

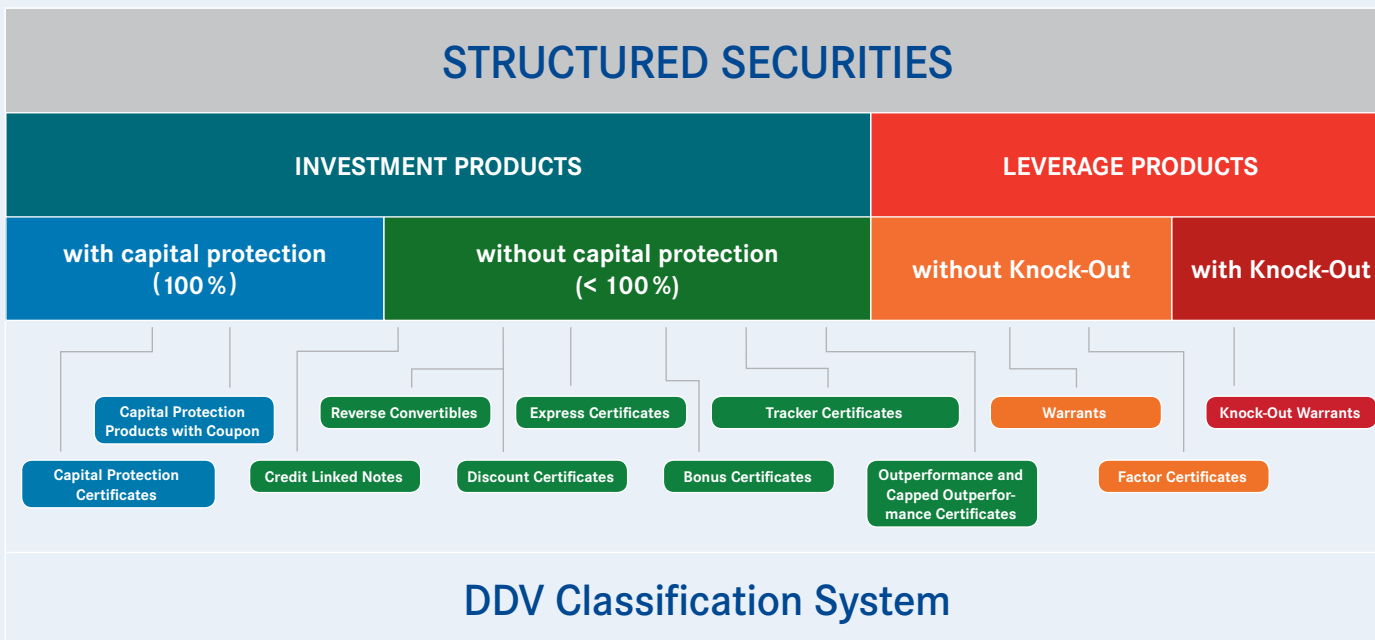
Market Volume

in Derivatives

Volume increase on the German structured products market

Particularly strong demand for Bonus and Express Certificates

STRUCTURED SECURITIES



DDV Classification System

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November | 2016

- In November, the total volume of the German structured products market increased to EUR 68.5 billion.
- Express Certificates experienced above-average growth of 3.6 percent and recorded a volume of EUR 9.7 billion.
- Investment products with indices as an underlying registered a plus of 2.7 percent. The volume invested in them amounted to EUR 19.2 billion.
- At EUR 58.8 million, the market volume of leverage products with currencies as an underlying notched up 7.5 percent month on month.

Volume increase on the German structured products market

Particularly strong demand for Bonus and Express Certificates

The outstanding volume of the German structured products market increased in November 2016. Above-average growth was seen in Bonus and Express Certificates in particular. By way of contrast, the volume of products offering full capital protection decreased further, bucking the positive overall trend.

On the whole, the market volume increased slightly by 0.3 percent or EUR 159.1 million compared with 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 the German Derivatives Association (Deutscher Derivate Verband, DDV). Extrapolating these figures to all issuers puts the **total volume of the German structured products market at EUR 68.5 billion at the end of November 2016.**

The **ratio of investment products to leverage products** shifted in favour of investment products. They accounted for 97.4 percent of the total market volume, while leverage products made up 2.6 percent.

