

Index Everything:

Into the new reality of 2022

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S&P 500

- Factsheet:
 - Created in 1957, first market-cap weighted index
 - Approximately 80% of available market capitalization: US\$36.7 trillion
 - US companies, filters on market cap, free float and trading volume
- Also Dow Jones Industrial Average (DJI), Nasdaq 100 (NDX), but
 - High correlation
 - Less broad than S&P 500
- What are the reasons for its popularity?



Trait 1: Utility



- Compresses the whole stock market into one number
 - #1 value of interest in every creeping line / news ticker
- Comparable with itself in the past
 - "S&P 500 ends 2021 with a nearly 27% gain"
 - "The S&P 500 could fall 17% [...]"
 - o "[...] S&P 500 tech slumps 14% year-to-date"



Trait 2: Clarity

- "Biggest stocks", "US stock market"
- Even "investor sentiment" in general
- Clear causality: prices grow, index grows
- Bigger stocks have bigger impact
- Index represents a broad investment portfolio
- How many stocks are there in S&P 500?
- Corporate actions are taken into account



Side note: CA tracking system

AMZN - Split

Due Date: 2022-06-03 Status: Non-Final

► Tap here to see more details

MSFT;ATVI - M&A Target

Due Date: 2023-06-30 Status: Non-Final

► Tap here to see more details

AMZN - Split

Due Date: 2022-06-03 Status: Non-Final

▼ Tap here to see more details about the deal

Announced Split event for AMZN with effective date 2022-06-03 and adjustment factor 0.05

Capital Change Announcement Date	Capital Change Effective Date	Corporate Change Event Type	Adjustment Factor	Terms Old Shares	Terms New Shares
2022-03-10	2022-06-03	Share Split	0.05	1	20

Corresponding 8-K filing.



Trait 3: Benchmarking

- Recognizable worldwide
 - Spawned similar "country representative" indices, z.B. DAX
- Strong track record
 - Industry-wide performance benchmark
 - In particular, β, systematic risk
 - Especially in portfolio/fund management ("consistently beat the S&P 500")
 - Academic reference, CAPM
 - See e.g. <u>Nobel Lecture</u> by William F. Sharpe, 1990



Trait 4: Tradability

- Compelling for a wide audience: easy to profit from
- Mutual funds and ETFs, futures and options

Fund name	Chart 4 weeks	Fund CCY	11	Fund size (in m €) ↓
iShares Core S&P 500 UCITS ETF (Acc)		USD		50,019
Vanguard S&P 500 UCITS ETF	~~~	USD		27,260
Invesco S&P 500 UCITS ETF	~~~	USD		12,570
iShares Core S&P 500 UCITS ETF USD (Dis	<u>st)</u>	USD		12,359
Xtrackers S&P 500 Swap UCITS ETF 1C	~~~	USD		6,643
SPDR S&P 500 UCITS ETF	~~~	USD		4,955
HSBC S&P 500 UCITS ETF USD	~~~~	USD		4,356 Source: justetf.com



Room for more

- Methodology: hyperconcentration
 - Factsheet: top 10 stocks comprise 27% of the index
 - Our analysis: top 100 stocks 72%, top 250 88%
- Methodology: no smaller caps, too broad
- Selection: not purely rule-based, committee oversight
- Operations: insufficient transparency in corporate actions
- Tradable products: market saturation in all asset classes
- There's demand for creating specialized index products while keeping the best traits: utility, clarity, benchmarking, and tradability



Our mission

To provide unique data-driven insight into modern financial markets by creating, calculating and governing rich, informative, and reliable indices and benchmarks, and to allow everyone to profit from them.

Notable clients











Scenario 1: indices for tradable products

- Index design (idea, appeal, construction, trading venue)
- Backtesting (performance, what-if scenarios)
- Data management, regulatory compliance
- Settlement procedure for options and futures
- Index companion indicators (e.g., halted stocks)
- Various frequencies/schedules, streaming/historical APIs, candles, charts...

We offer our expertise, experience and connections to provide end-to-end coverage for index creation, launch and governance



Scenario 2: custom indices

Market data indices:

- Equity / Specific segments
- Fed Rates / Bonds
- FX and commodities
- Futures and options
- Crypto

Non-market data indices:

- Macroeconomic quantities
- Interest rates
- Sales, profits, auction data, tax rates
- Decentralized finance (DeFi)

We offer our data management skills and calculation platforms to guarantee high degree of flexibility in index construction



