JANUARY 2025

FTSE PRIVATE EQUITY/ VENTURE CAPITAL INDEX

METHODOLOGY

FTSE RUSSELL
An LSEG Business

CONTENTS

Introduction

The FTSE Private Equity Buyout Index (**TRPEI**) and the FTSE Venture Capital Index (**TRVCI**) seek to provide the returns of the US PE and VC industries. Rather than investing in PE and VC companies directly, the Index seeks to replicate the industries' returns by constructing a portfolio of liquid, US large cap, listed equities. This portfolio is designed to mirror the characteristics and returns of the private markets (i.e., private equity or venture capital), which is tracked and calculated by LSEG in their FTSE Private Equity Buyout Benchmark Index and FTSE Venture Capital Benchmark Index.

This overall process can be distilled into two steps:

Construction of FTSE Private Equity Buyout Benchmark Index and FTSE Venture Capital Benchmark Index

For over 30 years, LSEG (previously Refinitiv, Thomson Reuters respectively) has been collecting detailed transaction and valuation data on the universe of US private equity and venture capital companies. Individual companies are aggregated to provide an industry level "valuation" of all US venture capital and private equity companies. This approach allows the Benchmark Index to reflect the "gross returns" of the industry, i.e., before VC and PE fund manager fees and expenses are deducted. Benchmark indices are rebalanced quarterly with monthly numbers. Also on each rebalance we update the Benchmark Indices for the last 24 months.

Construction of FTSE Private Equity Index and FTSE Venture Capital Index

With a detailed historical profile of the private equity industry return characteristics established through the Benchmark Index, a tracking portfolio is then created to mirror the return characteristics of the private market companies. This tracking portfolio, the FTSE Private Equity Buyout Index and FTSE Venture Capital Index, is constructed using highly liquid securities. Leverage is commonly used so that the tracking portfolios' risk loadings match those of the VC and PE industries in aggregate.

For further details please visit –

FTSE Private Equity Buyout Index

FTSE Venture Capital Index

FTSE Private Equity/Venture Capital Index (FPEVC) - Motivation

The returns of the TRPEI and TRVCI portfolios have a relatively low historical correlation (approximately 0.65) with each other. This means that a portfolio that combines both will benefit significantly from diversification. The FTSE PE/VC Index provides a portfolio that attempts to take advantage of this diversification benefit using optimal, time-varying weights.

In this context, "optimal weights" means weights across TRPEI and TRVCI that maximize a forward-looking risk-adjusted performance measure. In particular, the methodology optimizes a forward-looking Sharpe-style ratio (daily expected return divided by daily standard deviation) by selecting weights to TRPEI and TRVCI that sum to 1.0 (no additional leverage added) and that change once a month.

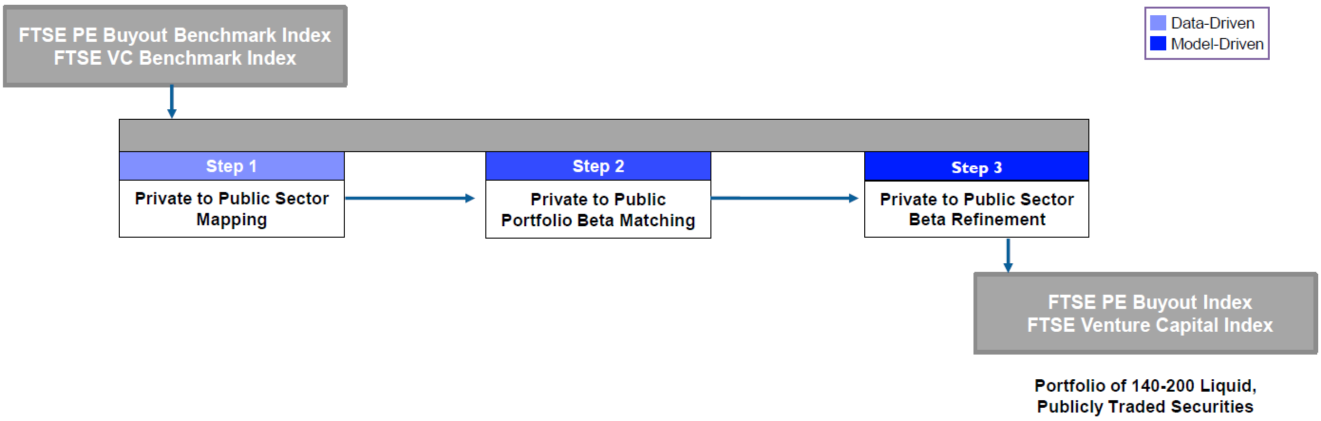
The Underlying Portfolios

The TRPEI and TRVCI portfolios seek to mimic the performance and risk characteristics of the private equity (buyout) and venture capital universes, respectively. A fundamental premise of the TRPEI and TRVCI Indexes is that, although returns of the private equity (PE) and venture capital (VC) industries cannot be predicted, the risk attributes associated with these areas can be.

