

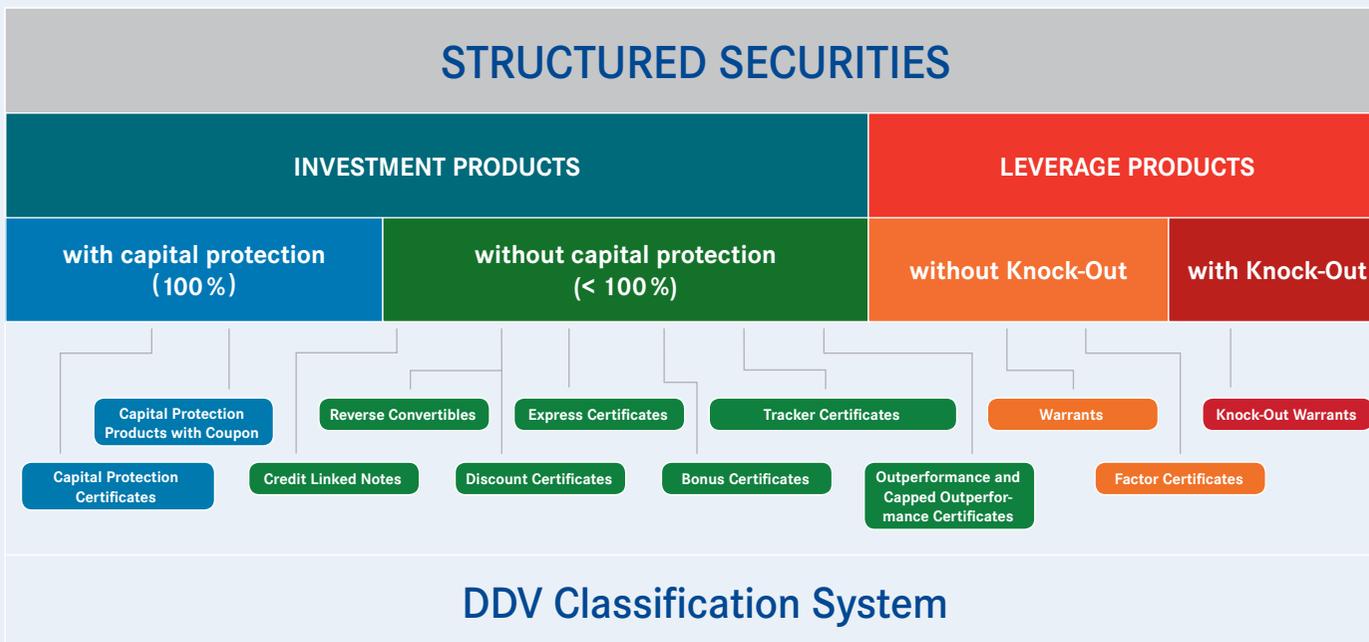
Market Volume

in Derivatives

Good start into the second quarter of the year

Express Certificates and Reverse Convertibles in particularly high demand

STRUCTURED SECURITIES



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April | 2019

- The total volume of the German structured products market rose to EUR 73.9 billion in April.
- Express Certificates outperformed the general trend: they recorded an increase in volume by 4.7 percent and stood at EUR 17.8 billion.
- The market volume of leverage products rose by 13.3 percent to EUR 2.1 billion.
- Leverage products with equities as an underlying experienced growth of 18.9 percent. The volume invested in these instruments totalled EUR 1.4 billion.

Good start into the second quarter of the year

Express Certificates and Reverse Convertibles in particularly high demand

The outstanding volume of the German structured products market grew significantly at the beginning of the second quarter. Extrapolating the figures to all issuers puts the total volume at EUR 73.9 billion in April 2019. This represents a rise of 2.7 percent (EUR 1.8 billion) on the previous month. These trends are shown by the latest set of the figures collected each month from 16 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 on March 2019. **Express Certificates** and **Reverse Convertibles** recorded particularly strong growth in volumes. The volume invested in Express Certificates rose to EUR 17.8 billion. Growth was also registered for the category of **Capital Protection Products offering full capital protection**. A total of EUR 25.6 billion was invested in these products in the reporting month. However, **Credit Linked Notes** bucked the trend by recording a decrease.

