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FOMO IN EQUITY MARKETS? CONCENTRATION RISK IN (SUSTAINABLE) INVESTING

A practitioner-focused synthesis of original research

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EXECUTIVE SUMMARY

Over the past decades, institutional equity portfolios have traditionally been highly diversified, often holding thousands of stocks across countries and sectors. More recently, a shift towards more concentrated portfolios has emerged, in part driven by sustainable investing objectives, engagement considerations, and the desire to "know what you own." This study revisits the financial consequences of such concentration.

Using backtests on a comprehensive global equity dataset covering 47 countries over 1985–2023, we analyze how portfolio performance varies with the number of stocks. Two main findings stand out. First, contrary to commonly cited evidence, portfolios of 30–40 stocks are not sufficient to fully diversify idiosyncratic risk.

Second, we identify a novel dimension of concentration risk, which we refer to as **FOMO** (fear of missing out). When portfolios are more concentrated, stock selection becomes critical for performance, and investors face a wide dispersion in outcomes depending on which stocks are included. Investors may thus experience regret about their portfolio choice ex post when other choices would have yielded better performance. This effect is economically large and persists even for portfolios with hundreds of stocks.

We are the first to study this FOMO risk dimension of concentrated portfolios, which seems even more important than insufficiently diversified idiosyncratic risk. Our findings are robust across alternative portfolio construction approaches, including ESG tilts, exclusion strategies, and portfolio optimization. The results suggest that concentrated equity portfolios exhibit both higher idiosyncratic risk and a substantial exposure to performance dispersion due to stock selection.

Key Takeaways for Investment Professionals

- 30–40 stocks are insufficient to achieve full diversification in global equity portfolios.
- Concentrated portfolios introduce a second risk dimension beyond volatility: FOMO risk.
- Portfolio outcomes depend heavily on stock selection, even for relatively large portfolios.
- ESG tilts and exclusion strategies do not materially change these concentration effects.

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WHY THIS RESEARCH MATTERS NOW

The question of how concentrated an equity portfolio should be has become increasingly relevant for institutional investors. While broad, index-like portfolios remain common, a growing number of investors are moving towards smaller portfolios with stronger convictions, often motivated by sustainability considerations, engagement strategies, and governance requirements. In the Netherlands in particular, a number of prominent pension funds have abandoned tracking broad equity indices in favor of considerably more concentrated portfolios.

Furthermore, concentrated portfolios are common in other contexts such as mutual funds, private wealth management, and retail investors. To illustrate, a recent study finds that the median number of stocks across global equity mutual funds is below 100.

At the same time, equity markets have become more concentrated in the sense that cap-weighted indices are increasingly dominated by a small number of stocks. Our analysis is further motivated by the fact that a small fraction of firms accounts for a disproportionate share of long-term wealth creation. This might amplify the potential consequences of portfolio concentration: missing a limited set of top-performing stocks could materially affect long-run performance.

In this context, the traditional view that a relatively small number of stocks suffices for diversification deserves reconsideration. Much of the existing evidence is based on older data, single-country samples, or random portfolio constructions that do not reflect current investment practices.

Moreover, investors increasingly rely on constrained investment universes – due to ESG screening, exclusion policies, or governance considerations – which may further affect diversification properties. This raises the question whether insights derived from unconstrained settings generalize to contemporary portfolio construction.

Our study addresses these issues by providing updated evidence on diversification and by introducing a new perspective on concentration risk that centers on outcome dispersion rather than volatility alone.

Relevance in Today's Context

- Institutional portfolios are becoming more concentrated, partly due to ESG and engagement considerations.
- Equity markets are becoming more concentrated and equity market performance is driven by a small subset of stocks.
- Traditional diversification benchmarks may no longer reflect current global market conditions.
- Investment decisions increasingly take place in constrained universes.

RESEARCH QUESTION AND APPROACH

The central question of this study is twofold:
(1) how many stocks are required to achieve effective diversification in global equity markets?
(2) what are the broader financial consequences of holding more concentrated equity portfolios?

To address these questions, we conduct a series of backtests using a large global dataset of over 87,000 stocks from 47 countries over 1985–2023. To reflect practical implementation, we also construct a "pseudo MSCI ACWI" universe that approximates a widely used benchmark for institutional investors.

