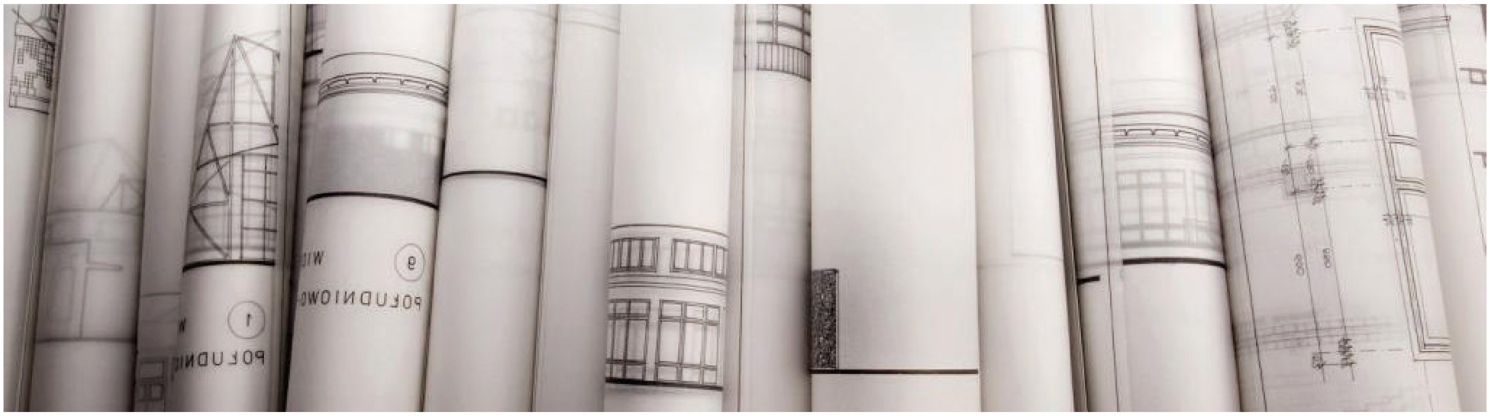
Public Eye

News and views impacting public funds

Fall-Winter 2015



IN THIS ISSUE

- **CIO corner: Tom Tull**, CIO, Employees Retirement System of Texas, shares his views on public fund leadership, discusses his plan's recent shifts in asset allocation and describes industry changes over the past 40 years.
- **The wage puzzle: Dr. David Kelly**, CFA, Chief Global Strategist, discusses the possible explanation for weak wage growth. Likely causes include baby boomer retirements, the continued fall in union membership and a lack of both headline inflation and productivity growth.
- **Rethinking the core: Josh Feuerman** and **Hamilton Reiner** explain equity approaches that straddle both actively and passively managed strategies that can help investors generate higher returns or minimize volatility.
- **The secondary market for private equity:** In a maturing market for secondary private equity, participants are more diverse and transactions more complex.
- **Asset allocation views: John Bilton**, Head of Global Multi-Asset Strategy, Multi-Asset Solutions, presents key findings from the team's quarterly Strategy Summit.

Our commitment to public plans

IN THIS EVOLVING INVESTMENT LANDSCAPE, MANY OF OUR PUBLIC PLANS ARE EVALUATING HOW THEY CAN BEST POSITION ASSETS FOR GROWTH WHILE MANAGING RISK.

They are asking for our latest thinking and insights to inform these decisions. To that end, we have developed this semi-annual newsletter to deliver some of our latest thinking to you in one consolidated format and offer our partnership and perspective as you continue to refine your portfolio.

Thank you for your continued trust and confidence in J.P. Morgan Asset Management.

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Asset Management

CIO corner

TOM TULL, *CIO, EMPLOYEES RETIREMENT SYSTEM OF TEXAS,* SHARES HIS VIEWS ON PUBLIC FUND LEADERSHIP AND DISCUSSES HIS PLAN'S RECENT SHIFTS IN ASSET ALLOCATION.

PROFILE

Tom Tull
Employees Retirement System of Texas (ERS)

Education:
BS: Ohio State University;
MBA, Xavier University

First job: Nationwide Insurance Mutual Funds

Date started with ERS: February 1, 2009

Hobbies: Investments

Favorite movie: "Minions" with my granddaughters

Favorite books: *World Order* by Henry Kissinger, *The Wright Brothers* by David McCullough and *The Churchill Factor* by Boris Johnson

Q: What skills does someone need to be an effective leader and CIO of a public pension plan?

TULL: The most important skills are the ability to manage people and time. I am a believer in delegation, accountability and professional development for staff. It should be a given that you have to understand the investment dynamics of a number of different asset classes and how they act and react to changes in economic fundamentals. But, how you manage people and time is what gives you a competitive advantage.

Q: In 2013 ERS made significant shifts in its asset allocation, boosting allocations to return-seeking assets to 79% from 61% and decreasing the allocation to risk reduction/liquidity assets to 21% from 39%. What was the strategy and how has it worked out?

TULL: The strategy was structured to allow ERS to become more tactical. Recognizing that return-seeking assets such as global equities, credit and alternatives can have ebbs and tides during different stages of the business cycle, it was important to have the flexibility to move assets between different asset classes when appropriate. At the same time we wanted a foundation of assets earmarked as portfolio risk-reducers to meet liquidity needs and help reduce the volatility of the portfolio using absolute return hedge funds. The board approved the portfolio changes following a fairly extensive process to assess risk tolerance and market conditions.

Q: As of June the plan had 2.01% of assets invested in global public equity special situations and 1.21% in directional growth. What falls in these categories?

