LONG HORIZON INVESTING IN A SHORT-TERM WORLD

PUBLIC VS. PRIVATE MARKET INVESTING AT *A GREAT INFLECTION POINT*

David Goerz
CEO & Chief Investment Officer
Strategic Frontier Management

May 2016

Investment Outlook : This publication is for general information only and is not intended to provide specific advice to any individual. Some information provided herein was obtained from third party sources deemed to be reliable. We make no representations or warranties with respect to the timeliness, accuracy, or completeness of this publication and bear no liability for any loss arising from its use. All forward looking information and forecasts contained in this publication are the opinion of this author, and future market returns may differ from our expectations. Index performance, related data or forecasts are provided for illustrative purposes only, thus not indicative of the performance of any particular portfolio. Performance shown herein is no guarantee of future results. Investment returns and the value of holdings will fluctuate over time.

GREAT INFLECTION POINTS: WHAT SHOULD INVESTORS DO?

- **Nothing of greater economic significance than an inflection point in interest rates, resulting in a likely extended period of negative real bond returns**
  - Expect significant changes to asset class volatility and correlation, already evolving
  - Equities compelling relative to bonds, alternatives as investors shorten their time horizons
  - Countries Still Matter: More typical *Asynchronous Global Expansion has* displaced *Global Synchronized Recovery* (2008-2012) with diverging central bank policy, currency volatility
  - Tactical opportunities increasing for Global TAA, Alternative Beta/Factors adds breadth
- **Increasingly *Playing in a Crowded Sandbox:*** Asset owners chasing less compelling private market valuations as allocations increased, straining investment capacity.
  - Global alternative exposure increased significantly between 2004 – 2012, now represent 25-30% of institutional portfolios in US, Canada, Australia
  - Erosion of illiquidity premium in unlisted assets requires greater reliance on active management and reducing cost, so reliable sources of excess return more valuable
- **How will the Optimal Asset Allocation be different?**
  - Private market assets are more volatile and correlated with public markets than assumed
  - *Great Rotation* in Strategic Asset Allocation favoring Equities vs. Bonds and Alternatives
  - *Objective Driven Investing* recognizes investment objectives may vary, but balance long-term expected risk vs. return. Challenges to conventional portfolio construction misguided.

WHAT ARE THE PRIMARY RISKS TO ACHIEVING INVESTMENT OBJECTIVES?

Investment Objective: MAX [Return/Risk] or MIN [Funding Shortfall], given return objective, constraints—Need a long-term *Objective Driven Investing* policy

- Investment objectives becoming more complex as investors adopt shorter term horizons with increasing regulation, behavioral biases, and risk aversion
- Reducing volatility versus liabilities desirable, but at what cost and over what horizon?
- Investment return objective increasing, requiring more equity and 3-6*% real return*
- Risk allocation and LDI strategies favoring higher bond allocations benefited from falling interest rates, but still resulted in lower funded ratios and increased contributions
- Overvalued bonds and increasing fixed income illiquidity provide only *bad* and *terrible* outcomes likely from minimizing risk objectives. Increasing leverage and extending duration to compensate for lower bond returns is dangerous, threatens sustainability
- Long-duration bond exposure riskier than diversified return-seeking portfolios, and leveraged bonds can be riskier than global equities given bond market return forecasts
- LDI implementation often overlooks minimum required investment return, and risk parity ignores greater active return potential of global equities relative to bond exposures

LIABILITY DRIVEN INVESTING A SPECIAL CASE OF *OBJECTIVE DRIVEN INVESTING*

- Recognized need to balance investment return objectives, guidelines, and risk
- As interest rates decline, *current liabilities* increase, but always in excess of inflation
- Future liabilities and asset returns are *f* (inflation, growth), so as inflation and growth increase, *future liabilities* increase -- equities more likely to outperform future increases
- *Liability Driven Investing* and *De-risking Strategies* emphasizing higher, even leveraged, bond allocations reducing short-term volatility, but significantly lag 60/40 long-term
- Future liability growth negatively correlated with bond returns, which are unlikely to exceed inflation and may be negative over 10 years, yet better aligned with equity
- Retirement liabilities correlated with nominal economic growth exceeding 6%, so high risk aversion driving high bond allocations are inconsistent with long time horizons

	Annualized		Correlation			
1965 - 2014	Average	Risk(σ)	CPI	Earnings[1]	PPI	R.Sales
S&P 500 Return	11.2%	15.2%	-0.13	**-0.05**	-0.23	0.26
US10Y Return	7.3%	7.7%	**-0.18**	**-0.21**	**-0.32**	**-0.20**
US30Y Return[2]	7.9%	12.0%	-0.21	**-0.24**	-0.29	-0.21
T10Yield	6.6%	2.8%	0.62	**0.47**	0.20	0.31
Weekly Earnings	4.0%	1.9%	**0.69**		**0.49**	**0.56**
CPI inflation	4.2%	2.9%		0.69	0.76	0.36
Retail Sales Growth	6.1%	4.3%	0.36	0.56	0.34	

1. Average Weekly Earnings (Wages)
2. Historical bond returns likely too high (1-3%) given yields of 2-3%, but risk estimates are likely too low, if yields normalize

