

Deutsche Bank Investment Bank

Ex-Ante Cost Disclosure

This document provides you with key information about Investment Bank Products. It is not marketing material. The purpose of this document is to break down and illustrate the Costs and Charges associated with a Class of Products. This document provides examples of particular products within an ESMA Asset Class¹ and the Costs and Charges associated with them. It does not include examples of all available Products within an Asset Class. The Costs and Charges figures provided in this document are illustrative of the Costs and Charges associated with particular Products, but may not reflect the Costs and Charges associated with any actual transaction. If you have any questions in relation to the Costs and Charges associated with any particular Product, please raise these with your usual Deutsche Bank Representative. We will provide to you Annual information in relation to the Costs and Charges associated with transactions actually carried out with you.

What are the Costs?

The Costs and Charges associated with Securities Financing Transactions (SFTs) are set out in the illustrations below.

Costs associated with SFTs:

Entry Cost is calculated as the difference between the Price of the SFT^{N1} and the Mid-Price where the best Bid and Offer quotes are available at point of Sale. Where an active Secondary Liquid Market is not available and Mid-Price cannot be derived, the Fair Value^{N2} of the SFT is used.

Note 1: The Price of an SFT is not solely based on the Theoretical Value of the SFT, but also includes an additional Margin that reflects, besides Deutsche Bank AG's Profit, the Costs for Conception, Structuring, Sales, Distribution, Settlement of the SFT and Balance Sheet and Capital usage as well as Expenditure for the hedging of Market Risks. Deutsche Bank AG determines the Margin in relation to each Transaction, taking into account the Market situation, the complexity of the SFT's structure, the size of the Transaction and Liquidity of the SFT, and the Margin as so determined, is represented as the Total Entry Costs section in the table. These factors may cause the Entry Costs in relation to any particular Transaction to vary from those set out in the examples below.

Note 2: The Fair Value represents the Theoretical Value of the SFTs as calculated by Deutsche Bank AG, based on Market Data and/or Market Standard Pricing Methods.

Where applicable, Costs may include compensation for the Credit Risk that Deutsche Bank AG is taking vis-à-vis its Client. For Deutsche Bank AG, as the Counterparty, the inclusion of the additional Margin in the Price of the SFT results in an initial positive Market Value. In general, the Market Risk from Financial Instruments of this type does not remain with Deutsche Bank AG, but will be partially or completely, transferred on to the Market. To the extent such transfer takes place, Deutsche Bank AG realizes the Profit that is, amongst other factors, reflected by the additional Margin regardless of the further performance of the SFT provided that the Credit Risk of the Client that is taken by Deutsche Bank AG does not materialize.

The provision of any Collateral required in connection with the SFT may result in Funding Costs for the Client depending on its resources and its overall position with Deutsche Bank AG.

Foreign Exchange Costs may also be incurred in respect of certain SFTs.

The Costs incurred in relation to these examples would all be Product Costs and no Service Costs would be applicable. Accordingly, the aggregated Product Costs represent the Total Costs of the SFT.

What is the effect of Costs on the return of the SFTs?

Entry Costs are a one off charge and presented as an upfront Cost based on the assumption that the SFT will be held to maturity. This amount frequently does not have to be paid separately; it is factored into the terms and conditions of the SFT and therefore reduces the market value of the SFT accordingly.

When there are On-going Costs for an SFT, the Total Cost amount throughout the SFT lifetime may diverge from the illustrated examples. Where applicable the On-going Costs and associated Cost calculation methodology are pre-defined in each SFT's specific documentation.

If the SFT will be held to maturity, Exit Costs will not be incurred. However, if the SFT is terminated or unwound prior to maturity, Exit Costs may occur. In such a case, we assume that the Exit Costs will be equal to the Total Entry Costs.

Total Entry Costs plus the On-going Costs (if any) for the first year will be incurred in the first year of the SFT lifetime. In the subsequent years, only On-going Costs (if any) will be incurred. If the SFT is terminated or unwound prior to maturity, in the final year of the SFT lifetime the proportionate On-going Costs (if any) plus the Exit Costs will be incurred. If costs are incurred in a year of the SFT lifetime, such Costs will reduce the market value of the SFT for such period accordingly.

