Total costs and cost components of investment in retail structured products

Study

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Management summary

In the study, we determine the total costs of investment in retail structured products, based on 24,830 structured products issued by the members of the DDV in the first half of 2016, constituting a total investment volume of € 8.169 billion one month after issuance. The total costs from the expected issuer margin, sales commission and front-end load amounted to 71.4 basis points (bp), or 0.714 percent per year of investment. The average lifetime of the products was 4.8 years.

Of the total costs of 71.4 bp, expected issuer margin comprised 30.3 bp, sales commissions comprised 31.6 bp, and front-end loads comprised 9.5 bp. The expected issuer margin goes to the issuer as compensation for structuring, market making, and settlement, and also includes the issuers' profits. In contrast, the sales commissions and front-end loads compensate the distributors and advisory services.

The above-mentioned costs do not include the hedging costs (transaction costs for the purchasing of product components), which we estimate at around 30 bp per year of investment. The total costs for investing in structured products, including hedging costs, thus amount to around 1 percent per year of investment. As such, although these costs may exceed those for investing in exchange-traded funds (ETFs) linked to major indices, they are significantly below the costs for actively managed investment funds.

We find these costs associated with investing in structured products to be low, and see them as evidence that high cost transparency has led to greater competition and, in consequence, efficient price structures. This high level of cost transparency, which the Regulator will require from 2018 for all packaged retail financial products in accordance with PRIIPs and MiFID II, has characterised the German structured products market for years.

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This study was prepared on behalf of the Deutscher Derivate Verband (DDV).

1. Introduction

Since May 2014, the members of the Deutscher Derivate Verband (DDV) have published the Issuer Estimated Value (IEV) in product information sheets. The IEV is calculated by the issuer at the time the product terms are defined. Through this voluntary undertaking, specified in in the DDV's Fairness Code, capital investors now also receive information about the expected issuer margin. "The expected issuer margin covers, inter alia, the operational costs incurred by the issuer for structuring, market making and settlement of the respective structured product, and it also includes the expected profit for the issuer."[1] In addition to the expected issuer margin, the difference between the issue price and the IEV includes distribution costs, and any front-end loads are added to the issue price. As such, investors receive information at issuance regarding the total costs (with the exception of hedging costs).

For reasons of consumer protection, the transparency of all costs is also very important to the Regulator. In accordance with the PRIIPs Regulation and the MiFID II Directive[2], from January 2018, investors are to be informed of all investment costs prior to purchasing a product. In its determination of the cost disclosure process, the European regulator has largely oriented itself with the definition of the IEV.[3] As such, an analysis of total costs based on IEVs can provide valuable reference points for the functioning of total cost transparency in accordance with PRIIPs and MiFID II.

In the first study of its kind, we comprehensively analyse the total costs of investment products based on the given IEVs, and, in doing so, distinguish between the costs components of expected issuer margin, sales commission and front-end load.

2. Data and cost calculation

The analysis is based on 303,634 product issuances conducted by all members of the Deutscher Derivate Verband (DDV) in the first half-year of 2016. The issuers belonging to the DDV follow different business models. Some of these are entirely focused on the primary market, i.e. product distribution through branches. Some issuers offer products only or mainly on the secondary market; to self-directed investors, asset managers or other institutional investors. Finally, there are other issuers who serve both markets.

[1] See DDV (2013a), p. 10.
[2] PRIIPs stands for "Packaged Retail and Insurance-based Investment Products", and MiFID for "Markets in Financial Instruments Directive". See European Union (2014a) and European Union (2014b).
[3] In contrast to the DDV Fairness Code, according to the Regulator's provisions, expected hedging costs are to be included in the total costs. See also DDV (2013b), p. 12. For the hedging costs, see Chapter 4.

