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The Evolution of Capital Markets

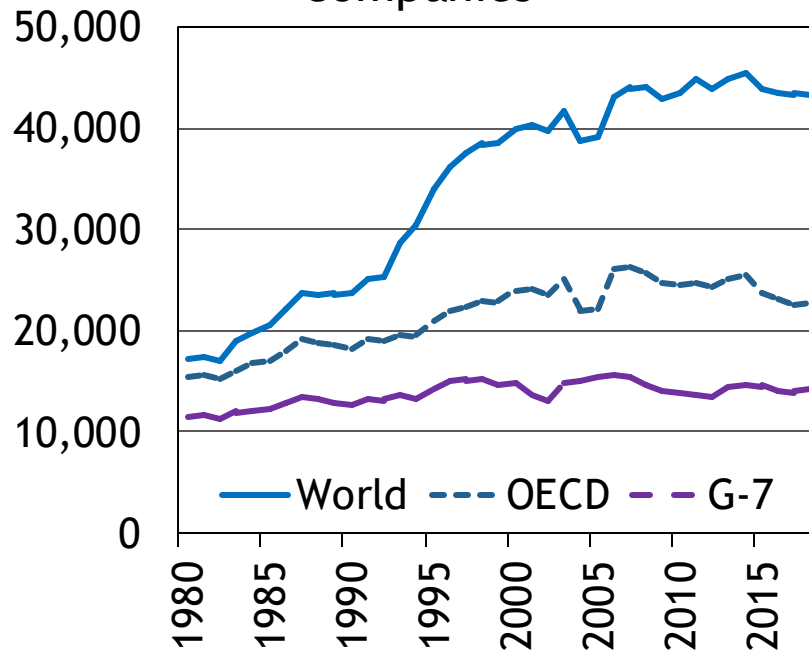
Greg Brown, UNC Kenan-Flagler

3 Eras of Modern Capital Market Growth

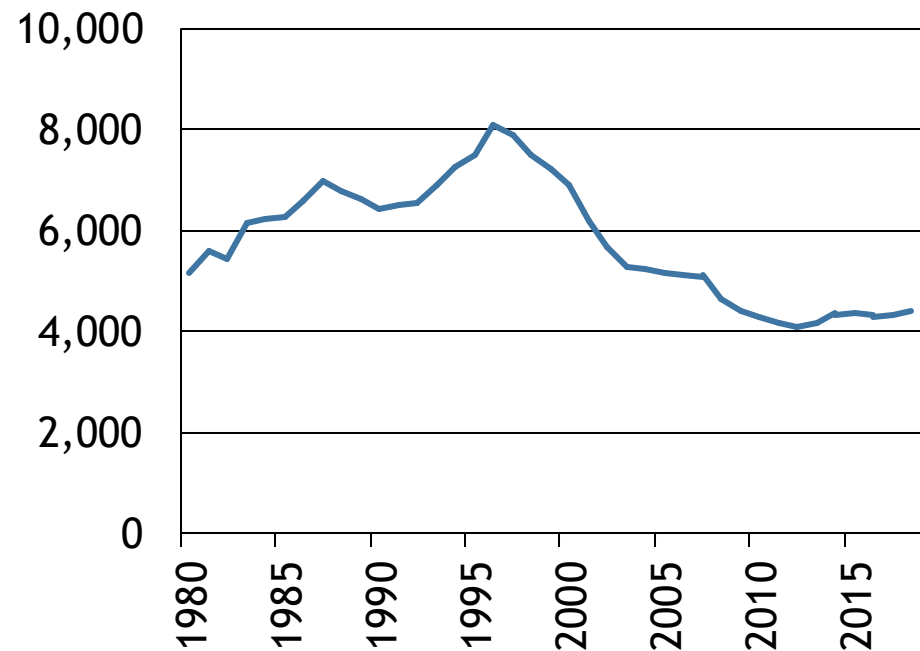
- The “Public Markets Era” (1950-1974)
 - Resurgence of public equity and debt markets after the dark ages of the depression and WW-II
 - Large growth in listings, market cap, and breadth of ownership
- The “Financial Engineering Era” (1975-1995)
 - Advances in derivative pricing theory and market structure lead to exponential growth in exchange-traded and OTC derivatives
 - Notional values of derivatives reach 100s of \$trillions, financial engineering invents technology for unfathomably complicated securities.
- The “Private Markets Era” (1996-present)
 - Institutionalization of private fund market and direct investments
 - Alternatives and the endowment model of investing