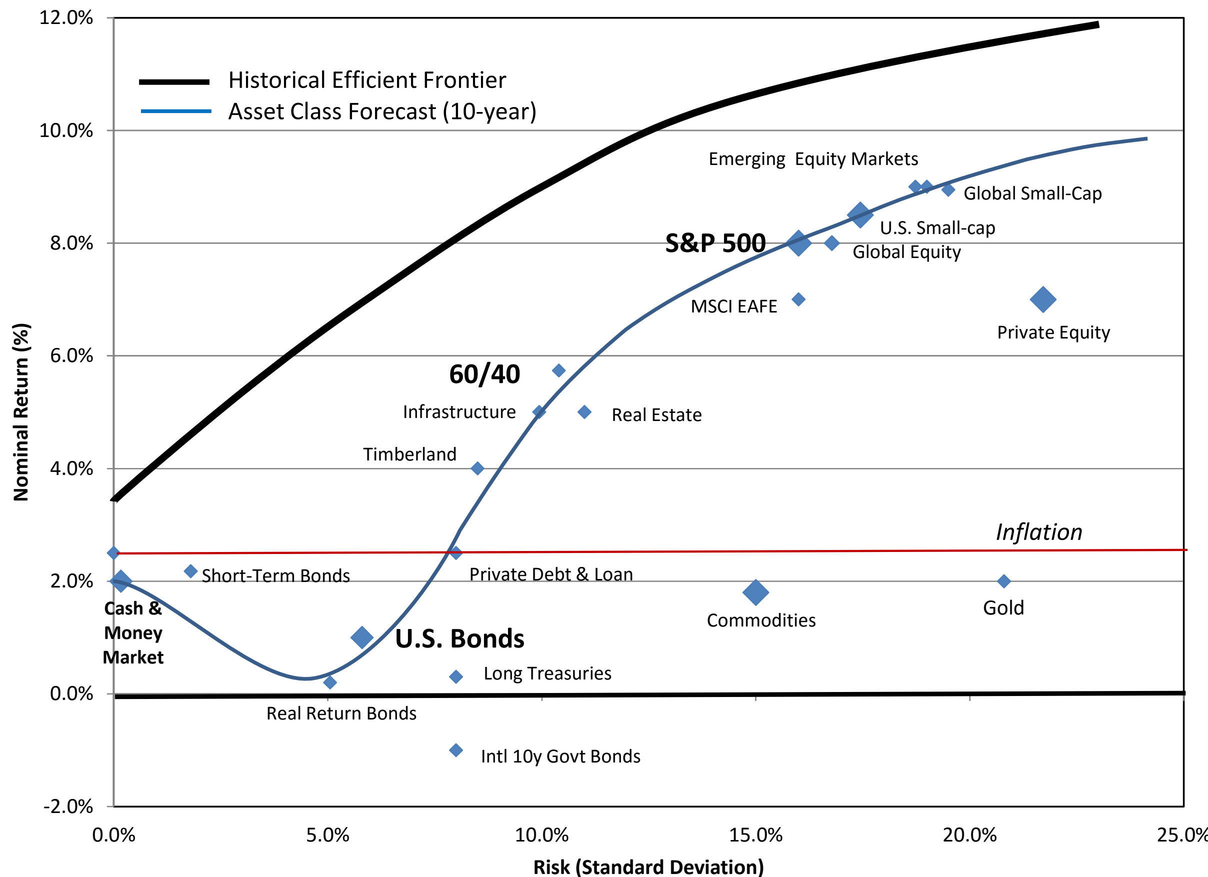
SHOULD YOU USE STOCKS TO HEDGE YOUR PENSION LIABILITY?[1]

- U.S. financial market legislation (PPA , GASB) and accounting regulation undermined the reporting objective of *information usefulness* for making prudent asset allocation decisions overemphasizing shorter-term yield risk at the expense of long-term return
- Businesses expand with economic growth, while employees mature in their careers even as life expectancy and retirement ages increase further driving liabilities higher
- Thus, *Liability Growth* = *d(L)/dt > 6-9% (or 3-6% real growth needed),*
  L = *f* (ending salary, service years, workforce size, benefits, retirement age, longevity, and career promotion)
- More frequent (annual) mark-to-market of liabilities drives shorter investment horizons focused on ***Present Value***, but should be more concerned about ***Future Values*** of L
- Interest rates are volatile, but periods of low rates don't result in true impairment, but long or leveraged bond portfolios can't exceed even 6% nominal return needed
- Fisher Black (1989)[1] concluded the *broader the definition of pension liability, then the greater the equity allocation* – it is better to clip equity tail risk with option hedging strategies than extend duration with increased or leveraged bond exposure
- Private Market alternatives more correlated with higher volatility than assumed, whereas high fund costs significantly reduced net risk premiums expected

1. "Should You Use Stocks to Hedge Your Pension Liability?" by Fisher Black, *Financial Analysts Journal* (1989)

