



Währungsmanagement mit Hilfe von Data Solutions, Algorithmen, und Smart Order Routers

UBS Investment Bank – Global Markets

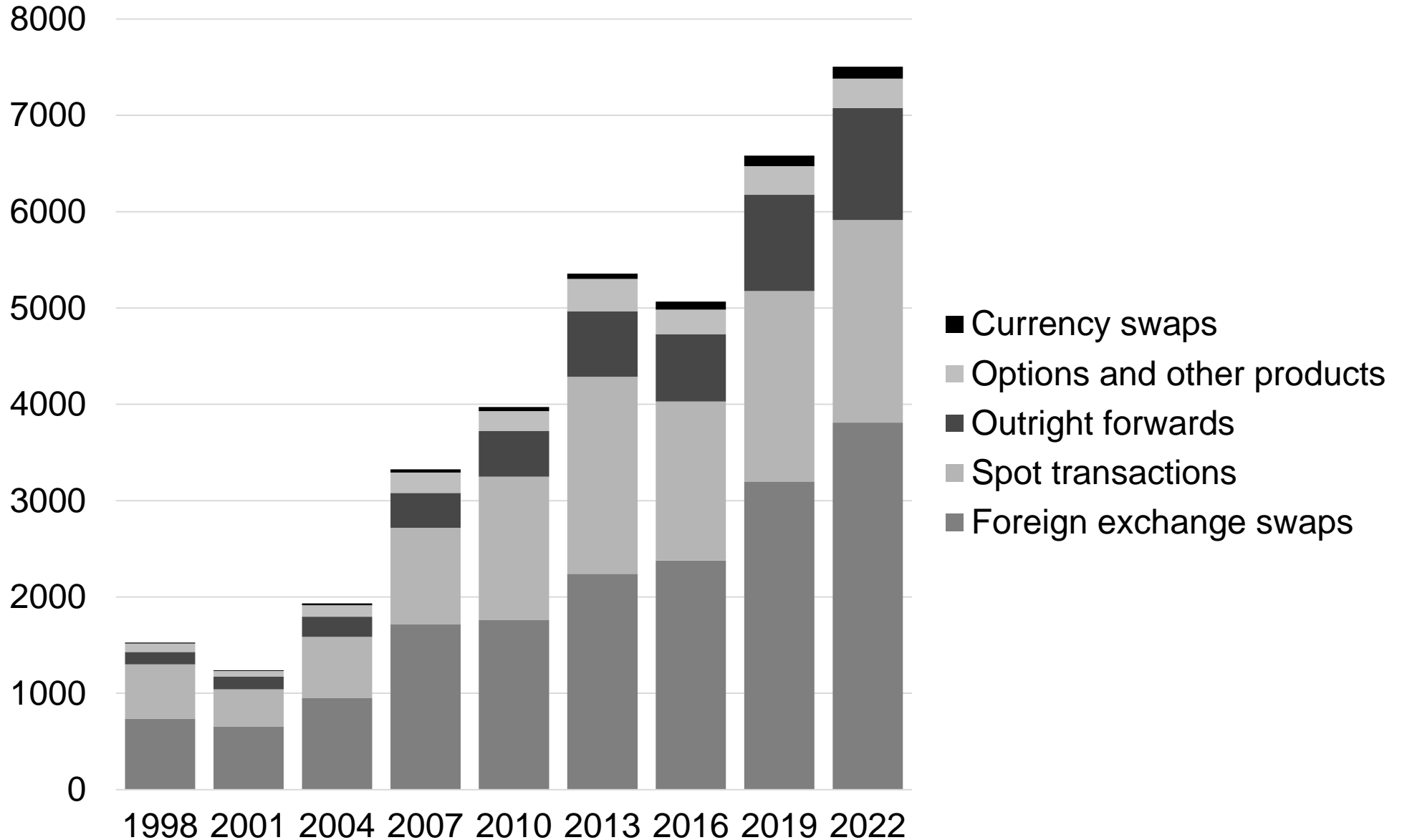
Nicolas Steiner & Larissa Lüchinger

1. März 2024

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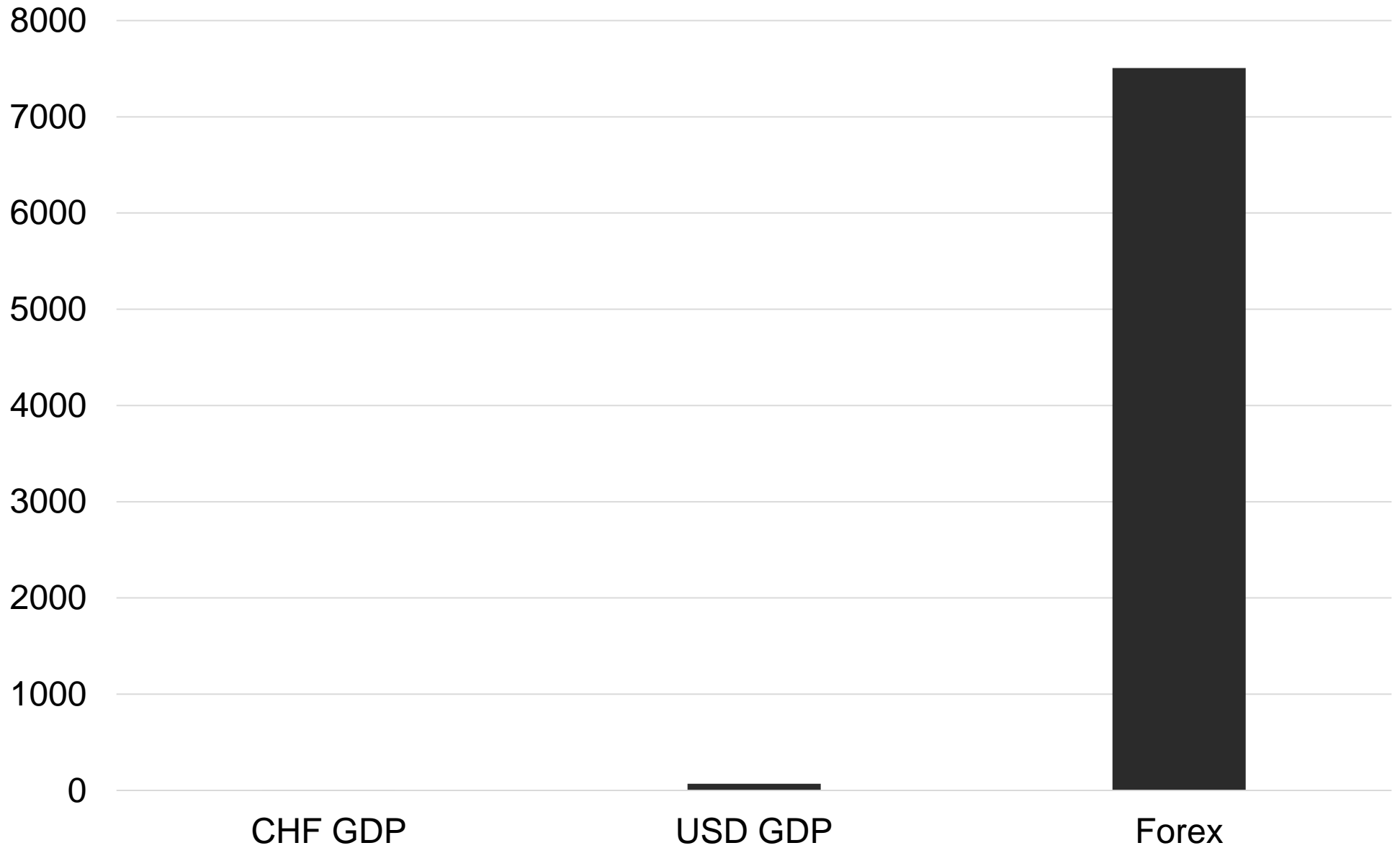
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Devisenhandel die Fakten – FX daily turnover by product