Investment products by product category

The volume of **Capital Protection Products** did not share in the positive general trend, decreasing in the month un-

der review. The market volume relating to Capital Protection Products with Coupon fell compared with the previous month, down 2.1 percent at EUR 16.0 billion. This corresponded to a 26.2 percent share of the investment products market. Uncapped Capital Protection Certificates recorded a decrease of 1.8 percent to EUR 7.3 billion. They accounted for 11.9 percent of the investment products market. 38.1 percent of the market volume was invested in these two product categories in November.

The volume of **Reverse Convertibles** rose by 1.7 percent to EUR 9.1 billion. This corresponded to a share of 14.9 percent.

Express Certificates gained 3.6 percent to come in at EUR 9.7 billion. Their share stood at 15.9 percent in November.

The market volume for **Credit Linked Notes** dropped 1.1 percent to EUR 6.0 billion. They accounted for 9.7 percent of the volume.

Discount Certificates recorded a 3.0 percent gain to stand at EUR 5.4 billion – a share of 8.8 percent.

The volume for **Tracker Certificates** dwindled by 1.3 percent to EUR 3.8 billion. Their share of the investment products segment was 6.2 percent.

Bonus Certificates also experienced a volume increase in November. Their market volume stood at EUR 2.8 billion – up 5.5 percent compared with one month earlier. This corresponded to 4.5 percent of the total volume.

The volume of **Outperformance and Capped Outperformance Certificates** rose by 2.5 percent to EUR 84.1 million. However, as it accounted for just 0.1 percent of the total investment products volume, this category had scarcely any impact on the overall trend.

The volume of **other Yield Enhancement Products** fell by 2.0 percent to EUR 1.1 billion. Their share stood at 1.8 percent.

Leverage products by product category

The market volume of **Leverage Products** was down 1.5 percent and stood at EUR 1.7 billion in November.

The volume invested in **Knock-Out Warrants** fell by 1.5 percent to EUR 699.0 million. Their share of the leverage products segment was 42.1 percent.

Warrants recorded a 1.5 percent reduction to EUR 617.4 million. Their share totalled 37.2 percent.



The volume invested in **Factor Certificates** went down by 1.2 percent to EUR 343.7 million. This category accounted for a 20.7 percent share of the leverage products market.

Investment products by underlying

Despite registering some losses, structured products with **interest rates as an underlying** remained the most popular category. Their volume contracted by 1.9 percent to EUR 22.5 billion in November. This corresponded to 36.7 percent of the aggregate volume.

Investment products with **indices as an underlying** followed in second place. Their volume rose by 2.7 percent to EUR 19.2 billion and represented 31.3 percent of the total volume.

Investment products with **equities as an underlying** were the third most popular type. Their share of the total volume edged up slightly by 0.4 percent, taking it to EUR 18.3 billion. This corresponded to a 29.9 percent share.

Following at a considerable distance behind the other classes were investment products with **commodities as an underlying**. Their outstanding volume rose by 1.6 percent in November to EUR 807.4 million. Commodities therefore accounted for a 1.3 percent share.

Investment products with **investment funds as an underlying** made up a 0.7 percent share. Their volume came in at EUR 430.5 million.

Investment products with **currencies as an underlying** were fairly insignificant in relation to the general trend with a share of 0.04 percent. The volume invested in them dropped by 1.1 percent to EUR 23.8 million in the reporting month.

Leverage products by underlying

The market volume of leverage products with **equities as an underlying** decreased by 2.4 percent to EUR 880.9 million. They made up 53.1 percent of the total leverage products volume.

The volume of leverage products with **indices as an underlying** grew by 1.0 percent, taking it to EUR 525.5 million. This corresponded to a 31.7 percent share.

Leverage products with **commodities as an underlying** followed at some distance behind the other classes. Their volume dropped by 11.9 percent month on month to EUR 161.0 million. Their share was 9.7 percent.

