



25 years of index innovation

# Market Consultation on the DAX capping limit and additional DAX capping functionalities

## Supporting Material

# Introductory note to the analyses provided for different cap limits per Index

- > The purpose of this document is to provide market participants with **an analysis of different index component capping limits** (10% and 15%) applied to DAX and MDAX
- > For each index, a **performance comparison and a capping event comparison** between the two capping limit scenarios is provided
- > Each analysis is based on actual and backtested index data. The index data were calculated as follows:
  - > The 10% capping limit analyses for DAX and MDAX are based on actual index data
  - > The 15% capping limit analyses for DAX and MDAX are based on backtested index data with adjusted number of shares in the actual compositions
  - > The backtests were calculated over a 10-year timeframe from 20<sup>th</sup> September 2013 – 15<sup>th</sup> September 2023

# DAX

## Impact analysis of proposed rule changes



# DAX performance comparison

## Risk and Return<sup>1)</sup>

	DAX with 10% Cap	DAX with 15% Cap
YTD return	12.97%	12.94%
1y return (actual)	24.74%	24.61%
3y return (actual)	21.17%	20.12%
5y return (actual)	27.86%	27.00%
Overall return (actual)	83.20%	81.85%
Overall return (annualized)	6.42%	6.34%
1y volatility (annualized)	15.24%	15.17%
3y volatility (annualized)	18.83%	18.84%
5y volatility (annualized)	21.56%	21.54%
Overall volatility (annualized)	19.86%	19.86%
Sharpe ratio <sup>2)</sup>	0.57	0.57
Maximum drawdown	-38.78%	-38.62%
Overall tracking error (daily) <sup>3)</sup>	0.022%	
Overall tracking error (annualized) <sup>3)</sup>	0.35%	

<sup>1)</sup> Backtest is calculated from 9/20/2013 – 9/15/2023. For the calculation of annualized figures, an annualization factor of 260 is applied.

<sup>2)</sup> €STR is used as risk free rate from 8<sup>th</sup> November 2019. Before 8<sup>th</sup> November 2019, EONIA is used.

<sup>3)</sup> **Note:** In the previous version of this document, only the overall daily tracking error has been displayed. This has been clarified, and the annualized tracking error has been added.

## Index Performance<sup>1)</sup>



# DAX Company Capping Events – Comparison between DAX with 10% vs. 15% capping limit

## DAX 10% Cap

- > In the past 10 years, **4 companies were capped 38 times in total**
- > The 10% capping limit is regularly enforced in DAX
- > The **highest weight** a company has reached between review dates was **11.62% (lowest: 0.014%)**

## DAX 15% Cap

- > Based on backtested DAX data, **no company ever exceeded the proposed DAX capping limit of 15%**. Hence no entries are shown in the table for back-tested DAX with 15% cap
- > The **highest weight** a company would have reached between review dates is **14.24% (lowest: 0.013%)**

## Intra-quarter capping (20% component weight threshold)

- > Based on the highest weights for DAX 10% Cap and DAX 15% Cap, **intra-quarter capping would not have been triggered** in either scenario for DAX in the previous ten years

## Group entity capping

- > In DAX, there are currently **2 group entities comprising 3 (2) separate companies** that have a **combined index weight of 3.54% (10.14%)<sup>1)</sup>**, i.e., group entity capping would not be triggered

<sup>1)</sup> As of 9<sup>th</sup> October 2023

Review Date	DAX 10% Cap	DAX 15% Cap
20/12/2013	Company A	
21/03/2014	Company A	
20/06/2014	Company A	
19/09/2014	Company A	
19/12/2014	Company A	
20/03/2015	Company A	
19/06/2015	Company A	
18/09/2015	Company A	
18/12/2015	Company A	
16/09/2016	Company B	
16/12/2016	Company B	
17/03/2017	Company B	
15/06/2018	Company C	
21/09/2018	Company C	
21/12/2018	Company C	
15/03/2019	Company C	
21/06/2019	Company C	
20/09/2019	Company C	
20/12/2019	Company C	
20/03/2020	Company D	
20/03/2020	Company C	
19/06/2020	Company D	
19/06/2020	Company C	
18/09/2020	Company D	
18/09/2020	Company C	
18/12/2020	Company D	
18/12/2020	Company C	
19/03/2021	Company D	
18/06/2021	Company D	
18/06/2021	Company C	
17/12/2021	Company D	
18/03/2022	Company D	
17/06/2022	Company D	
16/09/2022	Company D	
16/12/2022	Company D	
16/06/2023	Company C	
16/06/2023	Company B	
15/09/2023	Company C	