TULL: To encourage our investment staff to find hidden opportunities, we established an incubator program within the global public equity special situations area. This allows members of our investment team to recommend a portfolio idea that can be implemented. Two have been approved and invested. One is a portfolio of spin-offs. The other, the Capitol Hill portfolio, is derived from empirical evidence that indicates that engaging with policymakers to aggregate trade ideas across global markets based on convictions have produced consistent and outsized returns. The directional growth portfolio is a tactical 150/50 portfolio which attempts to do this in a unique quantitative fashion. It is expected to deliver an uncorrelated source of alpha while complementing our external manager line-up.

Q: ERS has outperformed its policy benchmark, net of fees, for the past one-, three-, five- and ten-year periods. What explains your impressive performance?

TULL: Most important is our tremendous investment team as we manage over 60% of our assets internally, taking more active risk and placing more sector bias. Other contributors include the harvesting of equity gains for deployment into private equity, private real estate and hedge funds; tactical moves between U.S. and international assets; a reduction in fixed-income assets; and underweighting of emerging markets. We are also demanding better economics on deal flow, doing more co-investments, derivatives and bringing assets in-house to manage once we gain the expertise from working with our managers.

Q: In May the state legislature took important action to improve the plan's funding status, passing a law that gradually raises employee and state contributions (from 7.2% to 9.5% for employees and from 8% to 10% for the state). How did that happen?

TULL: The successful passage of legislation to improve the plan's funding status depended on the development of accurate information and working closely with stakeholders our board and key legislators and staff. All were firmly committed to doing what was right for our retirees and the state workers of Texas.

Q: Since you took over as CIO in 2012, you've hired significant new talent. How do you attract and retain good people?

TULL: Other than a vibrant location like Austin, relatively low taxes and the great culture at ERS, we offer the opportunity to grow professionally, manage sizable assets, enjoy a collaborative culture and work with a great team.

Q: What are you most concerned about in terms of managing pension assets over the next two or three years?

TULL: My greatest concerns are constraints on free market forces, cybersecurity, market liquidity, investment deal economics, and retaining a strong internal team.

Q: Looking ahead, what are you most enthusiastic about?

TULL: Public funds are going to have to be more tactical going forward. You can't be a buy-and-hold type investor. You have to go where you can pick up alpha and competitive rates of return, recognizing the amount of risk that you're taking and going where you see value. For example, we see opportunities to get into areas that banks were previously more actively involved in, whether it's receivables financing, energy loans or litigation financing. These are areas that don't have available capital but do have a tremendous model for making money.

Q: How can public plans most effectively meet the challenges of underfunding and budget shortfalls?

TULL: Other than continuing to concentrate on earning competitive risk-adjusted returns for the Trust at a reasonable cost, I think the most effective means includes maintaining effective communication with stakeholders and legislators with respect to the value of the defined benefit plan and the long-term damage that can result from not meeting costs in the here and now. Most recognize the value of a funded plan and its importance to the state workers. The problem is they must work through all the priorities that face the state in each budget cycle.

Q: Your investment career began in 1971. Since then you've seen a lot of changes, in both the pension landscape and financial services. What have been the most significant?

TULL: The most significant changes include the evolution of asset classes over time, the efficiency of information flow, the changes in the availability of capital commitment in the markets and the changes in rank of different countries as a percentage of world GDP and market cap.

Q: Personally, what gives you the greatest satisfaction in your job?

TULL: Building a great team that enjoys working together or the benefit of the Trust and the opportunity to establish a foundation of retirement security for the state workers of Texas.

The wage puzzle

DR. DAVID KELLY, *CFA, CHIEF GLOBAL STRATEGIST,* DISCUSSES THE POSSIBLE REASONS AS TO WHY WAGE GROWTH IS SO WEAK.

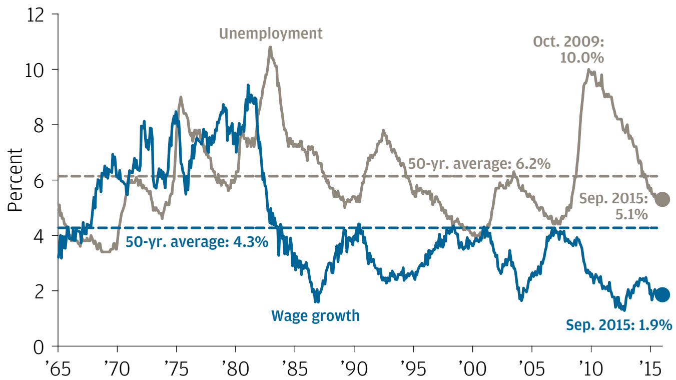
Despite a disappointing September employment report, the job market has been steadily improving over the past year and a half. Yet both labor force and wage growth have remained weak. Why?

We have argued in the past that most of the labor force problem is structural rather than cyclical. That is to say, it is largely due to the retirement of baby boomers, a surge in disability benefits and a growing number of Americans who are essentially excluded from the job market due to prior felony convictions, educational deficiencies and issues with addiction. All of these are important issues and deserve the urgent attention of the government. However, unlike a general lack of economic demand, they cannot be fixed by monetary or fiscal stimulus.

Wage growth remains weak, with average hourly earnings for production and non-supervisory workers up just 1.9% in September. This is remarkably different from the last three economic expansions (**EXHIBIT 1**, next page). The September unemployment rate was roughly unchanged, declining from 5.11% to 5.05%. However, the last three times the unemployment rate hit 5.1% on the way down, wage growth was much stronger, achieving year-over-year gains of 4.2% in March 1989, 3.4% in August 1996 and 2.7% in May 2005.

Wages have failed to respond to falling unemployment

EXHIBIT 1: CIVILIAN UNEMPLOYMENT RATE AND YEAR-OVER -YEAR GROWTH IN WAGES OF PRODUCTION AND NON-SUPERVISORY WORKERS, SEASONALLY ADJUSTED, PERCENT



Source: BLS, FactSet, J.P. Morgan Asset Management *Guide to the Markets*—U.S.; data as of September 30, 2015. The chart above and the charts, graphs and tables herein are for illustrative purposes only.