DDV members were asked to provide the following data fields for investment products issued in the first half of 2016: ISIN, product type, issue price, IEV, sales commission, front-end load (if present), as well as whether the product was for the primary or secondary market. This issuer data was reconciled with the EDG master data, and supplemented with further data fields: issuance date, lifetime, underlying, currency, quanto product (yes/no), value at risk of the underlying, as well as the investment volume (open interest) of the products in the month following issuance. Investments were made in 24,830 of the 303,634 products issued, with a total volume of € 8.169 billion.[4]

In accordance with the Fairness Code, the difference between the issue price and the IEV comprises the expected issuer margin and the sales commission (if applicable). If there is a front-end load, this will be added. The sum of these figures is the total costs. All costs are determined as a percentage of the issue price. The costs are annualised, in that every cost component and the total costs are spread across the lifetime of the product. This allows the individual costs per year of investment to be added to the total costs per year of investment. In comparison with the geometric annualisation of costs, there are only very minor deviations. Finally, each cost component and the total costs are multiplied with the invested volume (open interest). The result in euros is then divided by the total volume. As mentioned above, the volume for the sample of 24,830 products totalled € 8.169 billion.

Of the 24,830 products, 84 (0.34 percent) had an expected issuer margin below zero. For 197 products (0.79 percent), the expected issuer margin was zero. These values can be explained by rounding errors, as well as differing points in time for the determination of the IEV and issue price. Issuers may also intentionally issue products with negative margins for reasons of competition. In addition, products that are issued for the purposes of hedging generally have zero margins.

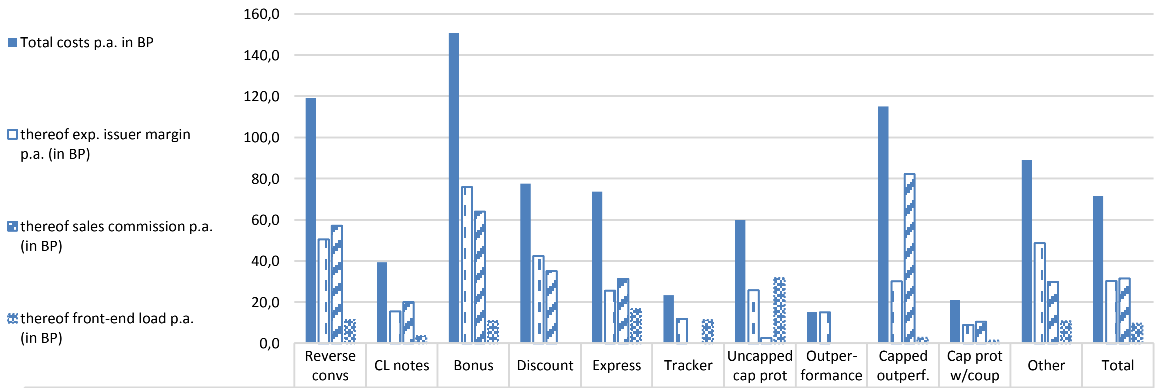
3. Average costs of structured product investment

The volume-weighted costs totalled 71.4 basis points (0.714 percent) for the 24,830 products constituting a total investment volume of € 8.169 billion. Expected issuer margin comprised 30.3 bp of this[5], while sales commissions comprised 31.6 bp and front-end loads comprised 9.5 bp (see figure 1, and for a detailed overview Table 1). The average lifetime in the first half of 2016 across all products was 4.8 years. The average costs of 71.4 bp were calculated by multiplying the costs with the weightings given to the individual products.[6] The products with the highest investment volume in the first half of 2016 included capital protection products with coupon (27.4 percent)

[4] For descriptive statistics, see Table 2 in the appendix.
[5] The expected issuer margin in this study is similar in scale to the issuer margin of 35 bp per year of investment determined by Döhrer / Johanning / Steiner / Völkle (2013) in a representative sample of structured products.
[6] If the costs were determined without annualisation, total volume-weighted costs would amount to 230.3 bp. See table 4 in the appendix for details of the costs of different product types.

reverse convertibles (24.7 percent), and express certificates (21.8 percent) – for more detail, refer to Table 1.[7] As such, around three-quarters of the volume placed was in products with an annual interest payment (coupon products).

Bonus certificates had an average lifetime of 1.4 years, and total costs of 150.7 bp per year of investment. These were followed by reverse convertibles, with total costs of 119.1 bp and an average lifetime of 2 years. The middle-field with respect to total costs was held by discount certificates with 77.6 bp and an average lifetime of 1 year, express certificates with 73.6 bp and a lifetime, on average, of 5.3 years, and uncapped capital protection certificates with 59.9 bp and an average lifetime of 7.4 years. The lowest average total costs were found with credit-linked notes (39.2 bp, and an average lifetime of 4.9 years) and capital protection certificates with coupon (20.9 bp, and an average lifetime of 8 years). The expected issuer margin was higher among bonus certificates (75.9 bp) and discount certificates (42.4 bp) – constituting around half of the total costs. It should be noted that the number of tracker, outperformance and capped outperformance certificates was very low.