# MDAX

Impact analysis of proposed rule changes



# MDAX performance comparison

## Risk and Return<sup>1)</sup>

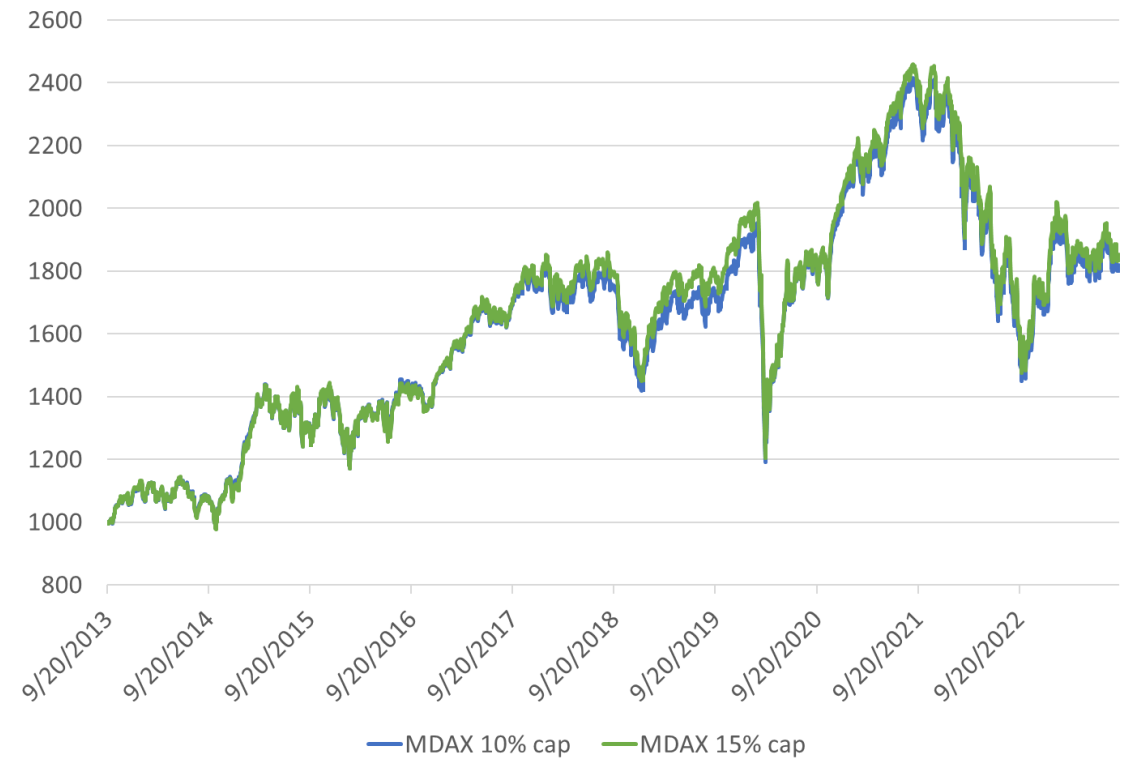
	MDAX with 10% Cap	MDAX with 15% Cap
YTD return	7.22%	7.22%
1y return (actual)	14.08%	14.08%
3y return (actual)	-0.72%	0.68%
5y return (actual)	3.69%	2.99%
Overall return (actual)	81.85%	85.11%
Overall return (annualized)	6.34%	6.53%
1y volatility (annualized)	19.75%	19.75%
3y volatility (annualized)	19.82%	19.96%
5y volatility (annualized)	20.89%	21.33%
Overall volatility (annualized)	18.48%	18.86%
Sharpe ratio <sup>2)</sup>	0.46	0.47
Maximum drawdown	-39.93%	-40.26%
Overall tracking error (daily) <sup>3)</sup>		0.078%
Overall tracking error (annualized) <sup>3)</sup>		1.26%

<sup>1)</sup> Backtest is calculated from 9/20/2013 – 9/15/2023. For the calculation of annualized figures, an annualization factor of 260 is applied.

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<sup>3)</sup> **Note:** In the previous version of this document, only the overall daily tracking error has been displayed. This has been clarified, and the annualized tracking error has been added.

## Index Performance<sup>1)</sup>



# MDAX Company Capping Events – Comparison between DAX with 10% vs. 15% capping limit

## MDAX 10% Cap

- > In the past 10 years, **1 company was capped 35 times in total**
- > Since Company A has left MDAX in September 2021, no company has been capped
- > The **highest weight** a company has reached between review dates was **13.07% (lowest: 0.20%)**

## MDAX 15% Cap

- > Based on backtested MDAX data, **Company A would have been capped 20 times in total.**
- > The **highest weight** a company would have reached between review dates is **18.64% (lowest: 0.19%)**

## Intra-quarter capping (20% component weight threshold)

- > Based on the highest weights for MDAX 10% Cap and MDAX 15% Cap, **intra-quarter capping would not have been triggered** in either scenario for MDAX in the previous ten years

## Group entity capping

- > Currently, there are no group entities in MDAX

Review Date	MDAX 10% Cap	MDAX 15% Cap
15/03/2013	Company A	Company A
21/06/2013	Company A	
20/09/2013	Company A	Company A
20/12/2013	Company A	Company A
21/03/2014	Company A	
20/06/2014	Company A	
19/09/2014	Company A	Company A
19/12/2014	Company A	
20/03/2015	Company A	Company A
19/06/2015	Company A	Company A
18/09/2015	Company A	
18/12/2015	Company A	Company A
18/03/2016	Company A	
17/06/2016	Company A	
16/09/2016	Company A	
16/12/2016	Company A	Company A
17/03/2017	Company A	Company A
16/06/2017	Company A	Company A
15/09/2017	Company A	
15/12/2017	Company A	Company A
16/03/2018	Company A	Company A
15/06/2018	Company A	Company A
21/09/2018	Company A	Company A
21/12/2018	Company A	
15/03/2019	Company A	Company A
21/06/2019	Company A	Company A
20/09/2019	Company A	
20/12/2019	Company A	Company A
20/03/2020	Company A	
19/06/2020	Company A	
18/09/2020	Company A	
18/12/2020	Company A	Company A
19/03/2021	Company A	Company A
18/06/2021	Company A	Company A
17/09/2021	Company A	



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