10-YEAR EXPECTED RETURNS: A VERY UNUSUAL EFFICIENT FRONTIER

Difficult Starting Point for Bonds and Bond Alternatives



<u>Challenging Beliefs</u>

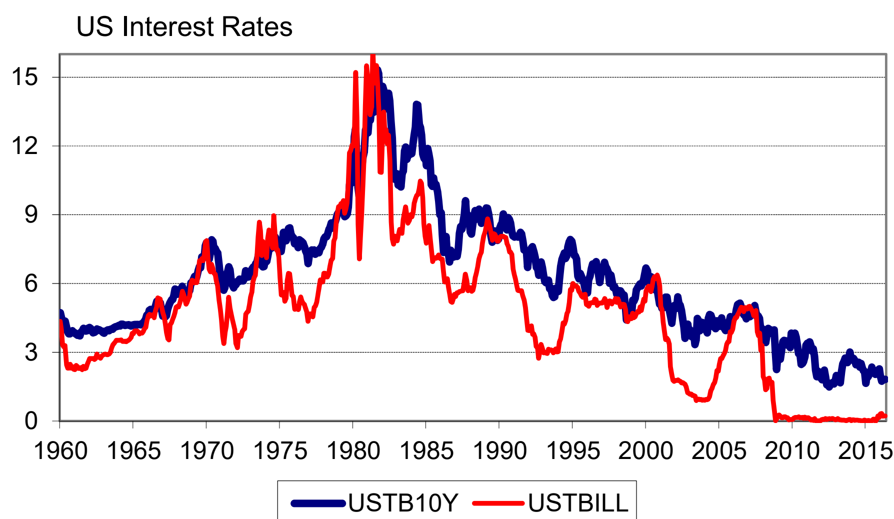
Input prices can't exceed output prices, thus commodity returns can't exceed inflation (1900-2012 supports -0.5% storage/ holding costs vs. CPI).

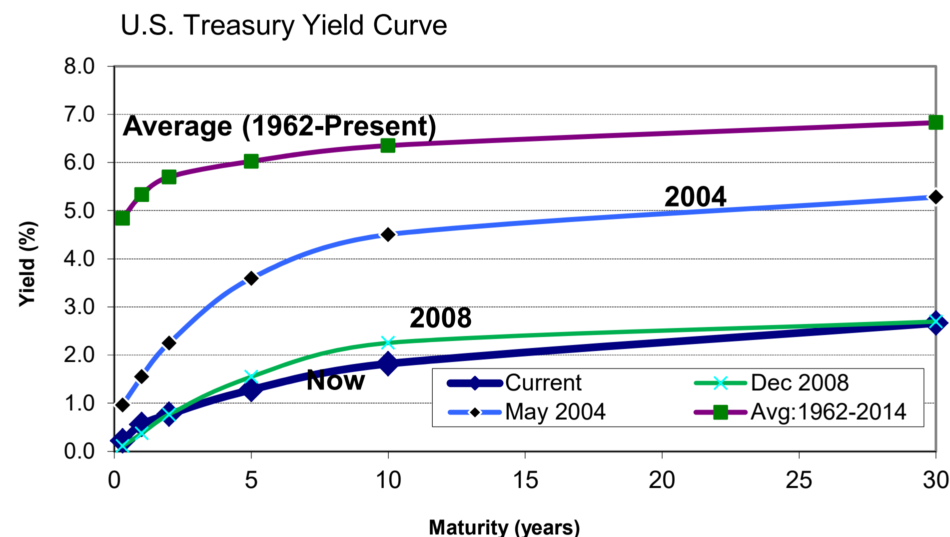
Normalizing interest rates after the inflation/interest rate risk premium extinguished by central bank manipulation could drive a 0.5% excess risk premium over next cycle.

All forward looking information and forecasts contained in this publication, unless otherwise noted, are the opinion of Strategic Frontier Management, and future market movements may differ significantly from our expectations.

GREAT INFLECTION POINT: INTEREST RATES

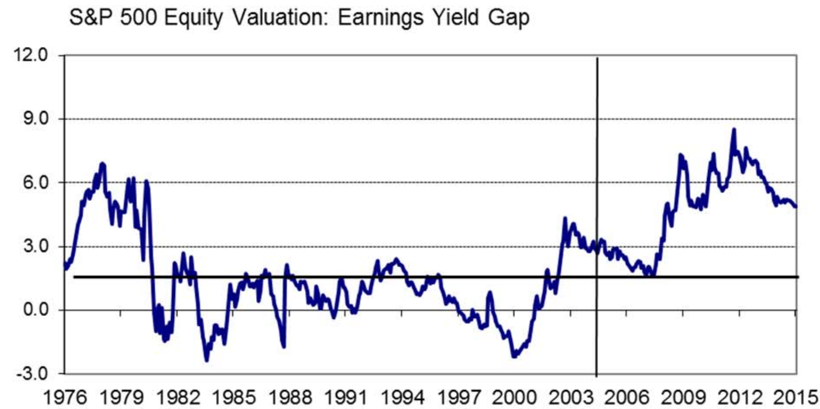
- *Great Inflection Point*: U.S. Treasuries has declined over 30 years—yield curve unsustainable
- Interest rate normalization with resilient economic growth—bond yield rise likely to overshoot, thus expect negative real bond returns for 3-5 years and costly 0.5% 10-yr yield risk premium
- Taylor Rule suggests Fed Funds Rate should greater than 2% today, not 0-1/4% observed
- Central bank forward guidance to "keep interest rates low for an extended period" regrettably lured investors, businesses, and consumers into costly decisions, inducing *moral hazard*
- Fixed income liquidity an increasing concern with expanded regulation, overvalued bonds