Public Equity Markets

Global Publicly-listed Companies



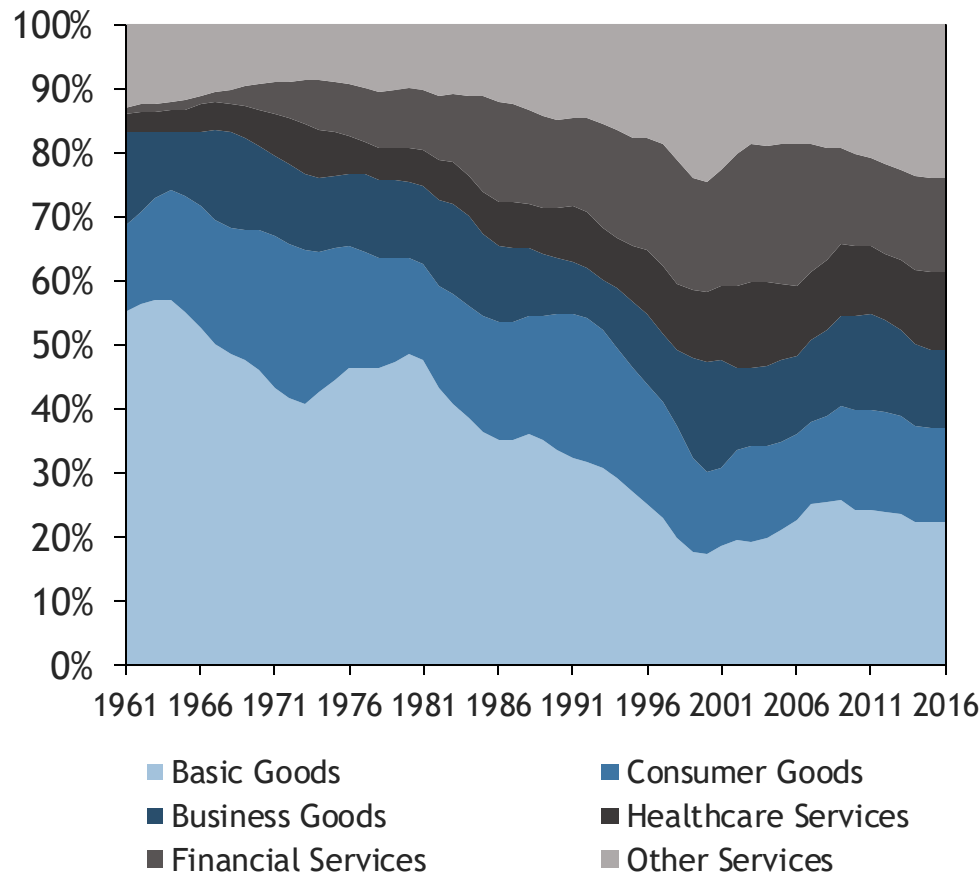
U.S. Publicly-Listed Companies



Source: WorldBank, World Development Indicators

Changing Industry Composition of Public Companies

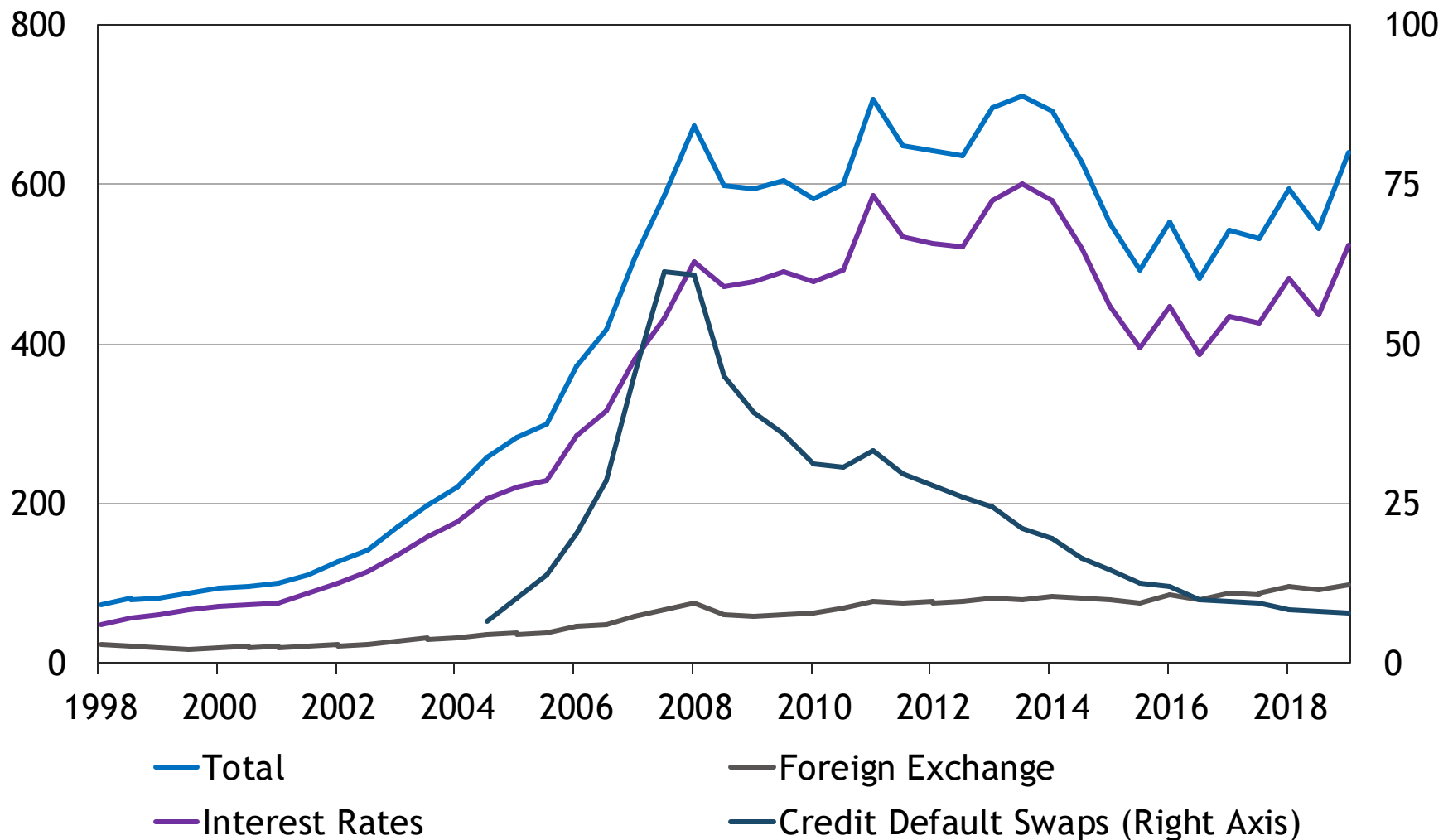
U.S. Market Capitalization by Industry Type



- The U.S. economy continues to shift away from goods producing toward services
- The makeup of public companies reflects this shift. In 1960 less than 20% of public market cap was in financial services, healthcare, or other services.
- Now, more than half of public companies are services with finance experiencing the largest growth.
- In contrast, basic goods have declined from nearly 60% of value in the 1960s to only 22% today.