What This Research Does (and Does Not) Show

- It shows how diversification and performance dispersion vary with the number of stocks.
- It introduces FOMO risk as a second dimension of concentration risk.
- It does not aim to replicate specific real-world strategies; rather, it illustrates a broad range of feasible portfolio outcomes.
- It relies on historical data and does not guarantee that patterns persist in the future.

We simulate portfolios with varying degrees of concentration by randomly selecting between 10 and 1,500 stocks and constructing value-weighted portfolios. For each portfolio size, we repeat the exercise thousands of times to capture the distribution of outcomes. This allows us not only to assess average performance, but also to analyze the dispersion in returns across different portfolio choices. While random selection does not represent industry practice, randomly selected portfolios do illustrate the wide variety of investment choices that can be made in practice. Our results are similar when we use more sophisticated portfolio choice methods, such as Markowitz optimization.

We evaluate portfolios based on standard metrics such as return, volatility, Sharpe ratio, drawdown, and tracking error. A key innovation is that we explicitly examine the cross-sectional dispersion in outcomes across portfolio draws, which forms the basis of our FOMO measure.

We further consider alternative specifications, including equal-weighted and optimized portfolios, ESG-based selection, exclusion of sin industries, and constraints on portfolio weights and sector composition.

APPLICATIONS FOR INVESTMENT PROFESSIONALS

The results have direct implications for portfolio construction and risk management. First, investors should revisit assumptions about the number of stocks required for diversification. In global portfolios, meaningful reductions in volatility and tracking error continue well beyond 30–40 stocks, implying that smaller portfolios retain a non-negligible amount of idiosyncratic risk.

Second, and perhaps more importantly, concentrated portfolios expose investors to substantial outcome uncertainty due to stock selection. Our results show that portfolios with the same number of stocks can generate markedly different returns depending on the specific stocks included. These differences persist even for portfolios with several hundred stocks and can compound into large wealth differences over long horizons.

Third, common portfolio construction techniques can partially mitigate diversification risk. For example, selecting stocks based on correlations and volatility, limiting individual stock weights, or maintaining a balanced industry composition can accelerate diversification to some extent. However, none of these approaches materially reduces FOMO risk.

Fourth, the findings apply equally to portfolios constructed under ESG constraints. While sustainable investing may motivate concentration, it does not fundamentally alter the underlying trade-offs between diversification and stock selection risk.

In practice, this implies that investors should explicitly consider which alternative portfolios they view as realistic benchmarks. FOMO risk is inherently relative to such alternatives and reflects the possibility of ex post regret when other feasible strategies perform better.

Practical Use Cases

- Assess whether current portfolio sizes sufficiently reduce idiosyncratic risk.
- Incorporate constraints (e.g., weight caps, sector balance) to improve diversification.
- Evaluate the dispersion in expected outcomes across alternative portfolio constructions.
- Consider which portfolio compositions are feasible alternatives against which to assess FOMO.

CONCLUSIONS AND NEXT STEPS

This study highlights two key financial consequences of concentrated equity portfolios. First, diversification requires substantially more stocks than often assumed in the literature and in practice. Second, concentrated portfolios expose investors to a distinct form of risk – FOMO – stemming from the dispersion in outcomes across different stock selections.

From a conceptual perspective, FOMO reflects the inherent uncertainty in identifying future stock performance. Given the strong skewness in stock returns – where a small fraction of stocks drives overall market performance – this uncertainty is difficult to eliminate. As a result, the financial consequences of concentration extend beyond higher volatility to include potentially lower long-term returns relative to alternative portfolios.

While certain techniques can modestly improve diversification, there are no straightforward ways to fully mitigate FOMO risk without reliable predictive power regarding future stock performance – something that remains challenging according to the broader literature.

Looking ahead, further research could explore how investors actually perceive and manage FOMO in practice, as well as how this concept extends to other dimensions of portfolio choice, such as asset allocation, rebalancing strategies, or factor tilts.

For practitioners, the key takeaway is that decisions about portfolio concentration should explicitly weigh both dimensions of risk. Non-financial considerations – such as sustainability goals or engagement objectives – may justify concentration, but the associated financial trade-offs should be clearly understood.

Points for Professional Discussion

- How much FOMO risk is acceptable in an concentrated portfolio?
- Which alternative portfolios should investors consider as relevant benchmarks?
- Can governance frameworks explicitly incorporate FOMO considerations?
- How should concentration trade-offs be communicated to stakeholders?

About the Original Research

This summary is based on the following original research paper:

- **Title:** FOMO in equity markets? Concentration risk in (sustainable) investing
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