¹ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0583&rid=1>

Asset Class: Securities Financing Transactions

The Manufacturer is the product issuer. Contact your Deutsche Bank representative for more information..

Regulatory Status Disclosure:

Deutsche Bank AG is authorised and regulated by the European Central Bank and the German Federal Financial Supervisory Authority (BaFin). Deutsche Bank AG is authorised by the Prudential Regulation Authority. It is subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Details about the extent of Deutsche Bank AG's authorisation and regulation by the Prudential Regulation Authority are available from Deutsche Bank AG on request.

Securities Financing Transactions are composed of two types of Instrument:

i) Securities Lending - one party, the 'Lender', transfers legal title to a security or basket of securities to another party, the 'Borrower', for a limited period, in exchange for a transfer of legal ownership of assets which represent 'Collateral'. The Collateral in securities lending can be either other securities or cash. The Borrower pays a fee to the Lender for the use of the loaned security. A significant part of the market is in equities. The securities lending market in Europe is represented by the International Securities Lending Association (ISLA)

ii) Repurchase Agreements 'Repos' – are economically analogous to short terms secured loans but take the form of a purchase of securities for cash by a repo buyer followed by a subsequent repurchase of those securities by the repo seller. The repurchase price is fixed at the same time as the purchase price but generally includes a component of price derived from an interest rate, which in part represents a return to the repo buyer. Repos are motivated by the need to borrow or lend for cash. The Repo market primarily involves bonds and other fixed-income instruments, and in Europe, is represented by the European Repo and Collateral Council (ERCC), part of the International Capital Market Association (ICMA)

If you have any questions in relation to the costs and charges associated with SFTs, please raise these with your usual Deutsche Bank representative.

Sub Asset Class: **Reverse Repo**

Reverse Repos are used to lend short-term Capital to businesses to facilitate Cash Flow.

The Buyer / Lender enters into a Reverse Repurchase agreement by purchasing a Security, in exchange for Cash with the agreement to sell the Security at a higher price at a specific future date.

The Seller / Borrower conversely enters into a Repurchase Agreement or 'Repo' by selling the Security in return for Cash and agrees to repurchase it at a higher price at a specified future date.

The higher price represents the interest to the Buyer for loaning Cash to the Seller during the duration of the deal. The Security acquired by the Buyer acts as a Collateral against any default risk it faces from the Seller

Product Name: DB Rev High Quality Liquid Asset General Collateral (HQLA GC)

Notional: €100,000,000

Currency: € EURO

Instrument: German Bund 5 Year Maturity, +5bps spread on EUR Cash Collateral Loan

<u>Tenor:</u>	<u>Spot-Next – ACT / 360</u>	
<u>Costs</u>	<u>%</u>	<u>€</u>
Entry Cost:		
General Collateral Curve Repo Rate	-0.60%	(€1,667)
Client Repo Rate	-0.55%	(€1,528)
Total Entry Costs	0.05%	€ 139
On Going Costs:	N/A	N/A
Exit Costs:	N/A	N/A
Incidental Costs:	N/A	N/A
Total Costs	0.05%	€ 139
Traded Price	-0.55%	(€1,528)
Inducements:	0%	€0

Product Name: EUR Specific DB Rev High Quality Liquid Asset General Collateral (HQLA GC)
Notional: €100,000,000
Currency: € EURO
Instrument: German Bund 10 Year Maturity; -15bps spread on EUR Cash Collateral Loan

<u>Tenor:</u>	<u>Spot-Next – ACT / 360</u>	
<u>Costs</u>	<u>%</u>	<u>€</u>
Entry Cost:		
General Collateral Curve Repo Rate	-0.60%	(€1,667)
Client Repo Rate	-0.75%	(€2,083)
Total Entry Costs	-0.15%	(€ 416)
On Going Costs:	N/A	N/A
Exit Costs:	N/A	N/A
Incidental Costs:	N/A	N/A
Total Costs	-0.15%	(€ 416)
Traded Price	-0.75%	(€2,083)
Inducements:	0%	€0