Leverage products by product category

The market volume of **leverage products** rose in the month under review, coming in at EUR 2.1 billion. Clear gains were seen in all product categories, with the strongest upsurge in **Warrants**.

Investment products by underlying

Structured products with **interest rates as an underlying** remained the most popular category in April. Following a slowdown in the previous month, demand for this category gained momentum, taking the volume to EUR 24.6 billion. Investment products with **indices as an underlying** came in second. The volume invested in these products stood at EUR 20.1 billion. Investment products with **equities as an underlying** gained in attractiveness as well. The market volume of investment products with **commodities or currencies as underlyings** rose to a total of EUR 557.5 million. The volume of investment products with **investment funds as an underlying** stood at EUR 882.3 million.

Leverage products by underlying

The dominant classes of underlyings for leverage products experienced strong growth at the beginning of the second quarter. The market volume of leverage products with **equities as an underlying** climbed to EUR 1.4 billion, while the volume invested in leverage products with **indices as an underlying** rose to EUR 491.9 million. Against the general trend, the market volume of leverage products with **commodities as an underlying** fell to EUR 114.1 million. The volume invested in leverage products with **currencies as an underlying** rose to EUR 38.7 million, whereas leverage products with interest rates as an underlying saw a decline. ■



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

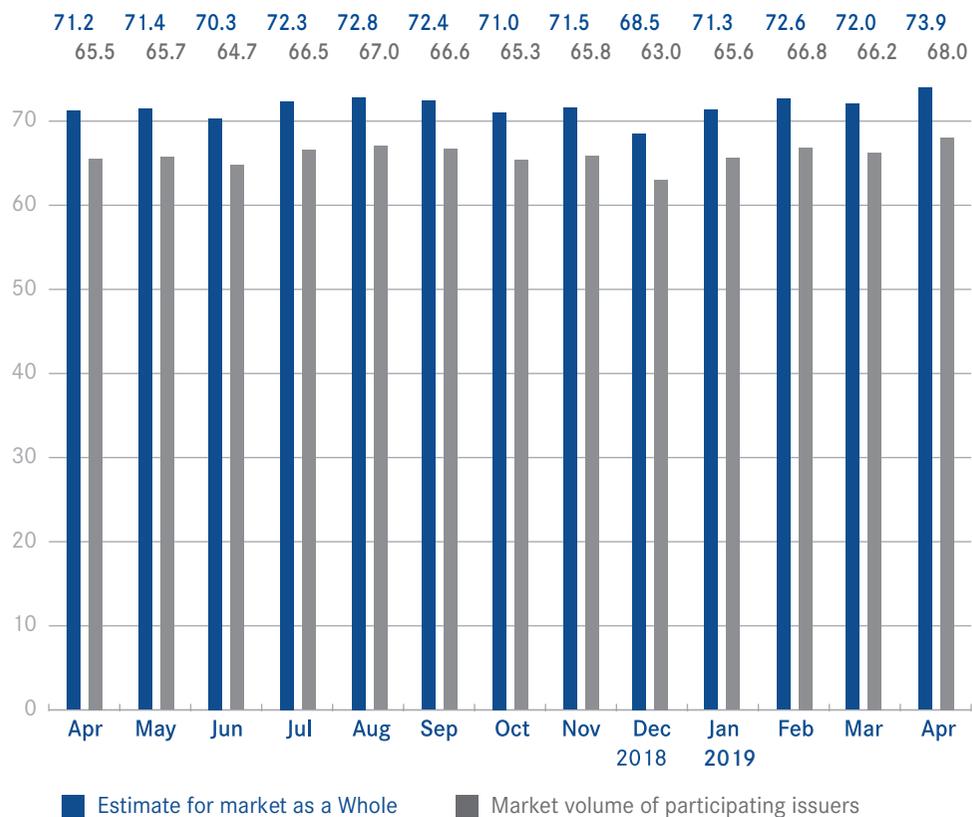
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Market volume since April 2018