So why are wages so weak this time around? A full explanation is elusive. However, statistical analysis suggests that the problems are largely structural or else due to factors that are mostly independent of demand in the economy. Some of the causes of slow wage growth are the following:

THE RETIREMENT OF HIGH-PAID WORKERS

Generally speaking older workers get paid more than younger workers. We estimate that as baby boomers aged, the median age of workers rose from 37.9 years in January 1980 to 42.5 years in December 2009, or 4.6 years in total. However, from December 2009 to September 2015, the median age rose to just 43.2 years or only 0.7 additional years. The sudden slowdown reflects the first wave of baby boomer retirements.

Because wages tend to rise with age, this slowdown in the aging of the workforce has had a significant impact on overall wage growth. In fact we estimate that shifts in the age mix of workers added roughly 0.19% to year-over-year wage gains from 1981 to the end of 2010 and have subtracted roughly 0.05% from year-over-year wage gains between the end of 2010 and September 2015.

THE CONTINUED FALL IN UNION MEMBERSHIP

A probably smaller structural factor in holding down wage growth in recent years has likely been the demise of unions. History suggests that unions may be better at getting wage increases for their members than individual workers who negotiate on their own. As evidence, over the past five years, the employment cost index for wages of unionized workers rose 0.3% per year faster than for their non-union brethren. However, union membership has been in a steady decline in the private sector, representing 12.9% of workers in 1988, 10.2% in 1996, 7.8% in 2005 and just 6.6% last year.

MORE WORKERS ON PART-TIME HOURS

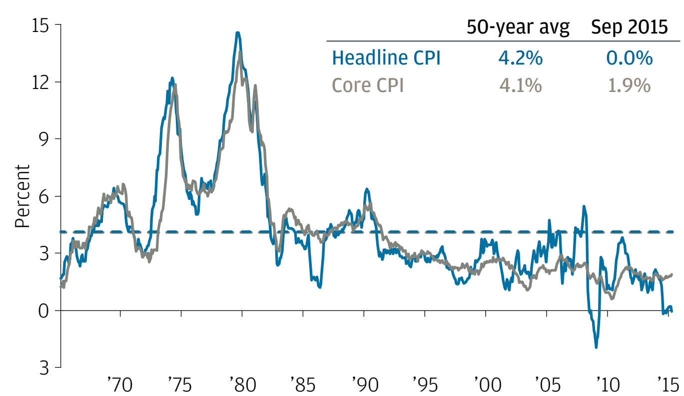
One other structural factor holding down wage growth may be the expansion of the number of workers working in a part-time capacity. In the second quarter of 2015, part-time workers were receiving only 30.4% of the wages of full-time workers and those wages had risen by only 7.5% over the prior five years compared to 8.2% in the case of full-time workers.

A LACK OF HEADLINE INFLATION

To this point, all of the factors we have mentioned have been structural. The current rate of inflation, by contrast, is a hybrid from the perspective of the business cycle. It is low, in part due to a lack of wage pressures and some remaining slack in the economy. However, it also reflects global commodity prices, which are clearly being determined by more than the U.S. cycle **(EXHIBIT 2)**.

If inflation is low, businesses feel more justified in denying wage increases

EXHIBIT 2: CPI AND CORE CPI, % CHANGE VS. PRIOR YEAR, SEASONALLY ADJUSTED



Source: BLS, FactSet, J.P. Morgan Asset Management *Guide to the Markets*—U.S.; data are as of October 16, 2015.

CPI used is CPI-U and values shown are % change vs. one year ago and reflect September 2015 CPI data. Core CPI is defined as CPI excluding food and energy prices.

Statistical evidence suggests that the headline rate of inflation is important in determining wages since many employers regard wage increases as essentially cost-of-living adjustments. If inflation is low, businesses feel more justified in denying wage increases and workers feel less justified in demanding them. In fact, since 2002, statistical analysis suggests that a one percentage point increase in year-over-year CPI headline inflation has been associated with a 0.17% increase in annualized average hourly earnings. As a result, the collapse in year-on-year CPI inflation from 2.0% in July 2014 to 0.2% in August 2015 will likely have further reduced the year-over-year growth in average hourly earnings.

A LACK OF PRODUCTIVITY

One other potential reason for a lack of wage growth is the very weak pace of productivity growth seen in recent years. This likely reflects slow economic growth overall. However, it may also be due to a slowdown in the growth of investment spending (since it is hard for workers to be more productive without more and better equipment). Whatever the reason, it may well be that cost-conscious firms are reluctant to grant pay increases to workers when productivity growth is slow.

ATTITUDES ABOUT THE ECONOMY

Finally, perceptions of the job market rather than raw job market statistics may be more important in determining wage gains. As evidence of this, every month as part of a survey on consumer confidence, the Conference Board asks consumers whether jobs are plentiful or hard to get in their local area. A diffusion index based on the answers to this question is actually more predictive of wages than the measured unemployment rate itself. It may well be that a continuation of a recession narrative long into the expansion, by Federal Reserve officials as much as anyone, may have convinced both workers and employers that it wasn't yet time for a pay increase.

Overall, this analysis suggests that wage gains will probably increase in the months ahead for cyclical reasons as the unemployment rate falls further, more part-time workers find full time jobs and attitudes about the economy improve. In addition, as oil prices stabilize or rise, headline inflation should rise, providing a further boost to wages. However, any residual weakness in wages is likely due to structural factors rather than cyclical weakness and hardly justifies the maintenance of the easiest monetary policy in a century in a fundamentally healthy economy.

