

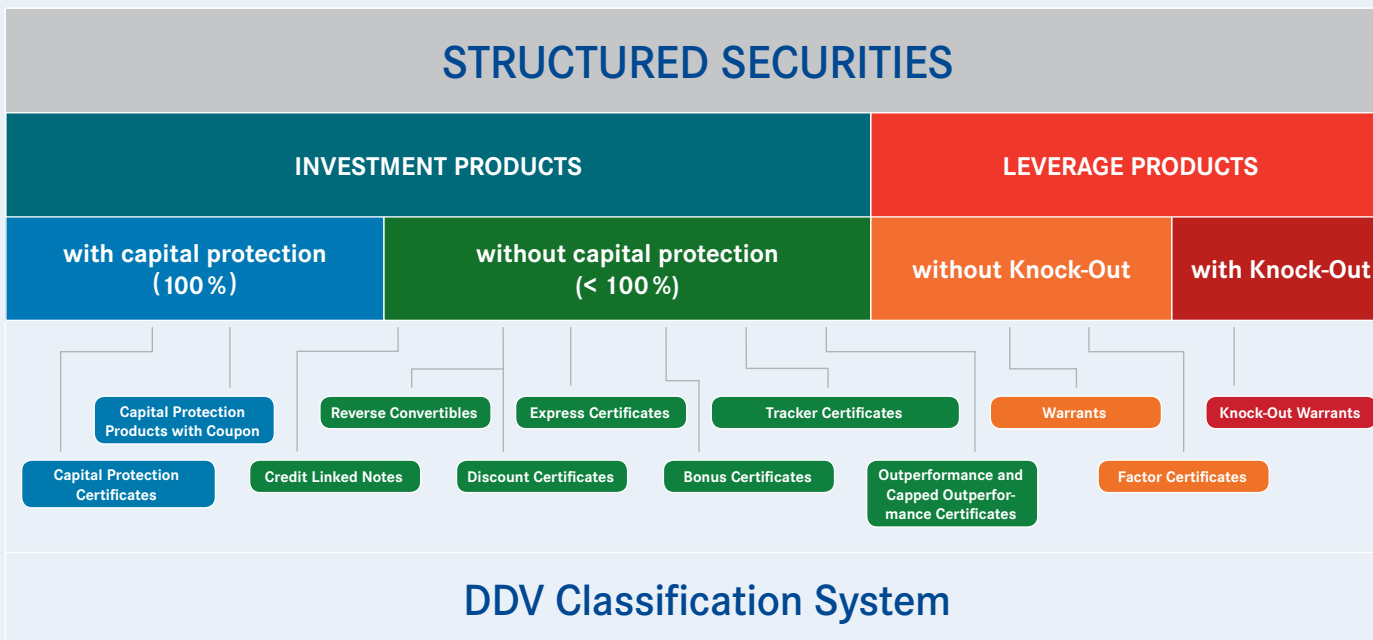
Market Volume

in Derivatives

Structured products market on the rise

Capital Protection Products with Coupon and Express Certificates in particularly high demand

STRUCTURED SECURITIES



DDV Classification System

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November | 2018

- In November, the total volume of the German structured products market grew to EUR 71.5 billion.
- The strongest growth was in Capital Protection Products with Coupon; their volume went up by 2.4 percent and thus saw an above-average increase of EUR 19.5 billion.
- An upsurge in market volume was recorded for investment products, whilst the volume invested in leverage products suffered losses.
- Investment products with interest rates as an underlying experienced growth of 2.4 percent. The volume invested in them climbed to EUR 24.1 billion.

Structured products market on the rise

Capital Protection Products with Coupon and Express Certificates in particularly high demand

The outstanding volume of the German structured products market rose in November. When the figures are extrapolated to all issuers, the total volume stood at EUR 71.5 billion. This represents an increase of 0.7 percent, or EUR 0.5 billion, on the previous month. These trends are shown by the latest set of data collected each month from 16 banks by the European Derivatives Group (EDG AG) on behalf of the German Derivatives Association (Deutscher Derivate Verband, DDV). The ratio of investment products to leverage products shifted slightly in favour of investment products.