	Reverse convs	CL notes	Bonus	Discount	Express	Tracker	Uncapped cap prot	Outper-formance	Capped outperf.	Cap prot w/coup	Other	Total
Total costs p.a. in BP	119,1	39,2	150,7	77,6	73,6	23,2	59,9	15,0	115,0	20,9	89,1	71,4
thereof exp. issuer margin p.a. (in BP)	50,4	15,5	75,9	42,4	25,6	12,0	25,7	15,0	30,1	9,0	48,7	30,3
thereof sales commission p.a. (in BP)	57,1	20,0	64,0	35,2	31,3	0,0	2,6	0,0	82,2	10,6	29,8	31,6
thereof front-end load p.a. (in BP)	11,5	3,7	10,8	0,0	16,7	11,3	31,6	0,0	2,7	1,3	10,7	9,5

Reverse convs = Reverse convertibles
CL notes = Credit-linked notes
Uncapped cap prot = Uncapped capital protection
Capped outper. = Capped outperformance
Cap prot w/coup = Capital protection with coupon

Figure 1: Average costs per year of investment in basis points (bp)
(100 bp = 1%) Weighting according to invested volume in month after issuance

We find these costs associated with investing in structured products to be low, and see them as evidence that high cost transparency has led to greater competition and, in consequence, efficient price structures. This high level of cost transparency, which the regulator will require from 2018 for all significant financial products in accordance with PRIIPs and MiFID II, has characterised the German structured products market

[7] The results were particularly influenced by the large investment volume and long lifetimes of primary market products. For more information on this, see further below in this section.

for years. In the light of these results, the use of product interventions as a regulatory instrument seems inadvisable as a first resort.[8]

In Table 1, costs are classified into primary market products and secondary market products. With primary market products, investors generally receive investment advice, and acquire the products through a bank branch. With secondary market products, a distinction should be made between products with commissions and products without commissions. Products without commissions are purchased by self-directed investors and asset managers, who work with, for example, an all-in-fee model. For secondary market products with commissions, however, asset managers can acquire a product through exchanges and collect a sales commission, which is passed on to the client.

The total costs of primary market products totalled, on average, 66.9 bp per year of investment. Expected issuer margin constituted 26.9 bp of this, sales commissions 29.3 bp, and front-end loads 10.7 bp.

Some 89 percent of the total volume, comprising € 7.275 billion, was traded on the primary market. The total costs of the primary market products were particularly influenced by products with long lifetimes (with the exception of reverse convertibles): capital protection with coupon products (€ 1.779 billion and total costs of 73.7 bp), reverse convertibles (€ 1.762 billion and 122.3 bp), and credit-linked notes (€ 0.708 billion and 40.2 bp).

In the sample, there was a volume of € 0.896 billion on the secondary market (10.5 percent of the total for the first half-year of 2016). The total costs were around 108.5 bp per year of investment, and the average lifetime was only around 1.3 years. At 58.2 bp, the expected issuer margin was greater than that of primary market products. Sales commissions averaged 50.3 bp, while the front-end load was insignificant.

For bonus certificates, the total costs and expected issuer margins amounted to 152.3 bp and 81.8 bp respectively, and the investment volume totalled € 0.312 billion (34.9 percent of the investment volume of secondary market products). Other important products included discount certificates, with total costs of 86.8 bp and a volume of € 0.277 billion (31 percent), and reverse convertibles, with total costs of 97.3 bp and a market volume of € 0.256 billion (28.6 percent). Other products did not feature significantly in the secondary market.

While coupon products are characteristic of the primary market, products with equity underlyings feature prominently in the secondary market. The significantly lower

[8] See Brunnermeier / Oehmke (2009) and Becker / Döhrer / Johanning (2012), who also come to the conclusion that appropriate transparency of costs and risks is more effective than product interventions. See also Carlin (2009) and Carlin / Kogan / Lowery (2013).

costs associated with primary products (66.9 bp per year of investment) can be explained by the longer average lifetimes – 5.3 years in comparison to 1.3 years for secondary market products.