OTC Derivatives

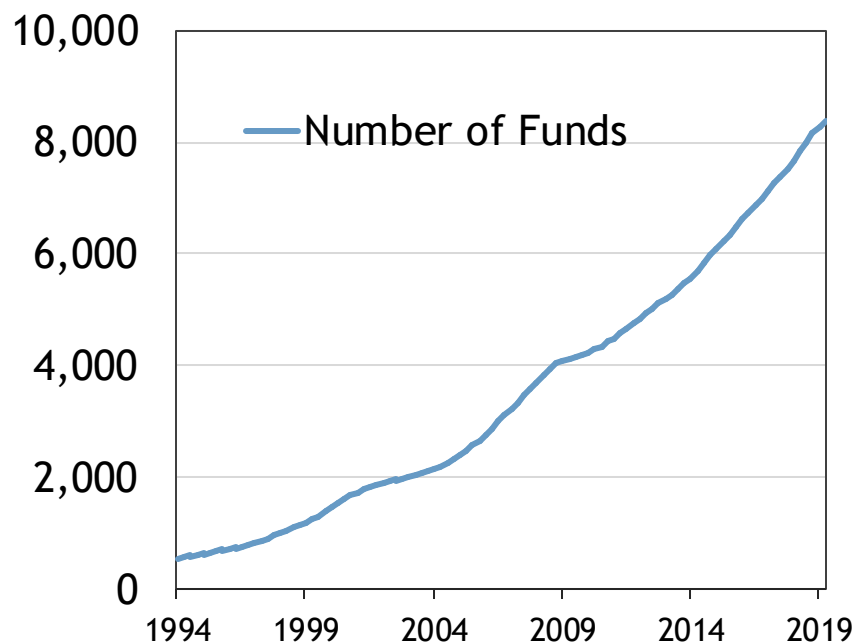
(Notional Value, USD trillions)



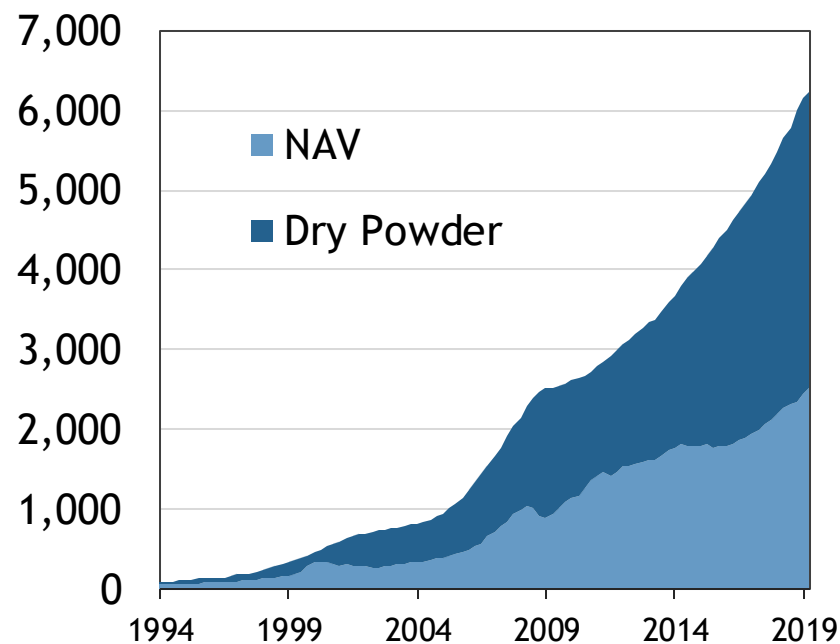
Source: BIS OTC derivatives statistics (Table D5.1).

Emergence of Global Private Fund Industry

Private Fund Universe



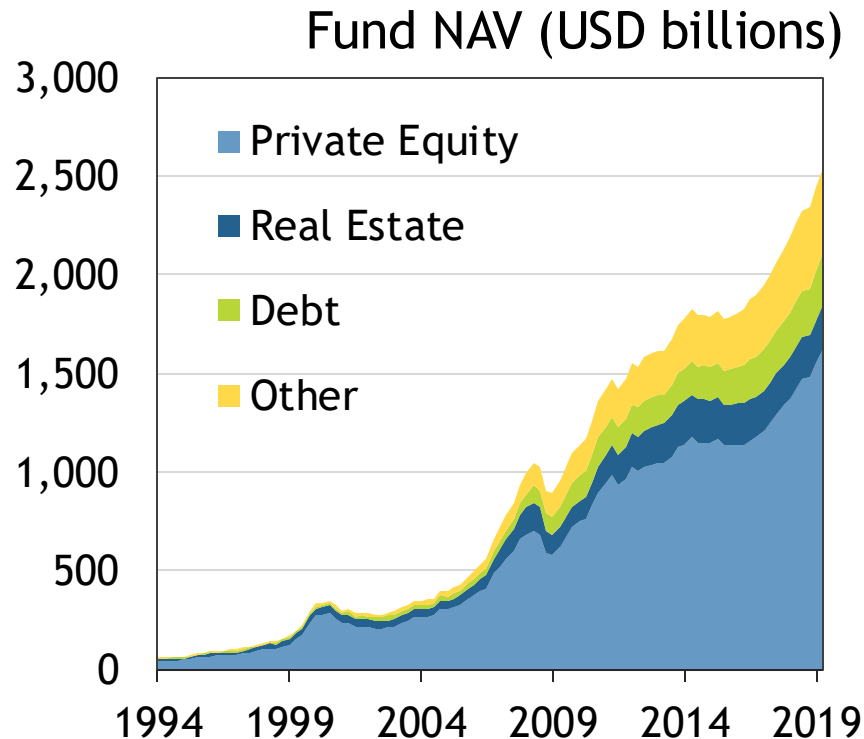
Private Fund Value (USD billions)