The market volume of leverage products with **currencies as an underlying** increased by 7.5 percent to EUR 58.8 million. This corresponded to a share of 3.5 percent.

Leverage products with **interest rates as an underlying** jumped by 42.2 percent to EUR 33.8 million in November. Because they accounted for only 2.0 percent of the volume, their impact on the general trend was not significant, however. ■



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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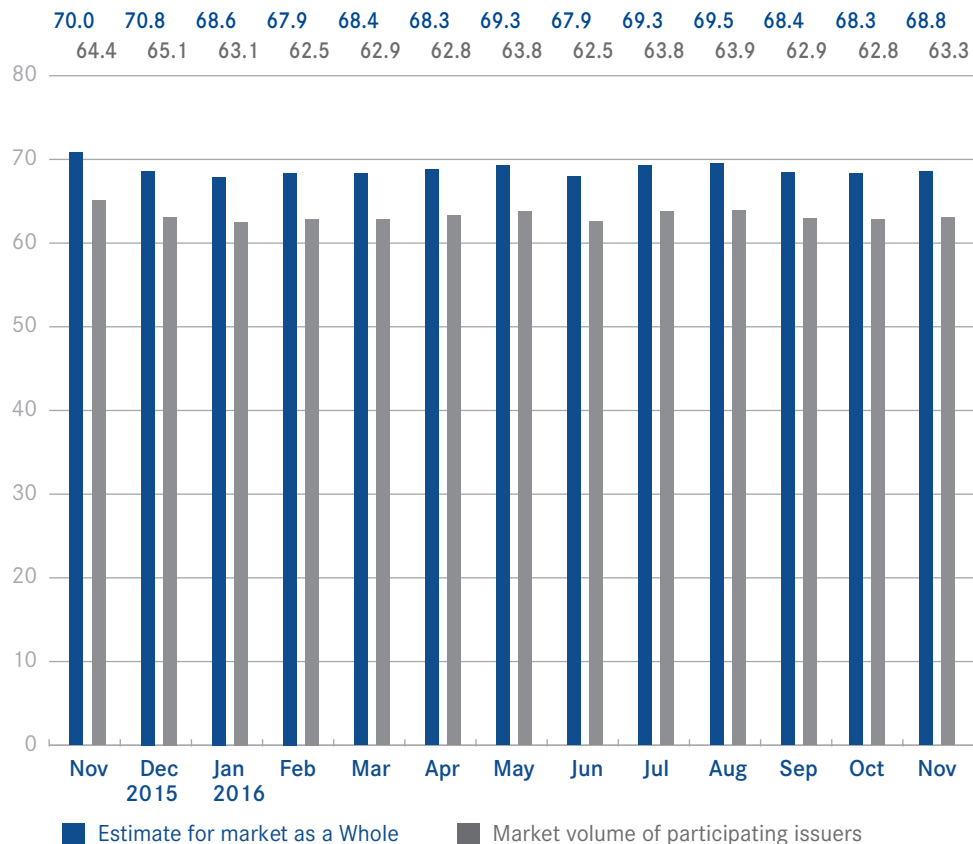
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Market volume since November 2015



