

Reasoned about universes in momentum strategies for a couple of seconds ▼

In the context of momentum (or most quantitative) trading strategies, a **"universe"** refers to the **set of securities** (such as stocks, ETFs, or other tradable instruments) that you are considering for inclusion in your strategy. Essentially, it is your **starting pool of candidates** before you apply any ranking or screening criteria.

Key Points About "Universes" in Momentum Strategies

1. Definition

- A "universe" is the **total group of assets** from which you will select your long and/or short positions.
- Common universes in equity momentum strategies might include:
 - All stocks within a certain index (e.g., S&P 500, Russell 1000, or Russell 3000).
 - All stocks meeting certain liquidity or market-cap requirements (e.g., stocks with daily trading volume above a threshold).
 - A combination of multiple indexes or regions (for global or cross-country momentum strategies).

2. Importance of Defining a Universe

- The composition of your universe greatly affects your **momentum signals** and ultimate returns.
- You generally want enough securities to ensure broad coverage (and diversification), but you also want to **exclude extremely illiquid or high-risk stocks** that might skew the results or incur large transaction costs.

3. Why "Universe" Matters

- Momentum strategies often involve **ranking** each security in the universe based on a past return measure (the "formation period") and selecting the top decile/quintile as "winners" to go long, and possibly the bottom decile/quintile as "losers" to short.
- If your universe is too narrow, you might miss out on major opportunities for momentum returns.
- If it's too broad or includes illiquid / penny stocks, you might be exposed to execution issues or noise rather than reliable momentum effects.

4. Ongoing Maintenance

- The universe definition may **change over time**—for example, as companies grow, shrink, or become ineligible due to low liquidity.
- Each time you rebalance or update your positions (e.g., monthly), you'd typically also **update the universe** to reflect any changes in eligibility (stocks entering or leaving the index, changes in liquidity, etc.).

5. Examples

- **U.S. Large-Cap Universe:** All S&P 500 stocks.
- **Global Developed Equity Universe:** Stocks from MSCI World Index.

- **Global Momentum / Cross-Asset:** Could include equity indexes, commodity futures, bond futures, and currencies—all within your “universe” before you apply momentum ranking.

Summary

A “universe” in a momentum strategy is simply the **list of assets you consider** before applying your momentum rankings and selecting your winners or losers. Defining this universe carefully ensures you capture your target market segment and maintain consistent liquidity, risk, and data requirements for your strategy.

Are there any papers that describe the importance of Universes in momentum trading strategies

Reasoned for 14 seconds ▼

While **most academic papers on momentum** do not devote an entire study solely to the concept of “universes,” virtually all of them **implicitly address universe construction** because it is critical to how momentum strategies are tested and implemented. Below is a short discussion of where the concept of “universe” appears in the academic literature and a few papers that touch on how universe definition can affect observed momentum profits.

1. What Does “Universe” Mean in Academic Studies?

In **academic momentum research**, the “universe” is the set of securities under consideration (e.g., NYSE/AMEX/NASDAQ stocks above a certain price or liquidity threshold). Researchers almost always state:

- Which **exchanges** they include (CRSP data for NYSE, AMEX, NASDAQ, etc.).
- **Exclusion criteria** such as penny stocks, extremely illiquid firms, or stocks in bankruptcy proceedings.
- Minimum market capitalization or **liquidity filters** so that results are not driven solely by microcaps.

Although these considerations are typically in the **Data** or **Methodology** sections—rather than a separate “universe” discussion—they form the foundation for the **momentum portfolios** researchers test.

2. Papers Illustrating the Importance of Universe Definition

(1) Jegadeesh & Titman (1993)

- **Title:** “Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency.”
- **Why it’s relevant:** Although their paper focuses on demonstrating the momentum effect, they also specify how they **select stocks** from the CRSP database. They exclude stocks under a certain price threshold and handle delistings. This is effectively defining their “universe.” Their

results show that the momentum effect is robust across various subsamples (e.g., large-cap vs. small-cap), underscoring the importance of universe selection.