TRPEI and TRVCI are designed to create portfolios that mimic the risks and returns in the PE and VC universe by investing in a collection of public sector portfolios that match the sectors of the privately held firms in the PE and VC universes. Because the operational and financial leverage of privately held PE and VC firms differ from that of the associated public sector portfolios, it is necessary for TRPEI and TRVCI to use time-varying leverage and adjust for each public sector.

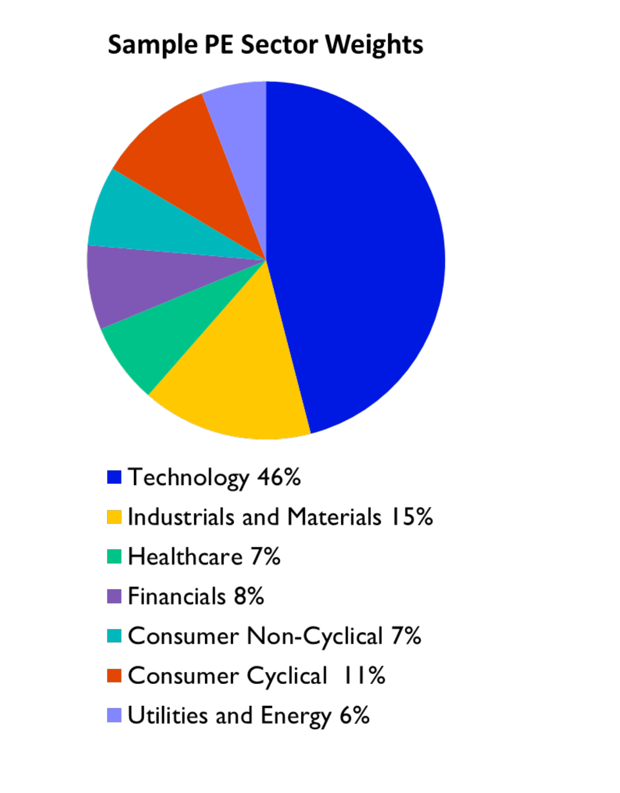
We can summarize the process of starting with private market benchmark data to the creation of the investable PE and VC indices by using a simplified three step framework. The process involves gathering private market data through FTSE and modeling the time variant risk exposures top-down by a set of econometric models.

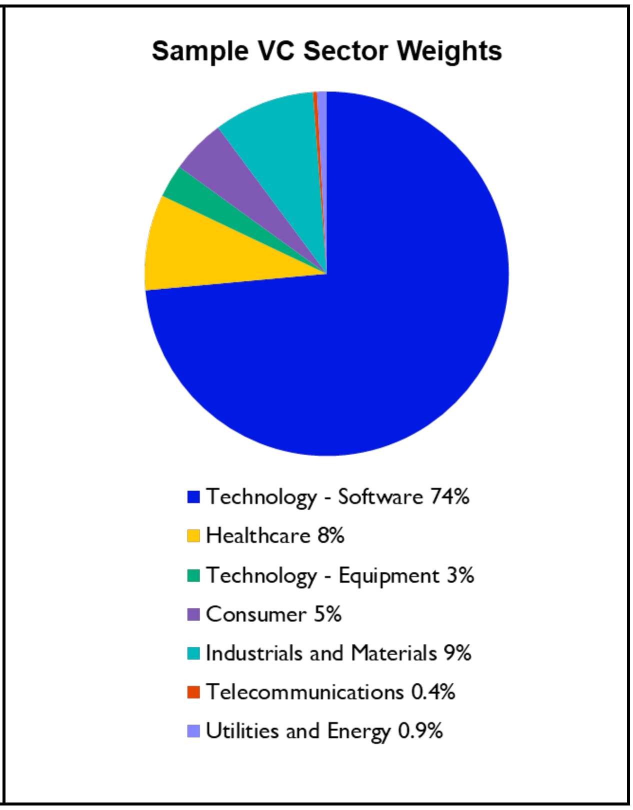
Overview of Investable Index Construction Process



Each index seeks to match the risk/return profile of the privately held firms that comprise the VC and PE Benchmark Indexes (the FTSE PE Buyout Benchmark Index and FTSE VC Benchmark Index) by investing, with dynamic leverage, in liquid securities that are publicly traded. This involves matching and then adjusting beta, sector by sector. This leverage and betas are determined by a set of econometric models and implemented once a month.