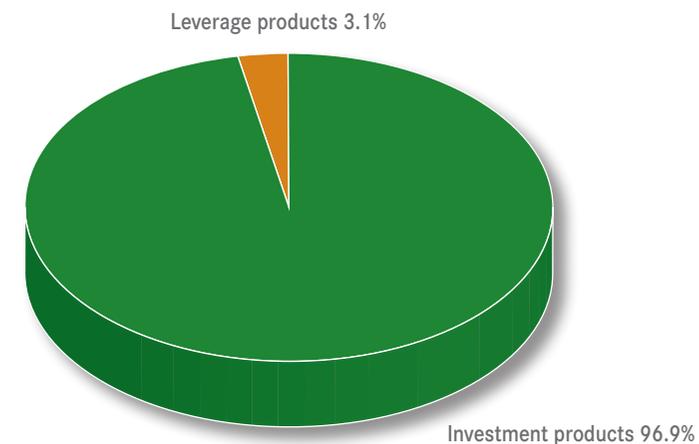
Product classes

Market volume as at 30 April 2019

Product classes	Market volume	Share
	T€	%
Investment products with capital protection	25,567,935	38.8%
Investment products without capital protection	40,318,106	61.2%
Total Investment products	65,886,041	100.0%
Leverage products without Knock-Out	1,206,923	57.6%
Leverage products with Knock-Out	888,624	42.4%
Total Leverage products	2,095,547	100.0%
Total Investment products	65,886,041	96.9%
Total Leverage products	2,095,547	3.1%
Total Derivatives	67,981,588	100.0%

Product classes

Market volume as at 30 April 2019

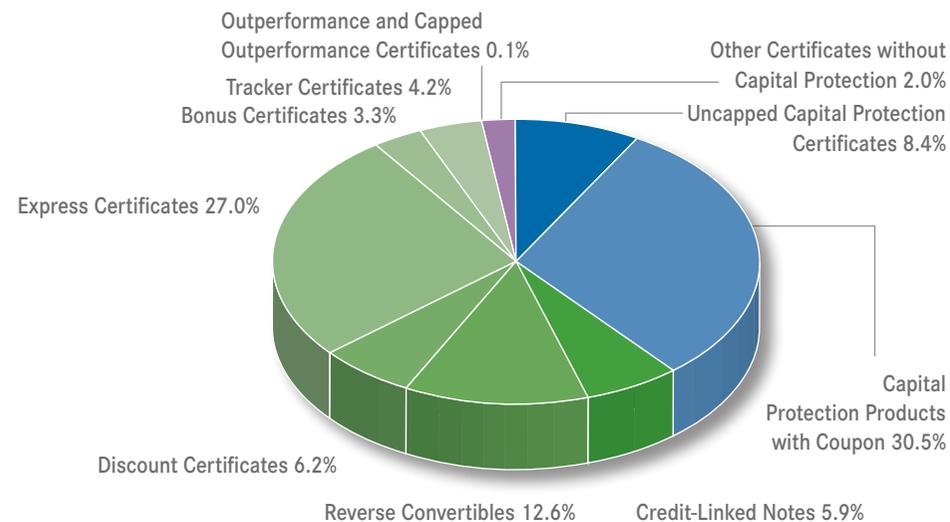


Market volume by product category as at 30 April 2019

Product categories	Market volume		Market volume price-adjusted		Number of Products	
	T€	in %	T€	in %	#	in %
■ Uncapped Capital Protection Certificates	5,501,538	8.4%	5,478,074	8.5%	1,441	0.3%
■ Capital Protection Products with Coupon	20,066,398	30.5%	20,079,132	31.0%	4,206	0.8%
■ Credit-Linked Notes	3,884,175	5.9%	3,877,352	6.0%	2,514	0.5%
■ Reverse Convertibles	8,319,461	12.6%	8,055,172	12.4%	116,036	22.4%
■ Discount Certificates	4,065,476	6.2%	3,997,691	6.2%	189,913	36.7%
■ Express Certificates	17,759,198	27.0%	17,127,844	26.4%	15,529	3.0%
■ Bonus Certificates	2,159,412	3.3%	2,160,807	3.3%	184,398	35.6%
■ Tracker Certificates	2,774,202	4.2%	2,676,527	4.1%	1,335	0.3%
■ Outperformance and Capped Outperformance Certificates	52,395	0.1%	49,385	0.1%	951	0.2%
■ Other Certificates without Capital Protection	1,303,788	2.0%	1,279,336	2.0%	1,116	0.2%
Investment products total	65,886,041	96.9%	64,781,321	97.1%	517,439	30.6%
■ Warrants	868,108	41.4%	774,196	40.3%	629,302	53.6%
■ Factor Certificates	338,816	16.2%	310,650	16.2%	28,697	2.4%
■ Knock-Out Warrants	888,624	42.4%	834,938	43.5%	515,359	43.9%
Leverage products total	2,095,547	3.1%	1,919,785	2.9%	1,173,358	69.4%
Total	67,981,588	100.0%	66,701,105	100.0%	1,690,797	100.0%