Investment products by product category

Structured securities bucked the rather negative general trend increasing in most product categories. In particular, the volumes of **Capital Protection Products with Coupon** and **Express Certificates** experienced above-average upturns. The volume invested in **Capital Protection Products with Coupon** rose to EUR 19.5 billion. In contrast to the trend, **Reverse Convertibles** were down. The volume invested in them dropped to EUR 8.6 billion. **Discount securities** also recorded a loss of EUR 4.4 billion.

Leverage products by product category

The market volume of **leverage products** fell significantly during the reporting month and stood at EUR 1.8 billion. Decreases were seen in all product categories, with the strongest decline for **Warrants**.

Investment products by underlying

Structured products with **interest rates as an underlying** remained the most popular category in November. After gains in the previous two months, the volume increased further and stood at EUR 24.1 billion. Despite some losses, investment products with **equities as an underlying** followed in second place. The volume invested in them totalled EUR 19.5 billion. A plus was recorded for investment products with **indices as an underlying**, following losses in the previous month. The market volume of investment products with **commodities** or **currencies as an underlying** fell to a total of EUR 487.9 million. Investment products with **investment funds as an underlying** suffered a drop and stood at EUR 842.3 million.

Leverage products by underlying

Marked losses were seen in all classes of leverage products in November. The market volume of leverage products with **equities as an underlying** decreased to EUR 1.1 billion. The volume invested in leverage products with **indices as an underlying** went down to EUR 499.9 million. The market volume for leverage products with **commodities** or **currencies as an underlying** fell to a total of EUR 142.4 million. A decline was also observed for leverage products with **interest rates as an underlying**. This category was down to EUR 19.7 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, 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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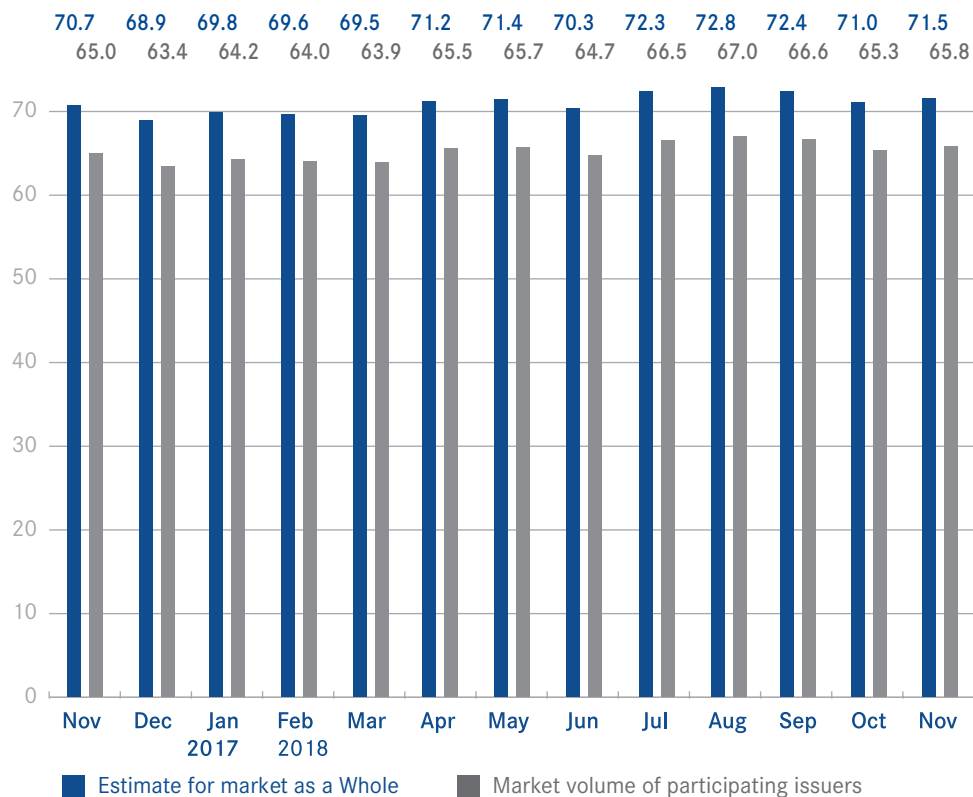
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Market volume since November 2017