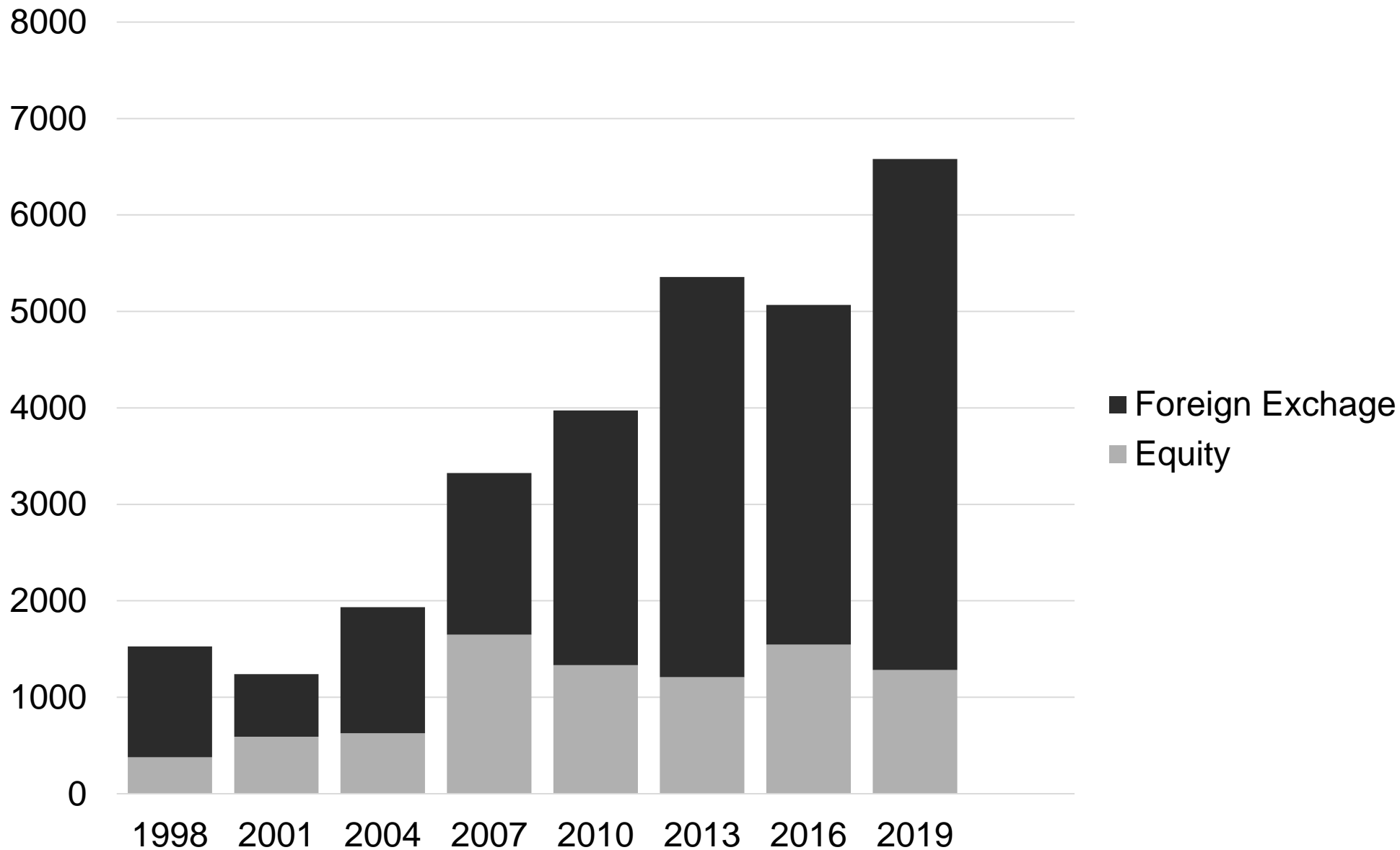


BIS 2022, (https://www.bis.org/stats_triennial_surveys/index.htm)

Devisenhandel die Fakten – Tägliche Forex vs GDP 2022



Devisenhandel die Fakten - FX vs Equity daily Turnover (bln \$)



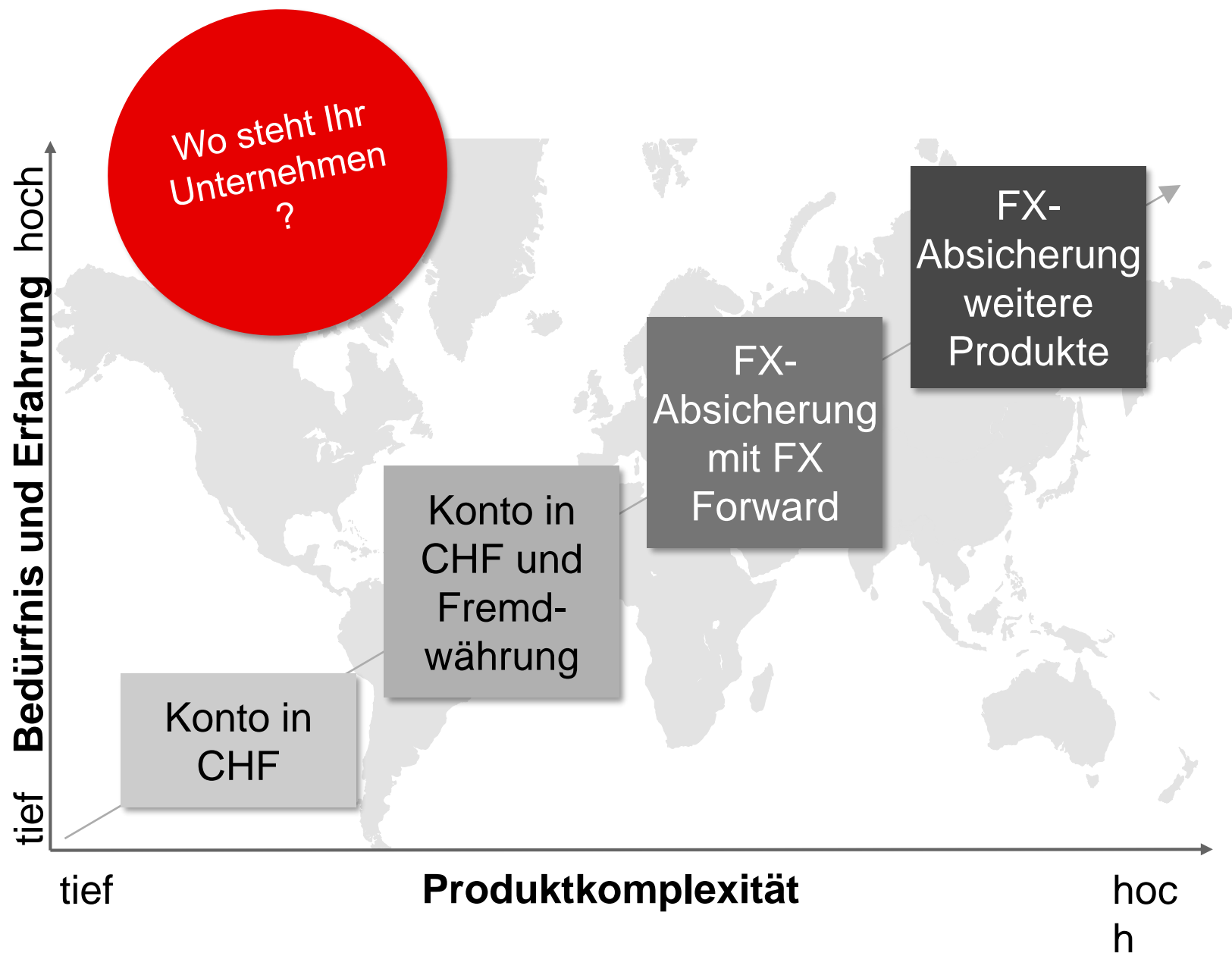
BIS 2022, (https://www.bis.org/stats_triennial_surveys/index.htm)