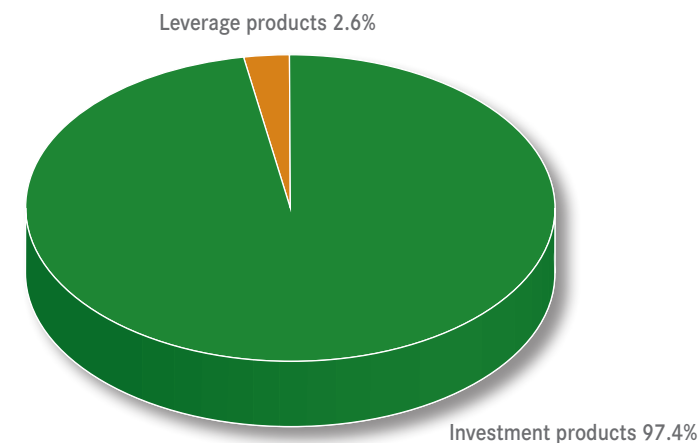
Product classes

Market volume as at 30 November 2016

Product classes	Market volume	Share
	T€	%
Investment products with capital protection	23,302,512	38.0%
Investment products without capital protection	37,991,305	62.0%
Total Investment products	61,293,817	100.0%
Leverage products without Knock-Out	961,135	57.9%
Leverage products with Knock-Out	698,954	42.1%
Total Leverage products	1,660,089	100.0%
Total Investment products	61,293,817	97.4%
Total Leverage products	1,660,089	2.6%
Total Derivatives	62,953,906	100.0%

Product classes

Market volume as at 30 November 2016

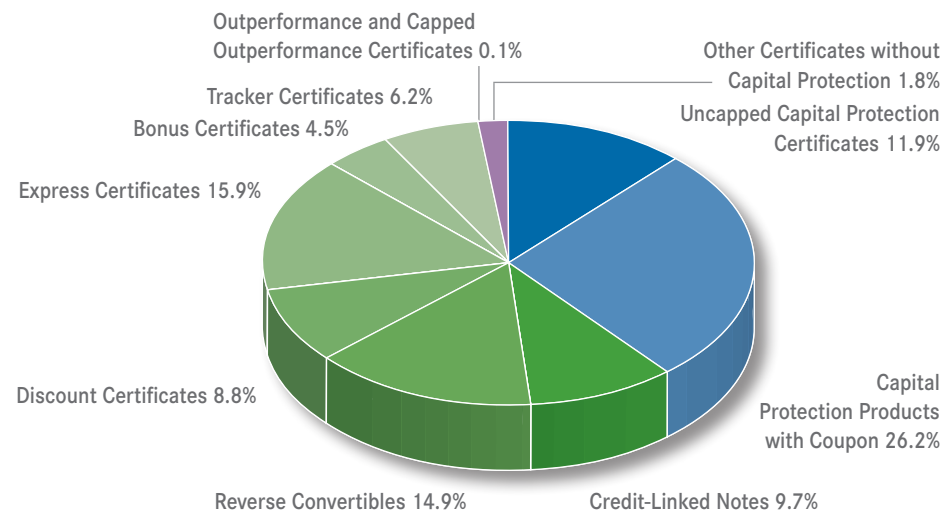


Market volume by product category as at 30 November 2016

Product categories	Market volume		Market volume price-adjusted		Number of Products	
	T€	in %	T€	in %	#	in %
■ Uncapped Capital Protection Certificates	7,270,804	11.9%	7,291,110	11.9%	2,085	0.4%
■ Capital Protection Products with Coupon	16,031,707	26.2%	16,097,126	26.3%	2,447	0.5%
■ Credit-Linked Notes	5,972,089	9.7%	5,990,393	9.8%	2,356	0.5%
■ Reverse Convertibles	9,141,374	14.9%	9,147,610	14.9%	104,472	20.7%
■ Discount Certificates	5,417,675	8.8%	5,400,573	8.8%	159,424	31.6%
■ Express Certificates	9,718,338	15.9%	9,692,172	15.8%	9,695	1.9%
■ Bonus Certificates	2,759,816	4.5%	2,741,149	4.5%	220,240	43.7%
■ Tracker Certificates	3,819,351	6.2%	3,791,504	6.2%	1,821	0.4%
■ Outperformance and Capped Outperformance Certificates	84,051	0.1%	83,895	0.1%	975	0.2%
■ Other Certificates without Capital Protection	1,078,609	1.8%	1,078,034	1.8%	889	0.2%
Investment products total	61,293,817	97.4%	61,313,565	97.1%	504,404	39.1%
■ Warrants	617,442	37.2%	683,312	37.8%	417,719	53.2%
■ Factor Certificates	343,693	20.7%	393,844	21.8%	3,911	0.5%
■ Knock-Out Warrants	698,954	42.1%	729,928	40.4%	363,861	46.3%
Leverage products total	1,660,089	2.6%	1,807,084	2.9%	785,491	60.9%
Total	62,953,906	100.0%	63,120,649	100.0%	1,289,895	100.0%