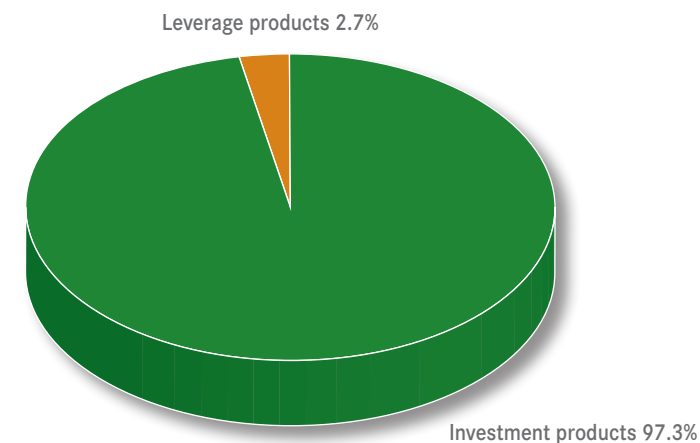
Product classes

Market volume as at 30 November 2018

Product classes	Market volume	Share
	T€	%
Investment products with capital protection	24,880,170	38,9%
Investment products without capital protection	39,092,131	61,1%
Total Investment products	63,972,302	100,0%
Leverage products without Knock-Out	1,019,437	56,9%
Leverage products with Knock-Out	772,078	43,1%
Total Leverage products	1,791,515	100,0%
Total Investment products	63,972,302	97,3%
Total Leverage products	1,791,515	2,7%
Total Derivatives	65,763,817	100,0%