World Bank Data 2019, (<https://data.worldbank.org/indicator/CM.MKT.TRAD.CD>) 4

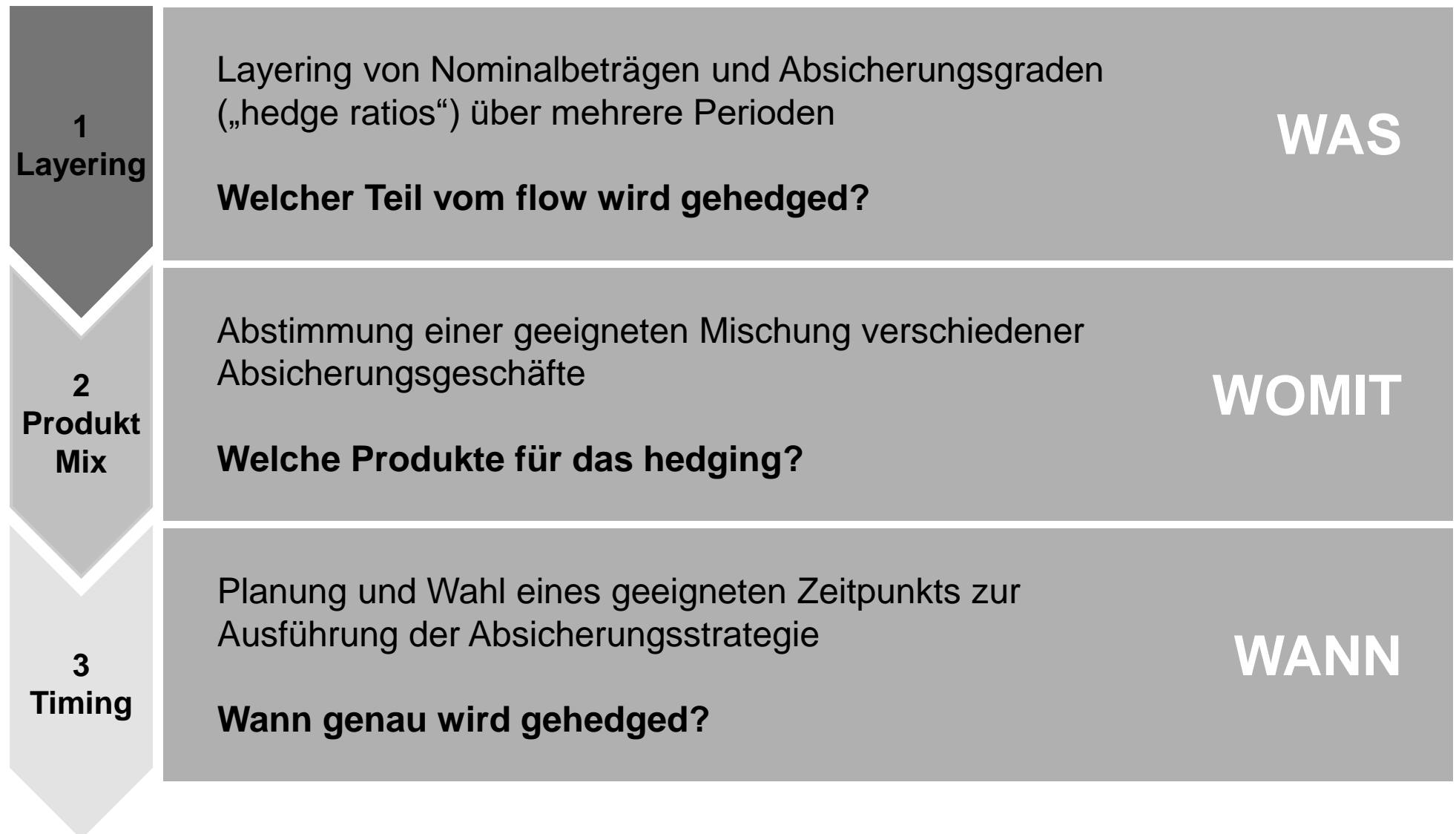
Abschnitt 1

Konzeptionelle Absicherung von Währungsrisiken

Währungsabsicherung – so individuell wie Ihre Bedürfnisse



Absicherungsansatz "Konzept 3+"



Layering

Entscheid **was** man hedgen wird, bassierend auf:

- Prognostizierbarkeit
- Reduktion der Volatilität
- Optimierungsmöglichkeiten: Partizipation an positiven Kursentwicklungen

Beispiel

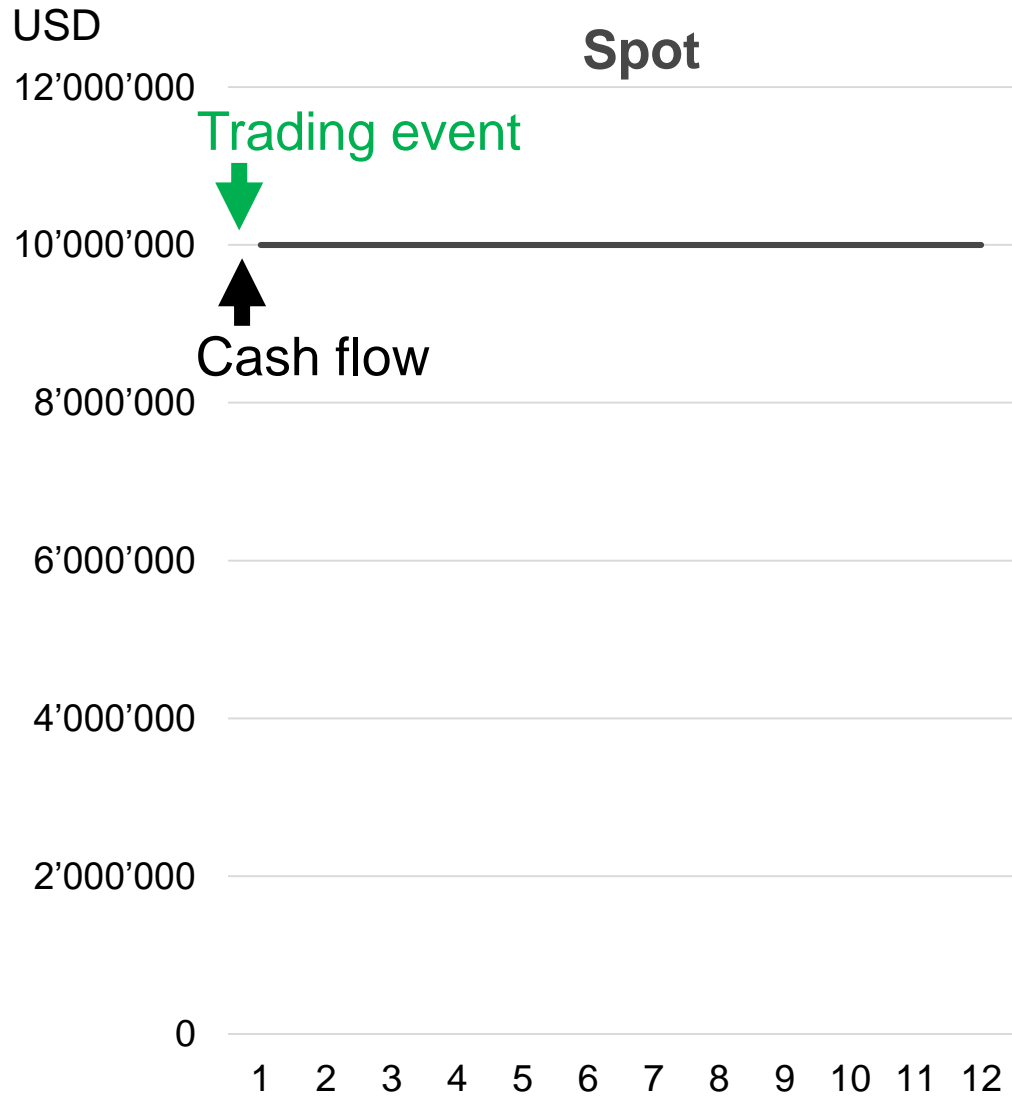
Absicherungsstrategie mit Spielräumen

	Minimaler Absicherungsgrad	Maximaler Absicherungsgrad
Periode 1	20%	40%
Periode 2	40%	60%
Periode 3	60%	80%
Periode 4	80%	100%

