STRATEGIC INSIGHTS

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ALTERNATIVE REALITY

- We have compiled our insights, concerns and recommendations for asset owners and investment advisors to expose certain myths and dirty little secrets of the *Alternative Reality*. Private fund managers benefited from rotation into increased portfolio complexity, but most investors have little to show for increased alternative exposures. Portfolio diversification can't overcome insufficient net return on a risk-adjusted basis or relative to benchmarks of simple balanced index strategies. Restructuring fees, increased transparency, and better risk/return assumptions might improve outcomes, but greater collaboration and direct investing offers the most potential to improve performance of private holdings.
- Exposure to private equity and debt, venture capital, hedge funds, infrastructure, real estate, and other alternative investments are what everyone seems to want, but are they constructive in satisfying investment objectives? High private fund costs including management fees, transaction costs, legal expense, fair value pricing, illiquidity, risk management and transparency has undermined relative performance versus simple benchmarks. Private markets can be compelling, but illiquidity and small company risk premiums declined with limited opportunities and stretched valuations, as investors chase capacity constrained exposures.
- Alternative investments promising enhanced risk-adjusted return is theoretically compelling, even if limited investment capacity and high transaction costs increase difficulty in managing and rebalancing strategic asset allocations. For those incorporating sustainable objectives, illiquidity and high transaction costs generally preclude entertaining such design, particularly in funds—although a few may specialize in this endeavor.
- Unfortunately, private market risk premiums diminished over the last decade and are increasingly insufficient to overcome high fund management costs. Perceived risk diversification benefits of difficult to value alternatives are not sufficient to overcome inferior net returns even with misleading risk measures. Too much complexity failed to add value beyond higher costs.
- Outsourcing reduces internal investment capabilities, critical resources, and self-reliance. Can you rely on an asset allocation committee without experience managing stocks and bonds or respond to a financial crisis? It can limit the ability to collaborate or partner with like-minded peers or pursue direct investment opportunities. Picking successful private fund managers subject to longer investment horizons can be more difficult than choosing among mutual funds.
- Disappointing hedge fund and private equity net returns have resulted in increased scrutiny of management performance fees (carried interest) and prudent asset allocations. Either fund costs must be restructured or investors should bypass private funds to invest directly at lower cost. Asset owners should better exploit natural advantages they have in direct investing, including peer collaboration.
- Limited ability to price illiquid investments more than quarterly or even annually results in low estimates of volatility and correlation, which are evolving more rapidly now with monetary normalization. This tends to overstate private market diversification with greater uncertainty, while ignoring the cost of illiquidity during volatile periods or crisis. Illiquid private investments require a longer holding period in an age of disruptive innovation---young companies are often single product or narrowly focused ventures. Limited mark-to-market pricing nor increased portfolio complexity doesn't increase portfolio diversification enhance risk-adjusted returns.
- Liquid alternative products hoped to lower costs and increase capacity by replicating systematic factor exposures of hedge funds and other alternative strategies. Skepticism about replicating active strategies with systematic common factor exposures was confirmed. Disappointing portfolio diversification and net returns has led to fund closures and stagnant growth since 2014.
- *Active management* can be a novel and disruptive "alternative investment" providing greater liquidity, holdings transparency, and diversification at lower cost. A simpler and smarter approach to investing can improve portfolio efficiency and consistency.

Need for Private Capital is Great

Asset owners, including pension and sovereign wealth funds, *endowments, foundations, and family offices* are well-positioned to provide needed private capital. In Alternative Reality, we suggest how to restructure private funds and improve performance to achieve investor objectives. It is important to consider that private market investing tends to rely more heavily on active security selection, requiring a much longer holding horizon than listed market strategies in an age of disruptive innovation demanding being nimble.

Private capital is critical to financing *entrepreneurial innovation, business formation, commercialization, project development,* and *infrastructure* needs that can bolster potential growth and lift living standards. Investors should be compensated for risk premiums of illiquidity, small size, and unlisted exposure. The challenge is that these risk premiums have declined with high investor demand for constrained capacity that undermined valuations, so future expected returns are likely lower as investment risk is likely higher than assumed. And, high fund costs are uncompensated by markets, thus management fees must be restructured.

There are advantages in having greater flexibility, longer time horizon, and scale that too often asset owners fail to exploit. Private markets can increase investable opportunities of unique market inefficiencies, including between-the-cracks of asset classes and style boxes, or extending beyond typical private fund lifespans. So, chasing illiquidity premiums may be theoretically compelling, but too often is eroded by high fund fees, administrative costs, and misaligned incentive fees.

Without enough compelling assets to satisfy investor demand, increasing global savings and rising alternative investment exposures has strained private market capacity and driven cyclical overvaluation. Low alternative correlation and volatility assumed was an appealing solution for risk adverse investors, but stale valuation of unlisted securities won't reduce volatility or correlation. In fact, valuation uncertainty increases risk. Use of leverage further exacerbates capacity issues. Governments have been reluctant to privatize non-strategic underutilized assets, limiting infrastructure and real estate investment opportunities, but fiscal necessity could encourage greater privatization.

Alternative investments gained rapidly in popularity promising to improve portfolio risk diversification and leverage unique risk premiums and inefficiencies of private markets. Illiquid investments should offer a risk premium or identifiable inefficiency, but purchase price matters and stretched valuation plus high fund fees appear to exceed available risk premiums. The combination of illiquidity, lack of transparency, and fund lock-ups preclude efficient rebalancing of a drifting asset allocation mix from cash flows and relative asset class returns. Disappointing performance, high costs, and lack of transparency has encouraged public pensions to reduce private equity and hedge fund holdings. They may be ahead of the curve this time.

Portfolio management outsourcing should have been cost effective, but relative returns versus public market indices have disappointed investors. Cyclically low returns result in a greater share of value added paid to managers. Asset managers and consultants continue to champion alternative products, arguing Modern Portfolio Theory is antiquated, yet their solutions only result in greater complexity and dependency by eviscerating internal staff capabilities.