Sector Weights for PE and VC Indices as of Q3 2024





Blend Weighting Methodology

The TRPEI and TRVCI portfolios are designed to dynamically adjust their exposures to risk factors on a monthly basis to continuously mimic the risk profile of the privately held firms in the PE and VC sectors, respectively. At the end of each month, the risk exposures for the next month in each are calculated. This is also the time at which the optimized blend methodology determines the weight to each portfolio in the final, “blend” portfolio.

The optimized blend index in month i is formed by choosing w_i, the weight to TRVCI. The weight applied to TRPEI, then, is $(1 - w_i)$. The Blend portfolio return in month i is

$$r_{blend,i} = w_i \cdot r_{VC.i} + (1 - w_i) \cdot r_{PE,i}$$

To determine the optimal w_i, the blend index methodology estimates the weight that, over a historical window of size X months, would maximize the ratio of the arithmetic average daily return to the daily standard deviation of the portfolio. This is a modification of the standard Sharpe Ratio, in which the effect of the risk-free rate is removed. Mathematically, for month i, using a historical window of size X, we obtain the blend index weights by solving

$$w_i = argmax\left(ModSharpeRatio\left(r_{blend,X}\right)\right).$$

Here, $ModSharpeRatio()$, is computed using all months in time period X, which ends at the beginning of month i.

Optimizing the Weights: Historical Vs Pro-Forma Returns

Note that TRPEI and TRVCI are dynamic portfolios that frequently change their exposure to economic risk factors in response to changes in the economic environment. Therefore, the historical realized returns to these indices are not the best tools to estimate a forward-looking parameter like w_i. Instead, the blend methodology computes the pro-forma returns TRPEI and TRVCI would have had if, over the window in question, they had the risk exposures that have been computed in month i using the TRPEI and TRVCI methodologies. The calculation of w_i, using the historical months X, involves the following steps:

1. Calculate the risk exposure for the incoming month for both TRVCI and TRPEI.
2. Build the past X months of pro-forma daily returns that each index would have had if they had the risk exposures we are about to implement (calculated in point 1).
3. Compute w_i, the weight that maximizes the risk-adjusted return of the portfolio for those X months.

The result is a weight that will be applied to TRVCI in each month. We can then subtract that from 1.0 to get the weight to TRPEI. Weights of the two indexes can vary significantly over time, as the forward-looking public sector weights, leverage, and market risks in TRPEI and TRVCI vary.

Sample Period and Constraints

The choice of time period, X, over which to estimate this weight represents a trade-off. Shorter time periods have the advantage of using more up-to-date and relevant information. On the other hand, shorter time periods contain less total information and exclude the effects of longer-term trends. The blend methodology seeks to incorporate the advantages of both longer and shorter horizons by implementing steps 1-3 using multiple X values. That is, w_i is estimated separately using 1, 3, and 6 months of daily data. The final value of w_i, then, is a weighted average of these three weights, where the weights are 60%, 30%, and 10%, respectively.

Historically, buyouts represent a larger industry than venture capital in terms of total invested cash. The blend methodology, therefore, ensures that TRVCI does not get a disproportionate weight in the final portfolio by limiting w_i to the interval 5% - 50%. This limitation, together with the averaging of different time horizons, stabilizes the blend index somewhat, and reduces its turnover. In the time period between 2003 and 2024 the VC weight has averaged approximately 29%.

Performance Characteristics

The FTSE PE/VC Index portfolio typically has a total return that is in between that of TRPEI and TRVCI (in any month, it is a linear combination of the two). However, the volatility of the Blend portfolio is lower than a linear combination of them because of the diversification benefit. As a result, the ratio of annualized returns to volatility for the FTSE PE/VC Index portfolio is higher than that of either TRVCI or TRPEI.

Governance

Index Action Committee (IAC)

The Index Action Committees (IAC) for the FTSE Private Equity Venture Capital Index is composed of representation from the FTSE Private Equity Buyout Index, FTSE Venture Capital Index, FR equity Indices and independent outside members of the financial community (TBD).

The main activity of this Index Action Committee is to ensure that the attributes the FTSE Private Equity Venture Capital Index claims to possess are indeed present. These reviews take place a week before the quarterly rebalance results are published by the 3rd Friday in April, July, October and January. The Index Action Committee deals with ensuring the algorithm that calculates the index is accurate. The committee will also review the results of the quarterly rebalance and reserves the right to make any necessary changes.

About FR Equity Indices

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- **Custom Index Services**
- **Index Calculation Services**
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For over 35 years we have been at the forefront of driving change for the investor, always innovating to shape the next generation of benchmarks and investment solutions that open up new opportunities for the global investment community.

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