Rethinking the core: Finding the middle ground in equities

JOSH FEUERMAN, *SENIOR EQUITY CLIENT PORTFOLIO MANAGER U.S. EQUITY GROUP* AND **HAMILTON REINER,** *PORTFOLIO MANAGER AND HEAD OF U.S. EQUITY DERIVATIVES U.S. EQUITY GROUP,* EXPLAIN EQUITY APPROACHES THAT STRADDLE BOTH ACTIVELY AND PASSIVELY MANAGED STRATEGIES CAN HELP INVESTORS GENERATE HIGHER RETURNS OR MINIMIZE VOLATILITY

In an environment of lower returns and higher volatility, investors may want to rethink their core equity allocation, as buying beta may not be enough. In recent years, some institutional investors have adopted a core-and-satellite approach for their equity allocation as a way to maximize their portfolios' return potential for a given level of risk. The "core" allocation may be made up of passively managed securities that provide exposure to equity strategies that are more benchmark-oriented.

By contrast, the "satellite" portion can include strategies that have higher tracking error or higher "active share," either of which has the potential to add higher alpha. One problem with seeking alpha, however, is that it can be hard to find, especially strong risk-adjusted alpha net of fees.

We believe there is a middle ground between active and passive. What if there were solutions that didn't take excessive benchmark relative risks but added some incremental returns? Just as one does when picking stocks, one needs to look at the risk taken for the reward received.

ENHANCED INDEX FUNDS

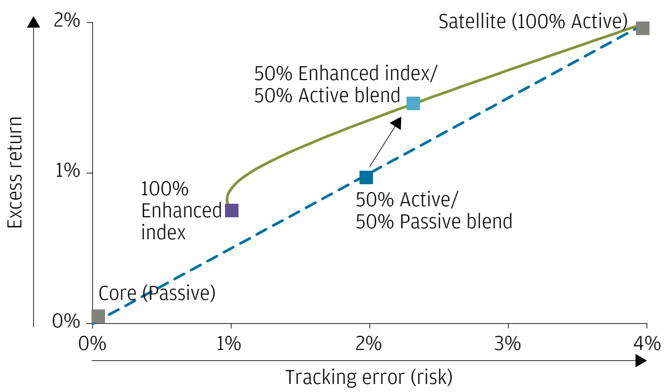
Rather than seeking the high-octane alpha associated with active management, investors can seek to incrementally boost returns in the active space. Enhanced index funds are good index fund surrogates as well as a more cost-effective solution to alternative investments. These funds are designed to look similar to the index in regard to their risk characteristics but also seek to add some incremental returns to aid in the compounding of the portfolio's returns. The higher information ratio of enhanced index-tracking strategies is key to this shift. In fact, an active/enhanced mix may offer better returns than an active/index mix for equal levels of risk. This active/enhanced mix often results in a superior information ratio.

Enhanced index-tracking strategies attempt to limit their tracking error relative to the benchmark and, in so doing, tend to avoid the pitfalls (or uncompensated risks) that are the downfall of many active managers. Their rigorous risk-management results in portfolios that look like the index in terms of risk, yet are designed to offer potential excess returns. As a result, investors receive virtually the same diversification benefits from enhanced index-tracking strategies, which are highly correlated with their benchmarks, only with consistent outperformance. To be sure, the measure of success is return net of fees relative to risk taken. By blending enhanced index-tracking strategies with more active funds or by using them as a partial allocation within a passive mandate, investors may end up with a more efficient core allocation.

Combining these risk diversification benefits with the strategies' excess returns results in the efficient frontiers depicted in **EXHIBIT 3**.

Enhanced indexing can serve as a middle ground in volatile markets

EXHIBIT 3: EXCESS RETURNS VS. TRACKING ERROR



Note: Active manager is assumed to have an expected return of 2% and a 4% tracking error. Correlations between managers are assumed to be zero.

Source: J.P. Morgan Asset Management; analysis as of June 2015. For illustrative purposes only.

This exhibit compares efficient frontiers using 100% actively managed equity strategies, a mix of active and enhanced index-tracking strategies and a portfolio of 100% enhanced index-tracking strategies. Including the enhanced index-tracking strategies raises the aggregate return, with only a small corresponding increase in the aggregate risk when compared with a mix of active and passive equity strategies alone. We believe this increase in risk is a small price to pay for the increase in returns.

EXPLICIT DOWNSIDE PROTECTION USING HEDGING

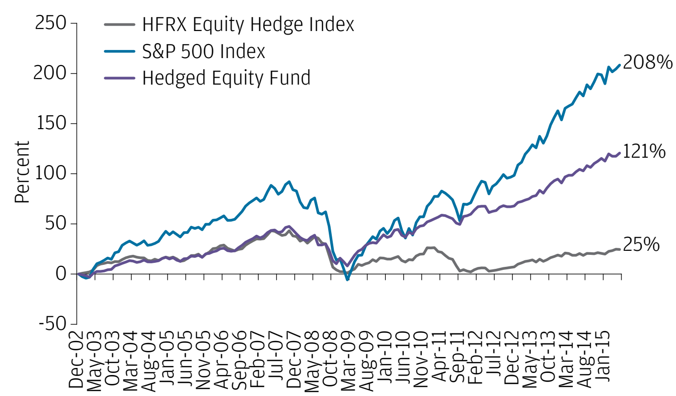
Another risk-reduction strategy recognizes that upside volatility is more palatable than downside volatility. In other words, investors can tolerate more volatility when returns are greater than zero than they can when returns are less than zero. In order to reduce overall portfolio volatility, these strategies hedge downside risk by explicitly buying downside protection using options or other derivatives. This protection dampens the downside volatility which, over time, reduces the portfolios' overall volatility. Since these actively managed hedges aim to provide higher risk-adjusted returns over long-only strategies, investors can use them to meet a variety of investment objectives, from de-risking and re-risking to serving as a liquid alternative to hedge funds.