Source: Burgiss

NAV by Type of Fund

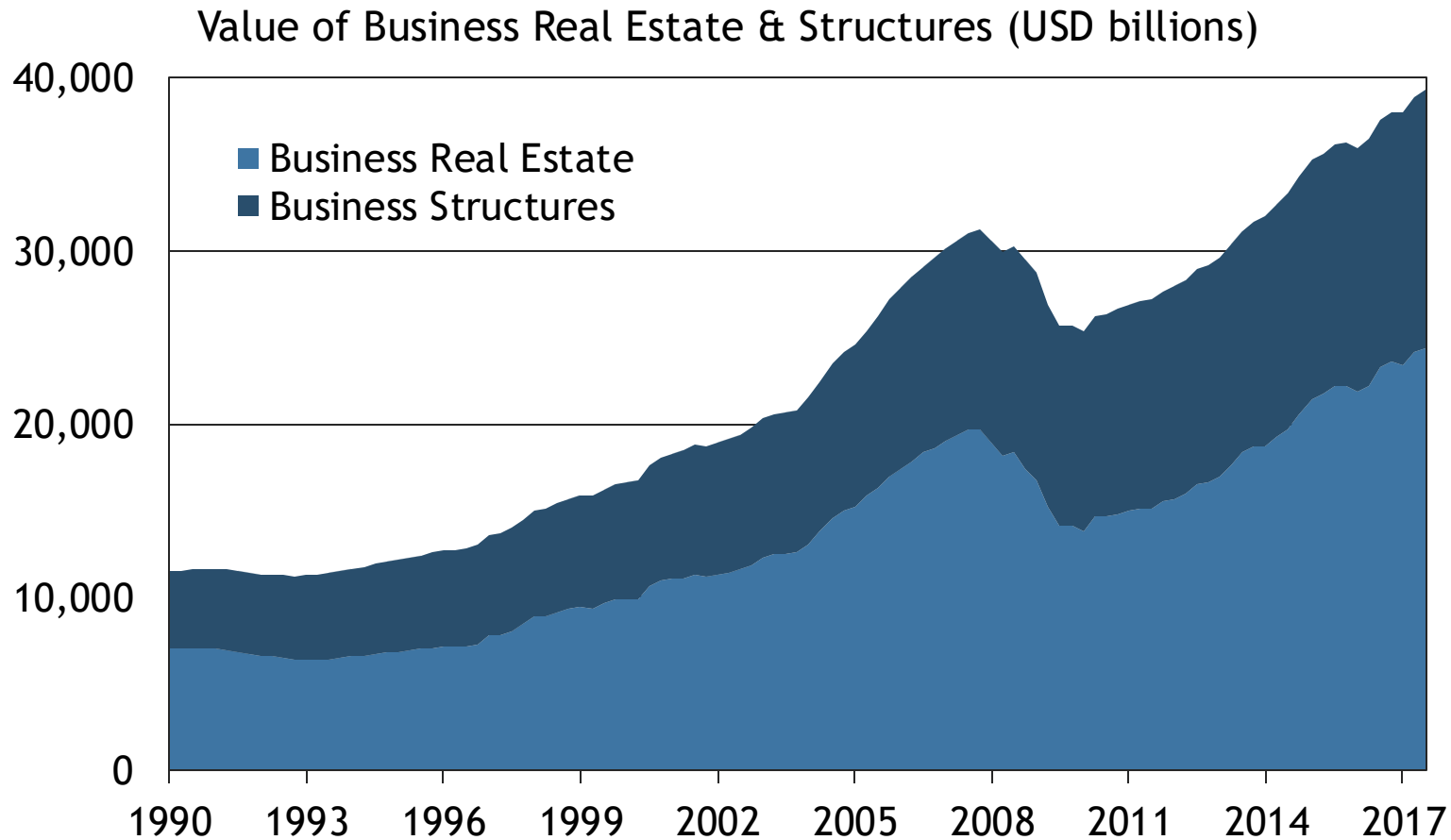
(Global, 1994-2019:Q2)