Table 3 in the appendix distinguishes between secondary market products with and without sales commissions. For products without sales commissions, the total costs (and, accordingly, the expected issuer margins) amounted to 62.1 bp. In contrast, the products with sales commissions had total costs of 193.2 bp - although the expected issuer margin was somewhat lower (51.2 bp), the average sales commission came to 142 bp. Bonus certificates contributed significantly to this result with an average sales commission of 213.6 bp and a relatively short lifetime of 0.8 years. However, in practice, these sales commissions may actually be lower, as the sales commissions listed by the issuers in the secondary market are the maximum values, similar to the front-end loads of investment funds. Secondary market trading in structured products is a high-volume business, so commissions are typically stipulated by the issuer as a maximum value per product type. The sales commissions actually charged by the distributor are generally lower.

Total	Reverse convertibles	Credit-linked notes	Bonus	Discount	Express	Tracker	Uncapped capital protection	Outperformance	Capped outperformance	Capital protection w/coupon	Other	Total
Total costs p.a. (in bp)	119.1	39.2	150.7	77.6	73.6	23.2	59.9	15.0	115.0	20.9	89.1	**71.4**
thereof exp. issuer margin p.a. (in bp)	50.4	15.5	75.9	42.4	25.6	12.0	257	15.0	30.1	9.0	48.7	**30.3**
thereof sales commission p.a. (in bp)	57.1	20.0	64.0	35.2	31.3	0.0	2.6	0.0	82.2	10.6	29.8	**31.6**
thereof front-end load p.a. (in bp)	11.5	3.7	10.8	0.0	16.7	11.3	31.6	0.0	2.7	1.3	10.7	**9.5**
Volume (in € M)	2,017.5	728.1	443.3	338.5	1,782.1	9.8	381.8	1.1	9.7	2,238.4	218.7	**8,169.0**
Weighting	24.7%	8.9%	5.4%	4.1%	21.8%	0.1%	4.7%	0.0%	0.1%	27.4%	2.7%	**100.0%**
Number of products	11,457	355	5,290	5,063	2,082	16	99	3	45	329	91	**24,830**
Average lifetime (in years)	2.0	4.9	1.4	1.0	5.3	9.7	7.4	1.1	1.6	8.0	3.0	**4.8**

Primary market	Reverse convertibles	Credit-linked notes	Bonus	Discount	Express	Tracker	Uncapped capital protection	Outperformance	Capped outperformance	Capital protection w/coupon	Other	Total
Total costs p.a. (in bp)	122.3	40.2	147.0	35.4	73.7	24.8	59.9		102.3	21.0	89.1	**66.9**
thereof exp. issuer margin p.a. (in bp)	50.1	15.8	61.9	27.3	25.6	12.3	25.7		13.7	9.0	48.7	**26.9**
thereof sales commission p.a. (in bp)	58.9	20.5	48.7	8.1	31.4	0.0	2.6		85.6	10.7	29.8	**29.3**
thereof front-end load p.a. (in bp)	13.2	3.9	36.4	0.0	16.7	12.5	31.6		3.1	1.4	10.7	**10.7**
Volume (in € M)	1,761.9	707.5	131.5	61.1	1,779.3	7.4	381.8	0.0	8.6	2,216.8	218.7	**7,274.5**
Weighting	24.2%	9.7%	1.8%	0.8%	24.5%	0.1%	5.2%	0.0%	0.1%	30.5%	3.0%	**100.0%**
Number of products	5,697	346	141	44	2,080	1	99	0	26	320	91	**8,845**
Average lifetime (in years)	22	4.9	2.6	1.1	5.3	10.0	7.4		1.7	8.0	3.0	**5.3**

