# Private Equity Overview

Texas Municipal Retirement System

# Private Equity Introduction

- **Institutional investors pursue private equity investments primarily due to higher expected returns than traditional publicly-traded equities**
  - RVK's long-term expected return forecasts are*:
    - Private Equity 11.00% vs. Global Public Equity 7.90%

- **The potential for higher returns is accompanied by tradeoffs including:**
  - Lower liquidity and transparency
  - Increased portfolio complexity
  - RVK's long-term expected risk forecasts are*:
    - Private Equity 29.00% vs. Global Public Equity 18.35%

- **It is important for investment decision makers to be educated on the many unique aspects of private equity**

*Based on RVK's 2014 Capital Markets Assumptions

# What is Private Equity?

- **Investments made up of privately held businesses that do not trade on an exchange, are illiquid, and have a long investment horizon**

- **Unique cash flow structure requiring paced cash funding and distributions**
  - Capital is called “as needed”, slowly over a period of years, and distributions occur irregularly as investments are sold

- **Investments are long-term, typically 10 years or more, with limited ability to liquidate before the termination of a partnership**

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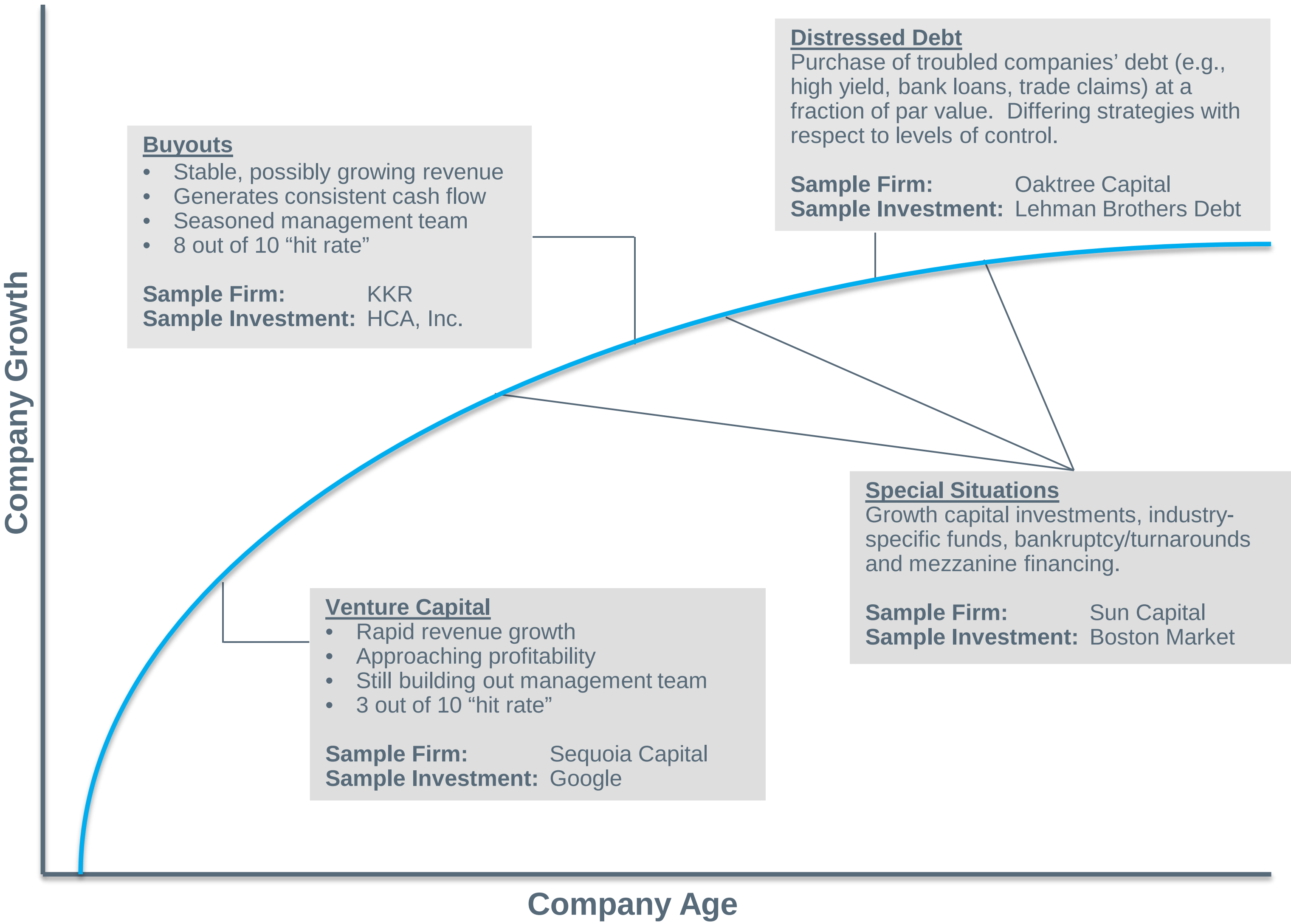
# Private Equity Strategies




# Other Private Equity Strategies

- **Secondary Investments**
  - Purchase of existing partnership interests on the secondary market
  - Can be used to quickly obtain exposure and/or diversification
  - Proper due diligence and price are key determinants of success in the secondary market

- **Co-Investments**
  - Investments made directly into private equity companies, typically made alongside an experienced lead investor
  - Co-investments are typically more passive than a lead investor, but will usually have equal economic terms

# Why Invest In Private Equity?

- **The private equity asset class provides some limited additional diversification benefits to a broadly diversified portfolio**

- **The primary benefits to the asset class is generating alpha above public market returns**
  - RVK currently estimates that the private equity asset class will return a premium of 310 basis points over global public market returns
  - **Observed** volatility (quarterly market value fluctuations) of the asset class has been lower than large cap equity markets

- **Private equity investments provide a way to access industries, sectors and products not easily available to public markets**

- **Private equity investing allows skilled managers to effect meaningful change to businesses, thus improving value**