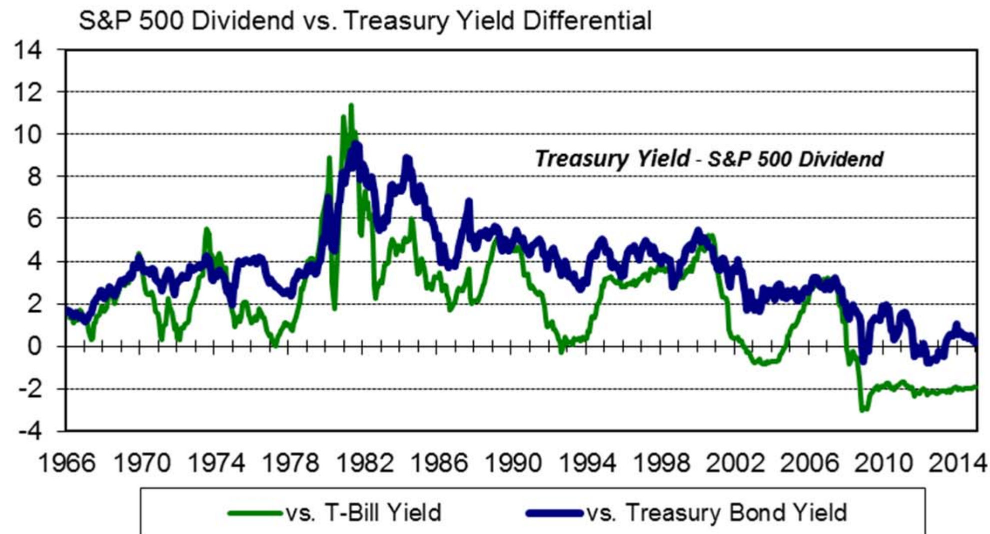




Source: Thomson Datastream

U.S. EQUITY VALUATION: UPSIDE REMAINS





Source: Thompson Datastream

THINKING ABOUT THE FUTURE
SETTING REALISTIC EXPECTATIONS

Pension liability risk similar to Bond risk, but Equity returns needed to keep pace with increasing liabilities--leveraged bond portfolios may be riskier than equities

- Active central bank intervention drove yields well below equilibrium, so normalization likely difficult and to persist—Increasing bond exposure is dangerous if real returns are negative
- Returns similar to rising rate period 1952-1980 over next cycle, need 7-8% balanced return
- Rising interest rates = Negative real returns and capital losses in bond portfolios, alternatives
- Neither active or total investment return objectives achieved without taking measured risk
- Hedge funds typically a combination of actively managed public securities, minus high costs

Strong 2010-2013 Balanced Returns helped funding ratios, de-risking strategies lagged significantly, even benefiting from accommodative central banks

- Returns of 7-8% are reasonable for 60% Equity in balanced portfolios, if bonds return 4-6%
- Lagging bond market will limit Balanced returns 4-5%, which explains tilt toward alternatives
- At 35% Equity and 1% bond return, 10-year balanced return falls from 115% to just 50%
- In a low yield world, contribution of active management and cost control more meaningful
- Only engaging across public and private assets can we improve performance consistency and diversification, but what was novel in the 1990s is now conventional, also extended
- Benefits of innovation/risk premium eroding –demand undermined small + illiquidity premium
- Chase has gotten harder, but still opportunities exist “between-the-cracks”

CHALLENGES MANAGING COMPLEX RISKS

Global Unified Multi-Asset Risk Management

Risk Compliance → Managing Risk

Risk Management VaR→ Multi-Perspective Risk Management

Regulatory Confusion

Liquidity Facilitators: Agent vs. Principal vs. Asset Owners

Targeting of *Too Big to Fail* & *Systematically Important Financial Institutions*