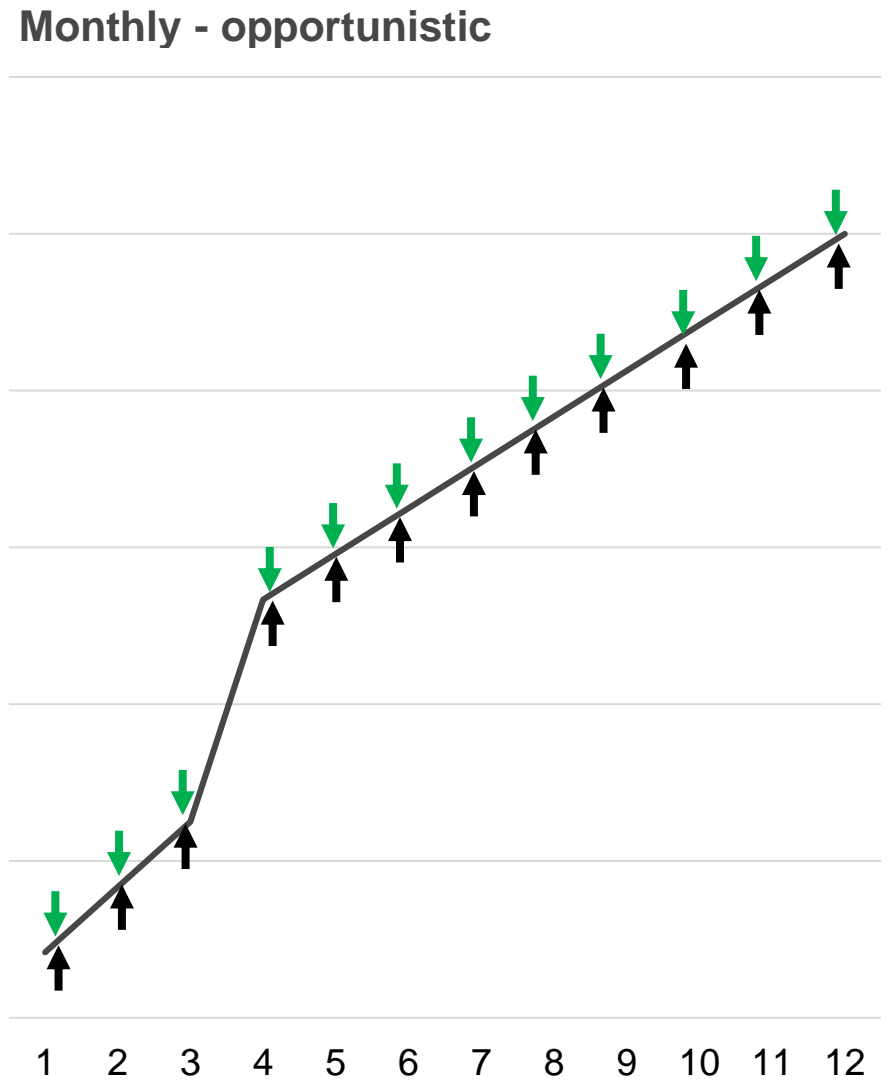
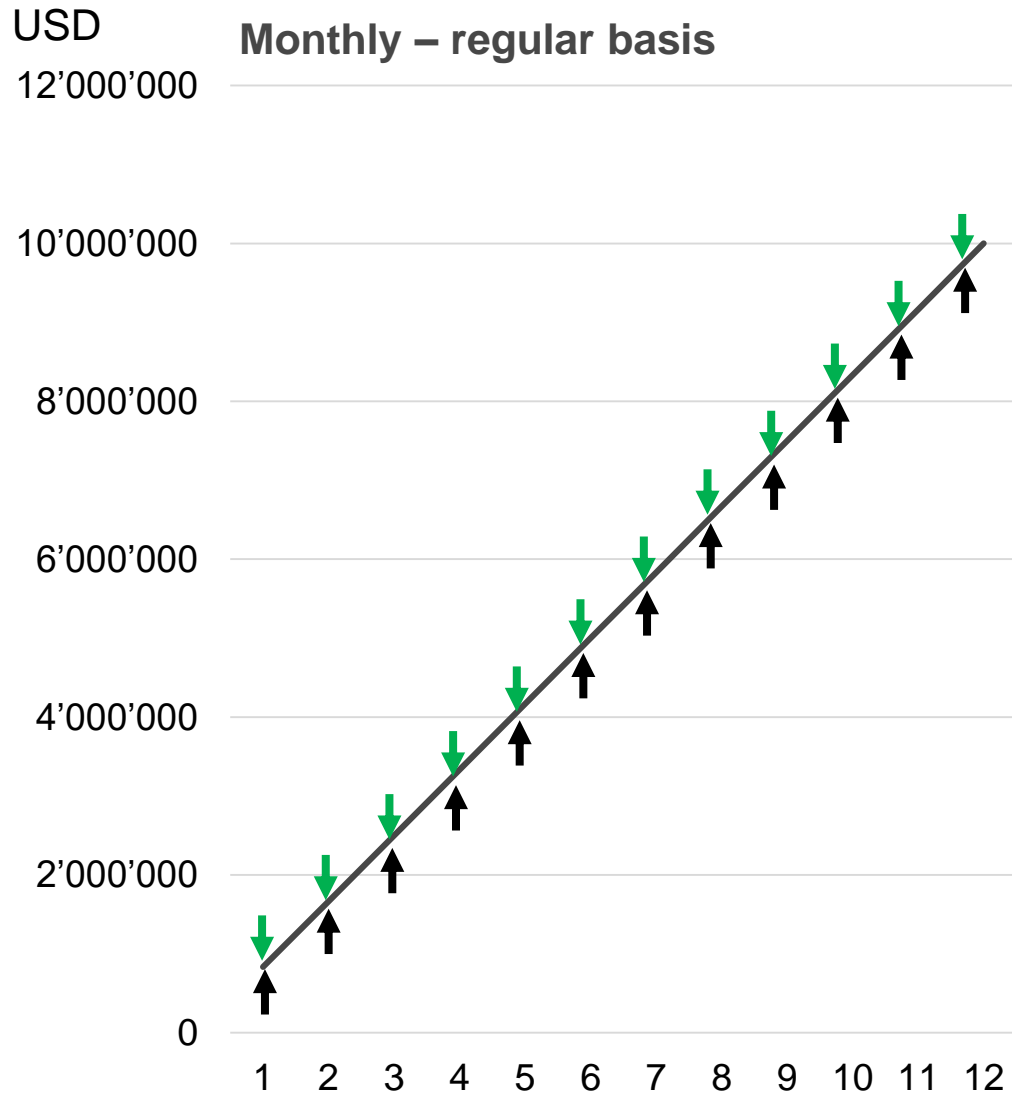
Hinweis Nur für Illustrationszwecke

Um das Layering visualisieren zu können, schauen wir uns verschiedene Strategien an, wie man das Hedging, oder die Absicherung, machen kann. Das Beispiel zeigt eine Schweizer Firma die eine Maschine kaufen muss in 12 Monate. Diese Maschine kostet 10mio USD, und diesen Flow muss über diesen 12 Monaten abgesichert werden.