Source: Burgiss

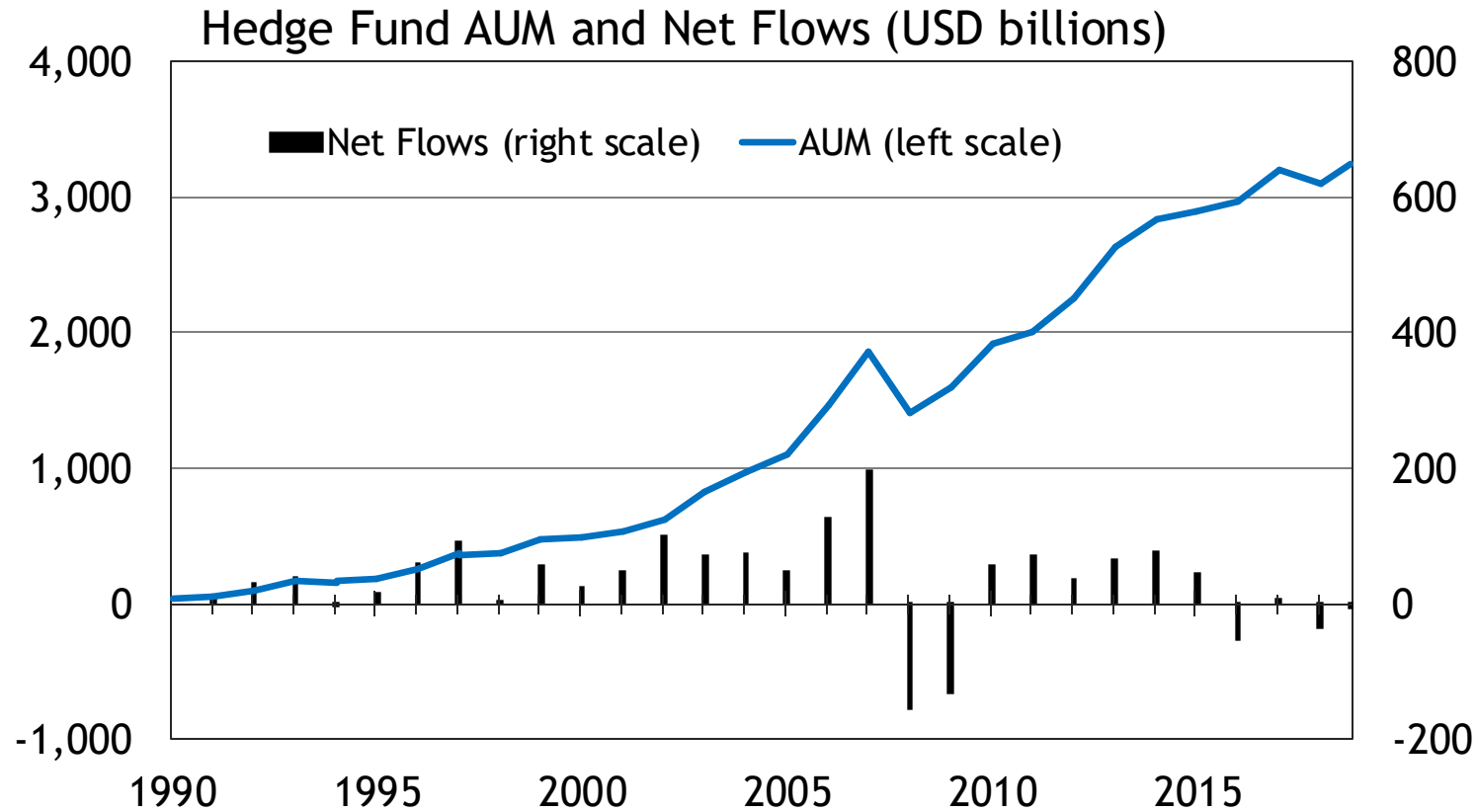
- Almost uninterrupted exponential growth
 - Pauses in 2007-8 and 2014-16 were minor and short.
- Real estate, debt, and other (infrastructure, natural resources, etc.) are growing faster and now 36% of all NAV

Commercial Real Estate



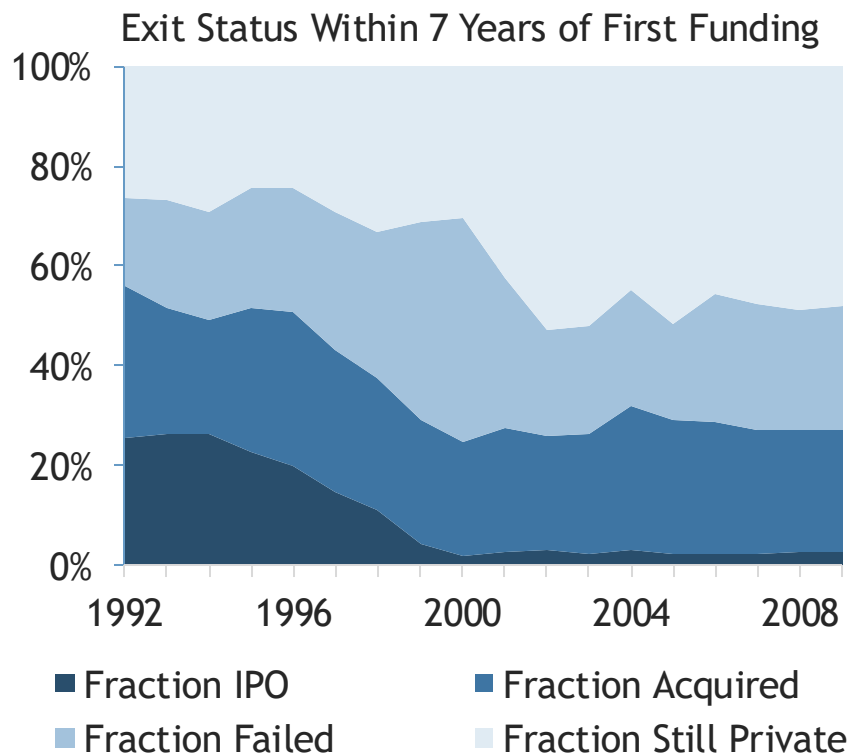
Source: FRB Flow of Funds Balance Sheet Tables B.100-B.103.

Hedge funds continue to grow (but more slowly)



Source: Hedge Fund Research, Inc.