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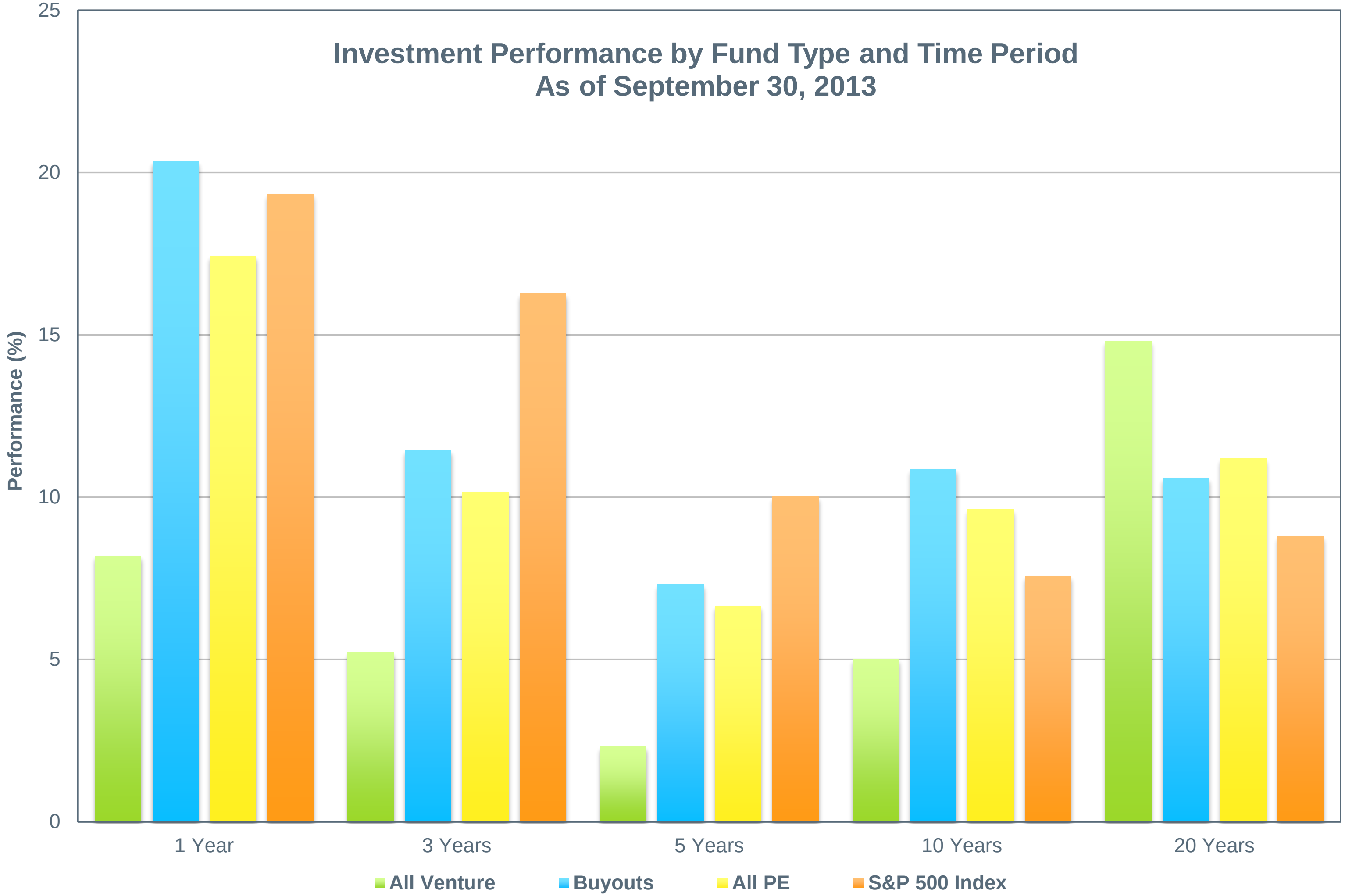
# Unique Considerations

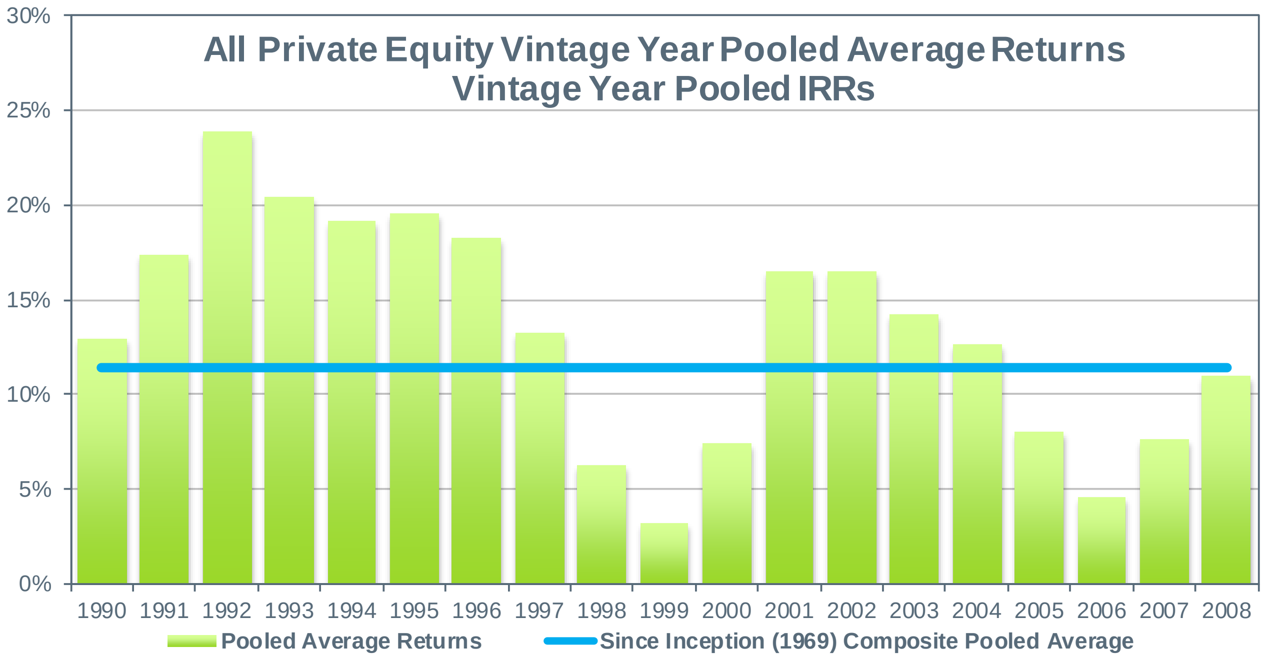
- **Illiquidity**
  - Private equity investments consist predominantly of holdings in privately held businesses with limited marketability prior to an exit (typically via an IPO or acquisition)
- **Long Investment Horizon**
  - Private equity fund investments are considered long term, with a horizon of 10 years or more
- **Cash Flow Uncertainty**
  - Cash flows are dependent upon market dynamics and can be difficult to forecast
  - Capital calls depend upon the availability of investment opportunities, while distributions depend on the availability of investment exits
- **Lower Transparency**
  - Private equity firms typically raise capital with limited insight into the actual investments that will be included with the fund
  - Therefore, developing comfort with managers' skill, as opposed to underlying investments, is essential
- **Higher Fees**
  - Private equity fee structures are higher than traditional asset classes
  - Typical fees to underlying managers include management fees and carried interest, or incentive fee on the investment gains
  - Fees are typically based on committed capital, regardless of the amount of capital called

# Historical Private Equity Returns




Source: Thomson Reuters.
Private Equity performance data includes vintages between 1980 and 2012.
Performance is calculated quarterly.