Banking & Balance Sheet vs. Active/Total Portfolio Management

More Dynamic & Complex, Exogenous, and Event-driven Portfolio Risks

Regulatory & Legislative Implementation Problematic

Great Rotation as the *Great Moderation* Fades

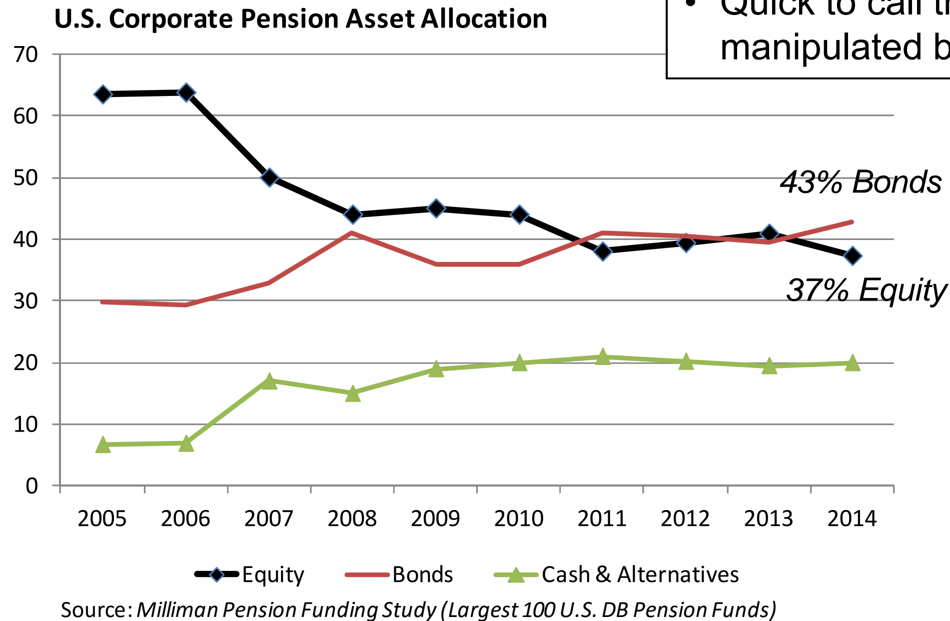
Policymakers, Consultants, Public rooted in the last crisis

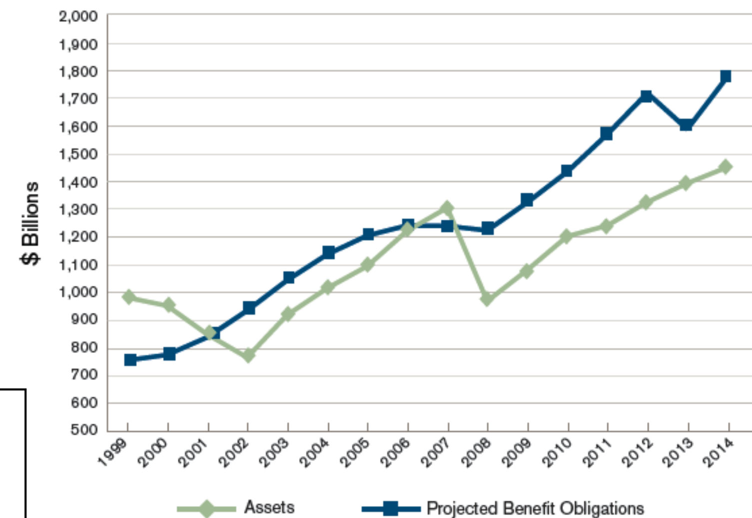
Financial, Economic, Geopolitical Challenges

Multi-Asset Resurgence Coincides with Complexity in Products & Derivatives

PENSION FUNDS AT LOWEST EQUITY AND HIGHEST BOND EXPOSURE EVER

- Return expectations averaging 7.3% still too high, particularly given lower equity allocations and negative real bond returns.
- Quick to call the equity market overvalued, although it is the manipulated bond market that is at greatest risk.