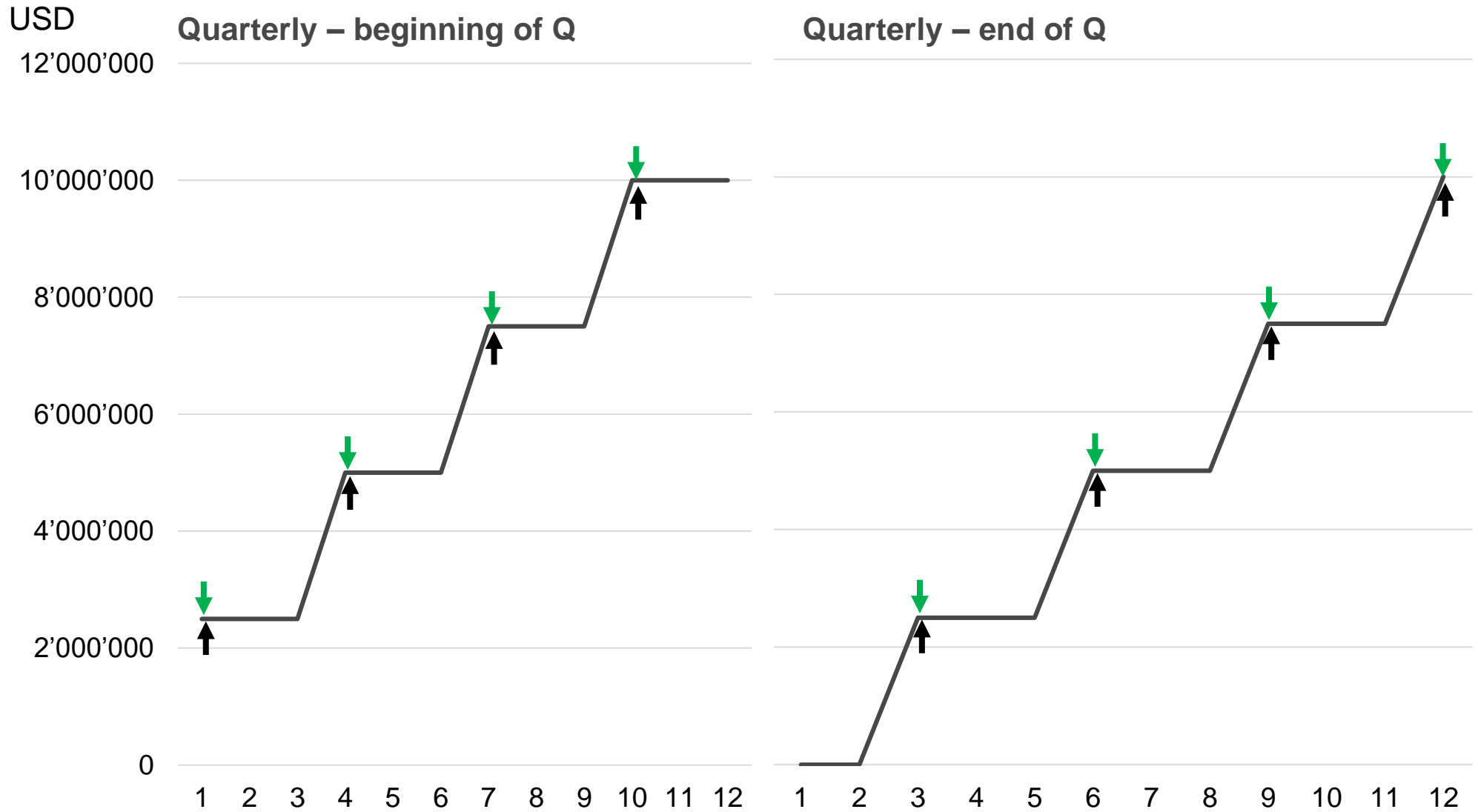
Layering - Beispiele



Layering - Beispiele

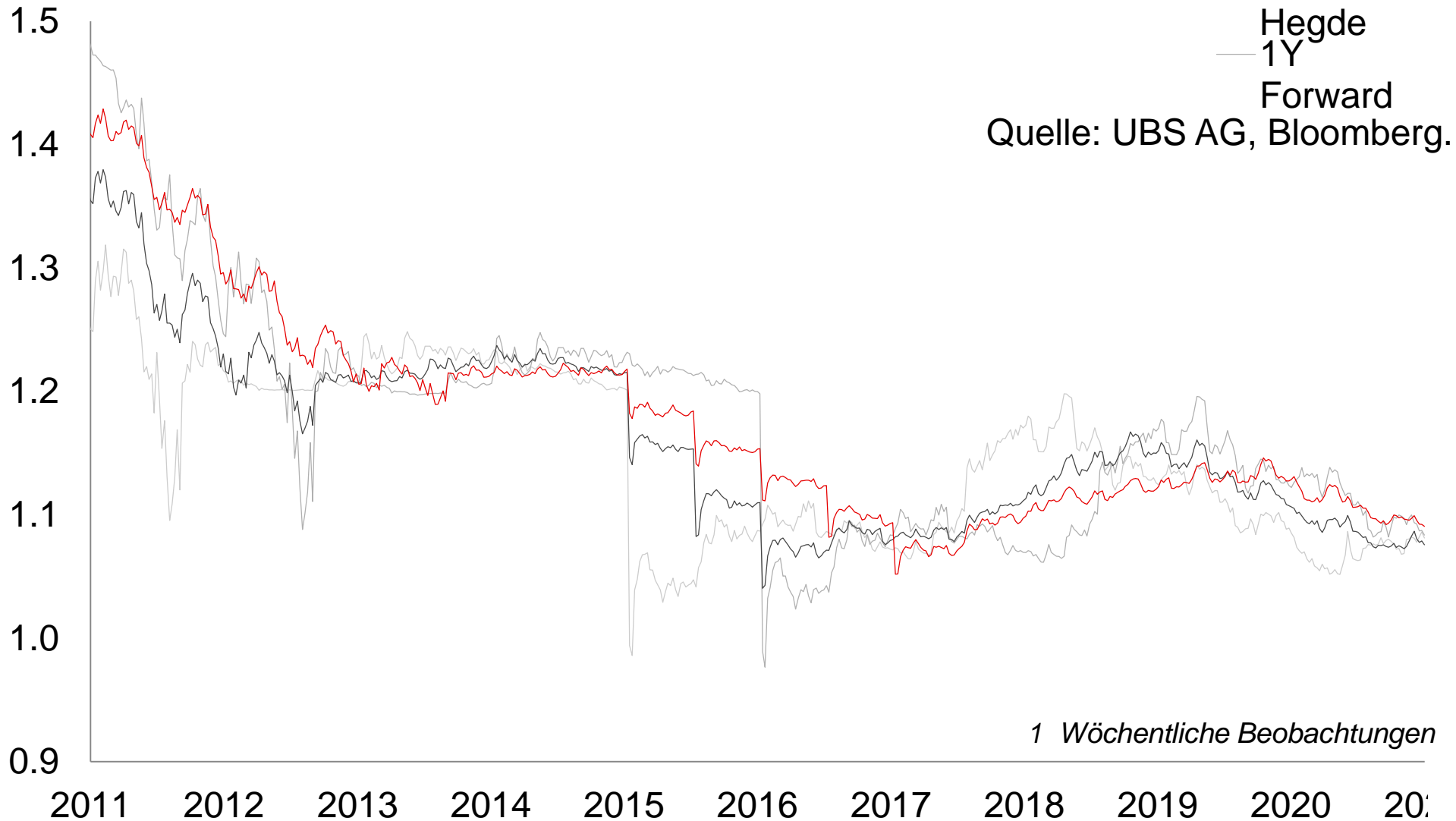


Layering - Beispiele



Layering – Produkt Mix - Timing Beispiel EURCHF

EURCHF



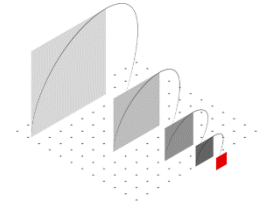
Hinweis: Vergangene Performance ist kein Indikator für zukünftige Performance. Bitte beachten Sie den Scenario Analysis Disclaimer am Ende dieser Präsentation