There are several equity hedging strategies—long/short, options overlays and covered call writing—that aim to reduce portfolio risk through shorting and options. Determining the appropriate strategy depends on the investor's strategic objectives, risk profile and desired beta exposure. Unlike the process used with shorting securities, hedged equity strategies (sometimes known as options overlay strategies) reduce risk by trading put and call options around an underlying stock index. In some cases, the manager may implement an equity collar by buying put options to protect an underlying equity portfolio and offsetting the cost of the put by selling call options.

EXHIBIT 4 provides an example of how this type of strategy outperformed more tactical long/short hedge fund managers.

Staying invested during volatile periods

EXHIBIT 4: RETURNS OF S&P 500 INDEX, HFRX EQUITY HEDGE INDEX AND A LOWER-VOLATILITY OPTIONS OVERLAY STRATEGY



Source: J.P. Morgan, HFR; data as of May 31, 2015.

Note: Options overlay strategy returns are shown net of fees. Based on J.P. Morgan's analysis using back-tested data of an options overlay, or hedged equity, index.

Many of the long/short managers reduced their net equity market exposure in 2008 and 2009 and, as a result, missed out on the S&P 500 Index's subsequent rebound. Usually, the price that one pays for this downside protection involves selling some upside participation away, but there are optimal trade-offs between the two.

LOOKING AHEAD

Few people believe that the recent past in either the fixed income markets or the equity markets is a true reflection of what the future holds. In an environment of lower returns and higher volatility, investors may want to consider equity strategies that can either add incremental alpha or minimize volatility to improve their risk-adjusted returns.

The secondary market for private equity

The secondary private equity (PE) market—where pre-existing PE interests are bought and sold—has grown substantially since its beginning in the 1980s. With transaction volume reaching $42 billion in 2014, the secondary private equity market continues to mature in its diversity of participants and complexity of transactions. It is no longer merely a market for distressed sellers. Today pension plans, endowments and foundations, family offices, asset managers, financial institutions, sovereign wealth funds and general partners (GPs) alike are among its many participants—acting as both buyers and sellers.

DISTINGUISHING CHARACTERISTICS

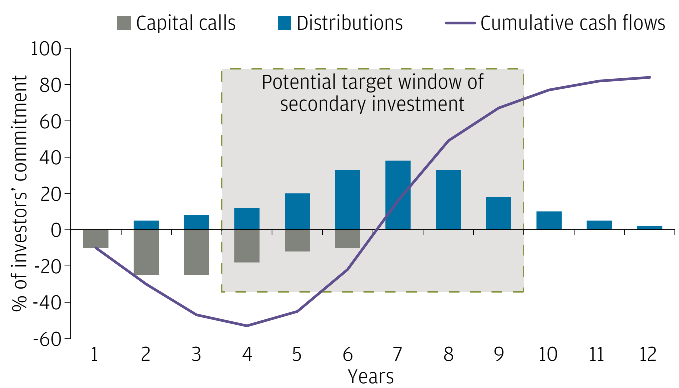
Private equity investors may choose to sell their PE interests for a variety of reasons: to raise cash or obtain relief from future capital calls, trim overall PE exposure, fine-tune PE portfolio composition and/or address regulatory concerns.

The distinct characteristics and potential benefits of secondary private equity investments include:

- Diversification of PE holdings across vintage years, geographies and sectors.
- Greater transparency: Since secondary investments often involve funds in which a significant level of capital has already been invested, there is less "blind pool" risk; existing portfolio companies can be evaluated, and there are fewer unfunded commitments.
- Potential mitigation of J-curve effect: The J-curve describes the general pattern of returns for a primary market private equity investment: moderately negative returns in the early years (when fees and expenses are high relative to invested capital), increasing returns as earnings and valuations grow (with meaningful distributions beginning around year three and cash flows usually turning positive around year seven), followed by the harvesting stage, in which asset sales and distributions continue until the end of the investment term (usually 12 years). Investors in private equity secondaries typically purchase interests midway through the investment's life cycle, as shown in **EXHIBIT 5**, often paying a large up-front purchase price, but avoiding fees and expenses paid in the initial years, which generally result in early negative returns for primary investors.

Secondary private equity investing involves an up-front purchase price but can help investors avoid some early years of negative return

EXHIBIT 5: ILLUSTRATIVE ANNUAL CASH FLOWS FOR A PRIVATE EQUITY PARTNERSHIP

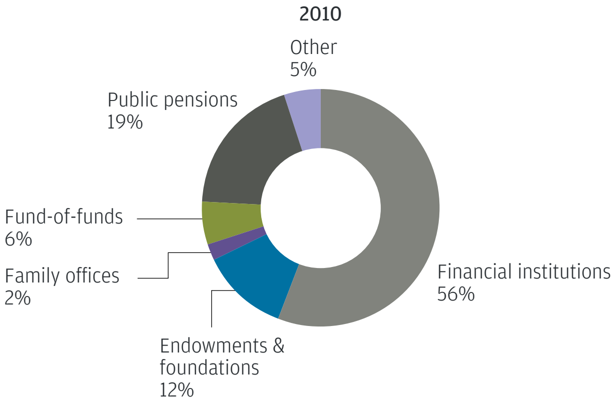


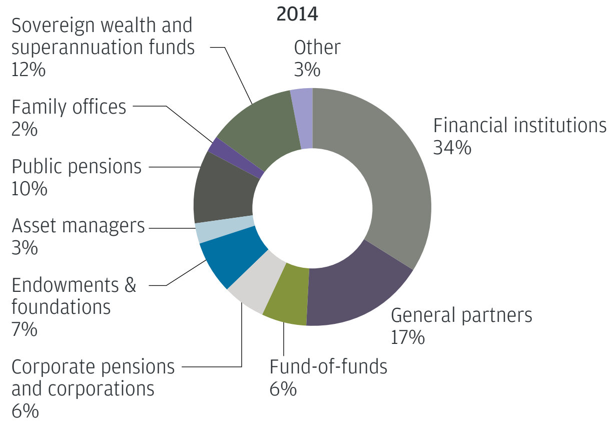
Source: J.P. Morgan Asset Management. For illustrative purposes only; based on certain assumptions, including a 1.8x return over a 12-year investment cycle with a five-year investment period (typical private equity fund terms).