Investment products by product category

Market volume as at 30 November 2016

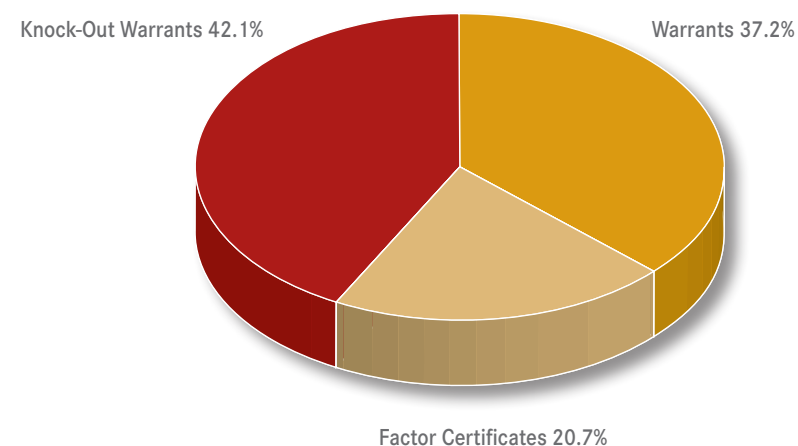


Change in market volume by product category in comparison with previous month

Product categories	Change		Change price-adjusted		Price effect
	T€	in %	T€	in %	in %
■ Uncapped Capital Protection Certificates	-134,911	-1.8%	-114,606	-1.5%	-0.3%
■ Capital Protection Products with Coupon	-345,791	-2.1%	-280,373	-1.7%	-0.4%
■ Credit-Linked Notes	-64,165	-1.1%	-45,860	-0.8%	-0.3%
■ Reverse Convertibles	156,759	1.7%	162,995	1.8%	-0.1%
■ Discount Certificates	158,662	3.0%	141,560	2.7%	0.3%
■ Express Certificates	341,574	3.6%	315,408	3.4%	0.3%
■ Bonus Certificates	143,301	5.5%	124,633	4.8%	0.7%
■ Tracker Certificates	-51,427	-1.3%	-79,274	-2.0%	0.7%
■ Outperformance and Capped Outperformance Certificates	2,083	2.5%	1,927	2.4%	0.2%
■ Other Certificates without Capital Protection	-22,392	-2.0%	-22,968	-2.1%	0.1%
Investment products total	183,693	0.3%	203,442	0.3%	0.0%
■ Warrants	-9,561	-1.5%	56,309	9.0%	-10.5%
■ Factor Certificates	-4,044	-1.2%	46,107	13.3%	-14.4%
■ Knock-Out Warrants	-10,959	-1.5%	20,015	2.8%	-4.4%
Leverage products total	-24,564	-1.5%	122,431	7.3%	-8.7%
Total	159,129	0.3%	325,872	0.5%	-0.3%