(2) Asness, Moskowitz, and Pedersen (2013)

- **Title:** "Value and Momentum Everywhere."
- **Why it's relevant:** This paper explicitly **broadens the universe** beyond U.S. equities to include international stocks, bonds, currencies, and commodities. One of their key points is that **momentum is pervasive** across many different asset classes and geographies. It underscores that **changing the universe** (e.g., going from just U.S. large-cap equities to global multi-asset) can change performance characteristics (sharpe ratios, drawdowns, etc.), but the momentum "factor" tends to persist in each universe.

(3) Chui, Titman, and Wei (2010)

- **Title:** "Individualism and Momentum Around the World."
- **Why it's relevant:** They examine **momentum in international markets**, splitting them into different **regional universes** (e.g., Asia, Europe, etc.). They find that momentum returns vary with cultural factors like individualism. Their approach highlights how the **choice of regional universes** (and any cultural or market-structure differences) can drive different outcomes for momentum.

(4) Geczy and Samonov (2016)

- **Title:** "Two Centuries of Price Return Momentum."
- **Why it's relevant:** They construct a **very long-run data set** (U.S. equity returns since 1801). They apply consistent rules to define their investable universe across vastly different historical periods (e.g., stocks listed on early exchanges, evolving listing requirements). Their findings show that momentum can be detected throughout different "universes" of stocks over two centuries—again stressing how carefully defining (and updating) a universe is part of making the results comparable and reliable.

(5) Barroso and Santa-Clara (2015)

- **Title:** "Momentum Has Its Moments."
- **Why it's relevant:** While this paper focuses on **risk management** of momentum strategies (volatility-scaling), it also discusses **filtering the stock universe** to mitigate extreme volatility. They acknowledge that **momentum crashes** can be influenced by the **composition of the universe** (small-cap vs. large-cap, sector exposures, etc.).

3. Practical Takeaways from the Literature

1. Universe Construction is Always Stated (Though Not Always Headlined)

- In nearly every empirical momentum study, researchers define a data set (CRSP, Compustat, MSCI, etc.) and describe how they filter out certain securities. **This is, in effect, describing their "universe."**

2. Performance Varies by Universe

- The magnitude (and even existence) of momentum can differ by **market cap** segment, liquidity tier, region, or asset class.
- For example, momentum among **large-cap U.S. equities** often looks smoother with lower turnover than a strategy that includes small or microcap stocks (which may show **higher ra**

momentum returns but also higher trading costs).

3. Multi-Asset or Global Universes

- Papers like “Value and Momentum Everywhere” demonstrate that the **choice to expand the universe** beyond a single equity market often leads to diversification benefits and more robust performance of the momentum factor.
- **Conversely, restricting to very narrow** universes (e.g., only small-cap biotech stocks) can **amplify sector or idiosyncratic risks**.

4. Transaction Costs, Liquidity, and Slippage

- A narrower or more microcap-heavy universe tends to **amplify transaction costs**, which can erode momentum profits in practice. This is partly why many institutional strategies focus on mid- to large-cap universes.

5. Implementation Realities

- Academics show momentum works “in theory” for broad (or sometimes not-so-broad) sets of stocks. In actual hedge fund or asset manager implementations, the **definition of the universe** is essential for ensuring you can trade at scale and with acceptable costs.

4. Additional Resources

- **AQR White Papers:** AQR Capital Management publishes multiple practitioner-oriented papers discussing how they **define investable universes** for factor investing (including momentum).
- **Books:**
 - *Quantitative Momentum* by Wesley Gray and Jack Vogel. While not solely academic, it devotes sections to **universe selection** and demonstrates how different choices (e.g., excluding illiquid, tiny stocks) affect momentum strategies.

Bottom Line

Although there is no single paper titled “The Importance of Universe Construction in Momentum,” researchers *always* specify the universe of assets they study. It is now well understood—thanks to decades of momentum research—that **changes in the chosen universe (e.g., size, liquidity, geography, sector)** materially affect both the **performance** and **practical feasibility** of momentum strategies. Papers ranging from Jegadeesh and Titman (1993) to Asness et al. (2013) to Geczy and Samonov (2016) all underscore, often implicitly, how critical the definition of the universe is to any robust investigation or implementation of momentum investing.