Investing Successfully in Private Markets:

- Private investments require longer 5-10 year holding periods and may exceed fund horizon. High specific security risk require greater margin for error.
- Long-term investors need courage to defy behavioral biases and should not be limited by uneconomic constraints or misguided objectives reducing flexibility or investment opportunity.
- Sustainable competitive advantage, dilution protection, investor preference, or higher yield can impact the success of investment decisions.
- Capital intensive or long lead times to profitability are rarely well compensated. Creative destruction is a ruthless master that will root out excess return without sustainable competitive advantage.
- Artificial constraints, exaggerated risk aversion, or other behavioral biases undermine risk-adjusted return and performance consistency.
- Regulatory arbitrage, tax credit reliance, or financial engineering are unreliable ways of adding value.
- Private market illiquidity is an underappreciated risk, as 2008-2009 exposed---allocations over 20-30% are aggressive even for long-term investors.
- Incentive fee should focus on market excess return, asset based private fund fees need to moderate.

A paper[1] on risk-adjusted private equity performance by principals of ADIA and CPP contend that buyout funds have failed to deliver excess return versus market equivalent indices. Considering risk premiums such as illiquidity, leverage, and size, as well as fund cash flows (survivorship bias, limited capacity) into their analysis undercuts apparent outperformance. Thus, private fund investment objectives remain allusive as long as risk premiums are insufficient to support 2+20% asset plus incentive fees. Such fees are equivalent to 4.4% annual costs over 10 years for

[1] L'Her, J., Stoyanova, R., Shaw, K., Scott, W., Lai, C. 2016. "A Bottom-Up Approach to the Risk-Adjusted Performance of the Buyout Fund Market." *Financial Analyst Journal, Vol. 72-4*

an 8% return objective, but there is no risk premium compensating for excessive management fees.

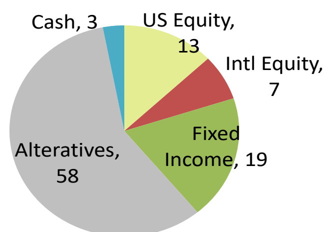
Many asset owners have demonstrated long-term success. The *Canadian Model* emphasizes internal direct public and private asset management with peer collaboration, seeking lower total cost but with institutionally competitive internal staff compensation. However, scale in assets under management is needed to tackle direct investing or any cost benefit must diminish—$20 billion should sufficient to achieve desired efficiencies given strong investment leadership. Greater investment control, risk management visibility, and strength of internal resources are still preserved at lower asset levels, even if cost efficiencies may be diminished.

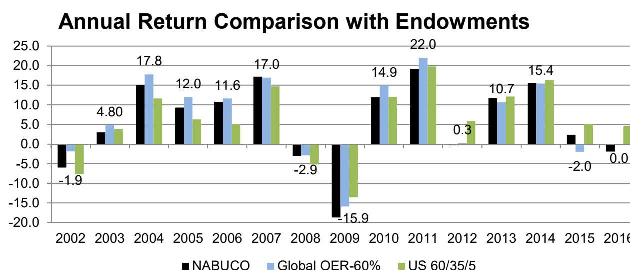
This contrasts with the *Endowment Model*, reliant on outsourcing and choosing external managers with high alternative fund exposure that typically exceeds 50% for larger funds. U.S. pension funds also embraced greater outsourcing with expanding consultant and manager dependency, as they gravitate toward liability risk transfer. U.S. pension funds rarely collaborate, even being in the same city or state, although some channels of communication or shared insights may be established, Compensation limitations may be the highest hurdle to re-design due to statute or public disclosure with representative versus professional fund boards. However, we observe some indications that reluctance of retirement fund funds may be waning from embracing the direct investment model observed among Canadian peers.

Impact of Alternatives on Asset Owners

As endowments drove up alternative exposure, many struggled to outperform a simple global balanced portfolio on a risk-adjusted basis. Private illiquidity limits the ability to rebalance and manage allocation exposures. Pension funds also increased alternative exposure, but many public plans are reconsidering their exposure to hedge funds and private equity. Private market correlation and volatility are difficult to measure and understated. Alternatives failed to moderate downside risk during the Financial Crisis.

NACUBO Endowment Allocation, June 2016 Over $1 Billion





	Endowment		
	NACUBO Return	**Risk (σ)**	**Ret/Risk**
2002-2016	5.2%	10.5%	0.50
10 year	5.3%	11.3%	0.47

	SFM OER-60%	**Risk (σ)**	**Ret/Risk**
2002-2016	6.4%	10.4%	0.62
10 year	5.9%	11.3%	0.52

Source: NACUBO Endowment Study and Strategic Frontier Management through June 2015. SFM OER refers to our proprietary global balanced (60% is equity exposure).

FY2016	Endowments	US Balanced	Global Balanced[2]
Average	-1.9%	4.5%	0.0%

Note: Average return through June 30 2016 for university endowments over $1 Billion from NCSE/NACUBO report.

University of Washington (-3.8, $6.5B), University of California (-3.4%, $8.2B), Ohio State (-3.4, $3.6B), and Cornell University (-3.3%, $6.1B) lagged disappointing peer group returns, while only Yale (3.4%, $25.4B), Princeton (0.8%, $22.2B), and MIT (0.8%, $13.2B) reported positive returns in FY2016 ended June 30th. Yale's success, which stands out over the last decade, has benefited from active contributions of global equity and private equity, resulting from manager selection, plus asset allocation. Real estate was the best performing asset class in FY2016 and Yale's exposure is higher than most (2015 Annual Report). Sometimes what you avoid matters most. Avoiding commodities and emerging markets helped a lot last year, and suggests why asset allocation remains so critical.

Results from a similar exercise with corporate pension plans are included below. Of course, it is more difficult to compare a static benchmark overlapping dramatic strategic allocation changes due to passage of the Pension Protection Act and the Financial Crisis. Implementing Liability Driven Investing (LDI) has become fixated on short-term bond yield volatility affecting the discount rate, instead of long-term growth in liabilities. These plans reduced equity exposure from over 60% to less than 45% from 2007-2009 at great cost to stakeholders.