# Portfolio Construction
## Vintage Year Diversification




| Vintage Year | Pooled Average Returns |
|---|---|
| 1990 | 12.91% |
| 1991 | 17.39% |
| 1992 | 23.88% |
| 1993 | 20.46% |
| 1994 | 19.17% |
| 1995 | 19.58% |
| 1996 | 18.25% |
| 1997 | 13.26% |
| 1998 | 6.28% |
| 1999 | 3.18% |
| 2000 | 7.40% |
| 2001 | 16.48% |
| 2002 | 16.44% |
| 2003 | 14.19% |
| 2004 | 12.60% |
| 2005 | 7.99% |
| 2006 | 4.61% |
| 2007 | 7.57% |
| 2008 | 11.00% |
| **Since Inception (1969) Composite Pooled Average** | |
| **11.5%** | |

- **Vintage years exhibit varying levels of return**
  - As the graph below illustrates, not participating in specific years can have a significant effect on overall return
- **To achieve the long-term expected return on the private equity asset class, it is important to maintain consistent exposure in each vintage year**

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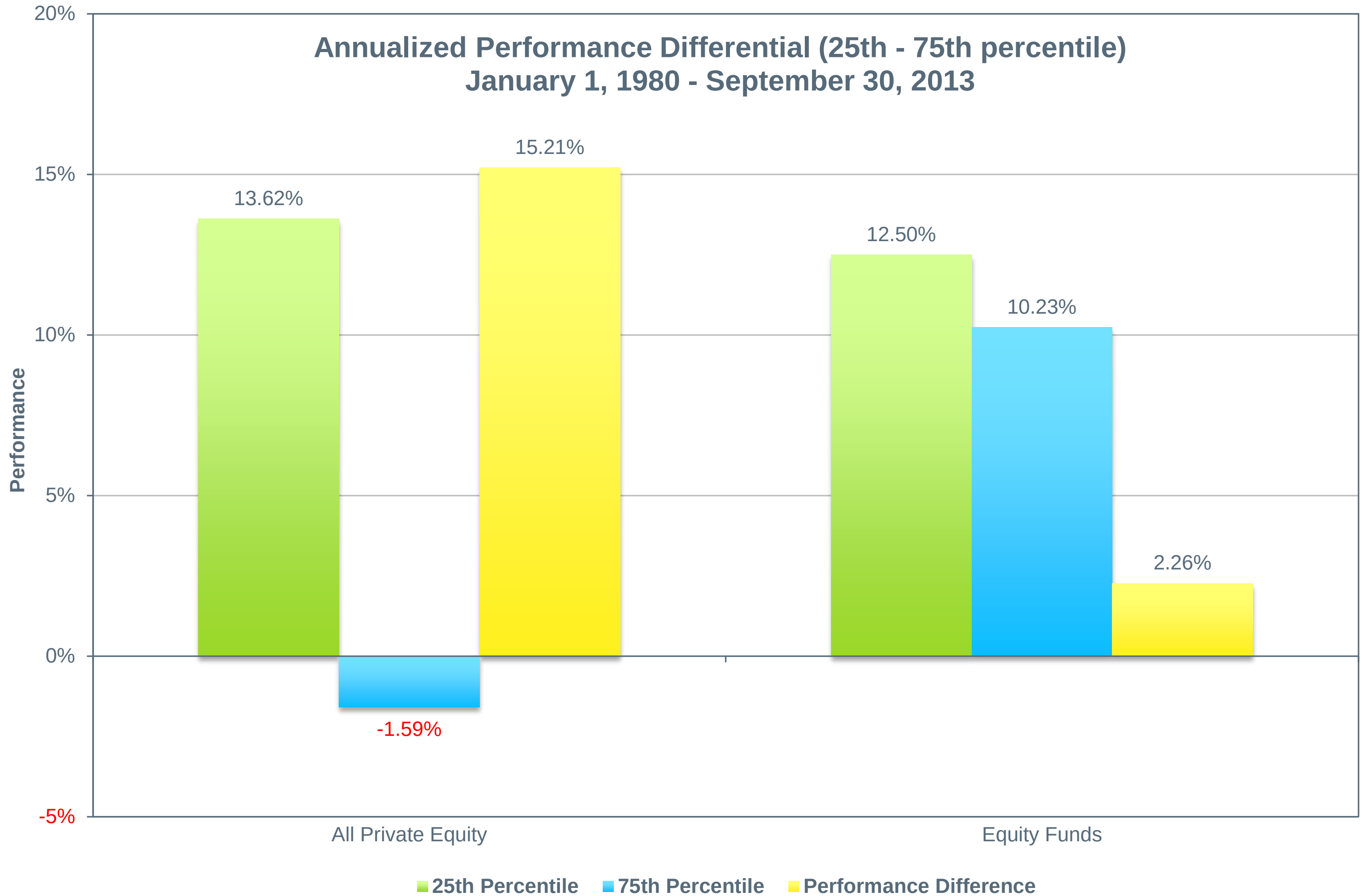
# Portfolio Construction

## The Importance of Manager Selection




All Private Equity Source: Thomson Reuters – All Private Equity Funds with vintages between 1980 and 2012
Equity Funds Source: Investment Metrics US Equity Funds (SA+CF+MF)
Private Equity performance is represented by the annualized since inception internal rate of return.