Secondary market	Reverse convertibles	Credit-linked notes	Bonus	Discount	Express	Tracker	Uncapped capital protection	Outperformance	Capped outperformance	Capital protection w/coupon	Other	Total
Total costs p.a. (in bp)	97.3	6.8	152.3	86.8	27.7	18.3		15.0	214.1	6.9		**108.5**
thereof exp. issuer margin p.a. (in bp)	52.6	5.1	81.8	45.7	27.7	10.8		15.0	158.8	1.8		**58.2**
thereof sales commission p.a. (in bp)	44.7	1.7	70.5	41.1	0.0	0.0		0.0	55.3	5.1		**50.3**
thereof front-end load p.a. (in bp)	0.0	0.0	0.0	0.0	0.0	7.5		0.0	0.0	0.0		**0.4**
Volume (in € M)	255.7	20.6	311.8	277.4	2.8	2.4	0.0	1.1	1.1	21.6	0.0	**894.5**
Weighting	28.6%	2.3%	34.9%	31.0%	0.3%	0.3%	0.0%	0.1%	0.1%	2.4%	0.0%	**100.0%**
Number of products	5,760	9	5,149	5,019	2	15	0	3	19	9	0	**15,985**
Average lifetime (in years)	1.0	6.2	0.8	1.0	3.9	8.8		1.1	0.8	11.0		**1.3**

Table 1: Average costs p.a. in bp (100 bp = 1%) – weighted according to investment volume (open interest) in month after issuance

4. Hedging costs

As discussed in the introductory chapter, investors can use the IEV to more accurately assess the total costs of their structured product investment at issuance. The total costs are divided into the expected issuer margin, sales commission and front-end load. While the sales commission and front-end load go to the distributor (as compensation for investment advice and other distribution services), the issuer receives the expected issuer margin to cover its costs with respect to structuring, market making, and settlement. In accordance with the PRIIPs Regulation, in future, hedging costs must be published in addition to these costs. These hedging costs represent the purchase costs of the product components of the structured product. As such, these costs can be regarded as compensation for the actual costs of the issuer. With products that are difficult to hedge, such as bonus certificates with barrier options, these hedging costs are higher than with simple discount certificates, which are relatively easy to hedge.

To obtain an initial impression of the extent of hedging costs, we asked a variety of experts to estimate their scale. Based on these discussions, we estimate the average hedging costs for a simple discount certificate to be 15 bp per year of investment, and the average hedging costs for a bonus certificate with a barrier option to be 45 bp per year of investment. Further product features may increase hedging costs. With the PRIIPs Regulation coming into effect as of January 2018, investors will obtain more precise information regarding these cost components. Based on these indicators, we estimate that the total costs of structured product investment, including hedging costs, to be around 1 percent per year of investment. As such, although these costs may exceed those for investing in exchange-traded funds (ETFs) linked to major indices, they are significantly below the costs for actively managed investment funds.

5. Outlook

In the coming years, the costs associated with capital investment in structured products and other investments will come under increasing scrutiny by investors and regulators,[9] but also by academia. Up to now, the focus of academic work has been the valuation of product prices for structured products. A problematic element of this approach is that, typically, only very inexact time information and data are available for prices and, especially, for the volatilities of the underlyings. The results and the (implicit) costs identified by these studies are thus, in many cases, extremely distorted and provide limited, if any, meaningful information.[10]

New research opportunities will be opened up with the disclosure of the IEV and cost components in accordance with PRIIPs as of January 2018. This will allow costs to be estimated and comparisons with other investment products to be made – one of the declared goals of the Regulator. Part of the research should focus on using econometric measures to further validate the cost information provided by the issuers, and on comparing different kinds of costs with each other as well as across product types. In this regard, it should be noted that IEV data is already being reviewed by auditors today, and this too is the subject of academic study and validation.[11]

[9] See, for example, ESMA (2013) and Hespeler (2017).
[10] For details on the difficulties in valuation of derivative investment products, see Döhrer / Johanning / Steiner / Völkle (2013) and the literature discussed therein, as well as Bauer / Fink / Stoller (2017).
[11] See Baule / Münchhalfen / Shkel (2017) and Bauer / Fink / Stoller (2017).