Product classes

Market volume as at 30 November 2018

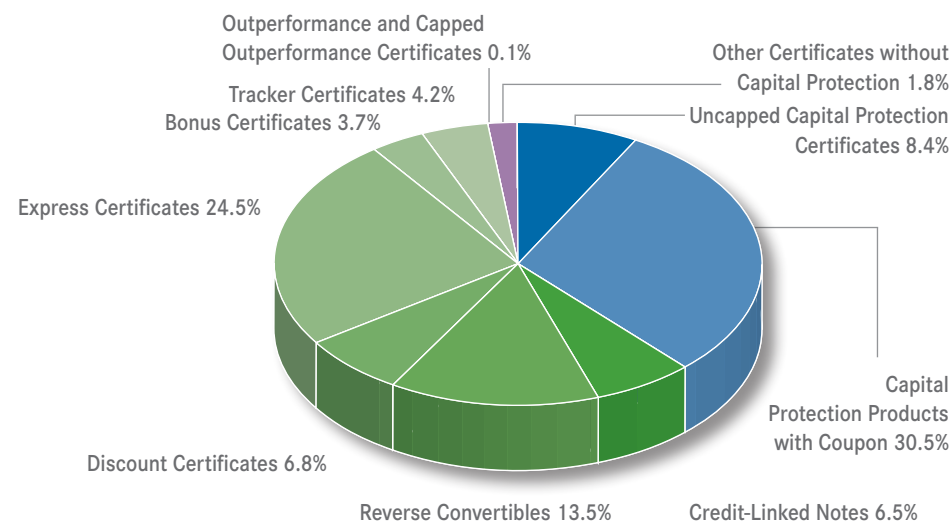


Market volume by product category as at 30 November 2018

Product categories	Market volume		Market volume price-adjusted		Number of Products	
	T€	in %	T€	in %	#	in %
■ Uncapped Capital Protection Certificates	5,379,231	8.4%	5,371,855	8.4%	1,454	0.3%
■ Capital Protection Products with Coupon	19,500,940	30.5%	19,434,394	30.2%	3,854	0.8%
■ Credit-Linked Notes	4,142,552	6.5%	4,149,572	6.5%	2,431	0.5%
■ Reverse Convertibles	8,616,105	13.5%	8,719,039	13.6%	106,090	21.5%
■ Discount Certificates	4,372,691	6.8%	4,403,446	6.8%	177,683	36.0%
■ Express Certificates	15,658,062	24.5%	15,827,970	24.6%	13,952	2.8%
■ Bonus Certificates	2,391,995	3.7%	2,393,013	3.7%	183,929	37.3%
■ Tracker Certificates	2,665,535	4.2%	2,738,425	4.3%	1,323	0.3%
■ Outperformance and Capped Outperformance Certificates	67,699	0.1%	68,191	0.1%	858	0.2%
■ Other Certificates without Capital Protection	1,177,493	1.8%	1,178,288	1.8%	1,573	0.3%
Investment products total	63,972,302	97.3%	64,284,193	96.9%	493,147	29.8%
■ Warrants	702,169	39.2%	831,212	40.1%	611,214	52.5%
■ Factor Certificates	317,268	17.7%	437,463	21.1%	20,259	1.7%
■ Knock-Out Warrants	772,078	43.1%	806,205	38.9%	532,953	45.8%
Leverage products total	1,791,515	2.7%	2,074,881	3.1%	1,164,426	70.2%
Total	65,763,817	100.0%	66,359,073	100.0%	1,657,573	100.0%

Investment products by product category

Market volume as at 30 November 2018

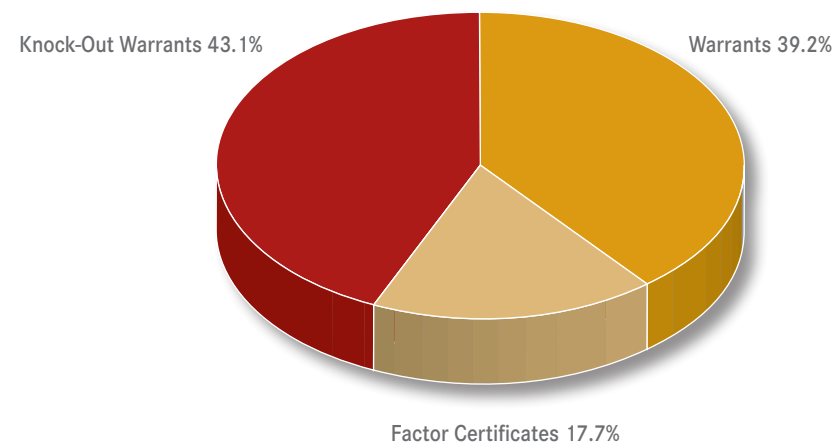


Change in market volume by product category in comparison with previous month

Product categories	Change		Change price-adjusted		Price effect	
	T€	in %	T€	in %		in %
■ Uncapped Capital Protection Certificates	103,534	2.0%	96,158	1.8%		0.1%
■ Capital Protection Products with Coupon	459,684	2.4%	393,138	2.1%		0.3%
■ Credit-Linked Notes	-4,596	-0.1%	2,424	0.1%		-0.2%
■ Reverse Convertibles	-138,699	-1.6%	-35,766	-0.4%		-1.2%
■ Discount Certificates	-84,760	-1.9%	-54,005	-1.2%		-0.7%
■ Express Certificates	180,272	1.2%	350,180	2.3%		-1.1%
■ Bonus Certificates	14,347	0.6%	15,365	0.6%		0.0%
■ Tracker Certificates	-41,125	-1.5%	31,764	1.2%		-2.7%
■ Outperformance and Capped Outperformance Certificates	-4,608	-6.4%	-4,116	-5.7%		-0.7%
■ Other Certificates without Capital Protection	21,801	1.9%	22,596	2.0%		-0.1%
Investment products total	505,849	0.8%	817,739	1.3%		-0.5%
■ Warrants	-45,864	-6.1%	83,178	11.1%		-17.3%
■ Factor Certificates	-2,388	-0.7%	117,808	36.9%		-37.6%
■ Knock-Out Warrants	-20,404	-2.6%	13,723	1.7%		-4.3%
Leverage products total	-68,656	-3.7%	214,710	11.5%		-15.2%
Total	437,193	0.7%	1,032,449	1.6%		-0.9%