Accelerated return of cash: With a later-stage start, secondary private equity investments typically exhibit shorter holding periods and a faster return of capital than primary partnership investments.

As the secondary market matures, the universe of sellers is becoming more diversified

EXHIBIT 6: SHARE OF SECONDARY TRANSACTION VOLUME BY TYPE OF SELLER





Source: *Cogent Secondary Market Trends & Outlook,* January 2011 and January 2015.

MATURING MARKET: A MORE DIVERSIFIED UNIVERSE OF SELLERS AND BUYERS

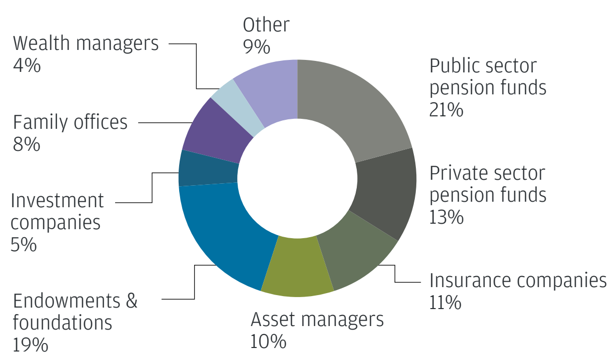
After a record year for secondary deals in 2014, we would expect both secondary volume and pricing to moderate. We anticipate that as the secondary market continues to mature and private equity investors become more comfortable with it, institutional investors of all types will increase their participation on both the buy and the sell sides, using the market to rebalance portfolios and further diversify private equity holdings.

Sellers of secondary interests have become more diverse, shifting away from a market dominated by pension plans and financial institutions, as demonstrated in **EXHIBIT 6**. Though financial institutions still represented a large portion of transaction volume in 2014, we expect their participation to decline further. This is in part due to an extension provided by the Federal Reserve allowing U.S. financial institutions to delay, likely until July 2017, conformance with a provision of the Volcker rule that limits their holdings of certain private equity investments. We see this engendering a wait-and-see mentality on the part of some institutions regarding additional portfolio sales. We also expect that the upward trend in the use of the secondary market as a portfolio management tool will result in the continued diversification of sellers, as well as the diversification of assets being sold.

Likewise, the universe of buyers has also diversified, from traditional purchasers (i.e., secondary fund managers) to a more diverse array of entrants who recognize the benefits of secondary investing in managing their own portfolios. Pension funds, insurance companies, asset managers and endowments and foundations, as shown in **EXHIBIT 7**, are among the growing list of non-traditional purchasers that likely represent at least 20% of the secondary buyer universe.

The universe of secondary private equity buyers is also diversifying

EXHIBIT 7: BREAKDOWN OF NON-TRADITIONAL SECONDARY MARKET BUYERS



Source: *Preqin Special Report: Private Equity Secondary Market,* March 2015.

KEY CONSIDERATIONS FOR INVESTORS

The diversification of buyers and the positive trend in public equity performance have resulted in increased demand for private equity secondary interests. The competition for secondary deals is strong and prices are likely to remain high—at single digit discounts of NAV, on average, including purchases at par or greater on the high end of the market. Despite availability of transactions, purchasers will face increased pressure to find high-quality secondary deals.

In a competitive environment, investment success in the secondary PE market requires meaningful relationships with agents and GPs, skill and experience in evaluating investments, and the ability to quickly evaluate and act on opportunities as they arise.

Asset allocation views

JOHN BILTON, *HEAD OF GLOBAL MULTI- ASSET STRATEGY, MULTI-ASSET SOLUTIONS,* PRESENTS KEY FINDINGS FROM THE TEAM'S QUARTERLY STRATEGY SUMMIT

IN BRIEF

- Concerns over China and emerging markets (EM) hit global growth expectations this summer; fears persist but we expect developed market growth to hold up.
- Rising stock-bond correlation makes diversification harder and risk appetites lower, but the U.S. economy in mid-cycle is ultimately supportive for stocks and credit.
- Despite softer global growth and low inflation, U.S. employment and housing justify normalization of policy; rates along the curve set to rise as global growth fears recede, but moderate inflation and central bank purchases keep demand elevated for duration.
- Slow but positive growth and preference for developed markets put emphasis on carry assets like credit and yielding stocks rather than on higher beta cyclical equities.

Summer 2015 witnessed a double dip in commodities and bond yields, ended the bull market in Chinese stocks, ushered in a bear market in emerging market (EM) equities and gave us a meaningful correction in developed market (DM) stocks. Yet perhaps most important is the collapse in confidence and conviction. The clear signal from our Strategy Summit and our quantitative models: this is no market for heroes.

Weakness in China will weigh on global growth, but we don't think it will derail it; dollar strength and oil weakness have wiped out a year of earnings growth from U.S. stocks; and Europe is prone to aftershocks as the economic wounds of the crisis slowly heal. Nevertheless, domestic U.S. strength persists and warrants a slow normalization of rates; sentiment in stock markets is weak, which presents a low hurdle for positive surprise; and Europe's first true post-crisis test—Greece—caused barely a blip in the data.