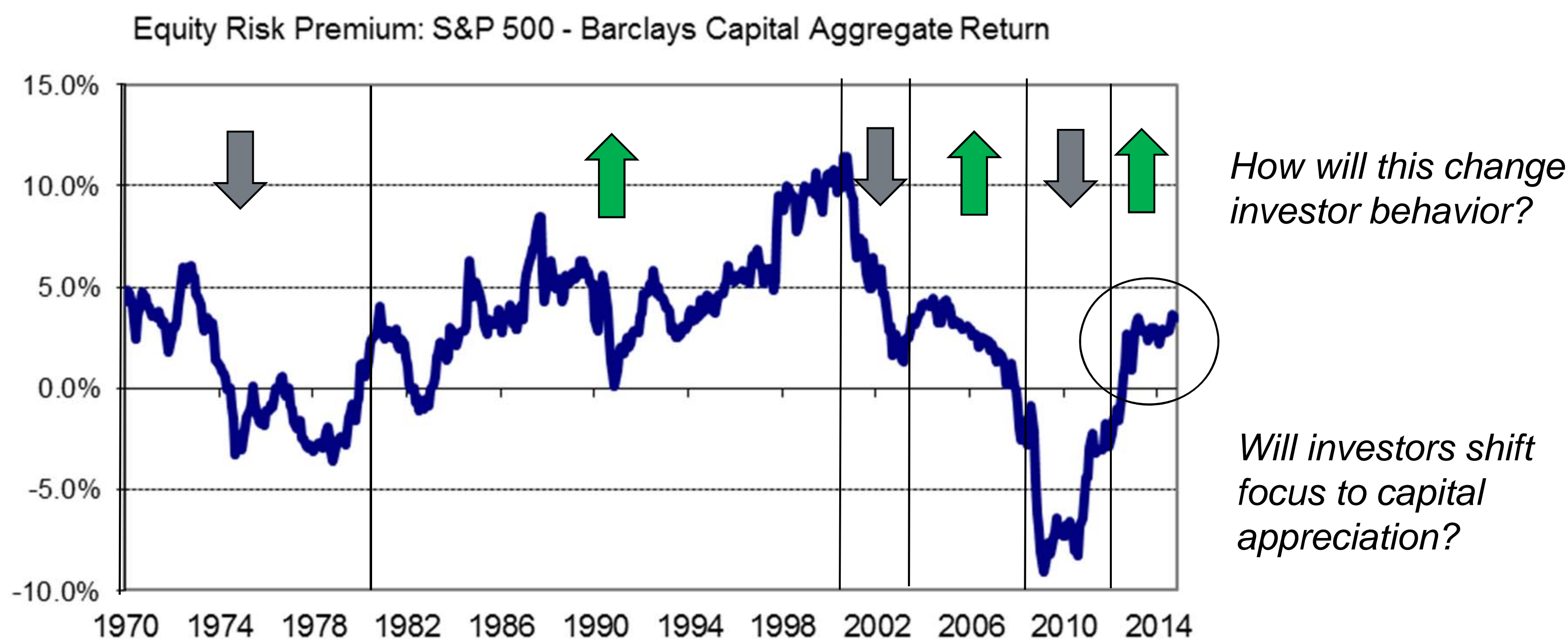


- The funded ratio declined from 87.9% to 81.7 in 2014, despite strong markets yielding 10.9% average return
- Bond allocations of 43% are highest ever, but we expect negative real bond returns over 10 years!

Regret & Envy May Fuel Another Great Asset Allocation Rotation

ROLLING 10-YR STOCK VS. BOND RETURN

Will reversal in relative performance change investors' risk averse behavior toward global equities and shorter horizon reflected in high bond allocations?



How will this change investor behavior?

Will investors shift focus to capital appreciation?

Source: Thomson Datastream

NEXT LONG HORIZON EVOLUTION

Extraordinary Results Not Possible by Ordinary Means

- If a strategy appears comfortable, time to stretch and explore new horizons
- Adopt a disciplined, well-defined, intuitive investment philosophy
- Promote a better understanding of good vs. bad "Leverage" and "Risk"
- Embrace active management and direct investing – Don't dismiss *efficient liquid strategies* and *Global TAA* to lever active return potential without leveraging risk
- New approach to sourcing direct investment and co-investment opportunities
- When capacity becomes strained, new *Alpha Engines* must be developed

Underexploited Edge for Asset Owners Pursuing Innovative Ideas

- Substantial advantage in long horizon investing underutilized because it is difficult
- Still many opportunities overlooked "between-the-cracks" of traditional investments
- Opportunities created by financial regulation, inefficiencies, distress, lack of creativity
- Efficient access to long-term capital needed to accelerate and exploit Innovation, thus better/more efficient and flexible capital financing structures must be developed
- Explore and understand impact of *Secular and Future Themes* – even if a guide

NEW DAWN AWAKENING ASSET OWNERS

Private Market inefficiencies are significant, still offer compelling risk premium

- Go for growth + *sustainable competitive advantage* or stick to Public Markets
- Asset owners need to re-discover pioneering spirit of active management and direct investing, when capacity is strained, new *Alpha Engines* must be developed
- Short-termism, exaggerated risk aversion, behavioral biases, and excessive fund expenses are significant hurdles impeding exceptional objective-beating results

Why VC/PE fund performance objectives remain allusive – outsourcing expertise to Funds should have been cost effective, but net of expenses not rationalized

- Private + Small + Illiquidity risk premiums no longer sufficient to overcome 2+20%, equivalent to underperforming 8% gross return by 4.4% annually over 10 years.
- Co-investing should lower costs, but generally results have been mixed due to adverse selection and access competitive among LPs left wanting in "pay-to-play"

Substantial *advantages* many asset owners still fail to exploit

- Long horizon private risk capital is needed to finance entrepreneurial innovation, thus investors have and should be generously compensated for private market risk
- Focus on "between-the-cracks" direct investing to exploit existing risk premium, but skeptical of capital intensive / long lead times which are rarely compensated
- Creative collaboration really is effective – share due diligence costs, governance

RISE OF LONG-TERM INVESTORS NEEDED

Savings growing rapidly, straining private market capacity

- Sovereign Wealth Funds, Endowments, and Family Offices growing rapidly, many now operating on commercial basis with longer horizons resulting in better alignment for exploiting unlisted inefficiencies, lower direct costs
- Push into higher private alternative allocations could stall due to reduced illiquidity premium (stretched valuations, deal competition) and high management costs
- Resistance to build institutionally competitive teams has severe adverse and unintended consequences; No room or patience for non-economic agendas

Longer horizon expands opportunities, increases potential return

- Yet, Too Many *Playing Not to Lose – Doing No Wrong* is not *Doing It Right*
- Natural long-term investors need courage to defy short-term behavioral bias and not be limited by uneconomic misguided constraints reducing flexibility
- Short-termism, exaggerated risk aversion, new regulations, artificial constraints, and other behavioral biases are significant hurdles impeding exceeding objectives
- Greater passion needed for growing great companies, building projects, exploring unconventional opportunities, all with a focus on a longer time horizon
- Fear of direct/active investing increases cost of capital and potential opportunities

