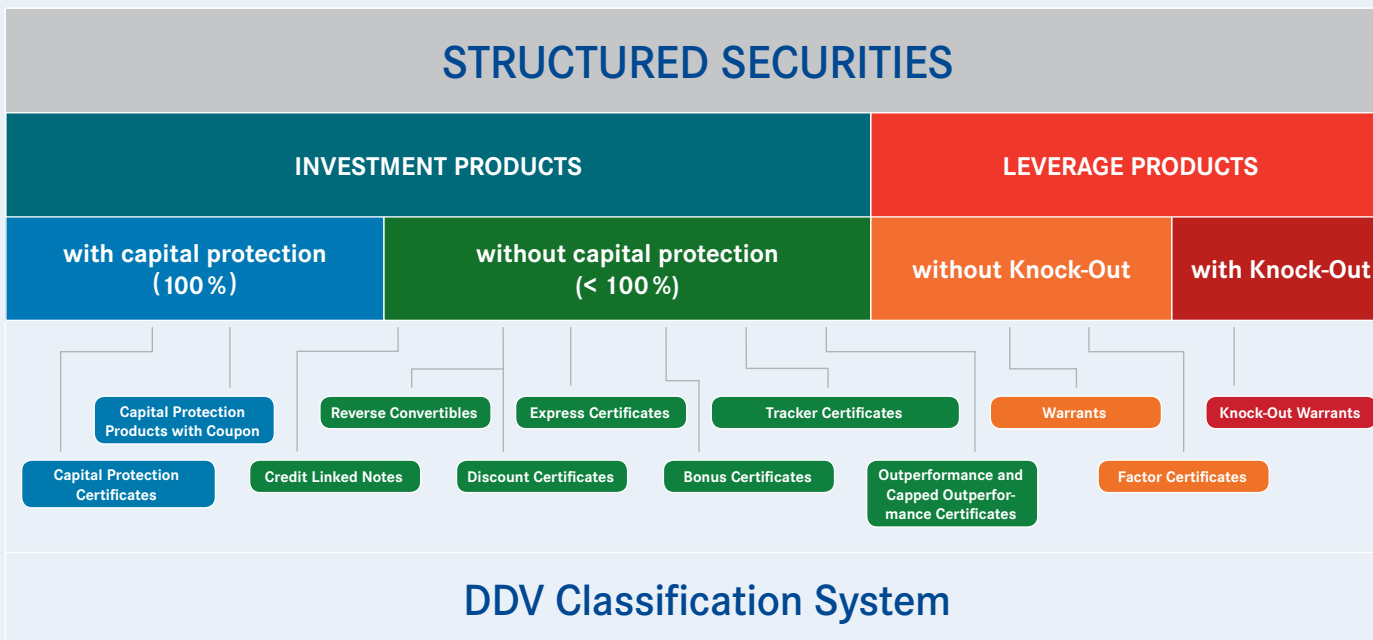
Market Volume

in Derivatives

German structured products market totals EUR 73.2 billion

Strong demand for Capital Protection Products with Coupon and Discount Certificates

STRUCTURED SECURITIES



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May | 2019

- In May, the total volume of the German structured products market stood at EUR 73.2 billion.
- Capital Protection Products with Coupon recorded an increase of 1.7 percent to EUR 20.4 billion.
- Investment products with indices as an underlying experienced growth of 0.6 percent. The volume invested in them totalled EUR 20.2 billion.
- Leverage products experienced a sharp decrease with negative growth of 15.2 percent.

German structured products market totals EUR 73.2 billion

Strong demand for Capital Protection Products with Coupon and Discount Certificates

The outstanding volume of the German structured products market fell slightly in May. Extrapolating the figures to all issuers puts the total volume at EUR 73.2 billion. This corresponds to a loss of 1.0 percent or EUR 0.7 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 the majority of product categories. **Express Certificates** and **Reverse Convertibles** in particular experienced above-average reductions in volumes. The volume invested in Express Certificates fell to EUR 17.3 billion. Likewise, the volume invested in **Tracker Certificates** dropped. **Discount Certificates** and **Bonus Certificates** bucked the trend by registering growth. Increases were also seen in **Capital Protection Products** offering full capital protection, meaning that a total of 39.3 percent of the market volume was invested in these instruments.