IPO decline is driving U.S. shift

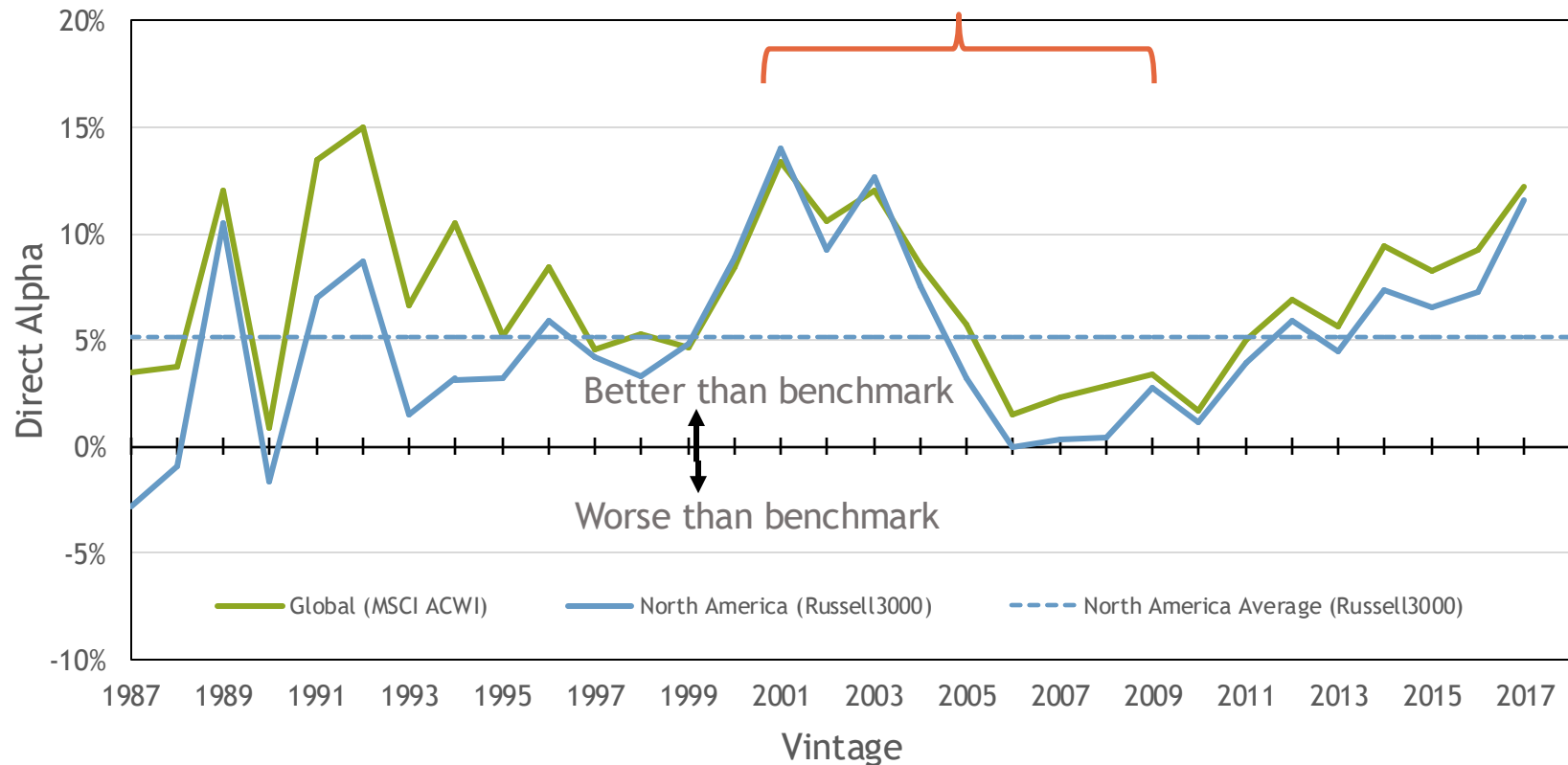


- Listings decline is not associated with cyclical trends in the total number of companies or employment.
- M&A activity and business failures have not changed much over time. In fact, failures have trended down since 2000.
- The shift is primarily accounted for by a massive drop in IPO activity that has resulted in an increase in the share of companies remaining private.
- The IPO decline is not a market failure in the process of going public. Rather, it is the result of founders taking advantage of their increased bargaining power and lower cost of being private to realize their preference for control.