Investment products by product category

Market volume as at 30 April 2019

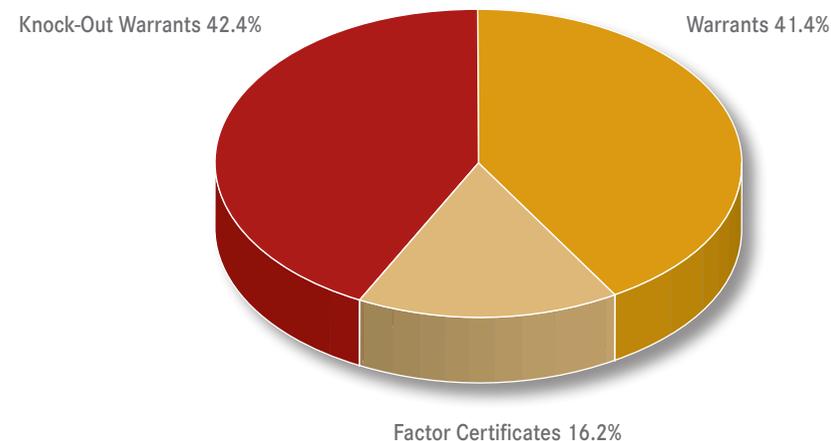


Change in market volume by product category in comparison with previous month

Product categories	Change		Change price-adjusted		Price effect	
	T€	in %	T€	in %		in %
■ Uncapped Capital Protection Certificates	57,761	1.1%	34,298	0.6%		0.4%
■ Capital Protection Products with Coupon	362,725	1.8%	375,460	1.9%		-0.1%
■ Credit-Linked Notes	-122,866	-3.1%	-129,689	-3.2%		0.2%
■ Reverse Convertibles	303,717	3.8%	39,428	0.5%		3.3%
■ Discount Certificates	10,822	0.3%	-56,963	-1.4%		1.7%
■ Express Certificates	799,678	4.7%	168,324	1.0%		3.7%
■ Bonus Certificates	40,590	1.9%	41,985	2.0%		-0.1%
■ Tracker Certificates	60,419	2.2%	-37,255	-1.4%		3.6%
■ Outperformance and Capped Outperformance Certificates	2,526	5.1%	-485	-1.0%		6.0%
■ Other Certificates without Capital Protection	22,989	1.8%	-1,464	-0.1%		1.9%
Investment products total	1,538,360	2.4%	433,640	0.7%		1.7%
■ Warrants	126,010	17.0%	32,099	4.3%		12.7%
■ Factor Certificates	34,995	11.5%	6,829	2.2%		9.3%
■ Knock-Out Warrants	85,385	10.6%	31,699	3.9%		6.7%
Leverage products total	246,389	13.3%	70,627	3.8%		9.5%
Total	1,784,749	2.7%	504,267	0.8%		1.9%