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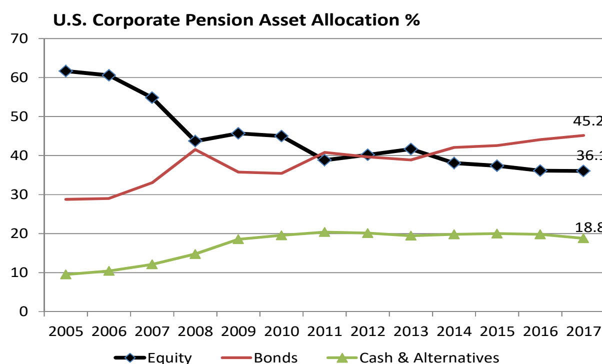
[2] Global Balanced: SFM's proprietary global strategic policy – 60% Equity, 35% Bonds, 5% Cash. U.S. Balanced: 60% S&P 500, 35% Barclays Agg. Bond, 5% Cash.

	100 Corp Return	Pension Risk (σ)	Ret/Risk
2000-2015	5.5%	10.5%	0.53
10 year	6.1%	10.9%	0.56
	SFM OER-45%	**Risk (σ)**	**Ret/Risk**
2000-2015	5.8%	9.7%	0.60
10 year	5.6%	10.5%	0.54

Source: Milliman Corporate 100 Survey and Strategic Frontier Management through December 2015. Reporting periods vary due to different fiscal year-end of surveys.

Asset allocation continues have significant impact on relative performance, as well documented since 1986[3]. With high allocations to alternatives, total returns lagged a simple global balanced policy portfolio with greater volatility. High total return correlation, even with 50-60% alternatives, suggests private markets are more integrated and correlated with public markets than generally assumed. If private fair value estimates are a function of public market valuations, public and private markets must be relatively correlated.

Before 2006, a stock versus fixed income mix of 60/40 was the prudent man standard of pension allocations for generations, highlighting considerable opportunity cost of rising risk aversion and ill-timed lower equity exposure. Milliman reported equity exposure declined to 36.8% in 2015. Public pension allocations have followed, resulting in greater exposure to alternatives and dismal bond valuations. Extended duration and bond leverage risks systemic financial concern as interest rates rise, just as Orange County experienced in 1994. We believe the bond market is significantly overvalued due to manipulation of interest rates by central banks. Persistent bond market losses might increase the inflation risk premium, adding 0.5% to a normal 2.5% inflation yield spread (-0.7% today).



Dubious alternative return expectations and risk inputs allowed pension funds to justify their unrealistic return expectations. Over the last five years, we estimate the difference between 45% versus 60% equity exposure likely cost plans at least 2% annually or a total shortfall of about 10.6%. Eventual yield curve normalization exposes asset owners to toxic interest rate sensitivity and excessive global debt. An asset allocation with over 40% bond exposure and less than 37% equity is unlikely to exceed 4% return, so pension funding gaps should increase. Similarly, endowments will struggle with spending 4-5%, even as pressure mounts to increase their spending rates.

Unique Consideration of Hedge Funds

While hedge fund performance may often be compared to equity indices, simple balanced benchmark portfolios have exceeded the hedge fund composite return by a wide margin. Leverage usually increases turnover, triggering greater short-term capital gains for taxable investors. Another dirty little secret is that hedge fund returns are not very compelling, even as a performance composite suffers from material exaggerating biases.

Various databases report hedge fund performance. HFRI is widely cited and has one of the longest publicly available monthly histories. HFRI is self-reported, resulting in survivorship and selection bias that tends to overstate average returns and understate risk. Data prior to 1995 is back-filled, and new hedge funds may delay reporting until returns are compelling. Similarly, poorly performing funds may suspend reporting, also biasing results. Selection bias can result from smaller funds having greater influence before being capacity constrained or more conservative as they grow in size.

HFRI Performance Composites

HFRI Fund Weighted Composite Index				HFRI Fund of Funds Composite Index			
Period	Ret/Risk	Risk	Return	Period	Ret/Risk	Risk	Return
1990-2016	1.51	6.69%	10.09%	1990-2016	1.20	5.57%	6.69%
1 year	1.14	4.34%	4.93%	1 year	0.17	3.68%	0.62%
2 year	0.37	4.22%	1.57%	2 year	0.08	3.77%	0.28%
3 year	0.80	3.97%	3.16%	3 year	0.62	3.58%	2.20%
5 year	1.04	4.25%	4.43%	5 year	0.91	3.52%	3.19%
10 year	0.60	6.25%	3.78%	10 year	0.33	5.41%	1.78%

Source, HFRI – September 30, 2016

Annualized Return	3-year	5-year	10-year
Global Balanced	6.5%	9.8%	5.5%
US 60/35/5	8.1%	10.9%	6.1%

Source: Strategic Frontier Management---Global: 39% S&P500, 9% R2000, 12% EAFE, 35% BarCap Bond Aggregate, 5% Cash.

Fund-of-fund returns are less than the fund weighted composite in every timeframe, including a 2% annual differential over 10 years. FoF mangers have been unable to add value in excess of their fees. Yet, the obvious inconsistency of relying on hedge funds while embracing passive management is observed too often.

Some hedge funds have lowered their asset-based fee, but it also could be a function of assets under management. For example, Vanguard has mutual fund share classes to differentiate expense ratios charged to

[3] Brinson, G., Beebower, L., Hood, G. 1986. "Determinants of Portfolio Performance." *Financial Analyst Journal*, Jul/Aug

small, large, and institutional investors. Commingled Investment Funds are often used for retirement plans and provide greater management fee flexibility by assessing clients directly. Thus, there are various ways to restructure funds to improve alignment.

Hedge funds, like private equity and venture capital, are highly dependent on manager selection, but provide greater liquidity than private markets, allowing quarterly or annual withdrawals after an initial lock-up period. Hedge funds should be "hedged" relative to the market, using leverage and derivatives to enhance value added. Thus, common factor exposures liquid alternatives seek to replicate tend to be negligible.

Real Assets, Commodities and Gold

Low inflation and moderate global growth have been cyclical challenges for real assets including real estate, infrastructure, commodities, and timber. Real asset returns may not increase with stretched valuations, even as inflation rises. If inflation hovers near 1%, real assets designed to earn 4-6% with 3% inflation are could yield 2-4%, barely breaking even on a net basis.

Correlations between asset classes, commodity returns, and gold, as well as economic variables are revealing. Gold and commodity returns rose during the *commodity supercycle* through 2007, but we know that commodities lagged inflation since 1900. Input costs can't exceed output costs (economic margins must be positive), therefore commodity returns can't exceed inflation. Commodities behave like currencies without any observable risk premium, but infrastructure and real estate are better, in this regard.