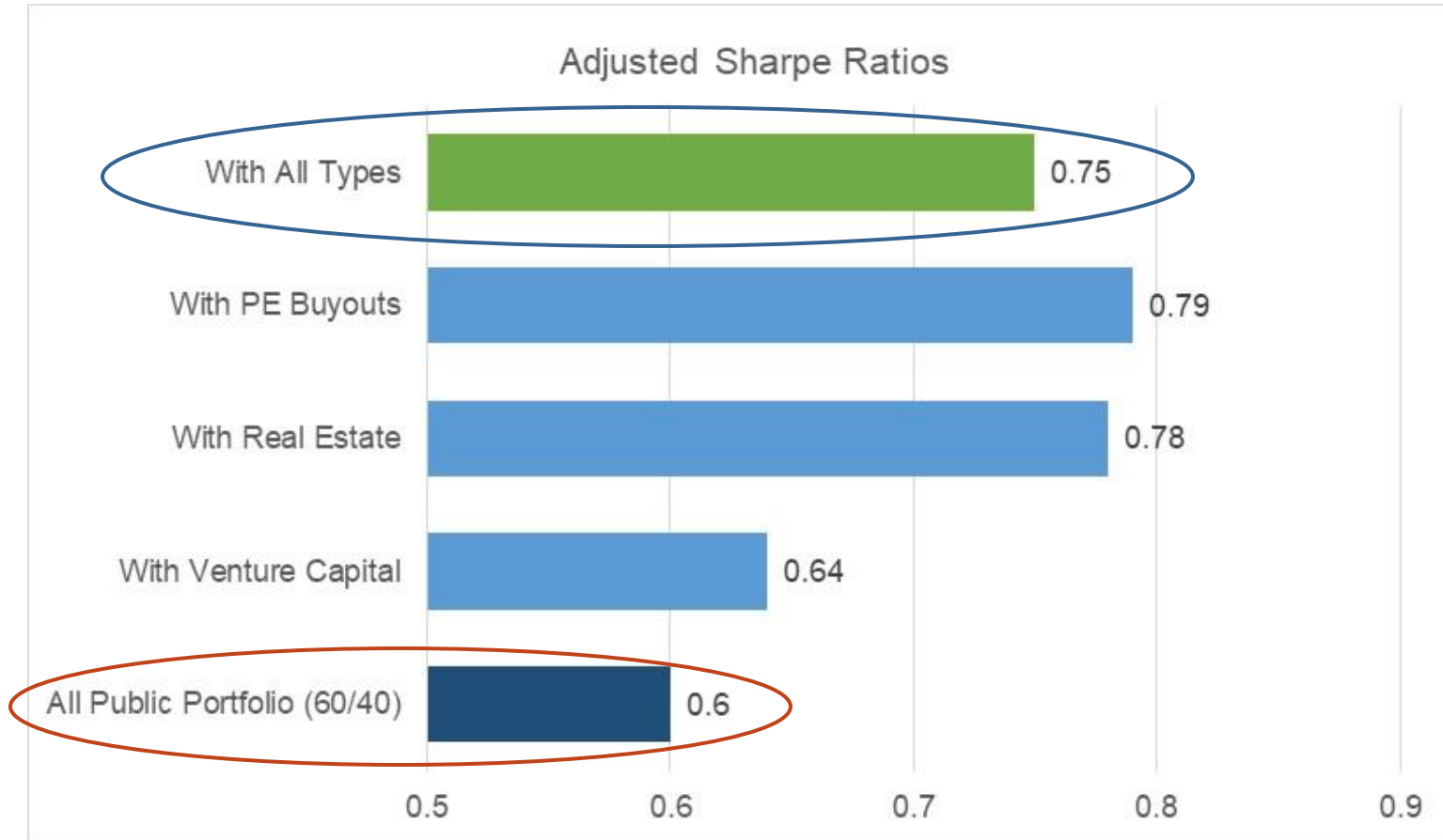
- Better return profile (including risk and diversification)
- Rise of institutional allocator
- Better model for operating some types of businesses
 - Governance advantage vs. cost of capital advantage
 - Private is often better for:
 - Young firms
 - Turnarounds / workouts
 - Facilitating value-added change that is hard for existing management to undertake because of agency issues
 - In each of these cases having concentrated ownership (often with industry expertise) is a direct benefit to the firm's operations

Long-run trends in private equity returns

Some analyses look only at this period...



Historical Sharpe ratios always improve with the inclusion of private assets...

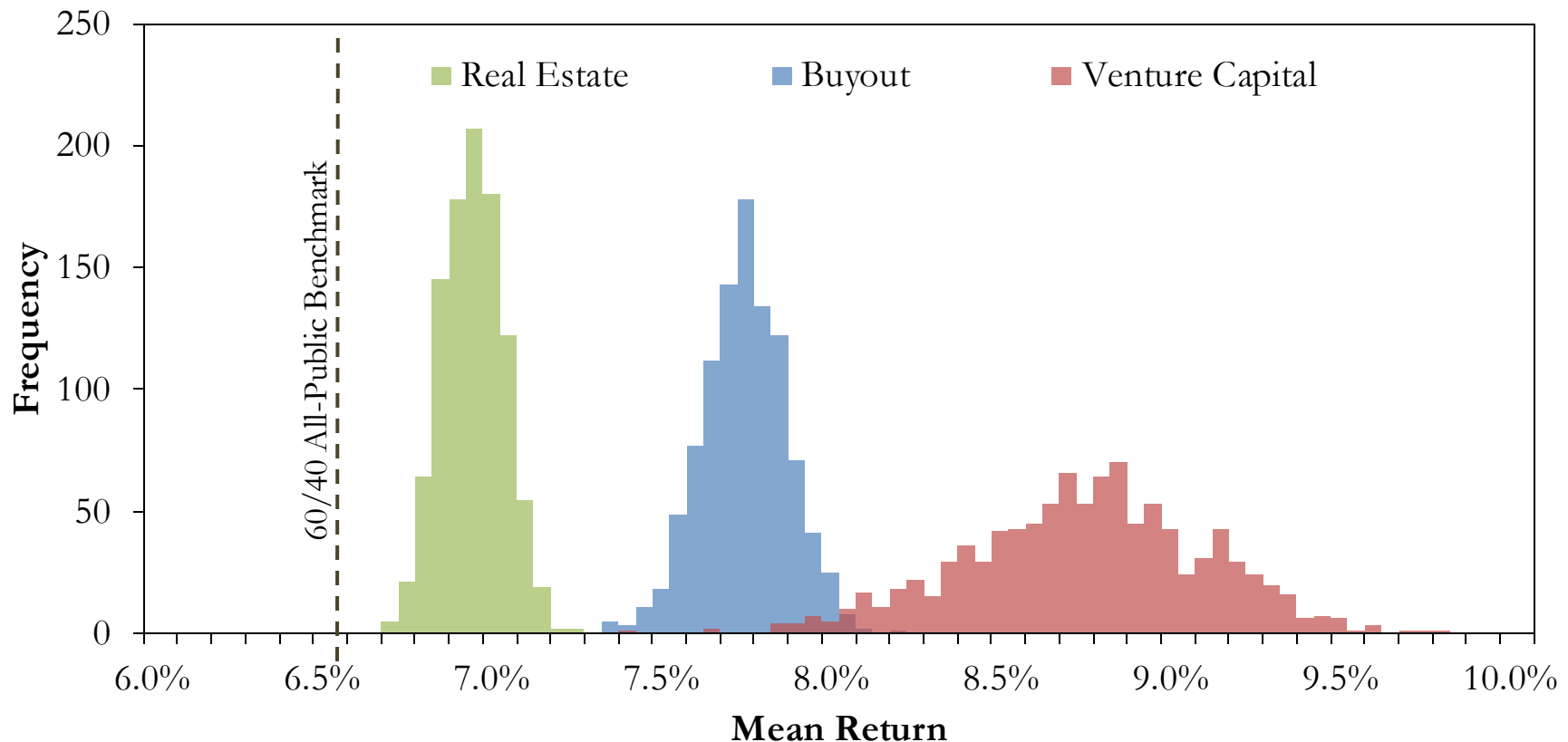


*Sharpe ratios are adjusted for return smoothing.