Leverage products by product category

After making gains in the previous month, the market volume of **Leverage Products** was down considerably at EUR 1.8 billion in the month under review. Decreases were

seen in all product categories, with the sharpest decline in **Warrants**.

Investment products by underlying

Structured products with **interest rates as an underlying** remained the most popular category in May. Their volume edged up slightly to just under EUR 24.9 billion. Investment products with **indices as an underlying** followed in second place. The volume invested in them totalled EUR 20.2 billion. Following growth in the previous month, investment products with **equities as an underlying** registered losses in the reporting month. Their volume came in at EUR 18.9 billion. Investment products with **commodities as an underlying** were down in the reporting period, coming in at EUR 492.6 million. Investment products with **currencies as an underlying** posted substantial growth of 93.3 percent, taking them to EUR 104.0 million.

Leverage products by underlying

Marked losses were seen in the main classes of leverage product in the reporting month. The market volume of leverage products with **equities as an underlying** decreased to EUR 1.1 billion, while the volume invested in leverage products with **indices as an underlying** fell to EUR 466.8 million. The aggregate market share of leverage products with **commodities** or **currencies** as an underlying climbed slightly to 8.8 percent. The volume invested in leverage products with **interest rates as an underlying** rose to EUR 11.6 million, bucking the general trend. ■



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.

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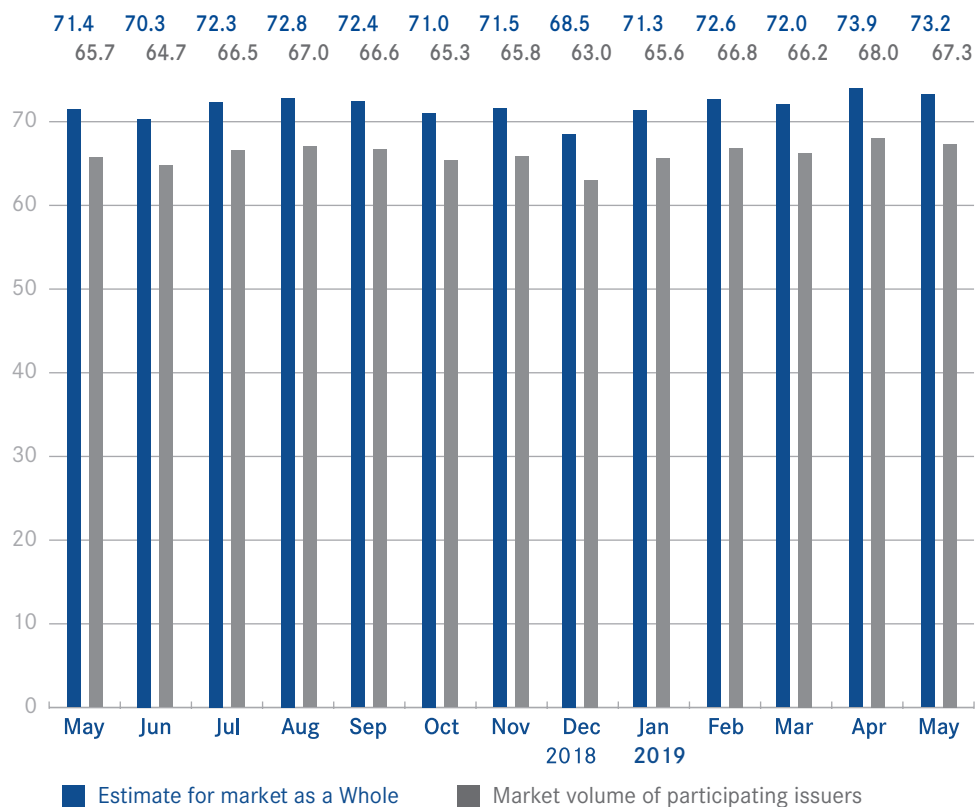
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Market volume since May 2018