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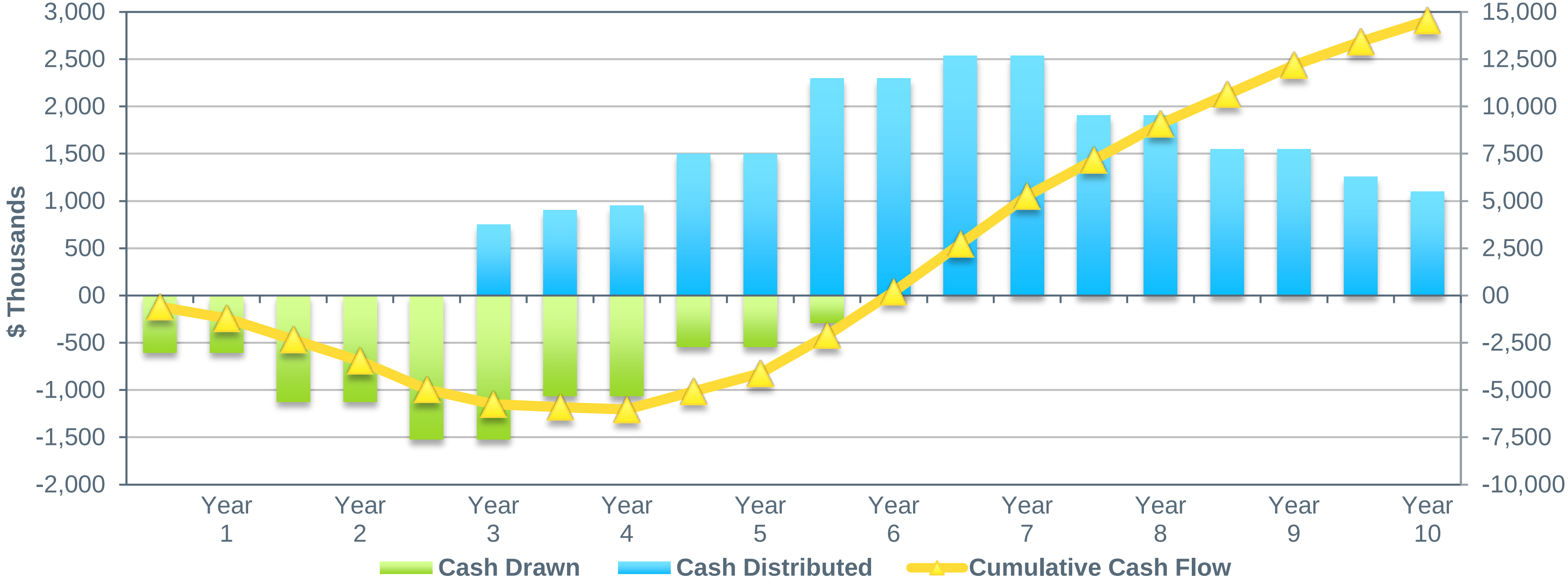
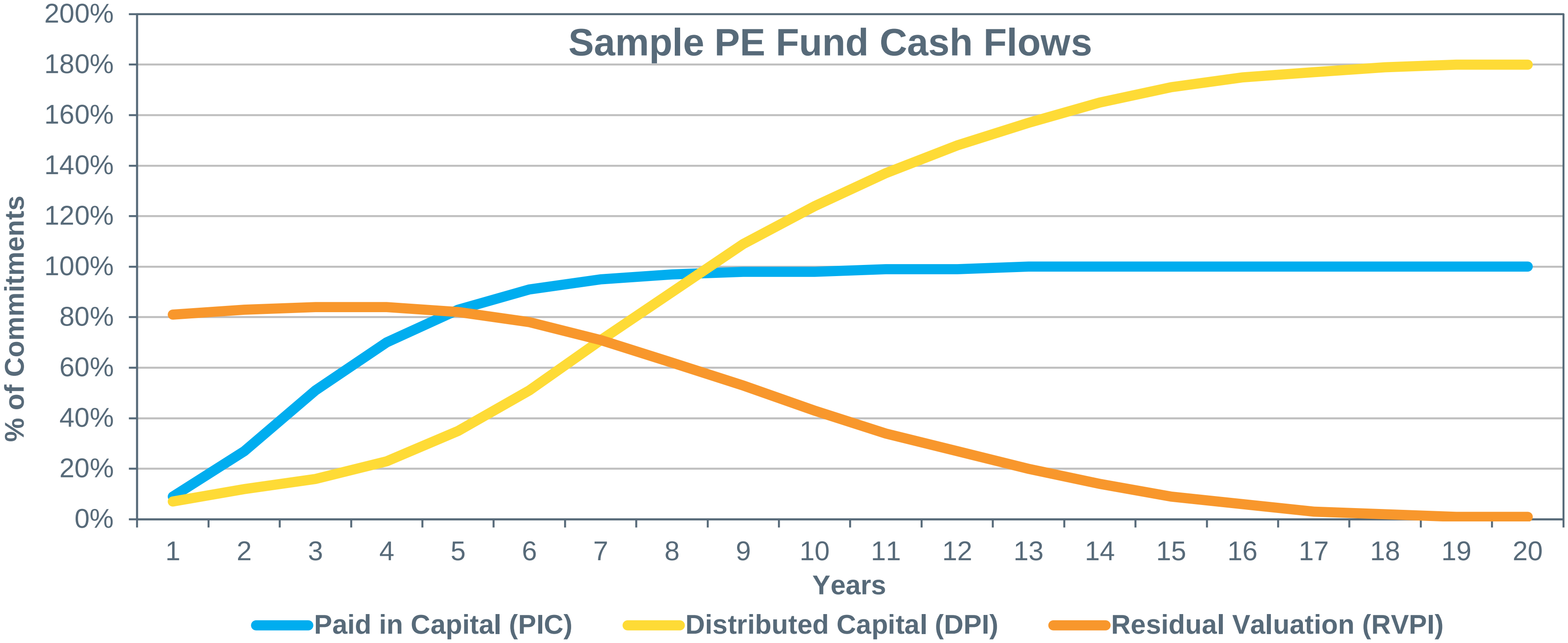
# Private Equity Terms

- **Private equity funds typically have a <u>fixed ten-year</u> term with possible one to two year extensions; fund of funds typically have <u>twelve-year terms</u> with two to three year extensions**
- **The <u>investment period</u> is generally around five years for direct funds and three to five years for fund-of-funds. This is the time when a fund actively seeks out and invests in new opportunities**
- **Most of the capital will be drawn and most of the management fees and expenses will also be paid during the investment period.**



# Private Equity Fund Lifecycle




**Observations:**

- **The fund is fully funded between years eight and nine (PIC)**
- **Contribution and distribution schedules cause the amount of private equity exposure to peak between years five and six, at approximately 80% of the Commitment amount (RVPI)**
- **Sample PE Fund returned slightly above 1.8X Commitment (DPI)**

# Private Equity Commitment Budget

- **<u>Private Equity commitments are drawn down over time</u> and distributions are made as a fund matures**
- **As a result, <u>over-committing is required</u> in order to meet a planned allocation target**
  - Typically 1.5X – 2X target
  - Follow-on commitment needed
    - To maintain allocation exposure
    - Vintage year diversification
- **Because the allocation level of the portfolio declines with distribution activity, a regular <u>commitment plan is required</u> to establish and maintain appropriate commitment targets**
- **Additional allocation factors to consider:**
  - Total fund growth (net of spending rate)
  - Timeline to reach target allocation
  - Annual review of commitment pace and budget

# Pacing Study

**<u>Pacing Study provided by RVK:</u>**

- **Evaluates current portfolio status versus target**

- **Considers the following factors*:**
  - Paid in Capital (Contributed Funds/Cash In)
  - Distributed Capital (Distributed Funds/Cash Out)
  - Valuation (Capital Account Valuation)
  - Allocation %

- **Takes into account the annualized growth rate for the overall total composite**

- **Presents a commitment plan with recommendations on private equity program structure and a proposed commitment budget**

* These variables are estimated using modified historical pacing patterns based upon the historical trends of the asset class and expected returns for each sub-segment.