Abschnitt 2

Data Solutions



Data Solutions - Key Objectives



Standardisiert

- Datenzentriert
Lizenzierungsvereinbarung
- Zentralisierte Daten
Verarbeitung 'Hub' und
Distributionsprogramm
- Kräftige Führung und Kuration
vom Genehmigungsprozess



Divers

- 20+ Live Datenprodukten
- Cross-asset Daten über
verschiedene
Informationstypen
- Große Kuration Pipeline,
beeinflusst von
Kundenfeedback



Nahtlos

- Zugriff auf cloud-based REST
APIs
- Metadaten, API Definition und
verschiedene Codes als
Angebot
- Reibungsloses Onboarding
und voller Kundensupport

Data solutions – offering

First level

 Devisen

 Aktien

 Zinsen

 Fixed Income

Second level

 Devisen

- FX Option Volatility
- Liquidity Barometer – FX Spot
- FX Quant Parameters

 Aktien

- Global Equity Volatility

 Zinsen

- Interest Rate Swap Pricing

 Fixed Income

- Credit Pricing

Third level

 Devisen

- FX Option Volatility

CHF

EUR

USD

Aktien

- Global Equity Volatility

UK retail

Europe retail (incl. CH)

Data Solutions – examples

STIR Analytics

USD : FOMC : 27 Feb 15:55 GMT+1 (vs 26 Feb)							
Meeting	Effective	Rate %	Δ bp	Hike bp	Δ	Σ Hike	Δ
Stub	27 Feb 24	5.338	0.1	0.0	0.0	0.0	0.0
20 Mar 24	21 Mar 24	5.340	0.0	0.1	-0.1	0.1	-0.1
01 May 24	02 May 24	5.294	-0.4	-4.6	-0.4	-4.4	-0.4
12 Jun 24	13 Jun 24	5.163	-0.2	-13.1	0.2	-17.5	-0.2
31 Jul 24	01 Aug 24	5.023	0.1	-14.0	0.3	-31.5	0.0
18 Sep 24	19 Sep 24	4.853	0.0	-17.0	0.0	-48.5	0.0
07 Nov 24	08 Nov 24	4.712	0.9	-14.1	0.8	-62.6	0.8
18 Dec 24	19 Dec 24	4.557	0.2	-15.5	-0.6	-78.1	0.2
29 Jan 25	30 Jan 25	4.414	1.9	-14.3	1.7	-92.4	1.8
12 Mar 25	13 Mar 25	4.277	0.9	-13.7	-1.0	-106.1	0.8

UBS evidence lab

Global Research and Evidence Lab

UBS Evidence Lab

Explore insight-ready datasets from the largest sell-side alt data offering of its kind.

For example try: Electric car, NFLX, Amazon, Michael Lasser, Zara or China

Live Desk

All Macro Equities Video Podcast **TOP**

15:22 Italy's Meloni Faces Sardinia Reality Check – Forefront

The left-wing coalition of Partito Democratico and Movimento 5 Stelle won Sunday's regional elections in Sardinia against the right-wing coalition of Fratelli d'Italia, Lega, and Forza Italia. This is the first defeat for the ruling right-...[more](#)

Matthew Cowley | Macro Sales | GB | Knowledge Network

[#News](#) [#Italy](#) [#Macro](#) [#Politics](#) 👍 🔄

15:12 US Retail Buy Nvidia, Palo Alto Networks Stocks At A Slower Pace

Nvidia and Palo Alto Networks were the two most-bought stocks in February by US retail market making (RMM) clients with the bulk of these inflows occurring over the past week, although the pace of inflows slowed a little on Mon-...[more](#)

Robert Chechilo | Electronic Agency - Trading | USA | Trading

[#Equities](#) [#Retail Market Making](#) [#USD](#) 👍 🔄

15:02 UBS Financial Services Conference: Goldman Sachs Presentation Key Takeaways

Goldman Sachs gave a very confident presentation at the UBS Financial Services Conference. Notwithstanding macro uncertainty, Goldman sees itself as streamlined and focused on executing on its two core businesses: Marke...[more](#)

Rob O'Dwyer | Specialist Sales | USA | Sales

[#UBS Financial Services Conf](#) [#Equities](#) [#Goldman Sachs Group Inc](#) 👍 🔄

Abschnitt 3

FX Algos & Smart Order Routers

Algos – an introduction

Algos

Algos sind Strategien die ausgeführt werden anhand von automatisierte und vor-programmierte Handelsinstruktionen (pricing, timing, volume). Dafür gibt es tausenden von spezifische Quantitative Parameters (PQs), basiert auf machine learning.

UBS offeriert Execution Algos Produkt weit: inkl. **Cash Equities**, **ETD** and **FX**.

Vorteile von Algos

- Big Data Verarbeitung
- Reduktion von Transaktionskosten
- Bei größeren Order kann der Market Impact reduziert werden
- Automatisierung, weniger manuelle Arbeit
- Kein Human Error
- Smart order router

Um die Algorithmen visualisieren zu können, schauen wir uns einen 'Use case' an. Einen Händler muss 100mio USD/JPY verkaufen. Entweder kann er das selber in den Markt handeln, oder er kann verschiedene Algos anwenden.

Algos – UBS offering

	UBS Strategy	Objective	When to use?
Limit	ORCA-Direct	Sources liquidity from UBS eFX Principal, ECNs & correlated FX Futures to fill order urgently.	When wanting to be filled urgently, within a specified limit, whilst utilising a wide range of liquidity sources.
Participation	Tap	Works the order in line with estimated market volume according to the urgency parameter selected whilst watching short term market movements and becoming more or less urgent.	To participate intelligently in volume while predicting short term price movements.
Schedule	TWAP	Aims to trade at an even (linear) pace over specific period of time (linear execution profile).	Strategy that will intelligently work bids/ offers and spread trades out over a time-based schedule. Suited for pairs when unusual trading activity may impact normal VWAP curves.
	VWAP	Aims to achieve VWAP benchmark driven by volume curve.	When looking to achieve the volume weighted average price over the period. When there is no intra-day directional view and/or the goal is to minimize impact.
Passive	Float	The aim is to work an order passively to capture a portion of the bid/ask spread. UBS Mid Matching engine, uniquely available to Float, allows to execute against hedging flow from UBS eFX Principal Desk.	Working an order passively in the market.