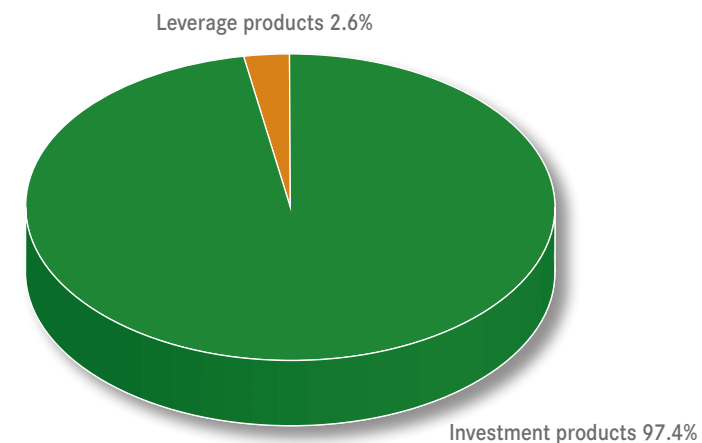
Product classes

Market volume as at 31 May 2019

Product classes	Market volume	Share
	T€	%
Investment products with capital protection	25,719,229	39.3%
Investment products without capital protection	39,771,069	60.7%
Total Investment products	65,490,298	100.0%
Leverage products without Knock-Out	978,245	55.0%
Leverage products with Knock-Out	799,678	45.0%
Total Leverage products	1,777,923	100.0%
Total Investment products	65,490,298	97.4%
Total Leverage products	1,777,923	2.6%
Total Derivatives	67,268,221	100.0%

Product classes

Market volume as at 31 May 2019

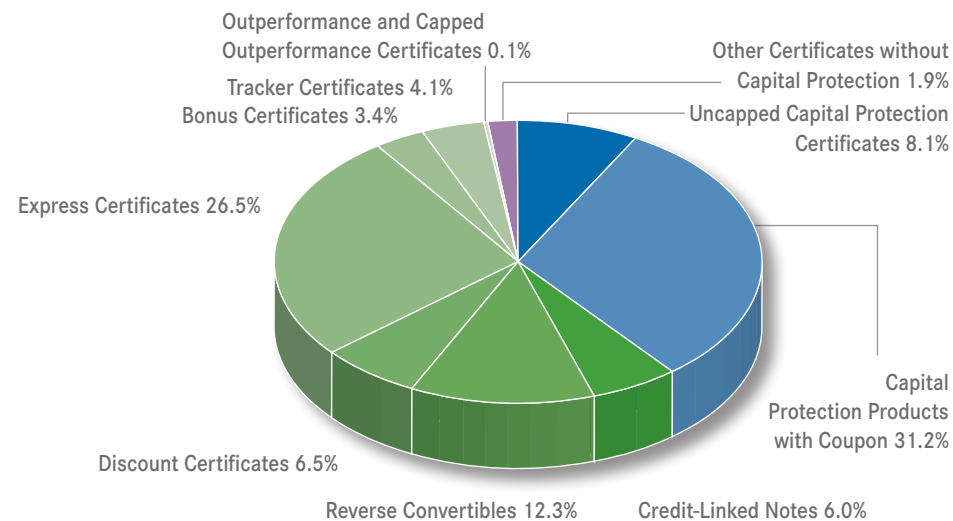


Market volume by product category as at 31 May 2019

Product categories	Market volume		Market volume price-adjusted		Number of Products	
	T€	in %	T€	in %	#	in %
■ Uncapped Capital Protection Certificates	5,306,467	8.1%	5,317,946	8.0%	1,432	0.3%
■ Capital Protection Products with Coupon	20,412,762	31.2%	20,296,555	30.4%	4,281	0.8%
■ Credit-Linked Notes	3,899,658	6.0%	3,900,432	5.8%	2,512	0.5%
■ Reverse Convertibles	8,028,303	12.3%	8,408,093	12.6%	120,579	21.8%
■ Discount Certificates	4,230,932	6.5%	4,307,795	6.4%	202,575	36.6%
■ Express Certificates	17,338,466	26.5%	18,210,982	27.2%	15,641	2.8%
■ Bonus Certificates	2,259,113	3.4%	2,266,346	3.4%	203,730	36.8%
■ Tracker Certificates	2,702,963	4.1%	2,788,793	4.2%	1,319	0.2%
■ Outperformance and Capped Outperformance Certificates	47,019	0.1%	49,519	0.1%	948	0.2%
■ Other Certificates without Capital Protection	1,264,617	1.9%	1,297,815	1.9%	1,143	0.2%
Investment products total	65,490,298	97.4%	66,844,276	96.8%	554,160	31.7%
■ Warrants	684,871	38.5%	906,929	41.4%	634,777	53.2%
■ Factor Certificates	293,373	16.5%	399,134	18.2%	29,828	2.5%
■ Knock-Out Warrants	799,678	45.0%	882,005	40.3%	527,820	44.3%
Leverage products total	1,777,923	2.6%	2,188,068	3.2%	1,192,425	68.3%
Total	67,268,221	100.0%	69,032,344	100.0%	1,746,585	100.0%