Leverage products by product category

Market volume as at 30 November 2018



Market volume by underlying asset as at 30 November 2018

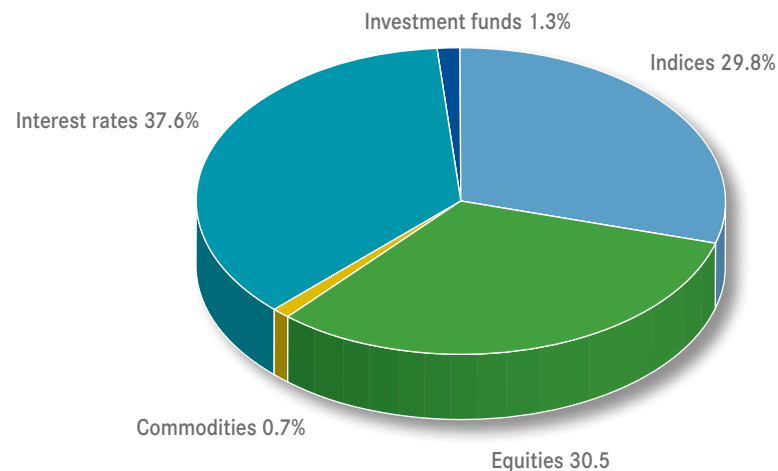
Underlying	Market volume		Market volume price-adjusted*		Number of Products	
	T€	%	T€	%	#	%
Investment products						
Indices	19,041,533	29.8%	19,017,876	29.6%	108,963	22.1%
Equities	19,517,247	30.5%	19,837,693	30.9%	375,311	76.1%
Commodities	450,337	0.7%	491,652	0.8%	2,217	0.4%
Currencies	37,572	0.1%	56,566	0.1%	13	0.0%
Interest rates	24,083,332	37.6%	24,024,541	37.4%	6,378	1.3%
Investment funds	842,281	1.3%	855,864	1.3%	265	0.1%
	63,972,302	97.3%	64,284,193	96.9%	493,147	29.8%
Leverage products						
Indices	499,900	27.9%	543,967	26.2%	279,031	24.0%
Equities	1,129,500	63.0%	1,338,699	64.5%	755,245	64.9%
Commodities	109,107	6.1%	131,891	6.4%	58,759	5.0%
Currencies	33,348	1.9%	37,717	1.8%	62,801	5.4%
Interest rates	19,660	1.1%	22,607	1.1%	8,590	0.7%
Investment funds	0	0.0%	0	0.0%	0	0.0%
	1,791,515	2.7%	2,074,881	3.1%	1,164,426	70.2%
Total	65,763,817	100.0%	66,359,073	100.0%	1,657,573	100.0%

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

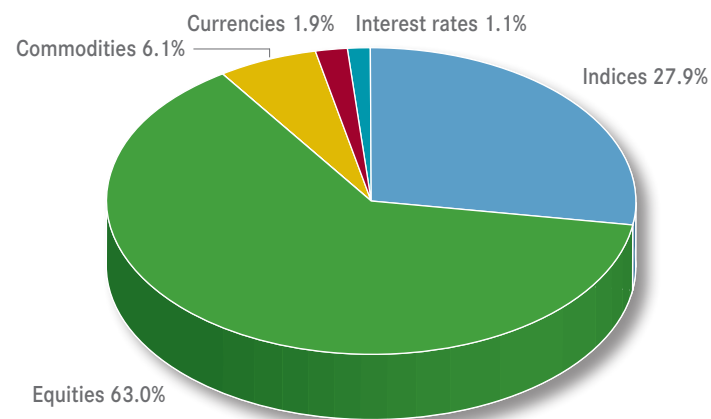
Change in the market volume by underlying asset in comparison with previous month

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 30 November 2018



Investment products by underlying asset Market volume as at 30 November 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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