Negative correlation of bond returns with growth and inflation suggests that Liability Driven Investment (LDI) objectives[4] confuse the importance of bond yield changes versus compound return. The present value of pension liabilities is affected by changes in the discount rate, assumed equivalent to short-lived changes in bond yields, but accounting practice should not affect investment decisions, as they have. Instead, liabilities can be discounted at rate that may evolve, but should be more stable than market-based yields. Changing discount rates correlate most with short-term changes in liabilities, but long-term bond returns are negatively correlated with economic growth, inflation, and wage increases. Long duration and leveraged bond portfolios fail to keep up with growth in liabilities, even if liabilities adjust with short-lived bond yield change. Alternative returns can't make up for reduced equity exposure.

Market and Economic Correlations

1973-9/2018	**S&P 500**	R 2000	EAFE+C	REIT	**T-Bonds**	G/C 1-3yr	CRB	Gold	Cash	R.Sales	Wages	CP
S&P 500	1	0.86	0.71	0.65	-0.01	0.09	0.18	0.01	0.04	0.29	0.02	0.04
R 2000	0.86	1	0.64	0.70	-0.11	0.01	0.21	0.06	0.01	0.29	0.05	0.07
REIT	0.65	0.70	0.54	1	0.04	0.10	0.27	0.08	0.01	0.32	0.05	0.09
EAFE+C	0.64	0.64	1	0.54	-0.06	0.05	0.35	0.20	0.03	0.33	-0.01	0.06
T-Bonds	**-0.01**	**-0.11**	**-0.06**	**0.04**	**1**	**0.77**	**-0.24**	**0.03**	**0.16**	**-0.28**	**-0.17**	**-0.18**
G/C 1-3yr	0.09	0.01	0.05	0.10	0.77	1	-0.14	0.02	0.55	-0.12	-0.04	0.13
CRB	**0.18**	**0.21**	**0.35**	**0.27**	**-0.24**	**-0.14**	**1**	**0.44**	**-0.09**	**0.35**	**0.15**	**0.25**
Gold	0.01	0.06	0.20	0.08	0.03	0.02	0.44	1	-0.03	0.14	0.03	0.21
Cash	**0.04**	**0.01**	**0.03**	**0.01**	**0.16**	**0.55**	**-0.09**	**-0.03**	**1**	**0.14**	**0.42**	**0.59**
R.Sales	0.29	0.29	0.33	0.32	-0.28	-0.12	0.35	0.14	0.14	1	0.31	0.35
Wages	0.02	0.05	-0.01	0.05	-0.17	-0.04	0.15	0.03	0.42	0.31	1	0.51
CPI	0.04	0.07	0.06	0.09	-0.18	0.13	0.25	0.21	0.59	0.35	0.51	1
Risk	**15.0%**	**19.9%**	**16.9%**	**16.8%**	**7.8%**	**2.7%**	**13.4%**	**20.8%**	**1.0%**	4.2%	1.5%	1.2%
Total Return	**10.5%**	**10.6%**	**8.9%**	**11.8%**	**6.7%**	**2.5%**	**2.1%**	**2.0%**	**3.0%**	5.4%	3.7%	4.0%
E[Return]	**7.5%**	**9.0%**	**6.0%**	**5.0%**	**1.5%**	**2.8%**	**3.0%**	**2.5%**	**3.0%**	5.2%	2.5%	2.5%
Real Return	**5.0%**	**6.5%**	**3.5%**	**2.5%**	**-1.0%**	**0.3%**	**0.5%**	**0.0%**	**0.5%**	2.7%	0.0%	0.0%
Sharpe	**0.30**	**0.33**	**0.18**	**0.12**	**-0.19**	**-0.07**	**0.00**	**-0.02**	**0.00**			

Source: Strategic Frontier Management, data through 9/30/2018. Correlations calculated are for rolling 3-month periods.

Fisher Black[5] concluded that broader definition of pension liability requires greater equity allocation. Employee compensation will tend to increase faster than inflation with changes in number of employees, service years, accrual rates, longevity, and extended benefits compounding to a multiple of inflation, plus periodic promotions and new job opportunities. Inflation plus real growth tend to drive compensation increases. This explains in part why pension plans continue to be underfunded, despite exceptional returns. Equities are the only asset class with positive correlation to inflation and potential return to exceed liability growth.

Misguided Hopes for Liquid Alternatives

Liquid alternative funds hoped to increase capacity and lower cost. These products promised to improve portfolio diversification for risk adverse and yield starved investors, lacking scale needed access private funds. Even target date funds scrambled to add them to their allocations. The alluring pitch capitalized on investors' envy of what they can't have from private equity to hedge funds. Use of liquid alternatives may enhance fund managers' profits, but hasn't bolstered investor returns. Cash and short-term bonds seem to provide better diversification above than commodities.

Liquid Alternative Performance Comparison

Liquid Alt Returns %	YTD	1 Yr	3 Yr	5 Yr	10 Yr
Multialternative Funds	1.23	1.23	1.37	3.37	1.89
Commodities Broad Basket	9.48	-0.09	-12.30	-8.97	-5.33
Average (excl. Bear Market)	1.10	1.83	1.75	2.14	0.68
Global Balanced	6.39	10.09	6.48	9.84	5.45
U.S. Balanced (60/35/5)	6.74	11.09	8.11	10.91	6.06
Number of Funds	493	468	255	161	n.a.

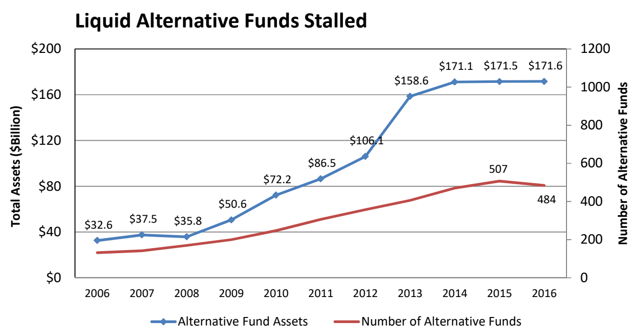
Source: Morningstar, Sept. 30, 2016 – Returns >1 Yr. Annualized

During the *Age of Alternative Enlightenment* from January 2009 - December 2014, liquid alternative fund assets increased five-fold to $171 billion and the number of funds increased from 170 to 470 funds (ref: Morningstar). It is remarkable only 50% of 500 multi-alternative funds have just a three-year track record,

[4] Pension plans calculate liabilities using market bond yield derived discount rates, yet future liabilities are most affected by various other inflationary forces driving compensation.