Investment products by product category

Market volume as at 31 May 2019

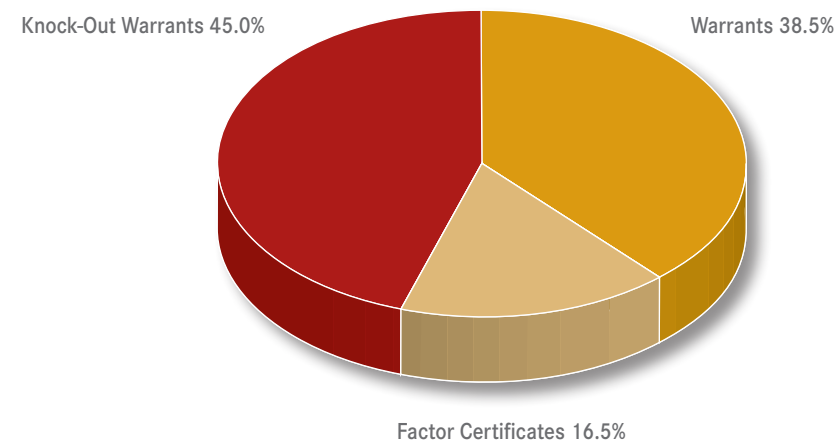


Change in market volume by product category in comparison with previous month

Product categories	Change		Change price-adjusted		Price effect
	T€	in %	T€	in %	
■ Uncapped Capital Protection Certificates	-195,070	-3.5%	-183,592	-3.3%	-0.2%
■ Capital Protection Products with Coupon	346,364	1.7%	230,157	1.1%	0.6%
■ Credit-Linked Notes	15,483	0.4%	16,257	0.4%	0.0%
■ Reverse Convertibles	-291,158	-3.5%	88,632	1.1%	-4.6%
■ Discount Certificates	165,456	4.1%	242,320	6.0%	-1.9%
■ Express Certificates	-420,732	-2.4%	451,785	2.5%	-4.9%
■ Bonus Certificates	99,701	4.6%	106,935	5.0%	-0.3%
■ Tracker Certificates	-71,239	-2.6%	14,592	0.5%	-3.1%
■ Outperformance and Capped Outperformance Certificates	-5,377	-10.3%	-2,877	-5.5%	-4.8%
■ Other Certificates without Capital Protection	-39,172	-3.0%	-5,974	-0.5%	-2.5%
Investment products total	-395,743	-0.6%	958,234	1.5%	-2.1%
■ Warrants	-183,236	-21.1%	38,821	4.5%	-25.6%
■ Factor Certificates	-45,442	-13.4%	60,319	17.8%	-31.2%
■ Knock-Out Warrants	-88,945	-10.0%	-6,618	-0.7%	-9.3%
Leverage products total	-317,624	-15.2%	92,522	4.4%	-19.6%
Total	-713,367	-1.0%	1,050,756	1.5%	-2.6%