Product Name: DB Rev High Quality Liquid Asset USD; Open Ended, Cost Re-Calculated daily
Notional: \$100,000,000
Currency: \$ USD
Instrument: DB Rev USD SSA (EIB/KFW), +11bps spread on USD Cash Collateral Loan

<u>Tenor:</u>	<u>Tomorrow - Open Next Day (1 Day ACT / 360)</u>	
<u>Costs</u>	<u>%</u>	<u>\$</u>
Entry Cost:		
Curve Fair Repo Rate	1.25%	\$3,472
Client Repo Rate	1.36%	\$3,778
Total Entry Costs	0.11%	\$ 306
On Going Costs:	N/A	N/A
Exit Costs:	N/A	N/A
Incidental Costs:	N/A	N/A
Total Costs	0.11%	\$ 306
Traded Price	1.36%	\$3,778
Inducements:	0%	\$0

Product Name: EUR Investment Grade (IG) Credit

Notional: €100,000,000

Currency: € EUR

Instrument: DB Rev EUR IG Credit Bonds, +5bps spread on EUR Cash Collateral Loan

<u>Maturity:</u>	<u>Tomorrow- 1 Month 30 / 360</u>	
<u>Costs</u>	<u>%</u>	<u>€</u>
Entry Cost:		
Curve Fair Repo Rate	-0.20%	(€16,667)
Client Repo Rate	-0.15%	(€12,500)
Total Entry Costs	0.05%	€4,167
On Going Costs:	N/A	N/A
Exit Costs:	N/A	N/A
Incidental Costs:	N/A	N/A
Total Costs	0.05%	€4,167
Traded Price	-0.15%	(€12,500)
Inducements:	0%	€0

Product Name: EUR Bespoke Collateral Basket Credit

Notional: €100,000,000

Currency: € EUR

Instrument: DB Rev EUR Investment Grade and High Yield ABS, MBS, Municipal, Corporate and Government bonds basket received as collateral with 28% haircut versus cash lent at +15bps spread on EUR Bespoke Collateral Basket Loan

<u>Maturity:</u>	<u>5 Year, Act / 360</u>	
<u>Costs</u>	<u>%</u>	<u>€</u>
Entry Cost:		
Curve Fair Repo Rate	3m Euribor + 0.65%	
Client Repo Rate	3m Euribor + 0.80%	
Total Entry Costs	0.15%	€750,000
On Going Costs:	N/A	N/A
Exit Costs:	N/A	N/A
Incidental Costs:	N/A	N/A
Total Costs	0.15%	€750,000
Traded Price	3m Euribor + 0.80%	
Inducements:	0%	€0

Sub Asset Class: **Repurchase Transactions to Cover Short Positions**

Repurchase Transactions to cover short positions are repurchase transactions ('repos') entered into to provide a particular security to a counterparty where such counterparty has sold a security that they do not yet own. These transactions are motivated by the need of the repo 'buyer' (in this case, the counterparty) to obtain the security rather than the need of the repo 'seller' to fund itself.

In such transactions the repo buyer purchases a security from the repo seller, in exchange for cash with the agreement for the repo seller to 'repurchase' the security back from the repo buyer at a lower price at a specified future date.

The lower price represents a return to the repo seller for 'loaning' the security to the repo buyer for the duration of the transaction. The cash acquired by the repo seller acts as collateral against any default risk it faces from the repo buyer.

Product Name: DB Repo Investment Grade BBB EUR Special for Shorts Coverage Service Provision

Notional: €25,000,000

Currency: € EURO

Instrument: EUR Investment Grade BBB; +34bps spread on German Bunds

<u>Tenor:</u>	<u>Tomorrow-Open Next Day (1 Day ACT / 360)</u>	
<u>Costs</u>	<u>%</u>	<u>€</u>
Entry Cost:		
General Collateral Curve Repo Rate	-0.26%	(€ 181)
Client Repo Rate	-0.90%	(€ 625)
Total Entry Costs	0.64%	(€ 444)
On Going Costs:	N/A	N/A
Exit Costs:	N/A	N/A
Incidental Costs:	N/A	N/A
Total Costs	0.64%	€ 444
Traded Price	-0.90%	(€ 625)
Inducements:	0%	€0

Sub Asset Class: Collateral Swaps

A collateral swap is a form of stock lending whereby one party, the 'lender', transfers title to one pool of target assets, for example liquid assets such as higher quality investment rated / graded securities, to another party, the 'borrower', in exchange for title to (or in some cases a pledge of) another type or grade of collateral, such as lower quality rated / graded securities or vice versa.