[5] Black, F. "Should You Use Stocks to Hedge Your Pension Liability?" *Financial Analyst Journal* (1989).

and only 32% exceed five years. Investors have become skeptical of liquid alternatives, and must outperform balanced portfolios on a risk-adjusted basis if they seek to be included. Liquid private market proxies[6] and liquid alternative products suggest diversification has been exaggerated.



Source: Morningstar, Inc.

Marginal products are closing and just 17 new funds appeared through August versus 70-93 in prior years. Hedge fund and private market appeal hinges on active management that can't be easily replicated in systematic ways. In our opinion, it seems deceptive to promise an ability to replicate hedge fund returns given reliance on non-systematic active management[7].

Even target date strategies capitalized on what investors seemed to want. New liquid alternative funds with short track records enjoyed strong asset flows through mid-2014, but since stalled with realization of disappointing returns compared to blended returns and hedge funds. Retirement plans are slow to adopt new trends, but probably dodged a bullet. Misuse is too often cited in advisor sanctions, including alternative concentration exceeding investment guidelines.

The *Fiduciary Rule* may continue to sideline liquid alternative products for retirement plans, just as ETFs have struggled to be integrated. Investors may instead consider substitution of risk factor investing, as some asset owners have begun to adopt. Thematic investing can benefit tactical portfolio allocation strategies. Concepts such as inflation, growth, yield, size, momentum, volatility, or interest rate sensitivity are likely to be more intuitive to investors.

Alternative Beta products are engineered to be cheaper and differentiated, and often conceptualized in ETF form. Cash and short-term bonds have offered better historical risk diversification than liquid alternative investments, particularly commodities and gold, in our opinion. Liquid cash or short-term bonds have diversified risk better than liquid alternatives during recent periods of turmoil.

[6] Constructed using *Private Market Equivalent* methodology
[7] For example, security selection, factor rotation, risk premium tilts ("smart" beta), or tactical asset allocation.

Infrastructure Considerations

Infrastructure can be an interesting investment with various possible sources of cash flow. Projects provide visible public benefits on a tangible asset. Like real estate, asset owners have been successful partnering directly on deals, taking advantage of their scale, financing flexibility, and longer time horizon. While demand for investment opportunities has increased, the number and size of deals is limited. Given limited opportunities and rich valuations of privatizations, it seems timely to divest non-strategic holdings, including ports, airports, buildings, roads, railways, land, and essential services like sewer, sanitation, and water. Power utilities, telecommunication networks, pipelines and transmission lines are typically privately owned.

Privatizations were popular in the 1990s, particularly among developing economies, but have stalled with governments' reluctance to relinquish control. The U.S. Government faces many challenges managing its property holdings, including underutilized property and overreliance on leasing. Yet, government agencies argue against disposal, except under dire fiscal circumstances such as the European Sovereign Debt Crisis. Property disposals could reduce debt or provide funding needed to develop new projects without further burdening taxpayers. Increased privatization might help satisfy growing investor demand, but only a few infrastructure assets changed hands in recent years.

The U.S. Government owns half of the Western United States and 28% of all land, including 85% of Nevada, 64% of Utah and Idaho, and 60% of Alaska (State of Alaska retains 28%) precluding commercial utilization and extracting natural resources, thereby reducing the tax base, impoverishing local governments. East of the Mississippi, the U.S. Government owns less than 10% of land, which is more consistent with other countries. Our National Parks are magnificent assets, but comprise just 13% of 609 million acres of U.S. Government holdings, not including state property.

Calls for additional infrastructure investment coincide with strong demand for private market investment opportunities. Government spending might bolster jobs and economic growth, but we have seen repeatedly that fiscal stimulus has been ineffective and inefficiently deployed. Construction activity would be transitory with ever lower labor intensity with automation and heavy equipment engineered to minimize labor costs. We can't spend ourselves into enhanced productivity any more than we can tax an indebted society into prosperity. Should heavily indebted governments borrow more to fund infrastructure projects or let eager investors finance these investment opportunities?

McKinsey Global Institute confirms that U.S. federal, state and local infrastructure spending of 3.2% of GDP has exceeded Japan and the European Union since 2000. The U.S. Government continues to acquire land

and property at an astonishing rate, while accumulating significant debt. *U.S. Land and Conservation Fund* budgets $900 million/year for acquisition, although they struggle to maintain existing property, including land, buildings, parks, monuments, and forests. The $870 billion for the *American Recovery and Reinvestment Act* of 2009 hoped to provide a boost to GDP with shovel-ready jobs for a nation in recession, but the economy was already recovering by Q2/2009, well before the first “shovel ready” contracts were awarded.

Private investor accountability improves development projects, including those financed through Public-Private Partnerships (P3). It should be more popular out of fiscal necessity, while reducing taxpayer cost with better aligning private operators to efficiently develop and manage assets. Real property disposals can fund new projects to balance social good with fiscal prudence, but projects must be commercially viable and compelling to attract investment. Tax incentives and smoothing regulatory requirements also can enhance investor returns, thereby increasing price and limiting taxpayers’ burden. Co-investment projects tend to be better managed during development and operational life, seeking to optimize cash flow.

New Dawn Awakening Asset Owners

Overcoming fiscal and geoeconomic challenges requires investment leadership, culture, patience, and commitment. The *Canadian Model*[8] embraced an independent professional board with strong internal direct investing capability. Its value added success over two decades is attributed to practical and indirect benefits of talented portfolio management, greater alignment, and lower total costs. It tends to be more flexible, innovative, independent, collaborative, and opportunistic. Recruiting and retaining experienced investment teams requires managing talent well and providing career opportunities. It stands in contrast to the *Endowment Model*, which underperformed on an average risk-adjusted basis. College endowments are most visible and focus on picking external managers with lean staffing and reliance on private alternative funds, typically with at least 75% externally managed.