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# Investment Structure Options

- **Off-the-Shelf Fund-of-Funds (FoFs)**
  - A fund-of-funds manager creates a portfolio of underlying funds or managed accounts, resulting in a single, diversified investment vehicle for a number of investors (commingled fund vehicle)
- **Separate Account Fund-of-Funds (FoFs)**
  - A fund-of-funds manager creates a customized portfolio of underlying funds or managed accounts, tailored to a single client's investment goals (separate account)
- **Specialist Advisor**
  - A consultant specializing in private equity investing creates a customized portfolio of underlying funds
  - This consultant can be given the discretion to make investment decisions, or it can be a non-discretionary mandate, with the client making the final structure and fund selection decisions
- **Direct Investment**
  - The "Do it Yourself" approach. Client uses internal expertise and appropriate systems to create a diversified portfolio of single-strategy and multi-strategy funds

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# Continuum of Implementation Approaches

Off-the-Shelf Fund-of-Funds Approach

Separate Account Fund-of-Funds Approach

Specialist Advisor Approach

Direct Investment Approach

| | |
|---|---|
| ***Less*** **Control over Strategy** | ***Greater*** **Control over Strategy** |
| ***Less*** **Client Resources Required** | ***Greater*** **Client Resources Required** |
| ***Higher*** **Management Costs** | ***Lower*** **Management Costs** |

# Implementation Matrix
## Resources and Control

| | Off-the-Shelf FoFs Approach | Separate Account Fund of One Approach | Specialist Advisor Approach | Direct Investment Approach |
|---|---|---|---|---|
| **Discovery, Evaluation, and Selection** | FoFs Manager's Staff | Fund of One's Manager's Staff | Specialist Advisor's Staff & Internal Staff<br>Approval and/or Delegation by Board/Committee | Internal Staff<br>Approval and/or Delegation by Board/Committee |
| **Diversification** | Instantaneous and Extensive | Likely Faster and Extensive | Likely Slower and Builds Over Time, but can be Extensive | Slow, Builds Over Time |
| **Cost Effectiveness** | Requires an additional FoFs Manager fee | Requires an additional discretionary Manager fee – potentially lower than an Off-the-Shelf FoFs | Requires an additional Advisor fee – likely much lower than a FoFs Manager fee. Can be negotiated based on level of service and discretion desired. | No additional Manager or Advisor fee, however management costs will be borne by the client |
| **On-going Risk Monitoring** | FoFs Manager's Staff | Fund of One's Manager's Staff | Specialist Advisor's Staff & Internal Staff | Internal Staff |
| **On-going Performance Monitoring** | FoFs Manager's Staff | Fund of One's Manager's Staff | Specialist Advisor's Staff & Internal Staff | Internal Staff |
| **RVK's Role** | RVK will provide: Search, Evaluation, Due Diligence, and On-going Monitoring of FoFs Managers | RVK will provide: Search, Evaluation, Due Diligence, and On-going Monitoring of Fund of One Managers | RVK will provide: On-going Monitoring and Reporting, and will incorporate investments into total fund asset allocation reviews | RVK will: Incorporate investments into total fund asset allocation reviews |

# Summary

- **Private Equity can generate significant value by enhancing returns and improving diversification**
  - Unique risks are introduced due to factors such as:
    - Investment illiquidity, cash flow uncertainty, and wide divergence in manager performance

- **There are significant challenges that investors face in the successful implementation of an alternative investment program**
  - Resources, access, transparency, lack of regulation, etc.

- **To manage diversification risk and to maintain access to best in class managers a steady program of pacing capital to private equity opportunities is required**

- **Proper implementation and manager selection is the key to overcome these challenges**

# Appendix

# Allocation Perspectives

- **We estimate that the return will be 310 basis points in excess of the global public equity markets over the long term.  Volatility reflects lower liquidity than public markets.**

- **RVK's current long-term forecast*:**
  - Expected Annual Return of 11.00%
  - Expected Annual Standard Deviation equal to 29.00%

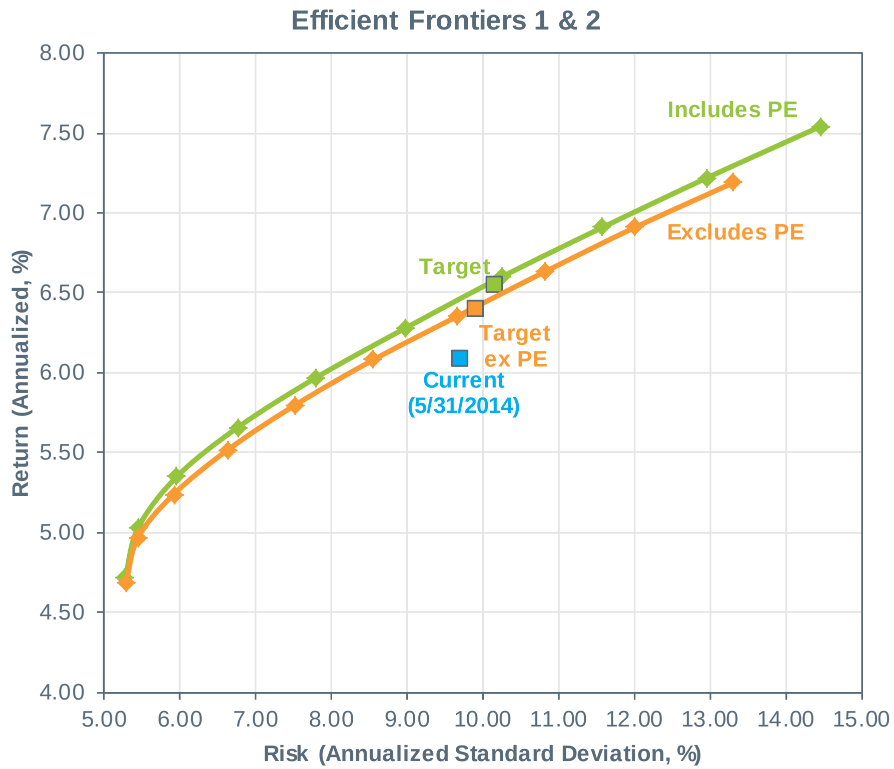
| Correlation | Int. Duration Fixed Income | Non-Core Fixed Income | Custom Real Return | 50/50 Equity | Custom Real Estate | Absolute Return | Inflation |
|---|---|---|---|---|---|---|---|
| Private Equity | -0.18 Negative | 0.70 Moderate-High | 0.43 Moderate | 0.75 Moderate-High | 0.51 Moderate | 0.62 Moderate | 0.22 Low |