The 'borrower' pays a fee to the 'lender' to compensate them for the transfer of risk to lower quality, less liquid assets.

Product Name: DB Bond Borrow: FRENCH GOVT; DB Bond Loan: GERMAN GOVT

Notional: €100,000,000

Currency: € EURO

Curves: FRENCH t/n -50bps vs GERMAN t/n -55 bps

<u>Tenor:</u>	<u>Tomorrow-Open Next Day (1 Day ACT / 360)</u>	
<u>Costs</u>	<u>%</u>	<u>€</u>
Entry Cost:		
French Curve	-0.50%	(€1,389)
German Curve	-0.55%	(€1,528)
Deutsche Bank Fee	0.10%	€ 278
Total Entry Costs	0.05%	€ 139
On Going Costs:	N/A	N/A
Exit Costs:	N/A	N/A
Incidental Costs:	N/A	N/A
Total Costs	0.05%	€ 139
Traded Price	0.10%	€ 278
Inducements:	0%	€0

Product Name: DB Bond Borrow: EUR Non-Investment Grade; DB Bond Loan: GERMAN GOVT
Notional: €100,000,000
Currency: € EURO
Curves: One Year 34bps vs German One-Year -65 bps

<u>Tenor:</u>	<u>1 Year</u>	
<u>Costs</u>	<u>%</u>	<u>€</u>
Entry Cost:		
EUR Non IG 1 Year Curve	0.34%	€340,000
German 1 Year Curve	-0.65%	(€650,000)
Deutsche Bank Fee	1.15%	€1,150,000
Total Entry Costs	0.16%	€160,000
On Going Costs:	N/A	N/A
Exit Costs:	N/A	N/A
Incidental Costs:	N/A	N/A
Total Costs	0.16%	€160,000
Traded Price	1.15%	€1,150,000
Inducements:	0%	€0

Product Name: DB Receive Tri-party Sec Borrow \$SSSA; DB Give Tri-party Sec Loan + Fee
Notional: \$100,000,000
Currency: \$USD
Curves: One Month AAA 133 bps vs One Month UST 120 bps + Fee

<u>Tenor:</u>	<u>1 Month 30 / 360</u>	
<u>Costs</u>	<u>%</u>	<u>\$</u>
Entry Cost:		
SSSSA 1 Month Curve	1.33%	\$110,833
UST 1 Month Curve	1.20%	\$100,000
Deutsche Bank Fee	0.20%	\$16,667
Total Entry Costs	0.07%	\$5,833
On Going Costs:	N/A	N/A
Exit Costs:	N/A	N/A
Incidental Costs:	N/A	N/A
Total Costs	0.07%	\$5,833
Traded Price	0.20%	\$16,667
Inducements:	0%	\$0

Product Name: DB Bond Borrow: EUR IG and HY ABS, MBS, Muni, Corp and Govt bonds basket received as collateral with 28% haircut ; DB Bond Loan: European Govt at 85bps financing rate

Notional: €100,000,000

Currency: € EURO

Curves: Five Year EUR bond basket vs Five Year German Govt -50 bps

<u>Tenor:</u>	<u>5 Year</u>	
<u>Costs</u>	<u>%</u>	<u>€</u>
Entry Cost:		
Core Government Curve	-0.50%	(€2,500,000)
Collateral Curve	0.00%	€0
Deutsche Bank Fee	0.85%	€4,250,000
Total Entry Costs	0.35%	€1,750,000
On Going Costs:	N/A	N/A
Exit Costs:	N/A	N/A
Incidental Costs:	N/A	N/A
Total Costs	0.35%	€1,750,000
Traded Price	0.85%	€4,250,000
Inducements:	0%	€0