After several years practicing the Canadian Model, in collaboration with others who helped refine it since the mid-1990s, it revealed its strengths, weaknesses, and vital keys to execution. It takes patience to refine an investment discipline as a team matures, gains confidence, and learns from experience. The remarkable success of the Canadian Model over 20 years has benefited from lower cost with direct active investing across public and private markets.

More independent, self-sufficient, and capable staff is able to develop resources, evaluate strategic decisions, manage market turmoil, increase investment objective alignment, as well as interpret performance attribution and risk management output. Expanding internal investment capabilities and resources becomes compelling and can lower cost. A few pension funds have considered managing money for others. OMERs manages money for other pension funds to help spread costs over a larger asset base on a cost recovery basis---imagine greater competition leveraging specific strengths of asset owners that are sharing resources at lower cost.

Having a strong investment culture will attract top talent, but simply being a manager-of-managers is unlikely to attract great investors. Skillful selection of private fund managers requiring a much longer time horizon is more difficult than choosing between mutual fund managers, particularly with much higher fees. A portfolio with a large number of funds will struggle to aggregate and manage risk factor exposures effectively, beyond simple value-at risk.

Outsourcing and delegating portfolio management has increased after struggling with staff recruiting, retention, and confidence challenges. Those with sufficient scale are losing core investment capabilities, consistency, and investment objective alignment. Developing internal staff provides many indirect benefits and expertise needed to evaluate strategic decisions, understand performance attribution, control investment risk, and manage market turmoil. Asset owners have failed to fully exploit their scale advantage with external dependency that perpetuated portfolio complexity and generally failed to add value.

Thus, pension funds are asking the question: Why are we willing to pay external managers (out of one pocket) an order of magnitude greater than compensation for their own staff? Corporate pension plans in the 1990s embraced relatively competitive compensation plans for internal pension staff from GM and IBM to aerospace and oil companies, but corporate DB plans have been in decline for 20 years and the rotation into DC/401(k) plans reduced pensions. Giving up on competing to attract and retain talent undermines board confidence in staff capability, which further degrades willingness to compete for talent. It was easier to hide management costs in return, rather than got to battle over competitive compensation, but this has gutted staff, dismantled core capabilities, and marginalized internal resources. More plan sponsors must embrace the need for competitive incentive-based compensation of investment teams to improve chances of achieving investment objectives.

[8] The *Canadian Model* embraced by large pension plans since the mid-1990s is now practiced by many sovereign wealth and non-U.S. pension funds. Its characteristics include greater active and internal investment capability at lower total cost, including 20-30% in alternative investments. Canada has the second highest per capita exposure globally to defined benefit pensions.

The adverse effects of the “pocket problem” are significant in the U.S., even as many Canadian pension and sovereign wealth funds overcame the “pocket problem” and leveraged direct investing with flexibility at lower cost for decades. Trustees are finally demanding full accounting of private fund fees, whereas California legislation now requires pension funds to disclose fund fees, expenses, and carried interest. The drive toward full expense accounting and enhanced performance attribution may finally expose total fund costs to the same accounting as internal costs, even if indirect benefits remain difficult to quantify. As cost transparency improves, the pocket problem should give way to focus on total costs and net performance, instead of individual compensation.

Academic research the universe of hedge fund returns can be explained increasingly by linear systematic risk factor exposures, thus becoming more passive as they mature or reach capacity.

Peer Collaboration Benefits:

- Shared due diligence, valuation, management (i.e., legal, tax opinion, expert consultants, etc.), and monitoring costs improves capability and oversight.
- Compare financial models, assumptions, evaluate management, and provide cross-partner liquidity.
- Secure greater shareholder rights, influence of controlled interest, and potential board seats.
- Cooperative syndication to right-size transactions for diversification that otherwise might be too big, while bolstering execution confidence of partners.
- Expanded and unique deal sourcing, visibility of new opportunities, broader network penetrating new markets, and alternative expertise.
- Financing flexibility, longer time horizon, and stable capital can improve deal terms (i.e., preference, shareholder rights, warrants, conversion, etc.)
- Synergies realized between overlapping portfolios and independent financial models leverage unique sourcing advantages, reputation and relationships.

Accelerating creative destruction remains a significant challenge for start-ups. Excess profit or market advantage is difficult to sustain for a 5-10 year horizon required by private investors. Compare this to mutual fund turnover of 70-90%. High potential profit growth is not sustainable without durable competitive advantage, patent protection, high regulatory hurdles, or oligopoly.

Asset owner collaboration has been visible in real estate and infrastructure for decades, but direct investments in venture capital and private equity deals with like-minded investors is evident, as well. Venture capital and private equity also can benefit from shared due diligence costs, joint board responsibility, and right-sizing investment stakes. Just because it is hard doesn’t mean we shouldn’t try[9].

Partnering with Management:

- Founders are more likely to prefer investment from asset owners with longer time horizons, financing flexibility, and access to stable aligned source of follow-on capital.
- More concentrated institutional investor base with a longer time horizon and ability to leverage good reputation of largest shareholders on exit
- More expedient and efficient deal closing on larger or more concentrated rounds with fewer investors and reduced overhead costs.
- Asset owners can add value with a breadth of experience to support management, while greater board access improves oversight and valuation.

Investors need to re-discover the pioneering spirit of active management, including direct investing across public and private markets. Direct investment management requires patience, commitment, talent development, building relationships, good governance, and stakeholder commitment. Restoring and developing internal investment capability will be difficult, but can lower total cost, increase competition, and produce indirect benefits. While sourcing private market opportunities is demanding, collaborative relationships hold promise and have been effective.

Private fund co-investing was popularized as a way for LPs to offset high management costs. GPs view co-investing as critical to successful fund raising. Opportunities arise when earlier investors are tapped out—limited by operating agreement, available funding, or conflict of interest. Although co-investment seems appealing, experience has been mixed due to limited and adverse selection. Access remains competitive, but often only in exchange for a fund commitment.

Private fund managers need to consider restructuring their fees. For example, many institutional managers base incentive fees on active return instead of total return. Value added fee incentives with lower asset-based fees would improve private fund investor alignment and likelihood of adding value. A small-cap equity index better reflects equity market, small size, and illiquidity risks of venture capital, for example. Similarly, hedge funds incentives could be a function of valued added over cash or a blended benchmark representative of its beta or average market exposure.

