Third Quarter 2016 Commentary

October 24, 2016

The 17th century Enlightenment brought advancements of all kinds and the field of mathematics was one of the more fertile. From the shoulders of that era's giants, two Scottish ministers named Robert Wallace and Alexander Webster marked a major milestone in financial history. As Harvard professor Niall Ferguson recounts in *The Ascent of Money*, they recognized a problem when the short life expectancy of their fellow ministers left widows and orphans in hopeless poverty since the Church of Scotland did not support them beyond the year of the minister's death. The Bishop of Edinburgh set up a supplementary scheme in 1711 but the pay as you go structure proved inadequate.

Gathering historical data from presbyteries throughout Scotland, Wallace and Webster determined how many ministers, widows and orphans could be expected to exist at any given time. Then, using life expectancy tables developed in a Prussian town several decades earlier, they determined how much would be needed to sustain the beneficiaries for the rest of their lives and the level of investment required to generate those returns. Their insurance scheme was the first based on matching expected investment returns with expected liabilities. Prior forms of insurance were merely gambles that adverse events would not overwhelm premiums received in a given year. The Scottish Widows Fund was mathematically enumerated for twenty years of expected contributions, investment returns and payments. In 1765, Wallace and Webster were alive to see their calculations vindicated. The Napoleonic Wars of the early 19th century saw the Scottish Widows Fund expand its offerings beyond the clerical community and the company entered the 21st century as part of British giant Lloyds Banking Group and today is one of Great Britain's most prominent financial brands specializing in insurance and pension management. It's a healthy market as the British are the world's most insured people.

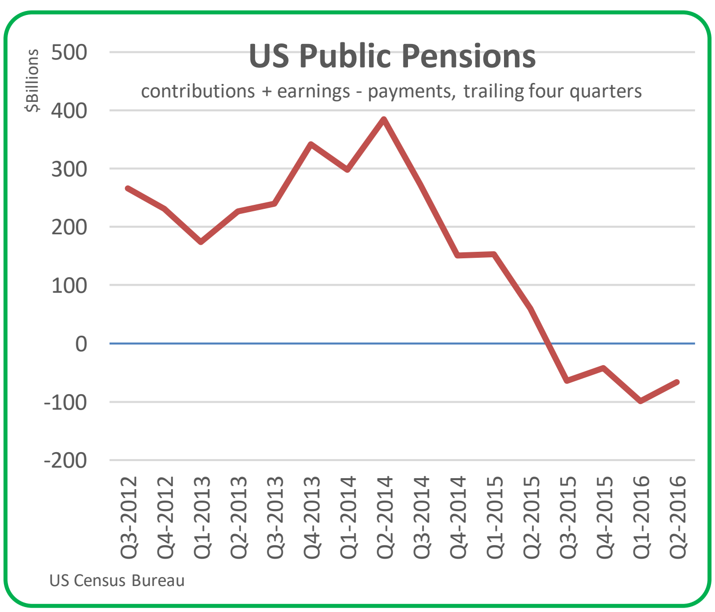
Pensions are a form of insurance against living beyond your savings and as humanity progresses so does life expectancy. Wallace and Webster's genius was in recognizing the power of investment returns to supplement payments from the fund that exceed contributions. They realized that investing in low risk assets can generate substantial returns whose risk would be mitigated by the long time frame of a fund's liabilities. In the more than 250 years since they launched their experiment, pension funds have grown to represent the largest group of assets in the world. Like all financial assets, they have benefited greatly from the quantitative easing (QE) policies underway among the world's central banks. Although the US Federal Reserve has ceased expanding its balance sheet, banks in Asia and Europe continue to create money to purchase financial assets with a goal of creating a wealth effect to spur their broader economies. Foreign central banks are even buying US stocks which helped the S&P 500 rise 3.3% for the third quarter reaching a new record high for the first time in 15 months. Bond indices felt the headwind from upwardly drifting interest rates.

Hotel California

A bond is a claim on a defined stream of payments so when interest rates decline, the value of that stream rises and the price of the bond increases. Although Japan and Europe have driven rates into negative territory, US bonds have maintained positive, albeit minuscule interest rates for several years. Large pension funds hold a mix of assets and have enjoyed so many years of rising prices in their bond portfolios that they may not have noticed the lack of any interest income. Now with interest rates stuck at the zero bound, so is the return on those assets. Fortunately the rising stock market has offset the stagnant bond portfolios and non-traditional pension assets like hedge funds and real estate have played larger roles. Rising prices across all asset categories have supported US pension funds even as payments to beneficiaries have consistently exceeded contributions from current workers.

Most workers today contribute to defined contribution retirement plans, such as 401(k)s, that will hopefully appreciate enough to sustain them through their retirement. Employers typically contribute to such plans but the risk of outliving the assets is borne by the employee. Older workers and government employees generally have defined benefit plans where they can rely on a monthly sum that rises with inflation throughout their retirement years. In these plans, the longevity risk is borne by the employer.