Leverage products by product category

Market volume as at 30 April 2019



Market volume by underlying asset as at 30 April 2019

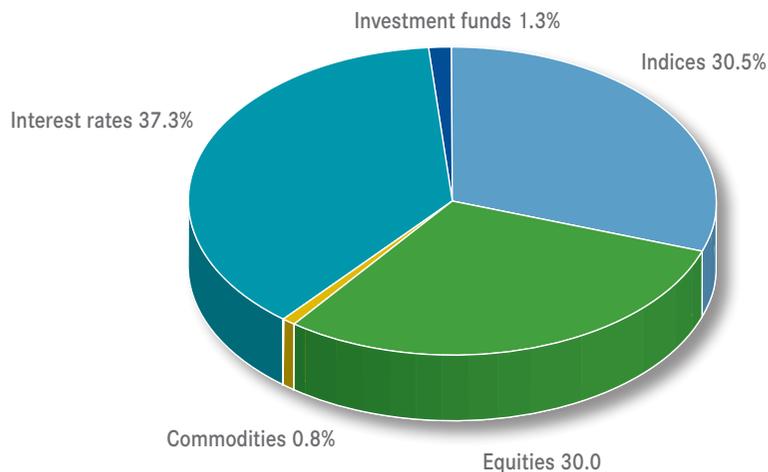
Underlying	Market volume		Market volume price-adjusted*		Number of Products	
	T€	%	T€	%	#	%
Investment products						
Indices	20,104,692	30.5%	19,853,720	30.6%	111,400	21.5%
Equities	19,741,956	30.0%	18,911,792	29.2%	396,274	76.6%
Commodities	503,663	0.8%	492,830	0.8%	2,640	0.5%
Currencies	53,791	0.1%	42,818	0.1%	12	0.0%
Interest rates	24,599,652	37.3%	24,605,128	38.0%	6,840	1.3%
Investment funds	882,288	1.3%	875,034	1.4%	273	0.1%
	65,886,041	96.9%	64,781,321	97.1%	517,439	30.6%
Leverage products						
Indices	491,907	23.5%	511,671	26.7%	270,922	23.1%
Equities	1,443,764	68.9%	1,237,019	64.4%	769,963	65.6%
Commodities	114,134	5.4%	125,328	6.5%	61,696	5.3%
Currencies	38,707	1.8%	39,126	2.0%	61,821	5.3%
Interest rates	7,035	0.3%	6,641	0.3%	8,956	0.8%
Investment funds	0	0.0%	0	0.0%	0	0.0%
	2,095,547	3.1%	1,919,785	2.9%	1,173,358	69.4%
Total	67,981,588	100.0%	66,701,105	100.0%	1,690,797	100.0%

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

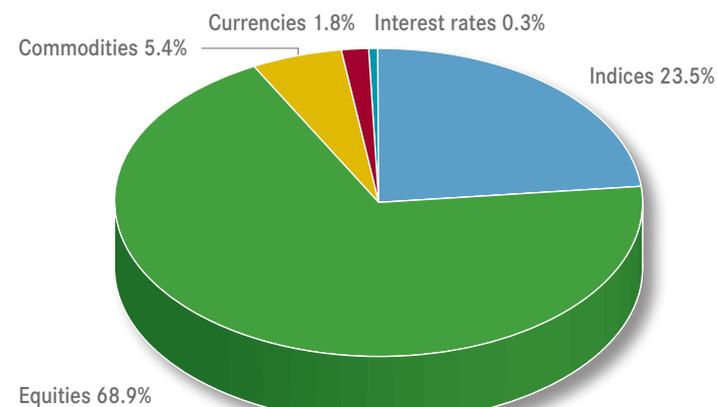
Change in the market volume by underlying asset in comparison with previous month

Underlying	Change		Change price-adjusted		Price effect
	T€	%	T€	%	
Investment products					
Indices	164,686	0.8%	-86,285	-0.4%	1.3%
Equities	1,021,618	5.5%	191,454	1.0%	4.4%
Commodities	1,585	0.3%	-9,248	-1.8%	2.2%
Currencies	14,928	38.4%	3,956	10.2%	28.2%
Interest rates	331,270	1.4%	336,746	1.4%	0.0%
Investment funds	4,272	0.5%	-2,983	-0.3%	0.8%
	1,538,360	2.4%	433,640	0.7%	1.7%
Leverage products					
Indices	26,952	5.8%	46,716	10.0%	-4.3%
Equities	229,722	18.9%	22,978	1.9%	17.0%
Commodities	-7,434	-6.1%	3,759	3.1%	-9.2%
Currencies	2,466	6.8%	2,885	8.0%	-1.2%
Interest rates	-5,317	-43.0%	-5,711	-46.2%	3.2%
Investment funds	0	n. a.	0	n. a.	n. a.
	246,389	13.3%	70,627	3.8%	9.5%
Total	1,784,749	2.7%	504,267	0.8%	1.9%

Investment products by underlying asset Market volume as at 30 April 2019



Leverage products by underlying asset Market volume as at 30 April 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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