So why the collapse in confidence and conviction? Simply put, growth is low by historical standards, policy is unusual, and after two decades of globalization we are in a new world that challenges our assumptions about the plumbing of the global economy. Even after seven years of expansion, we view the U.S. economy as only mid-cycle and see a low risk of recession. And for all the concern over DM policy divergence and EM economic weakness, our work on the synchronization of business cycles suggests that the apparently dislocated world we see today is by no means unusual.

A common thread running through the year is the low level of global growth. To the optimists, a sluggish recovery has more scope to persist; to the pessimists, we're one mishap away from a slump. Early-year themes of a strong dollar and weak oil have largely played out, and the collateral damage on S&P earnings growth will heal. By contrast, China's challenges are persistent and continue to weigh on EM and commodity producers. We expect this weakness to drag on global growth into next year. More profound, however, is the growing chasm in growth outlook this creates between the consumption-led developed world and export-dependent emerging economies.

China will continue to divide opinion. While China has accounted for around one-third of world nominal GDP growth since the crisis, International Monetary Fund (IMF) projections have this falling to around one-fifth in 2016. The U.S. and, increasingly, Europe drive global growth, and we remain optimistic that the domestic recoveries in both regions are robust. But EM weakness will constrain global growth rates, leading investors to prefer "carry and roll" assets such as dividend-yielding stocks and credit over seeking capital growth alone.

The global growth gap manifests itself in divergent central bank policy. Despite holding rates steady at its September meeting, the U.S. Federal Reserve (Fed) continues to signal the start of a rate hiking cycle this year. By contrast, EM central banks are easing policy, and in Europe and Japan quantitative easing (QE) is in full swing. The implications of central bank bond demand and low inflation expectations appear fully

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KEY THEMES AND THEIR IMPLICATIONS

Theme		Macro and asset class implications
GLOBAL MACRO THEMES	Low inflation	Slower Asian growth and weak commodities stall rebound in global inflation; carry assets (e.g. credit) may benefit
	Global policy divergence	Fed on track to normalize as other central banks ease policy; scope for riskless rates to modestly rise with the Fed
	Supply-side weakness	Across developed markets, low productivity and labor force growth will ultimately cap longer-dated yields
DEVELOPED MARKETS MACRO THEMES	U.S. economic strength	U.S. in mid-cycle with low risk of recession despite fears over global growth; good for U.S. stocks and high yield credit
	Gradual growth recovery in Europe	Europe's recovery is on track; EM weakness may hit confidence a little, but EU stocks and Bund yields should rise
	Japanese economic recovery	Japan remains focused on recovery, but inflation is still low; expectations are already high for Japanese stocks
EMERGING MARKETS MACRO THEMES	Emerging market rebalancing	Despite the recent sell-off, weakness remains; earnings and EM FX are vulnerable and still weigh on EME and EMD
	China in transition	Rebalancing the economy and liberalizing markets proving volatile; problematic for commodities and EM FX

Source: J.P. Morgan Asset Management Multi-Asset Solutions; data as of September 15, 2015. For illustrative purposes only.

reflected in sovereign yield curves. So interest rates all along the curve should grind higher as the Fed raises rates.

We remain cautiously optimistic on risk assets, with a preference for developed markets, but questions over growth and policy lead us to moderate portfolio risk. Our overweights (OW) are U.S., eurozone and Japanese equities; U.S. high yield credit; Australian bonds; and the U.S. dollar. Our underweights (UW) are cash, EM equities, Canadian bonds and the euro. We close our flattening bias, as forwards now largely price this; take our commodities UW to neutral; and seek opportunities to underweight duration as policy rates start to rise.

On balance, we maintain our view that the gradual healing of developed economies will more than offset weakness across emerging markets, leading to a steady maturing of the mid-cycle phase in which the U.S. economy currently sits.

MULTI-ASSET SOLUTIONS

J.P. Morgan Multi-Asset Solutions manages over USD 170 billion in assets and draws upon the unparalleled breadth and depth of expertise and investment capabilities of the organization. Our asset allocation research and insights are the foundation of our investment process, which is supported by a global research team of 20-plus dedicated research professionals with decades of combined experience in a diverse range of disciplines.

Multi-Asset Solutions' asset allocation views are the product of a rigorous and disciplined process that integrates:

- Qualitative insights that encompass macro-thematic insights, business cycle views and systematic and irregular market opportunities
- Quantitative analysis that considers market inefficiencies, intra- and cross-asset class models, relative value and market directional strategies
- Strategy Summits and ongoing dialogue in which research and investor teams debate, challenge and develop the firm's asset allocation views

As of June 30, 2015.

Active allocation views

These asset class views apply to an intermediate-term horizon (that is, 12 to 18 months). Up/down arrows indicate a positive (▲) or negative (▼) change in view since the prior quarterly Strategy Summit. This summary of our individual asset class views shows absolute direction and strength of conviction but is independent of portfolio construction considerations.