Global Market Outlook

Asset allocation is most significant determinate of long-term wealth. Given our anomalous return forecasts for the next decade, asset class forecasts are more critical

[9] Managed team that invested C$170 in 10 mostly direct private equity and venture capital investments in 2014.

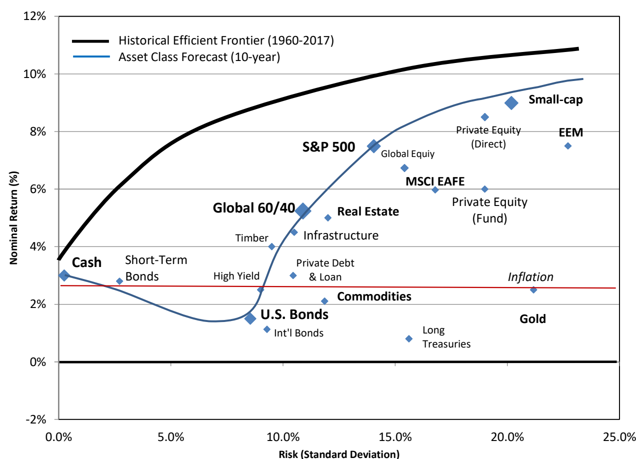
than usual affected most by relative valuations. Our outlook reflects eventual normalization of interest rates, and illustrates an unusual return/risk relationship. As interest rates begin to normalize, evolving return expectations will have significant implications for our strategic asset allocation given current imbalances. Global growth is slowing but inflation is accelerating.

	10-year Returns		1900-2017[2]	30-Years		1973-2017		
Asset Class	Return	Risk	LT Return	1988-2017	Risk	Return	E[Return][1]	Risk
U.S. Stocks	8.5%	15.1%	9.4%	10.6%	14.0%	10.5%	7.5%	14.0%
World (ex-US)	2.4%	18.5%	-.-	5.7%	16.7%	8.9%	6.0%	16.8%
Emerg. Mkt Eqty	2.0%	22.8%	-.-	9.9%	22.7%	-.-	7.5%	22.7%
U.S. 10Y Tres	4.5%	7.5%	4.9%	5.9%	7.0%	7.2%	1.1%	8.5%
US BC Agg Bond	4.0%	3.2%	-.-	6.1%	3.7%	-.-	1.4%	4.5%
Cash	0.3%	0.0%	4.1%	3.0%	0.2%	3.1%	2.5%	0.2%
Inflation	1.6%	1.1%	2.9%	2.5%	0.9%	4.0%	2.5%	1.2%
Commodities	-1.2%	15.8%	2.6%	1.8%	11.7%	2.6%	2.1%	11.9%
Risk Premium								
Stock-Bond	4.0%		4.5%	4.7%		3.4%	**6.4%**	
Stock-Cash	8.2%		5.3%	7.6%		7.4%	5.0%	
Bond-Cash	4.2%		0.8%	2.9%		4.1%	**-1.3%**	

(1) Expected return refers to long-term return over an investment cycle or ~7 years
(2) 1900-2017 data from Credit Suisse Global Investment Returns Yearbook
(3) Data as of December 31, 2017. Periods greater than 1-year are annualized.
(4) **Stocks:** S&P 500, **Bonds:** Barclay's Aggregate Bond, **Cash:** 3m T-Bill, **Commodity:** CRB

Source: Strategic Frontier Management

The heavy black line of the efficient frontier below traces the historical efficient frontier over the last 50 years and the lighter blue line represents our current forecasts. Concern about the outlook for balanced portfolios has focused on equities, but overvalued global bonds are of grave concern. The *Alternative Reality* is that private market funds and most other alternatives are too far below the efficient frontier. A dramatic correction in private markets seems unlikely without daily pricing, but significant discounts on private secondary transactions could increase.



Source: Strategic Frontier Management

Private funds in this environment languish below the public market efficient frontier. Stretched valuations and high costs are significant enough to incorporate. Low capitalization rates[10] for real estate are approaching 2007 levels, while private equity and venture capital opportunities remain expensive. Private debt may offer an illiquidity premium, but is still tethered to overvalued bond markets. Hedge funds are uniquely less susceptible to valuation concerns.

Increasing focus on global multi-asset investing has bolstered risk management practices. Unmanaged risk factors such as inflation, economic growth, interest rate sensitivity, leverage, volatility, energy, style, size, credit, and currency can complement value-at-risk. The emergence of risk factor investing and breadth of ETFs provide new ways to monitor and manage these multi-factor risks. In 2015, currency exposure with strength in the U.S. dollar had an impact on equity performance. This year, effects of a weak British pound and strong Japanese yen are evident. We expect that interest rate sensitivity of private fund holdings is greater than assumed, which could be problematic as rates rise.

Macroeconomic trends are difficult to forecast, but considering their effects can add value. Insights into *Technological Change, Innovation*, and *Future Themes* are valuable, even if difficult to apply. Direct investing can reveal insights critical to trends that may be difficult to observe otherwise. Seeking growth consistency and sustainable competitive advantage with an appreciation for creative destruction can increase the margin for error over a longer horizon. Better investments are often found in unexpected places, exploiting unconventional ideas, or during uncomfortable periods.

Portfolio Diversification Still Matters

The promise of higher risk-adjusted return for alternatives can be compelling in asset allocation studies. Diversification won't increase portfolio return, but it can reduce portfolio risk. When correlations increase during volatile periods, diversification may become less effective, but investors are no worse of during these periods, and better off over the long-run. Well-diversified investors find it easier to endure volatile periods if disciplined, including rebalancing.

Historically derived risk measures are evolving more quickly now with instability at an inflection point in interest rates. Risk models need to be more responsive and adapt to changing volatility and correlation after interest rates declined steadily for 30 years. Investors should be skeptical of risk allocation strategies focused on unstable and uncertain risk measures, such as minimum variance, maximum diversification, and risk parity. Private market investments are likely more susceptible to interest rate risk. Conventional wisdom anticipates higher equity volatility, but we expect increased volatility-of-equity-volatility with relatively average equity volatility. We also anticipate higher bond and currency volatility as interest rates rise.