A CHALLENGE: PRIVATE MARKET SOURCING

Building collaborative relationships provides recognized advantages in direct investing

FUNDS & GENERAL PARTNER RELATIONSHIPS

- **Co-investment opportunities alongside Funds:** Mixed results, but understand what works
- **Establishing strategic relationships with other GPs** networking institutional, patient investors
- **Fund expenses exceeding private market risk premiums:** Expensive way to access markets
- **Without accessible risk premiums, alternative investments are inefficient allocations**

TRADITIONAL SOURCING STILL MEANINGFUL

- **Investment Banks:** Global / Canadian investment banks are very receptive to asset owners
- **Direct Solicitation of Opportunities:** Drawn by reputation + long-term horizon of asset owners
- **Industry groups, Conferences, Universities:** Inefficient, but opportunities can be compelling
- **Monitoring Deal Flows:** Seek opportunities that fit our needs

ASSET OWNERS UNIQUELY POSITIONED

- **Direct investment in portfolio companies compelling:** Follow-on, related/unique opportunities
- **Institutional Investors Roundtable:** Collaborative organization, demonstrated deal-making
- **US Family Offices Syndicate:** Similar to IIR network, focus on larger family offices
- **Proprietary Connections:** Engage with board members, connected consultants
- **Referrals** from collaborating with Sovereign Wealth, Pension, Endowment, and Family Office Peers, as well as existing portfolio companies, professional networking, and conferences

PRIVATE PARTNERING ADVANTAGES

Partnering with Management

- Stable long-term capital needs vs funds
- More flexible financing – investment terms, financing structure, follow-on
- More concentrated and institutional investor base with longer time horizon
- Expedient and efficient deal closing on larger rounds with fewer investors and reduced deal overhead costs
- Highly regarded, institutional, apolitical, non-activist Canadian investor
- Strategic input can add value, while information access improves monitoring/ valuation, and portfolio decisions
- Can benefit from understanding new emerging technologies, and impact of accelerating innovation, trends

Partnering with Peers

- Cooperative syndication to right-size transactions for diversification
- Vastly expanded deal sourcing, enhanced collective visibility
- Group-tackling due diligence, monitoring, shared governance / board representation
- Benefit from access to broader network in penetrating new markets, exposure to other investor groups
- Direct investment synergies realized between overlapping partner portfolios
- Collaboration increases like-minded controlling interest and can bolster shared governance rights
- Beneficial experience of Innovation Alliance and peer partnering across real estate, infrastructure, private equity

PRIVATE INVESTMENT TARGET PROFILE

Investment Thesis:

- High potential growth and compelling ‘between-the-cracks investment opportunities.
- Seeks to exploit market inefficiencies, through flexible deal structuring, acquisition discount, liquidation preference, and derivative kickers to enhance return or reduce downside risk with a longer investment horizon.

Investment Strategy: Opportunistic investing in (1) companies with well-defined sustainable and differentiated competitive advantage, (2) differentiated project / asset finance, and (3) other special situations that can either be growth or value in nature.

Investment Characteristics: High-growth potential companies with significant barriers to entry and defendable margin (i.e., high structural barriers to entry, patents, trade secrets, cost advantage, policy or regulatory edge, insurmountable lead, technological advantage), as well as synergies with or as a “complementor”.

- Demonstrated market traction and extendable product or potential for new markets.
- Mid-to-later stage companies or projects with visible path to profitability/positive cash flow, which may be offered at a discount or are under stress that can be resolved
- Benefits from a compelling thematic tailwind or a meaningful value proposition (i.e., lower cost) with a large and/or expanding market opportunity.

PRIVATE MARKET LESSONS LEARNED

- Costs of Private Market Funds in RE/I/PE/VC are too high with reduced risk premiums
- Strategy focused on mid-to-later stage opportunities with proven technology, revenue generating, and path to profitability yields a higher hit ratio, fewer catastrophic loses
  - Leveraging fundamental analysis and financial engineering increases net return potential, rather than evaluating early stage innovation, complex products, or market acceptance
  - Companies more interested in engaging with asset owners directly, than through funds
- Sustainable competitive advantages essential with accelerating economic innovation. Imagination and creativity can be more important than knowledge.
- Good Management team is important, but business and product must be compelling.
- Business may fail despite good execution–importance of being adaptable to change.
- Co-investment intuitively appealing, but prone to adverse selection, competition for access, and still high level of due diligence required—experience mixed at best.
- More skeptical of payoff for capital intensive and long lead time investments that increase uncompensated risks, thus valuation should reflect higher cost of capital
  - Creative project finance and "between-the-cracks" of traditional assets yield compelling returns
  - Building network of professional consultants and experts to assess risks in technology, science
  - Avoid investments with difficult economics, regulatory/environment risks, reliant on tax credits