Appendix

Total	Reverse convertibles	Credit-linked notes	Bonus	Discount	Express	Tracker	Uncapped capital protection	Outperfor mance	Capped outperfor mance	Capital protection w/coupon	Other	Total
Total costs p.a. (in bp)	121.7	35.5	155.9	110.0	79.8	47.0	57.1	14.8	165.2	19.3	79.0	**137.2**
thereof exp. issuer margin p.a. (in bp)	69.7	14.6	80.5	53.6	28.4	45.6	22.1	14.8	115.4	7.6	34.9	**71.1**
thereof sales commission p.a. (in bp)	494	18.8	75.4	56.4	34.2	0.0	6.3	0.0	47.6	10.7	25.7	**65.5**
thereof front-end load p.a. (in bp)	2.6	2.1	0.0	0.0	17.2	1.4	28.7	0.0	2.2	1.0	18.3	**0.6**
Number of products	50,762	360	168,983	80,354	2,130	20	99	14	472	344	96	**303,634**
Average lifetime (in years)	1.2	5.6	0.9	1.1	5.0	5.7	7.8	1.2	0.8	8.1	4.5	**1.1**

Primary market	Reverse convertibles	Credit-linked notes	Bonus	Discount	Express	Tracker	Uncapped capital protection	Outperfor mance	Capped outperfor mance	Capital protection w/coupon	Other	Total
Total costs p.a. (in bp)	133.0	36.2	134.9	106.2	80.0	24.8	57.1		182.1	19.6	79.0	**111.5**
thereof exp. issuer margin p.a. (in bp)	58.3	14.8	89.0	98.7	28.4	12.3	22.1		78.4	7.7	34.9	**48.8**
thereof sales commission p.a. (in bp)	51.8	19.2	31.7	7.5	34.3	0.0	6.3		66.5	10.9	25.7	**43.2**
thereof front-end load p.a. (in bp)	22.9	2.1	14.2	0.0	17.3	12.5	28.7		37.2	1.0	18.3	**19.5**
Number of products	5,860	351	234	141	2,124	1	99	0	28	334	96	**9,268**
Average lifetime (in years)	2.65	5.59	1.95	0.85	5.01	10.00	7.82		2.06	8.00	4.49	**3.53**

Secondary market	Reverse convertibles	Credit-linked notes	Bonus	Discount	Express	Tracker	Uncapped capital protection	Outperfor mance	Capped outperfor mance	Capital protection w/coupon	Other	Total
Total costs p.a. (in bp)	120.2	10.7	156.0	110.0	19.4	48.2		14.8	164.1	10.1		**138.0**
thereof exp. issuer margin p.a. (in bp)	71.2	5.7	80.5	53.5	19.4	47.4		14.8	117.7	3.2		**71.8**
thereof sales commission p.a. (in bp)	49.1	5.0	75.4	56.5	0.0	0.0		0.0	46.4	6.9		**66.2**
thereof front-end load p.a. (in bp)	0.0	0.0	0.0	0.0	0.0	0.8		0.0	0.0	0.0		**0.0**
Number of products	44,902	9	168,749	80,213	6	19	0	14	444	10	0	**294,366**
Average lifetime (in years)	1.05	6.43	0.91	1.09	4.33	5.45		1.23	0.71	11.03		**0.98**

Table 2: Average costs p.a. in bp (100 bp = 1%) – equal weighting given to all products

Secondary market	Reverse convertibles	Credit-linked notes	Bonus	Discount	Express	Tracker	Uncapped capital protection	Outperfor mance	Capped outperfor mance	Capital protection w/coupon	Other	Total
Total costs p.a. (in bp)	97.3	6.8	152.3	86.8	27.7	18.3		15.0	214.1	6.9		**108.5**
thereof exp. issuer margin p.a. (in bp)	52.6	5.1	81.8	45.7	27.7	10.8		15.0	158.8	1.8		**58.2**
thereof sales commission p.a. (in bp)	44.7	1.7	70.5	41.1	0.0	0.0		0.0	55.3	5.1		**50.3**
thereof front-end load p.a. (in bp)	0.0	0.0	0.0	0.0	0.0	7.5		0.0	0.0	0.0		**0.4**
Volume (in € M)	255.7	20.6	311.8	277.4	2.8	2.4		1.1	1.1	21.6		**894.5**
Weighting	28.6%	2.3%	34.9%	31.0%	0.3%	0.3%		0.1%	0.1%	2.4%		**100.0%**
Number of products	5,760	9	5,149	5,019	2	15	0	3	19	9	0	**15,985**
Average lifetime (in years)	1.0	6.2	0.8	1.0	3.9	8.8		1.1	0.8	11.0		**1.3**