Private markets must reflect valuation changes in public markets. If a private asset's value can only be estimated quarterly or annually, volatility and correlation can't be easily determined, nor are they stable and constant. A dirty little secret of private

[10] Capitalization Rate=Net Operating Income / Current Value

markets is how valuation latency effects tend to result in misleading risk inputs. Unlisted illiquid assets should increase investment risk, not lower volatility or correlation estimates, even if these inputs are difficult to quantify. Such naïve reasoning must not justify an *Alternative Reality* of lofty alternative allocations, as we've observed all too often.

Investors should be reminded of the still remarkable benefits of international country and currency diversification. Many were disappointed that well-diversified portfolios didn't perform better during the Financial Crisis. Seemingly diverse asset classes can experience higher correlation than expected during periods of turmoil given unknown but similar common risk factor exposures. Higher realized correlation reduces benefits of diversification, but unexpected volatility is more difficult to manage.

An Alternative Strategic Frontier

Developed in 2002, our proprietary strategic frontier[11] methodology for determining a strategic frontier across risk aversion (or equivalently 0-100% equity exposure) has been utilized by many different types of global clients with a range of investment objectives for well over a decade. The empirical sampling of capital market returns is not reliant on normal or independent, identically distributed returns, as in mean-variance portfolio optimization. Many have observed that small changes to expected return, volatility, or correlation can have a meaningful impact on mean-variance solutions. This robust and intuitive method is capable of incorporating Bayesian adjustments to accommodate material divergences from equilibrium, such as an overvalued bond market. Selected portfolio allocations derived in this manner tend to be more robust, stable, and intuitive. Empirical analysis of asset class relationships linked in time preserves descriptive statistical relationships that are more insightful.

Combining independent strategies of top-down asset allocation and bottom-up security selection in an overlay structure can provide true active diversification. Experience suggests active return correlation between security selection and tactical asset allocation (TAA) is uncorrelated with independent divergent cycles, even when both approaches are adding value. *Dual Alpha* results from overlaying active strategies operating independently and in parallel to leverage potential alpha without leveraging total risk. Market neutral derivative strategies, such as Global TAA, have modest collateral requirements. In contrast, alternative funds displace holdings that reduce active contribution of security selection. It is a myth that adding value in more inefficient asset classes (i.e., small-cap, high yield, private equity, venture, infrastructure) is easier.

Final Thoughts

Everything should be made as simple as possible, but not simpler. --Albert Einstein

Access to private markets increases investment opportunities, and the need for long-term private capital investment is substantial. However, private market and real asset valuations are stretched with growing demand from increasing global savings and rising alternative allocations. Limited private market capacity, despite restrained commercial bank financing, led to erosion of private market risk premiums. The attraction of alternatives promising higher returns with increased portfolio diversification is persuasive. So, we sought to differentiate compelling opportunities in private markets versus disappointing alternative fund management.

Investors should want to cast as wide a net as possible to uncover uncommon values. Private inefficiencies and risk premiums can be compelling, but high management fees are uncompensated costs. Direct investing increases potential risk premiums left over. Investors are struggling with breadth and complexity of new products---so, the need for a simpler and smarter approach to investing is acute. Trusted independent advisors with good intuition and discipline are needed to minimize unforced errors, identify unintended risks, and prudently differentiate the choices in alternatives.

Higher risk aversion, behavioral biases, inflexibility, misleading myths, and high fund expenses are hurdles impeding objective-beating results. Asset allocation studies with misleading volatility and correlation estimates have led many investors astray. Theoretical alternative diversification appears overstated if private markets are more correlated with blended public market indices than assumed. Investor scrutiny of disappointing alternative investments have focused on high fees, illiquidity, valuation uncertainty, lack of transparency, administrative expense, and rebalancing difficulty. Such unsettling disturbances awakened an *Alternative Reality of an unsustainable private fund status quo.* We believe that investors should limit alternative exposure to less than 25%, and less than 15% may be prudent for those relying on funds.

Alternative returns appear more correlated with public markets then usually assumed—even high allocations of university endowments aren't enough to drive much difference. Larger asset owners should be compelled to increase direct investment capabilities from infrastructure and real estate to even private equity and venture capital opportunistically. Active return, plus any cost savings of insourcing capabilities, is more valuable during periods of expected lower portfolio return.

Some asset owners may be better served by collapsing their private market activities of venture capital, private equity, private debt, and infrastructure into an opportunistic portfolio with greater investment and

[11] Inspiration for naming *Strategic Frontier Management*

financing flexibility. Strategy allocations of less than 3-5% usually have no distinguishing value and only increase complexity. Currency and cash exposures should at least be rolled up and managed in aggregate to minimize currency risk, cash drag, and other unintended exposures. Creating replicating liquid market proxies identify idiosyncratic characteristics, as determined by the *Private Market Equivalent* methodology, to improve understanding of portfolio holdings. Such liquid proxies represent an opportunity cost, but don't advocate for creating a liquid alternative product. Specifically, proxies can provide:

(1) Improved risk inputs (volatility and correlation),
(2) Reference for valuation changes,
(3) Evidence of effective leverage and exposures
(4) Investible index for rebalancing cash flow, and
(5) Enhanced performance attribution.

Beyond performance, there are several key elements to client engagement: (1) Performance consistency and clear discipline, (2) Transparent costs and performance attribution, (3) Clear discipline and investment values with no surprises, conflicts or ethical lapses, (4) Always show up, in good times and bad, while seeking to add value directly and indirectly, (5) Better portfolio analytical tools and services will enhance client communication and understanding. All of these things particularly expose the *Alternative Reality*.

Costs and fees are moderating and being restructured. Private market and hedge fund incentive fees may be instead increasingly focus on value added, while private asset-based fund fees decline from 2%. ETF and passive management fees will converge toward 0%, leaving Blackrock, Vanguard, Schwab, and State Street managing most of the assets for just a few basis points. Wealth management is experiencing the greatest margin pressure from robo-investment platforms to the new *Fiduciary Rule*. Financial advisors charging 1.0-1.5% are more likely to jump for higher payout ratios of independent RIAs to afford lower fees, while trading clients' mutual fund holdings for separately managed accounts (SMAs) and ETFs.

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