EXCEPTIONAL AND ACCELERATING INNOVATION DRIVING PROFIT MARGINS

1. *Accelerating Innovation:* Technological progress is accelerating tackling an ever-increasing abundance of problems to solve, but various adverse consequences for labor markets
2. *Investment Spending Displacing Labor:* Repetitive tasks, manufacturing, and quantitative disciplines improved by systems increasing efficiency and quality, reliance on the "Creative Class"
3. *Democratization of Education:* Internet access (i.e., Coursera), spanning many languages
4. *Ubiquitous Computing*: Enabling broad-based, low-cost access to information and applications
5. *Revolutionizing Communication:* Revolutions in communications, facilitating increased collaboration and networking, usually usher in ***Industrial Renaissance***
6. *Research, Development and Process Engineering:* Shorter prototyping cycles, intellectual property protections, unlimited opportunities, revealed needs
7. *Expanding Universe of Inventors:* Emerging markets are contributing meaningful invention and innovation, incentivized by expanding capitalism and entrepreneurialism worldwide
8. *Increasing Financial Liberalization:* Reverse misguided regulatory reform and reduce overhead to bolster free markets and competition to incentivize the large pool sidelined investment capital
9. *Logistics and Transportation Efficiency*: Facilitators of physical product connectivity account for 8-15% of GDP of the largest trade intensive countries
10. *Forces of Secular Disinflation:* Globalization, outsourcing, hyper-competition, and increased price transparency leverage innovation and creativity

FUTURE THEMES PROVIDE OPPORTUNITY

Future Themes are a thesis or proposition that could substantially shift consumption, investment preferences, disrupt competition or impact lifestyles.

1. **Communications Revolution**
   - Ubiquitous Computing
   - Big Data: Unprecedented Data Access & Analysis

2. **Industrial Revolution**
   - Accelerating Systematic Re-engineering
   - Adaptive Robotics
   - Rapid Prototyping and 3-D/Additive Manufacturing
   - Logistics Transforming Global Supply Chains
   - Better Products and Services at Lower Cost

3. **Energy: Less Intensive, Higher Demand**
   - Less Energy-Intensive Economy with Conservation, Substitution and Innovation
   - Driving Energy Efficiency and Increasing Capacity
   - Evolving Alternative Power Sources
   - Trade-off of Power and Capital versus Labor

4. **Exploiting Advanced Materials and Resources**
   - Higher Performance at Lower Cost
   - Exotic Alternatives for Scarce Commodities
   - Demographics of Developing Economies
   - Efficient recovery and utilization of Natural Resources

5. **Emerging Markets and Beyond**
   - Managing Industrialization and Urbanization
   - Demographics of Developing Economies
   - Faster Growing Frontier Markets
   - Africa: The Last Untapped Continent

6. **Increasing Longevity**
   - Improving Healthcare Efficiency & Effectiveness
   - Bolstering Retirement Savings, Financial Security
   - Luxuries, Convenience, Insatiable Consumption
   - Access/Sustaining Basic Needs (i.e., Food, Water)

7. **Personal & Business Security**
   - Geopolitical Storms and Rise of Terrorism
   - Enhancing Security vs. Individual Freedoms
   - Individual and Household Protection
   - Cyber Threats, Espionage, and Protecting IP

8. **Democratization of Education**
   - Increased Access to Higher Education at Lower Cost
   - New Job Skillsets Needed to Meet Evolving Needs
   - Improved Educational Outcomes and Efficiency
   - Expanded Capacity for Lifelong Higher Learning

FINAL THOUGHTS

- *Opportunistic* strategy focused on identifying "*sustainable competitive advantages*" can fully realize high potential returns from small company and illiquidity premiums.
- Companies need patient long-term capital to help build businesses and commercialize. Asset owners uniquely positioned to play a critical role providing needed capital.
- Innovation leveraging technology, but allocation of financing capital remains inefficient.
  - Direct private investing is ripe for those that are: nimble, collaborative, flexible, disciplined, creative, long-term oriented, networked, and prudently risk tolerant.
  - Asset Owners must adapt their investment discipline, leveraging their unique advantages, forming collaborative partnerships and sourcing compelling direct investment opportunities others cannot exploit easily or at much greater cost.
- Capacity constraints limiting time horizon and hampers large fund returns.
- Allocation to private market investments provide diversification and higher potential returns realizing small-company and illiquidity premiums.
- Effective sourcing is challenging, but asset owners enjoy distinct advantages others cannot exploit easily or at greater cost. CEOs generally prefer institutional investors.
- Dirty Little Secrets of Co-Investing: Compelling opportunities exist as a liquidity provider, but there are unappreciated pitfalls and adverse selection to co-investing.

EASIER TO DO THE COMFORTABLE THING

What is the difference between a bleak and a bright future?

- Rapid innovation has fundamentally lifted our living standards
- Its persistence lies in entrepreneurship and free market incentives
- Potential economic growth of 2-3% is normal – return to risk capital rewarded incentivizing research, development, innovation
- Asset owners are well positioned to play a distinctly unique role providing adaptive long-term capital at critical stages
- Just because its hard doesn't mean we shouldn't try – somebody else's *New Normal* doesn't have to be our destiny

Investment Opportunity

The future may be better than you think – wide range of opportunities to be exploited

- Longer horizon increases opportunities between-the-cracks and potential return
- Need courage to defy short-term behavioral bias and not limit flexibility
- Need to "re-discover" pioneering spirit of active and direct investing