Secondary market without sales commissions	Reverse convertibles	Credit-linked notes	Bonus	Discount	Express	Tracker	Uncapped capital protection	Outperfor mance	Capped outperfor mance	Capital protection w/coupon	Other	Total
Total costs p.a. (in bp)	56.7	5.2	88.0	47.4	27.7	18.3		15.0	179.8	0.2		**62.1**
thereof exp. issuer margin p.a. (in bp)	56.7	5.2	88.0	47.4	27.7	10.8		15.0	179.8	0.2		**62.0**
thereof sales commission p.a. (in bp)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		**0.0**
thereof front-end load p.a. (in bp)	0.0	0.0	0.0	0.0	0.0	7.5		0.0	0.0	0.0		**0.0**
Volume (in € M)	136.0	19.0	209.0	197.6	2.8	2.4		1.1	0.8	8.9		**577.5**
Weighting	23.6%	3.3%	36.2%	34.2%	0.5%	0.4%		0.2%	0.1%	1.5%		**100.0%**
Number of products	2,919	7	3,534	3,909	2	15	0	3	15	3	0	**10,407**
Average lifetime (in years)	1.0	6.1	0.8	0.9	3.9	8.8		1.1	0.9	7.8		**1.2**

Secondary market with sales commissions	Reverse convertibles	Credit-linked notes	Bonus	Discount	Express	Tracker	Uncapped capital protection	Outperfor mance	Capped outperfor mance	Capital protection w/coupon	Other	Total
Total costs p.a. (in bp)	143.3	24.6	282.9	184.7					290.6	11.5		**193.2**
thereof exp. issuer margin p.a. (in bp)	47.8	4.1	69.3	41.6					111.8	2.9		**51.2**
thereof sales commission p.a. (in bp)	95.5	20.4	213.6	143.2					178.8	8.7		**142.0**
thereof front-end load p.a. (in bp)	0.0	0.0	0.0	0.0					0.0	0.0		**0.0**
Volume (in € M)	119.7	1.7	102.9	79.7					0.3	12.8		**317.1**
Weighting	37.7%	0.5%	32.4%	25.1%					0.1%	4.0%		**100.0%**
Number of products	2,841	2	1,615	1,110	0	0	0	0	4	6	0	**5,578**
Average lifetime (in years)	1.1	7.6	0.8	1.0					0.6	13.2		**1.5**

Table 3: Average costs p.a. in bp (100 bp = 1%) – secondary market products classified into those with sales commissions and those without sales commissions– weighted according to investment volume (open interest) in month after issuance

Total	Reverse convertibles	Credit-linked notes	Bonus	Discount	Express	Tracker	Uncapped capital protection	Outperfor mance	Capped outperfor mance	Capital protection w/coupon	Other	Total
Total costs p.a. (in bp)	197.9	178.3	159.3	69.0	375.2	209.5	445.3	16.4	159.7	160.9	253.5	**230.3**
thereof exp. issuer margin p.a. (in bp)	72.6	68.0	76.8	38.3	127.9	96.7	192.7	16.4	27.0	64.5	128.4	**87.9**
thereof sales commission p.a. (in bp)	97.9	91.1	54.2	30.7	157.9	0.0	20.8	0.0	128.5	87,4	78.6	**98.1**
thereof front-end load p.a. (in bp)	27.4	19.2	28.3	0.0	89.4	112.8	231.8	0.0	4.2	9.0	46.5	**44.2**
Volume (in € M)	2,017.5	728.1	443.3	338.5	1,782.1	9.8	381.8	1.1	9.7	2,238.4	218.7	**8,169.0**
Weighting	24.7%	8.9%	5.4%	4.1%	21.8%	0.1%	4.7%	0.0%	0.1%	27.4%	2.7%	**100.0%**
Number of products	11,457	355	5,290	5,063	2,082	16	99	3	45	329	91	**24,830**
Average lifetime (in years)	2.0	4.9	1.4	1.0	5.3	9.7	7.4	1.1	1.6	8.0	3.0	**4.8**

Table 4: Average costs in bp (100 bp = 1%) without annualisation – weighted according to investment volume (open interest) in month after issuance

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