Leverage products by product category

Market volume as at 31 May 2019



Market volume by underlying asset as at 31 May 2019

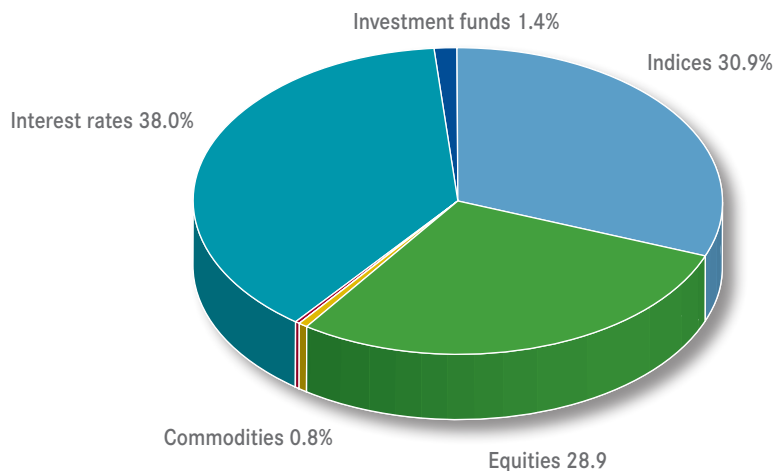
Underlying	Market volume		Market volume price-adjusted*		Number of Products	
	T€	%	T€	%	#	%
Investment products						
Indices	20,223,181	30.9%	20,493,169	30.7%	113,755	20.5%
Equities	18,916,419	28.9%	20,116,522	30.1%	430,769	77.7%
Commodities	492,577	0.8%	518,832	0.8%	2,426	0.4%
Currencies	103,974	0.2%	66,803	0.1%	13	0.0%
Interest rates	24,857,399	38.0%	24,742,431	37.0%	6,911	1.2%
Investment funds	896,749	1.4%	906,519	1.4%	286	0.1%
	65,490,298	97.4%	66,844,276	96.8%	554,160	31.7%
Leverage products						
Indices	466,765	26.3%	522,219	23.9%	275,898	23.1%
Equities	1,143,860	64.3%	1,479,598	67.6%	778,262	65.3%
Commodities	111,504	6.3%	128,018	5.9%	61,082	5.1%
Currencies	44,228	2.5%	44,696	2.0%	67,489	5.7%
Interest rates	11,566	0.7%	13,538	0.6%	9,694	0.8%
Investment funds	0	0.0%	0	0.0%	0	0.0%
	1,777,923	2.6%	2,188,068	3.2%	1,192,425	68.3%
Total	67,268,221	100.0%	69,032,344	100.0%	1,746,585	100.0%

*Market volume adjusted for price changes = quantity outstanding as at 31 May 2019 x price as at 30 April 2019

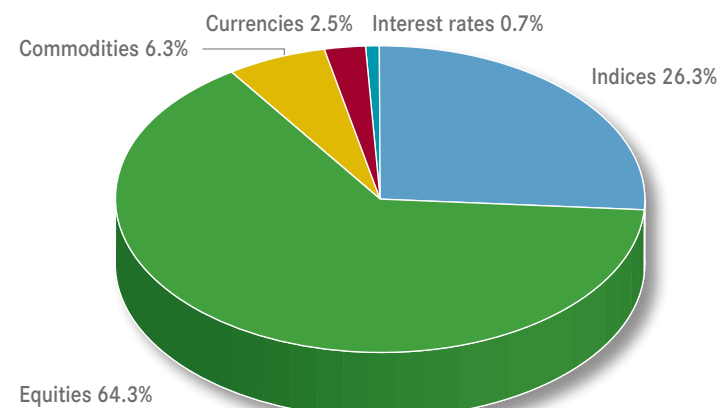
Change in the market volume by underlying asset in comparison with previous month

Underlying	Change		Change price-adjusted		Price effect
	T€	%	T€	%	
Investment products					
Indices	118,489	0.6%	388,477	1.9%	-1.3%
Equities	-825,537	-4.2%	374,567	1.9%	-6.1%
Commodities	-11,085	-2.2%	15,169	3.0%	-5.2%
Currencies	50,183	93.3%	13,012	24.2%	69.1%
Interest rates	257,747	1.0%	142,778	0.6%	0.5%
Investment funds	14,460	1.6%	24,231	2.7%	-1.1%
	-395,743	-0.6%	958,234	1.5%	-2.1%
Leverage products					
Indices	-25,143	-5.1%	30,312	6.2%	-11.3%
Equities	-299,904	-20.8%	35,834	2.5%	-23.3%
Commodities	-2,630	-2.3%	13,883	12.2%	-14.5%
Currencies	5,521	14.3%	5,988	15.5%	-1.2%
Interest rates	4,531	64.4%	6,504	92.4%	-28.0%
Investment funds	0	n. a.	0	n. a.	n. a.
	-317,624	-15.2%	92,522	4.4%	-19.6%
Total	-713,367	-1.0%	1,050,756	1.5%	-2.6%

Investment products by underlying asset Market volume as at 31 May 2019



Leverage products by underlying asset Market volume as at 31 May 2019



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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