*Based on RVK's 2014 Capital Markets Assumptions

# Allocation Perspectives – TMRS
## Performance Impact – Forecasted*

- **The TMRS final target allocation includes 5% to Private Equity ("PE")**

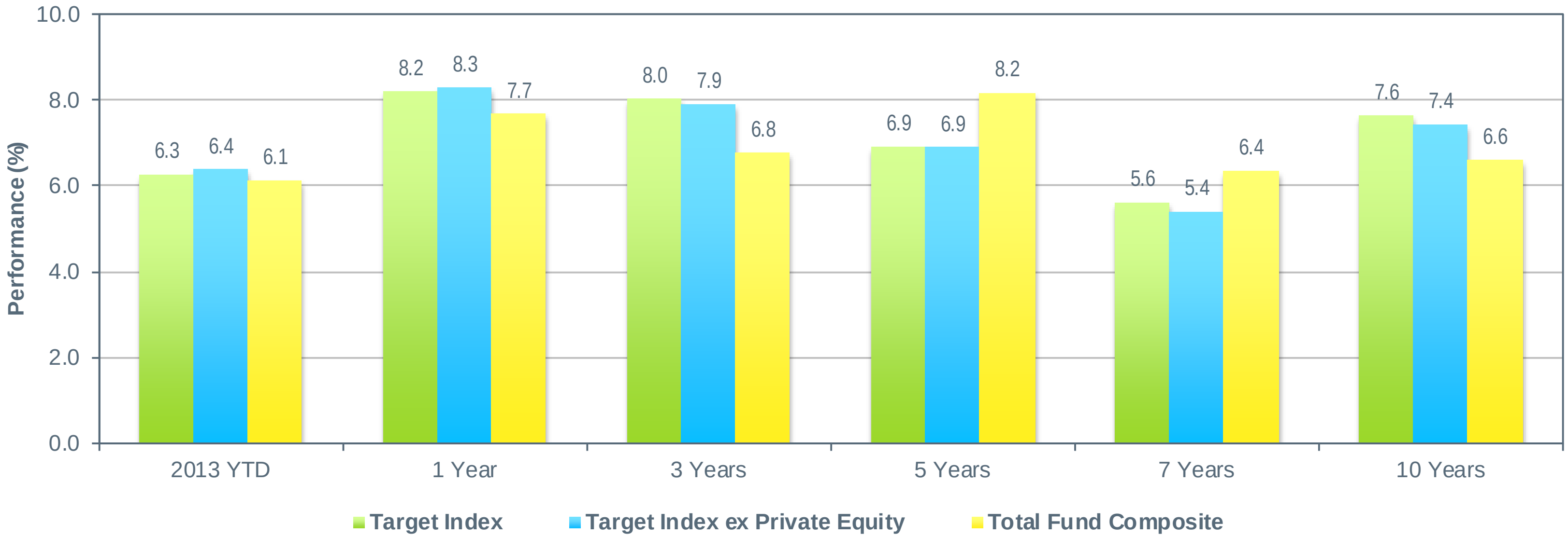
| | Frontier 1 | | Frontier 2 | | Current (5/31/2014) | Target | Target ex PE |
|---|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | | | |
| Int. Duration Fixed Income | 0 | 100 | 0 | 100 | 43 | 30 | 30 |
| Non-Core Fixed Income | 0 | 10 | 0 | 10 | 0 | 10 | 10 |
| Global Linkers | 0 | 0 | 0 | 0 | 4 | 0 | 0 |
| Custom Real Return | 0 | 5 | 0 | 5 | 0 | 5 | 5 |
| 50/50 Equity | 0 | 60 | 0 | 60 | 49 | 35 | 40 |
| Custom Real Estate | 0 | 10 | 0 | 10 | 4 | 10 | 10 |
| ARS | 0 | 5 | 0 | 5 | 0 | 5 | 5 |
| Private Equity | 0 | 0 | 0 | 5 | 0 | 5 | 0 |
| Total | | | | | 100 | 100 | 100 |
| Capital Appreciation | | | | | 49 | 50 | 50 |
| Capital Preservation | | | | | 43 | 30 | 30 |
| Alpha | | | | | 0 | 5 | 5 |
| Inflation | | | | | 8 | 15 | 15 |
| **Expected Return** | | | | | 6.07 | 6.54 | 6.40 |
| **Risk (Standard Deviation)** | | | | | 9.70 | 10.16 | 9.91 |
| Return (Compound) | | | | | 5.63 | 6.06 | 5.94 |
| Return/Risk Ratio | | | | | 0.63 | 0.64 | 0.65 |
| RVK Expected Eq Beta (LC US Eq = 1) | | | | | 0.51 | 0.50 | 0.49 |
| RVK Liquidity Metric (T-Bills = 100) | | | | | 84 | 70 | 74 |




*Based on RVK's 2014 Capital Markets Assumptions

# Allocation Perspectives – TMRS
## Performance Impact – Trailing Periods

| Asset Class | Index | Allocation | | Performance (%) as of September 30, 2013 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 2013 YTD | 1 Year | 3 Years | 5 Years | 7 Years | 10 Years |
| Core Fixed Income | Barclays US Agg Bond Index | 30.0% | 30.0% | -1.9 | -1.7 | 2.9 | 5.4 | 5.1 | 4.6 |
| Non-Core Fixed Income | Non-Core Fixed Income Index* | 10.0% | 10.0% | -2.0 | 1.7 | 5.6 | 10.5 | 9.1 | 9.6 |
| Real Return | Real Return Index* | 5.0% | 5.0% | -7.0 | -10.4 | -0.6 | -1.9 | 0.4 | 3.6 |
| Domestic Equity | Russell 3000 Index | 17.5% | 20.0% | 21.3 | 21.6 | 16.8 | 10.6 | 6.1 | 8.1 |
| International Equity | MSCI ACW Ex US IMI (Gross) | 17.5% | 20.0% | 11.0 | 17.4 | 6.6 | 7.3 | 3.8 | 9.5 |
| Real Estate | Real Estate Index* | 10.0% | 10.0% | 9.8 | 12.8 | 14.4 | -0.5 | 2.6 | 7.1 |
| Absolute Return | HFN FOF Multi-Strat Index (Net) | 5.0% | 5.0% | 5.2 | 6.5 | 2.5 | 1.5 | 1.4 | 3.1 |
| Private Equity | Venture Econ All Prvt Eq Index | 5.0% | 0.0% | 13.7 | 17.7 | 14.9 | 10.4 | 9.9 | 13.4 |
| **Target Index** | | **100.0%** | | **6.3** | **8.2** | **8.0** | **6.9** | **5.6** | **7.6** |
| **Target Index ex Private Equity** | | | **100.0%** | **6.4** | **8.3** | **7.9** | **6.9** | **5.4** | **7.4** |
| **Total Fund Composite** | | | | **6.1** | **7.7** | **6.8** | **8.2** | **6.4** | **6.6** |