Results are from 1,000 simulated total portfolio returns from 1987-2019 with a target allocation of 20% to the respective private fund strategy.

... and the improvement has been very reliable historically

Historical simulations show improved performance in every scenario when 20% of the portfolio is allocated to buyouts, VC, or Real Estate

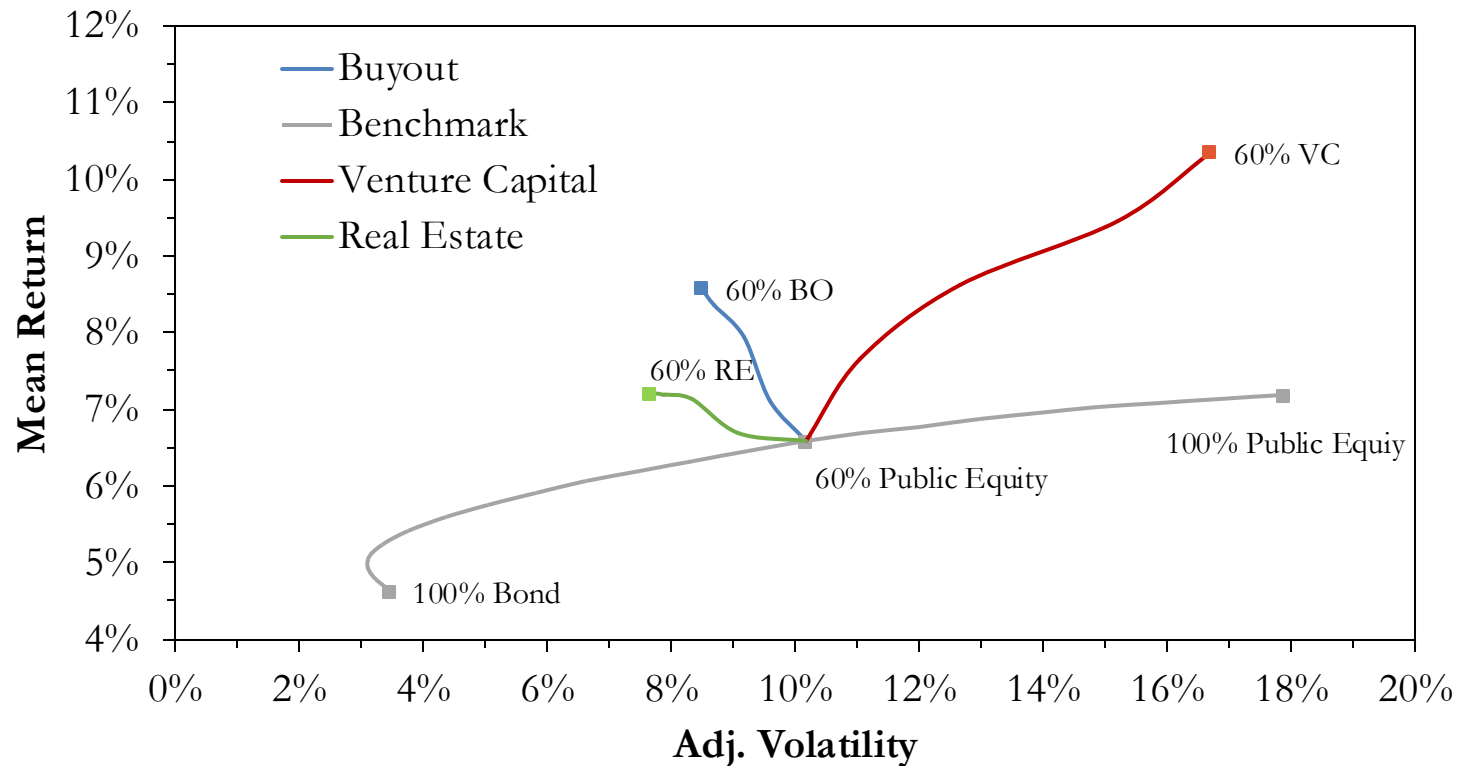


Histograms show results of 1,000 simulated total portfolio returns from 1987-2019 with a target allocation of 20% to the respective private fund strategy. Private fund cash flows move in and out of the public equity portfolio. Simulations use full Burgiss net performance cash flow data.

Allocations to private funds push out the efficient frontier

Private Funds in Diversified Portfolios

Simulated Impact to Efficient Frontier



What does this mean for investors?

Can't do traditional portfolio allocation and optimization because market portfolio is unobservable and illiquid

1. Fully diversified portfolios require private component to access certain types of companies: size, growth, quality, etc.
 - Public market risk (especially industry and idiosyncratic volatility) driven by market development trends
2. Likely requires a rethinking of allocation that is focused on factors including private market risk factors (liquidity, etc.)
 - Private markets may be “capturing” some factor risk
3. Delegation of investment timing with closed-end drawdown funds introduces additional source of uncertainty
4. Even if alpha is zero, still beneficial to invest in assets that provide additional diversification