Algos – pre-TCA Strategiewahl

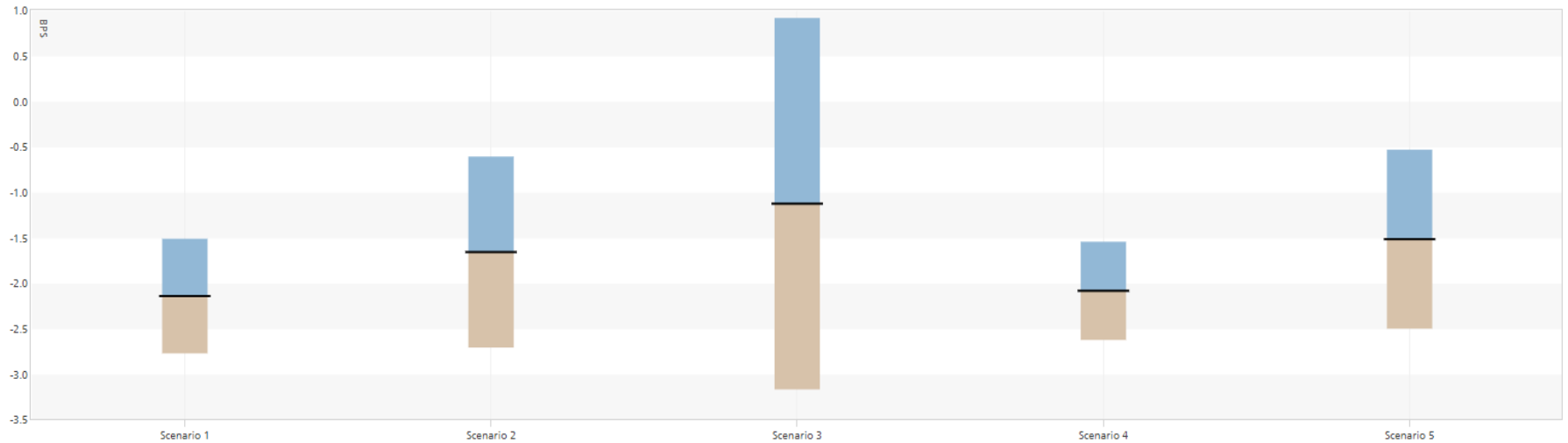
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Ccy Pair	EURUSD	EURUSD	EURUSD	EURUSD	EURUSD
Amount	100,000,000 EUR	100,000,000 EUR	100,000,000 EUR	100,000,000 EUR	100,000,000 EUR
Strategy	TWAP	TWAP	TWAP	Float	Tap
Start	2023-03-14 17:21:11 ⓘ	2023-03-14 17:21:11 ⓘ	2023-03-14 17:21:11 ⓘ	2023-03-14 17:21:11 ⓘ	2023-03-14 17:21:11 ⓘ
Duration	5 m	15 m	1 h	Good For Day	Good For Day
TAP Urgency / Discretion / Peg To	2	2	2	Mid	3

Performance Volumes

Save as Print

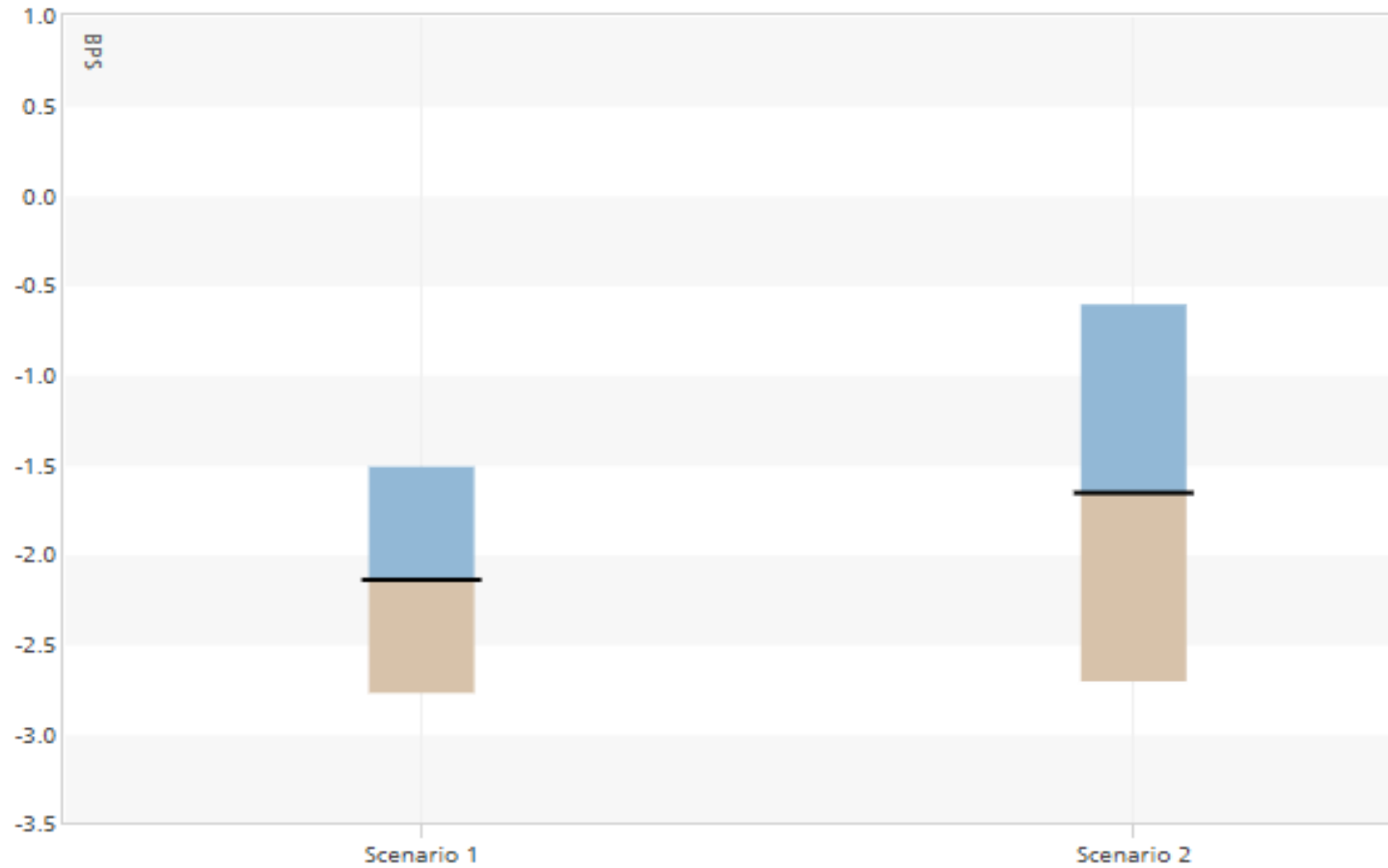
Legend

- Est. Upper Bound (bps)
- Est. Algo vs Arrival Mid (bps)
- Est. Lower Bound (bps)



Est. Algo vs Arrival Upper Bound (bps)	-1.5	-0.6	0.92	-1.54	-0.53
Est. Algo vs Arrival Mid (bps)	-2.14	-1.65	-1.12	-2.08	-1.51
Est. Algo vs Arrival Lower Bound (bps)	-2.77	-2.7	-3.16	-2.62	-2.49
Est. Participation Rate	37.57%	18.07%	5.81%	45.06%	20%
Est. Duration	5 m	15 m	1 h	3 m, 40 s	12 m, 55 s
Est. Fill %	100%	100%	100%	100%	100%