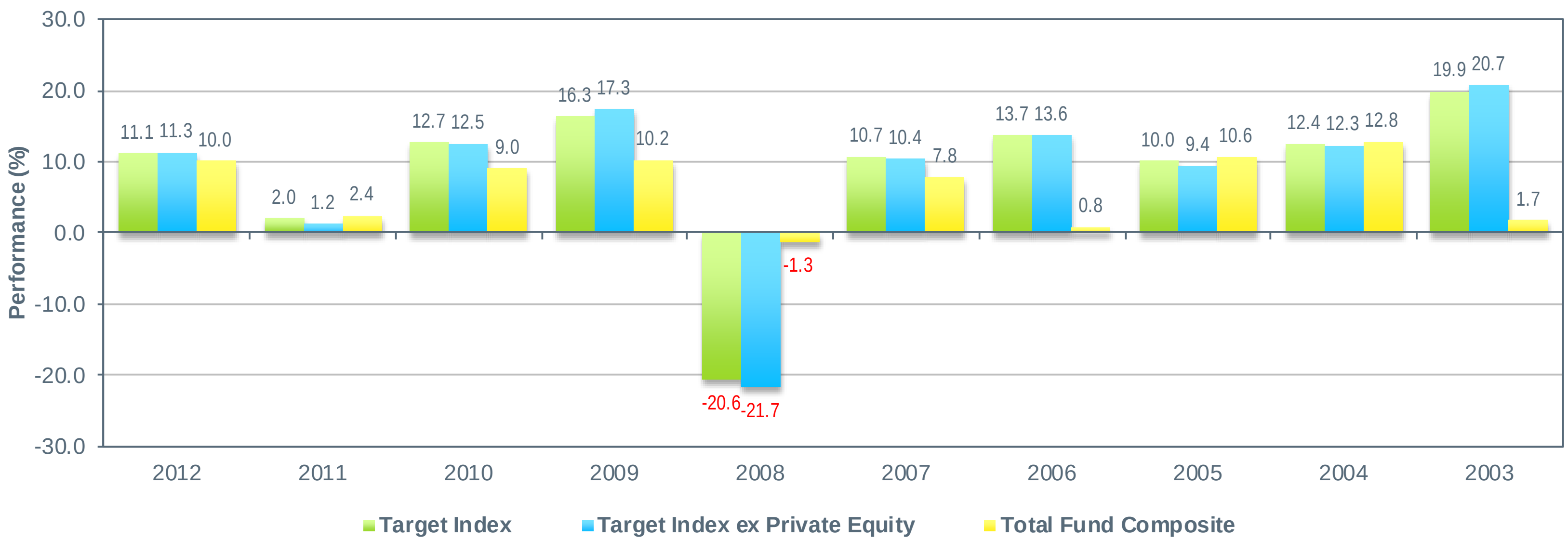



Total Fund performance shown is gross of fees.

# Allocation Perspectives – TMRS

## Performance Impact – Calendar Years

| Asset Class | Index | Allocation | | Performance (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 |
| Core Fixed Income | Barclays US Agg Bond Index | 30.0% | 30.0% | 4.2 | 7.8 | 6.5 | 5.9 | 5.2 | 7.0 | 4.3 | 2.4 | 4.3 | 4.1 |
| Non-Core Fixed Income | Non-Core Fixed Income Index* | 10.0% | 10.0% | 16.4 | 1.7 | 15.5 | 39.3 | -16.1 | 9.8 | 13.6 | 4.5 | 17.0 | 22.9 |
| Real Return | Real Return Index* | 5.0% | 5.0% | 1.7 | -5.8 | 12.7 | 17.1 | -26.8 | 14.9 | 3.9 | 13.7 | 11.0 | 21.7 |
| Domestic Equity | Russell 3000 Index | 17.5% | 20.0% | 16.4 | 1.0 | 16.9 | 28.3 | -37.3 | 5.1 | 15.7 | 6.1 | 12.0 | 31.1 |
| International Equity | MSCI ACW Ex US IMI (Gross) | 17.5% | 20.0% | 17.6 | -13.9 | 13.2 | 44.3 | -45.6 | 16.6 | 26.9 | 18.2 | 22.3 | 42.7 |
| Real Estate | Real Estate Index* | 10.0% | 10.0% | 11.5 | 15.9 | 16.3 | -31.8 | -13.8 | 16.9 | 18.8 | 24.1 | 15.1 | 10.2 |
| Absolute Return | HFN FOF Multi-Strat Index (Net) | 5.0% | 5.0% | 4.8 | -5.6 | 4.8 | 9.7 | -20.5 | 9.9 | 9.9 | 6.8 | 6.8 | 11.9 |
| Private Equity | Venture Econ All Prvt Eq Index | 5.0% | 0.0% | 13.4 | 9.9 | 18.3 | 15.3 | -21.7 | 16.7 | 21.7 | 25.1 | 20.2 | 19.4 |
| **Target Index** | | **100.0%** | | **11.1** | **2.0** | **12.7** | **16.3** | **-20.6** | **10.7** | **13.7** | **10.0** | **12.4** | **19.9** |
| **Target Index ex Private Equity** | | | **100.0%** | **11.3** | **1.2** | **12.5** | **17.3** | **-21.7** | **10.4** | **13.6** | **9.4** | **12.3** | **20.7** |
| **Total Fund Composite** | | | | **10.0** | **2.4** | **9.0** | **10.2** | **-1.3** | **7.8** | **0.8** | **10.6** | **12.8** | **1.7** |




Total Fund performance shown is gross of fees.