Leverage products by product category

Market volume as at 30 November 2016



Market volume by underlying asset as at 30 November 2016

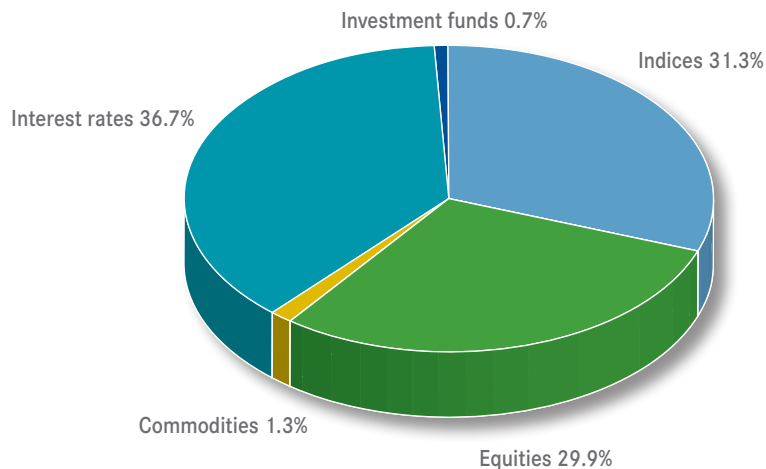
Underlying	Market volume		Market volume price-adjusted*		Number of Products	
	T€	%	T€	%	#	%
Investment products						
Indices	19,188,120	31.3%	19,149,842	31.2%	126,880	25.2%
Equities	18,321,590	29.9%	18,302,467	29.9%	370,114	73.4%
Commodities	807,436	1.3%	798,504	1.3%	2,332	0.5%
Currencies	23,774	0.0%	23,716	0.0%	19	0.0%
Interest rates	22,522,361	36.7%	22,606,312	36.9%	4,909	1.0%
Investment funds	430,536	0.7%	432,724	0.7%	150	0.0%
	61,293,817	97.4%	61,313,565	97.1%	504,404	39.1%
Leverage products						
Indices	525,516	31.7%	575,861	31.9%	177,988	22.7%
Equities	880,882	53.1%	934,011	51.7%	527,219	67.1%
Commodities	161,043	9.7%	212,947	11.8%	37,318	4.8%
Currencies	58,777	3.5%	53,014	2.9%	39,170	5.0%
Interest rates	33,849	2.0%	31,230	1.7%	3,788	0.5%
Investment funds	21	0.0%	21	0.0%	8	0.0%
	1,660,089	2.6%	1,807,084	2.9%	785,491	60.9%
Total	62,953,906	100.0%	63,120,649	100.0%	1,289,895	100.0%

*Market volume adjusted for price changes = quantity outstanding as at 30 November 2016 x price as at 31 October 2016

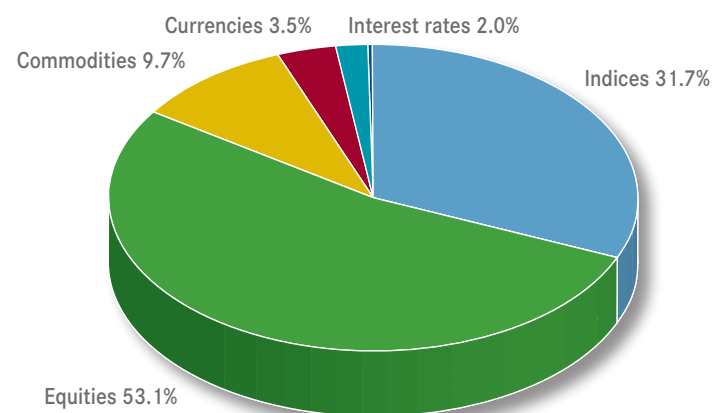
Change in the market volume by underlying asset in comparison with previous month

Underlying	Change		Change price-adjusted		Price effect
	T€	%	T€	%	
Investment products					
Indices	502,376	2.7%	464,098	2.5%	0.2%
Equities	79,854	0.4%	60,730	0.3%	0.1%
Commodities	12,759	1.6%	3,827	0.5%	1.1%
Currencies	-258	-1.1%	-315	-1.3%	0.2%
Interest rates	-434,262	-1.9%	-350,311	-1.5%	-0.4%
Investment funds	23,225	5.7%	25,413	6.2%	-0.5%
	183,693	0.3%	203,442	0.3%	0.0%
Leverage products					
Indices	5,017	1.0%	55,361	10.6%	-9.7%
Equities	-21,980	-2.4%	31,149	3.4%	-5.9%
Commodities	-21,775	-11.9%	30,129	16.5%	-28.4%
Currencies	4,124	7.5%	-1,640	-3.0%	10.5%
Interest rates	10,051	42.2%	7,432	31.2%	11.0%
Investment funds	0	0.0%	0	0.0%	0.0%
	-24,564	-1.5%	122,431	7.3%	-8.7%
Total	159,129	0.3%	325,872	0.5%	-0.3%

Investment products by underlying asset Market volume as at 30 November 2016



Leverage products by underlying asset Market volume as at 30 November 2016



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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