Algos – pre-TCA Strategiewahl



Scenario 1

TWAP

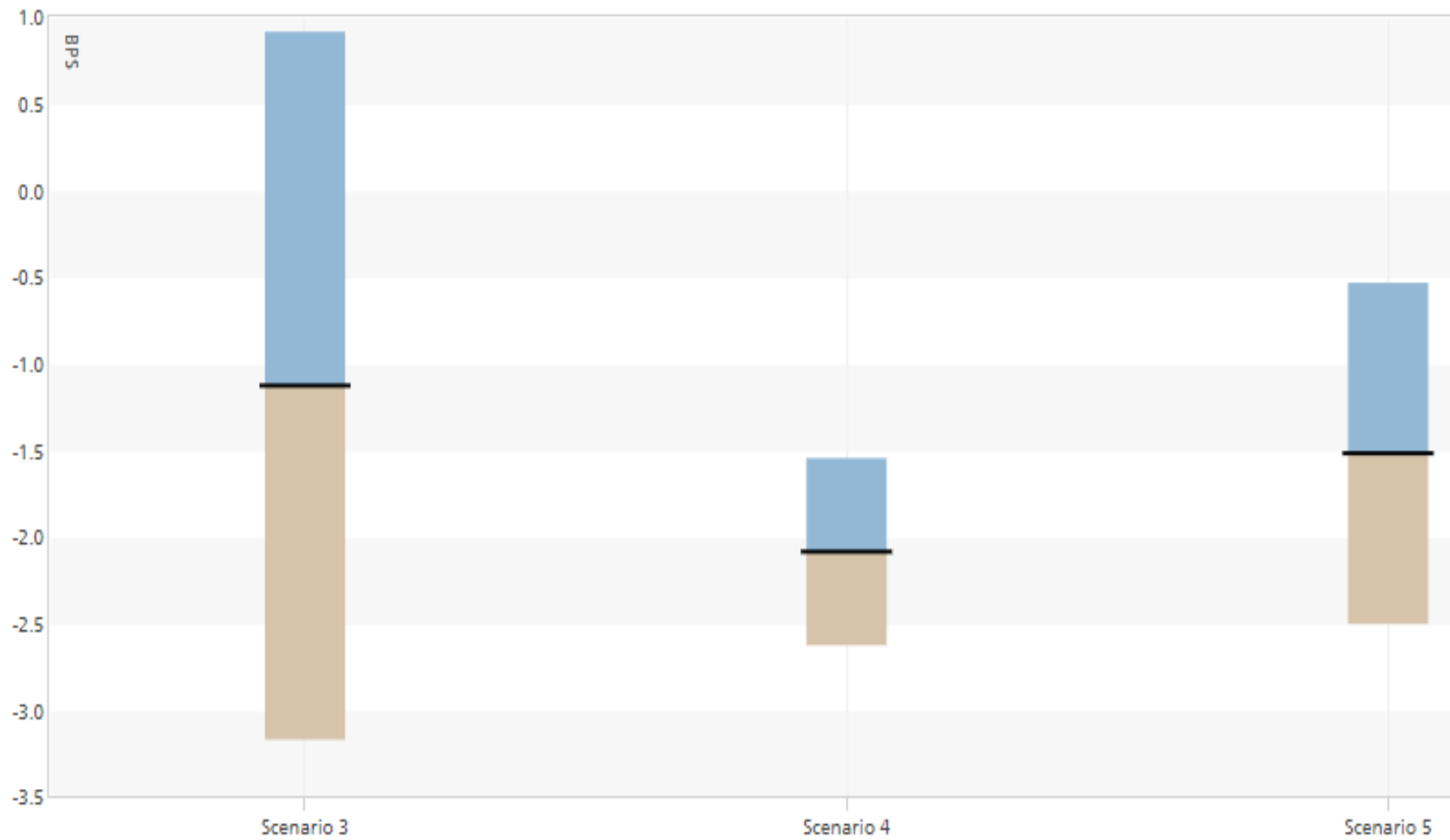
5 Minuten

Scenario 2

TWAP

15 Minuten

Algos – pre-TCA Strategiewahl



Scenario 3

TWAP

60 Minuten

Scenario 4

Float

1 Tag

Scenario 5

Tap

1. Tag

Algos – pre-TCA Strategiewahl

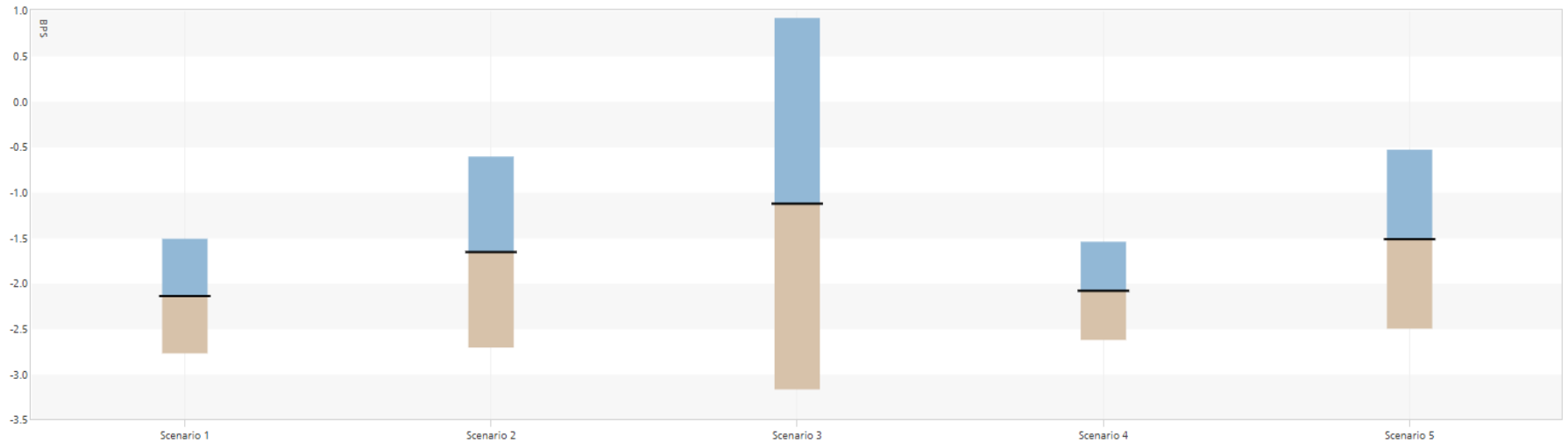
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Amount	100,000,000 EUR	100,000,000 EUR	100,000,000 EUR	100,000,000 EUR	100,000,000 EUR
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Performance Volumes

Save as Print

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Est. Fill %	100%	100%	100%	100%	100%

Algos – post-TCA Leistungsevaluation

Order SELL USDJPY Float	Amount 100,000,000.00 USD	Progress Done 100.0M (100%)	Time (GMT)	Net Avg Price 133.654402	Final Avg Price 133.652931
--------------------------------------	------------------------------	--------------------------------	------------	------------------------------------	--------------------------------------

Export PDF | Export ▾ | **Report** | Executions (95) |

Performance

Benchmark name	Revision	Benchmark	Performance (bps)	Performance (USD/M)	Performance (Total USD)
> Arrival	Order	133.59150000	4.60	461.13	50,493.23
> Exec Mid	Order	133.65479680	-0.14	-13.81	-1,512.15
> Average Mid	Order	133.66209708	-0.69	-68.80	-7,533.95
> Risk Transfer Price	Order	133.52520577	9.57	958.76	104,983.68

Venues



Execution Type:



Algos – post-TCA Leistungsevaluation

Order	Amount	Progress	Net Avg Price	Final Avg Price
SELL USDJPY Float	100,000,000.00 USD	 Done 100.0M (100%)	133.654402	133.652931

Performance

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> Risk Transfer Price	9.57	958.76	104,983.68

Algos – post-TCA Leistungsevaluation

Venues



Lit



Venue	Notional (USD, k)	Notional %
EBS Market	34,000	31% 
Cboe Spot	11,500	11% 
Euronext FX	3,000	3% 
360TGTX	500	<1% 

UBS

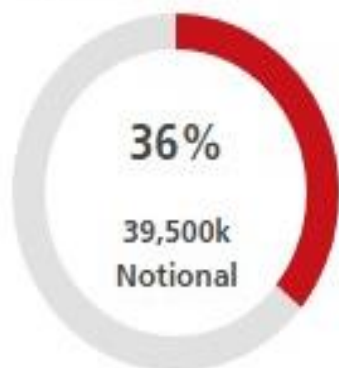


Venue	Notional (USD, k)	Notional %
UBS Mid Matching	60,000	55% 
UBS eFX	500	<1% 

Algos – post-TCA Leistungsevaluation

Execution Type:




Aggressive



Venue	Notional (USD, k)	Notional %
UBS Mid Matching	23,000	21% 
Cboe Spot	11,500	11% 
EBS Market	4,000	4% 
UBS eFX	500	<1% 
360TGTX	500	<1% 

Passive



Venue	Notional (USD, k)	Notional %
UBS Mid Matching	37,000	34% 
EBS Market	30,000	27% 
Euronext FX	3,000	3% 

Algos – post-TCA Leistungsevaluation

Order SELL USDJPY Float	Amount 100,000,000.00 USD	Progress Done 100.0M (100%)	Time (GMT)	Net Avg Price 133.654402	Final Avg Price 133.652931
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Performance

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Venues



Execution Type:



Kontaktinformation

UBS Switzerland AG
Postfach
8098 Zürich

+41-44-239 76 40
www.ubs.com