Max negative ● ● ● Neutral ● Max positive ● ● ●

Asset class		Opportunity set	Change	Negative	Neutral	Positive	Rationale
MAIN ASSET CLASSES		Equities/bonds	▼	○ ○ ○	○	● ○ ○	U.S. in mid-cycle boosts stocks; risk capped by rising stock-bond correlation
MAIN ASSET CLASSES		Duration	▼	○ ○ ○	●	○ ○ ○	Fully priced for low growth and disinflation; risks to the upside in yields
MAIN ASSET CLASSES		Credit		○ ○ ○	○	● ○ ○	Absenting a U.S. slowdown (not our base case), spreads are attractive
MAIN ASSET CLASSES		Commodities	▲	○ ○ ○	●	○ ○ ○	Oil price now at a level the market can clear, but demand will be slow to rise
MAIN ASSET CLASSES		Cash	▲	○ ○ ●	○	○ ○ ○	Lower diversification from stock-bond means less negative on holding cash
REGIONAL PREFERENCE BY ASSET CLASS	EQUITIES	U.S.		○ ○ ○	○	● ● ○	2015 earnings growth hit by oil and currency; scope for a rebound in 2016
REGIONAL PREFERENCE BY ASSET CLASS	EQUITIES	Europe ex-UK	▼	○ ○ ○	○	● ○ ○	Easy policy and domestic macro supportive, but earnings momentum slowing
REGIONAL PREFERENCE BY ASSET CLASS	EQUITIES	UK		○ ○ ○	●	○ ○ ○	Downgrades in oil and mining run their course; high dividend is supportive
REGIONAL PREFERENCE BY ASSET CLASS	EQUITIES	Japan		○ ○ ○	○	● ○ ○	Consensus overweight; good earnings outlook, but expectations are high
REGIONAL PREFERENCE BY ASSET CLASS	EQUITIES	Pacific ex-Japan	▼	○ ○ ●	○	○ ○ ○	Chinese weakness hitting other parts of the region; earnings outlook poor
REGIONAL PREFERENCE BY ASSET CLASS	EQUITIES	Emerging markets		○ ● ●	○	○ ○ ○	Poor fundamentals, but still neither cheap nor hated enough for contrarians
REGIONAL PREFERENCE BY ASSET CLASS	EQUITIES	U.S. REITs		○ ○ ○	●	○ ○ ○	Prefer exposure to core real estate where interest rate sensitivity is lower
REGIONAL PREFERENCE BY ASSET CLASS	FIXED INCOME	U.S. bonds-short end	▲	○ ○ ●	○	○ ○ ○	U.S. tightening policy but at a gradual pace; should see two-year rates rise
REGIONAL PREFERENCE BY ASSET CLASS	FIXED INCOME	U.S. bonds-long end	▼	○ ○ ○	●	○ ○ ○	Term risk premia compressed and supply-demand now more in balance
REGIONAL PREFERENCE BY ASSET CLASS	FIXED INCOME	Euro, core	▼	○ ○ ●	○	○ ○ ○	Upside growth risks and correlation to U.S. Treasuries can pull yields up
REGIONAL PREFERENCE BY ASSET CLASS	FIXED INCOME	Euro, periphery	▼	○ ○ ○	●	○ ○ ○	Political risks into late 2015; need higher core yields now for tighter spreads
REGIONAL PREFERENCE BY ASSET CLASS	FIXED INCOME	UK bonds	▲	○ ○ ○	●	○ ○ ○	Unattractive from a yield perspective, but domestic demand is persistent
REGIONAL PREFERENCE BY ASSET CLASS	FIXED INCOME	Other DM bonds		○ ○ ○	○	● ○ ○	Yield pickup in Australian bonds attractive; Canadian bonds very rich
REGIONAL PREFERENCE BY ASSET CLASS	FIXED INCOME	Investment grade	▼	○ ○ ○	●	○ ○ ○	Spread levels attractive, but overall yields uninspiring
REGIONAL PREFERENCE BY ASSET CLASS	FIXED INCOME	U.S. high yield	▲	○ ○ ○	○	● ● ○	Carry and yield levels attractive in a slow but positive growth environment
REGIONAL PREFERENCE BY ASSET CLASS	FIXED INCOME	Emerging markets debt		○ ○ ○	●	○ ○ ○	Rising U.S. rates will hurt EM external debt; fundamentals still challenged
REGIONAL PREFERENCE BY ASSET CLASS	FX	USD		○ ○ ○	○	● ○ ○	Upside limited, but weakness in EM FX likely to keep dollar supported
REGIONAL PREFERENCE BY ASSET CLASS	FX	EUR	▲	○ ○ ○	●	○ ○ ○	Some scope for further stimulus, but growth and current account supportive
REGIONAL PREFERENCE BY ASSET CLASS	FX	GBP	▲	○ ○ ○	○	● ○ ○	Underpriced scope for rate hikes and low political risk in near term
REGIONAL PREFERENCE BY ASSET CLASS	FX	JPY	▼	○ ○ ●	○	○ ○ ○	Patchy macro data raises probability of further stimulus in 2015 or early 2016

Source: J.P. Morgan Asset Management Multi-Asset Solutions; data as of September 15, 2015. For illustrative purposes only.

Diversification does not guarantee investment returns and does not eliminate the risk of loss. Diversification among investment options and asset classes may help to reduce overall volatility.

Come visit us at these upcoming Industry Conferences

October	NCTR	Annual Conference
	NCPERS	Public Safety Conference
November	SACRS	Fall Conference
January		Opal Financial Group Public Funds Summit 2016
	NCPERS	2016 Legislative Conference
February	FPPTA	Trustee School
March	CALAPRS	General Assembly
	NASRA	Winter Meeting
April	TEXPERS	2016 Annual Conference
		Pension Bridge Annual Conference
May	NCPERS	2016 Annual Conference & Exhibition
	SACRS	Spring Conference 2016

We welcome your feedback. Your suggestions for future topics and ideas on how to enhance the newsletter are most welcome. Please e-mail us at jpmam.info@jpmorgan.com.

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REPLAY 2016 Long-term Capital Market Assumptions

Please join us as we discuss the research results of our 2016 Long-term Capital Market Assumptions—our annual assessment of the long-term outlook for all major asset classes and markets. This year marks the **20th anniversary** of our assumptions. Members of our Assumptions Committee will review our time-tested approach, reveal this year's assumptions and:

- Examine the broad themes impacting our assumptions
- Present our long-term outlook across traditional and alternative asset classes
- Provide the rationale behind our estimates in a pragmatic manner

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Please contact your Client Advisor for full details.

J.P.Morgan
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