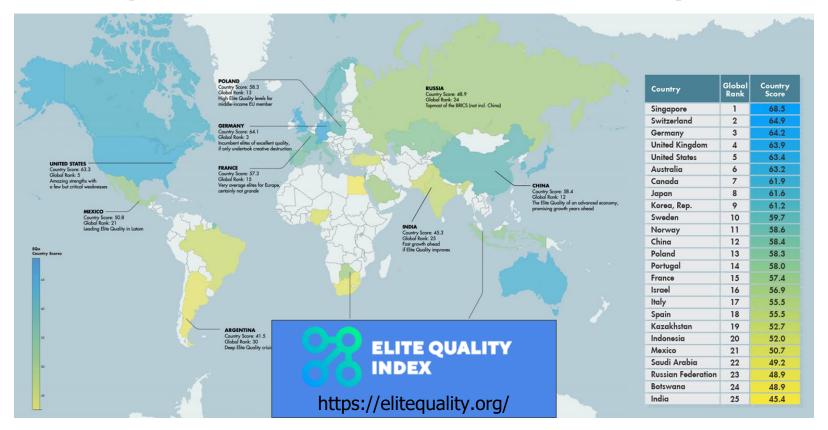
Scenario 3: custom benchmarks for industry and academia

- Almost anything can be an index!
- Internally driven quantitative research:
 - Elite Quality index (with St.Gallen University)
 - FX composite feed: see "Cost-Effective Composite Forex and US Equities Feeds" by Dmitry Zotikov, dxFeed, speaking tomorrow at <u>Quant Insights</u>
 - Enriched feed: iceberg order detection model

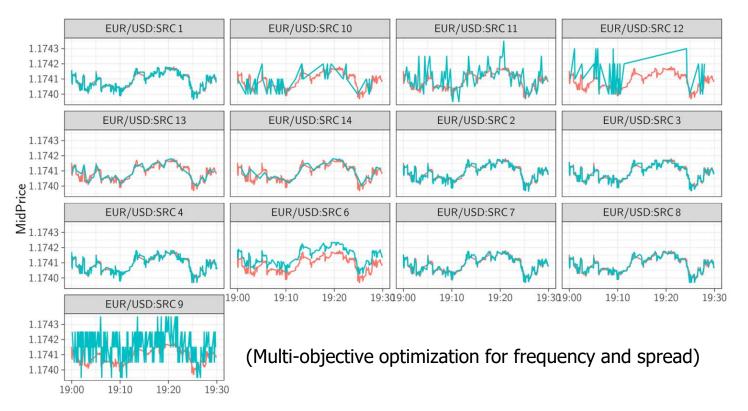
We offer our expert knowledge in quantitative research for benefit of our customers and general public



Case study: collaboration with St. Gallen University



Case study: FX composite feed

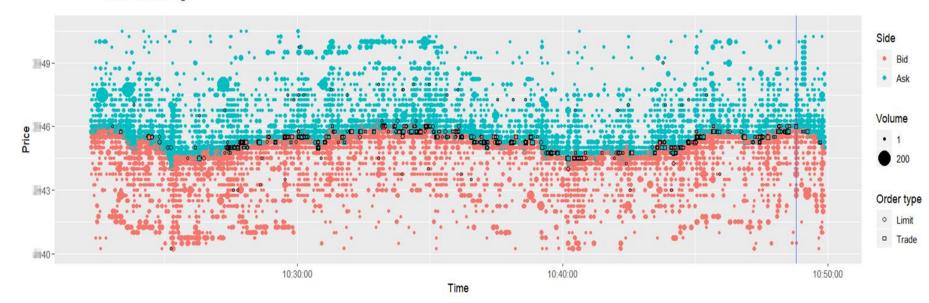


Reference

Source

Case study: market microstructure

Order Book Log



Zotikov D., Antonov A., "CME iceberg order detection and prediction", Quant. Fin., Vol 21, 2021

Kurzgesagt

- Three index calculation platforms
- Dedicated infrastructure in cloud or on premises
- 2.5+ mil instruments available for index construction across all asset classes
- Fully traceable audit, data exports, variety of <u>APIs</u>
- SEC, CFTC and OCC compliant out-of-the-box solution
- High degree of customization for calculations ("classics" already included)
- Low time to market for index launch





References

- General info: <u>dxfeed.com</u>, <u>kb.dxfeed.com</u>
- Index services: indexit.dxfeed.com
- Follow us on <u>LinkedIn</u>, <u>YouTube</u>, <u>Twitter</u>
- Come to our booth and visit us in Highlight Towers!

Thanks!



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Bonus: new reality of 2022

- Post-pandemic growth
- War in Ukraine, oil and gas markets redefined
- Rising inflation, supply chain disruptions, price shocks
- One of the worst years for the stock market so far
- Crypto is getting mainstream, new problems arise
 - Growing correlation with traditional assets (up to 60% already)
 - Vulnerability attacks (TerraUSD, Luna)
- ... and it's only May