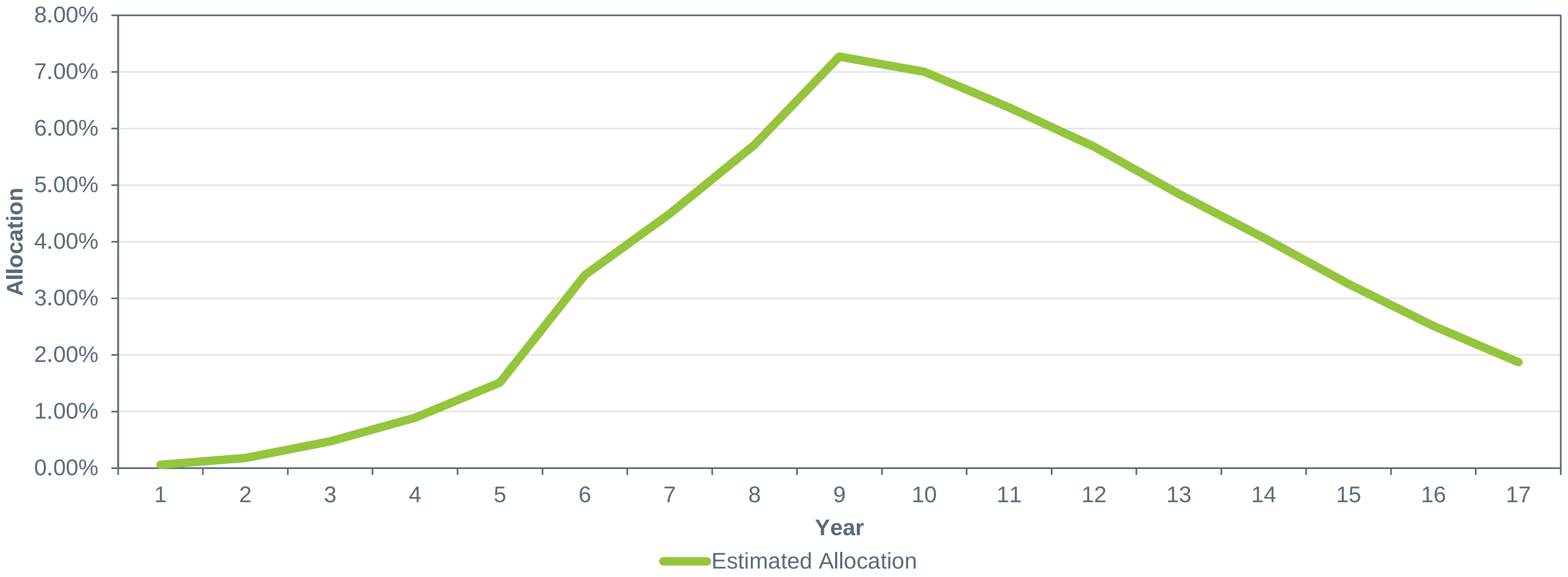
# Private Equity Performance

- Private Equity investments are challenging to accurately and consistently report meaningful performance characteristics.
- Time-weighted rates of return are generally meaningless for investments that violate key assumptions – including client ability to withdraw funds at any time.
- Assets with a “lock-up” and draw-down funding schedule are more appropriately measured on an individual basis with the Dollar-Weighted Return – Internal Rate of Return (IRR).
- Private Equity performance is also measured in terms of the Total Value to Paid-in Capital (Investment Multiple or TVPI).

# Private Equity Fund Lifecycle

- **Private Equity commitments are drawn down over time and distributions are made as a fund matures.**
  - Most of the capital will be drawn in the first years of a fund's life, but pace will vary by strategy.
  - Cash distribution activity begins in the later stages of a fund's lifecycle, with most occurring in years four through ten.
- **Such irregular cash activity means dollars committed to the asset class are not simultaneously invested.  As a result, over-committing is required in order to meet a planned allocation target.**
- **Because the allocation level of the portfolio declines with distribution activity, a regular commitment plan is required to establish and maintain appropriate commitment targets.**
- **RVK meets this objective with an annual Private Equity Pacing Analysis.**

# Allocation Levels
## *Without* Continued Commitments

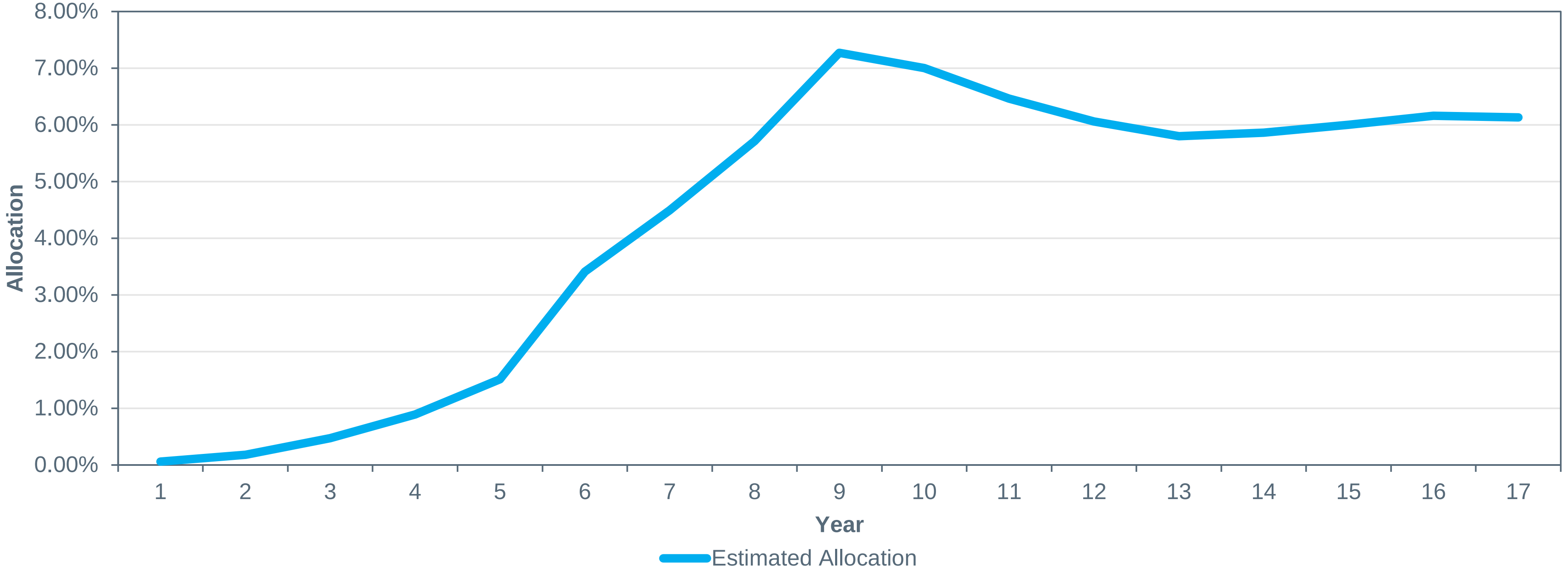



**<u>Client A</u>**

- **Has a 6% private equity target allocation**
- **By over-committing to Sample Fund, the target allocation is reached in year seven, but declines with distribution activity**
- **Continued investments are necessary to maintain this target allocation**

# Allocation Levels

## *With* Continued Commitments




**Client B**

- **Follows a custom commitment budget to maintain the target allocation:**

| Vintage | US FOF | Non-US FOF | Total |
|---|---|---|---|
| **2013** | $10,000,000 | $2,000,000 | $12,000,000 |
| **2014** | $10,000,000 | $2,000,000 | $12,000,000 |
| **2015** | $10,000,000 | $2,000,000 | $12,000,000 |
| **2016** | $10,000,000 | $2,000,000 | $12,000,000 |

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