



## Quantitative Research

# Historical returns of the market portfolio

- Newly constructed data set covering the entire invested market portfolio
- Return index for the global multi-asset market portfolio starting in 1960
- Investors in the market portfolio earned 3.4% per year more than savers
- Data of the market portfolio are made public for others to use

This note is a summary of the article entitled **“Historical returns of the market portfolio”** coauthored by Ronald Doeswijk, Trevin Lam, and Laurens Swinkels, has recently been published in the *Review of Asset Pricing Studies*, one of the top academic finance journals in which per year only 10 articles are published out of almost 200 submitted manuscripts.<sup>1</sup> This research is an extension of their article **“The Global Multi-Asset Market Portfolio, 1959–2012”** published in the *Financial Analysts Journal*, which has won the prestigious Graham & Dodd Readers’ Choice Award in 2014.<sup>2</sup>

### Why is this research important?

First, the market portfolio is relevant for studying financial markets, in the sense that the market portfolio reflects the entire opportunity set of investors. It is an arithmetic fact that the average investor must hold the market portfolio. Investors cannot all be smarter than the average, investors cannot all rebalance, investors cannot even all reinvest dividends or interest payments. The market portfolio can be used as a starting point or benchmark for asset allocation. The market portfolio is the only macro-consistent benchmark and reflects the return of the average dollar invested in publicly available assets at any point in time. This study provides a new historical insight into the actual returns of the

<sup>1</sup> The full article has been published open access and is therefore publicly available at <https://doi.org/10.1093/rapstu/raz010>

<sup>2</sup> The full article is available from the author or can be accessed online here <https://doi.org/10.2469/faj.v70.n2.1>



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average investor, as no index provider offers a global multi-asset market index, let alone one with a history back to 1960.

Second, the market portfolio matters for asset pricing. The capital asset pricing model specifies that, under certain conditions, the set of ex ante optimal portfolios consists of the market portfolio, in which all risky assets are weighted according to their market capitalization, plus long or short positions in the riskless asset. Although the true market portfolio is unobservable because it contains all assets that economic agents hold, including assets such as human capital and art, the return of our market portfolio reflects the return on basically all assets held by financial investors around the world. Hence, we report returns of their investable universe.

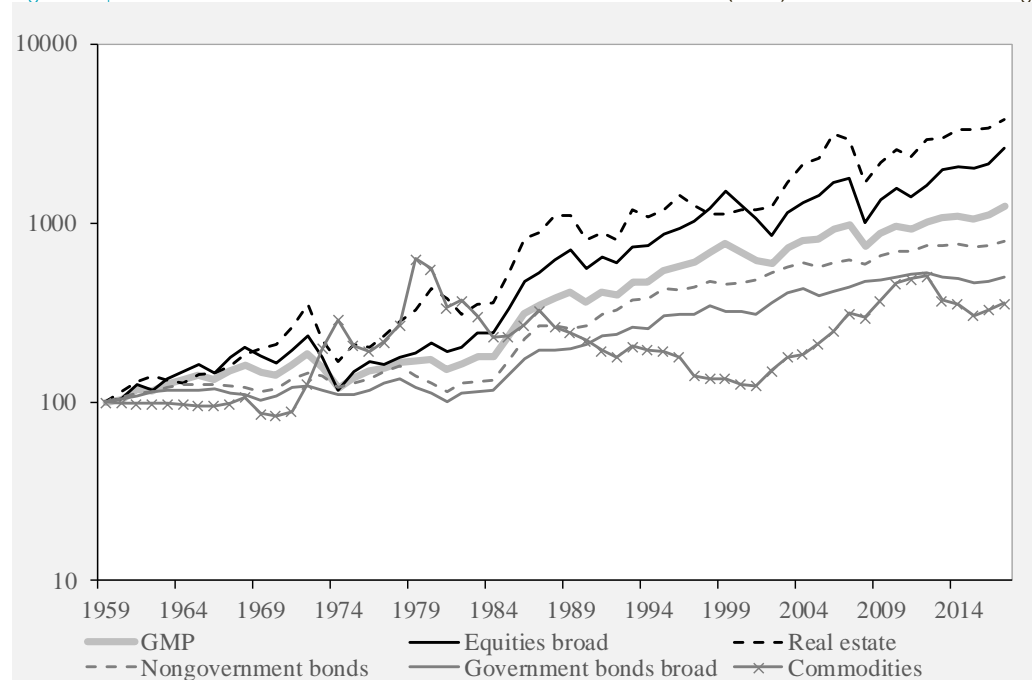
Third, our study contributes to the inequality debate in economics. An important and highly debated number is the return on capital. The average return of our market-capitalization-weighted invested global multi-asset market portfolio is an estimate for the return that financial investors have achieved since 1960.

This study on the returns of the market portfolio offers opportunities for several additional applications or analyses. We include an overview of correlations between asset categories and show conditional analyses on the returns during recessionary and expansionary periods and inflationary and disinflationary periods. Understanding asset returns during these economic situations can be important for investors.

### What did we do?

We collected market capitalization and return data for basically all assets in which financial investors have invested. Using this newly collected unique data, we create an annual return index (see Figure 1) for the invested global multi-asset market portfolio for the period 1960–2017. We define the market portfolio as all assets held by financial investors around the globe. We distinguish ten asset classes that we aggregate to five asset categories. The ten asset classes are listed equities, private equity, real estate, investment-grade credits, high-yield bonds, leveraged loans, nominal government bonds, inflation-linked bonds, and emerging market debt, and commodities. This market portfolio basically contains all assets in which financial investors have invested. We weight returns of these ten asset classes by their market capitalizations.

Figure 1 | Cumulative real return index of the Global Market Portfolio (GMP) and the five asset categories



Source: Doeswijk, Lam, Swinkels (2019) Historical returns of the market portfolio. *Review of Asset Pricing Studies*. Online available at the following link: [doi.org/10.1093/rapstu/raz010](https://doi.org/10.1093/rapstu/raz010)

The weight in the market portfolio of asset classes other than equities and government bonds has increased from 20% at the end of 1959 to 35% in 2017. Hence, including asset classes beyond equities and government bonds is increasingly important for assessing the market portfolio. Market capitalization weighting and a total market coverage result in a unique historical insight into the actual returns on invested capital of financial investors.

This article complements our previous article that solely documents the historical *composition* of the market portfolio, but not its historical *returns*. What also makes our study special is that we meticulously document each of the data sources that we use to create the return on the market portfolio and the sensitivity to several of the choices that we had to make in the process, so that other researchers can replicate or criticize our research, which is the cornerstone of academic discourse.

### What do we find?

The global market portfolio realizes an average compounded real return of 4.45%, with a standard deviation of annual returns of 11.2% from 1960 until 2017. The arithmetic average real return of the market portfolio is 5.05%. It appears that the average annual real return of the market portfolio in expansions is a statistically significant 9.68 percentage points higher than the return in recessions. In the inflationary period from 1960 to 1979, the average real return is 2.77 percentage points below the return in the disinflationary period from 1980 to 2017, but this gap is statistically insignificant. The reward for the market portfolio is a compounded return of 3.4% above the riskless rate that savers would have received.

### Where can I find the data on the market portfolio?

We have decided to make the annual data on the market portfolio publicly available on [www.robeco.com/data](http://www.robeco.com/data) and via Erasmus University [doi.org/10.25397/eur.9419585](https://doi.org/10.25397/eur.9419585). It is free to use for all, provided that you cite the research article in which it was published. The research article has been made publicly available using an open access grant of Erasmus University in Rotterdam, where Swinkels is part-time assistant professor of finance, in addition to his research position at Robeco.

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