The US Census Bureau compiles quarterly data on metrics like total contributions, payments and investment earnings of US public pension funds. Since publishing those particular data series in 2007, every calendar quarter has seen aggregate payments exceed contributions. That is a function of the baby boomer demographic moving through the system but also of more employers moving their workers to defined contribution plans. Nevertheless, Wallace and Webster's principles still apply as the money contributed to the pension funds during the baby boomers' working years is earning and paying returns. Rising stock, bonds and real estate prices during the Fed's most active QE years kept the line in the accompanying chart well in positive territory. The second quarter of 2014 marked a peak in pension fund earnings of more than $490 billion over the previous year, represented by the peak on the orange line where contributions plus earnings exceed payments by over $384 billion. That quarter also happened to mark the worst position in almost a decade of data where payments for the previous year exceeded



contributions by $106 billion. There has been minimal improvement in that metric since then, putting more importance on the earnings component.

That inflection was also around the time the Fed stopped printing money and you can see the trend on the chart has not been favorable since. The S&P 500 finished the second quarter only slightly above where it was then so pension funds haven't earned much from their stock portfolios for the past two years. Their bond portfolios have enjoyed the higher prices that come with lower yields but recent yields are only returning to previous lows from 2012. A couple of years without much in the earnings component has brought the line below zero for the last four consecutive quarters, which has not happened since the financial crisis in 2009. Contributions have grown along with the economy but payments have grown faster, keeping the position around negative $100 billion annually, a sum that would have vexed Wallace and Webster's calculations.

Most pension funds have been unable to keep up with the growing holes. The country's largest is the California Public Employees Retirement System, better known as CalPERS. They assume an annual rate of return of 7.5% on their blended portfolio and they easily exceeded that in 2011 and 2014 when they gained around 20% but their return for the fiscal year that ended June 2016 was only 0.61%, after gaining only 2.4% in 2015. The fund's manager observed that the 3, 5, 10, 15 and 20 year average returns all fall short of their 7.5% goal.

That may be the reason why the tiny town of Loyalton, CA decided to withdraw from CalPERS after their four employees in the system had all retired. The town hoped to save the $30,000 it contributed to the fund each year, a liability based on the stated 7.5% discount rate. However, CalPERS has a termination policy that has the effect of discounting those future liabilities at a more realistic lower rate which inflated them into a $1.6 million bill that overwhelmed Loyalton's $1.2 million annual operating budget. If the town doesn't pay, the four retirees will see their pensions cut in half. If the other municipalities remaining in the fund were also required to discount their future liabilities at the lower rate, they too would be forced to make huge contributions into the fund which otherwise will deplete before it is able to make its promised payments. Loyalton found that they can check out anytime they like but they can never leave.

Just as low rates have inflated the value of pension fund assets they also inflate the present value of future liabilities. Even using the unrealistic higher discount rate, major cities and states have woefully underfunded pension systems and more quarters of below benchmark returns exerts further pressure on municipal finances. According to Bloomberg News, public pensions had a median return of 1% for the year ending June 2016, the lowest since 2009. CalPERS is one of the better funded but will surely have to drop its 7.5% assumed return just like dozens of other pension systems recently have. Any reduction in the assumed return translates into instant liabilities for the employers using the system. When a city is forced to put more money into its pension funds, it has less to spend on services and infrastructure. Chicago raised water and sewer taxes in the third quarter to help fund its underfunded pension which means less for its citizens to spend. Now that the Fed has stopped printing money, these funding gaps are more difficult to paper over.

The third quarter overlooked these concerns as liquidity from other central banks flowed into risk assets. The most aggressive position in the Stepping Stones fully invested Equity ETF strategy was also the strongest. We hold the semiconductor ETF for its economic sensitivity and its 21% quarterly return may signal all is well with the world economy or it may signal all is well with risk assets. It did benefit from industry consolidation in the quarter. Other aggressive positions like our China and Japan funds also did well gaining around 11% each. Markets reacted to the second quarter's Brexit vote by bidding up our European large cap position by over 5% in the third quarter. Our two energy positions enjoyed similar strength as the price of crude oil stabilized. Defensive positions were our weaker performers like the value fund gaining only 2.1% and the consumer staples and utilities positions losing almost 4% and 6% respectively. The ultimate defense against calamity is gold and our gold miners fund gave back some recent gains. Putting it all together, the strategy gained 2.68% in the third quarter compared to 3.3% for the S&P 500 and 5.1% for the MSCI All World index. Our year to date return of 20.38% easily exceeds both benchmarks.

Hard To Be Soft

Strong returns in the third quarter were partly attributed to the smooth reaction to the second quarter's Brexit vote, some even hoped the political class in Britain would ignore the voters and remain within the European Union. Newly installed British Prime Minister Theresa May dashed those hopes when she said her government would begin the process laid out under Article 50 of the EU charter no later than the first quarter of 2017. That will begin a two year process of negotiations over trade and immigration policies between the UK and EU. The prime minister is pushing for a "Soft Brexit" where current law will be replicated to reflect Britain's regained sovereignty. Other European leaders are calling for a "Hard Brexit" to dissuade other nations from following the British example. They want to ban British products in the European Union unless any European can enjoy free immigration into Great Britain. If savers in Germany can't choose a Scottish Widows financial product, the traders in London may not be able to buy BMWs and Mercedes, or French wine, or any of the other products that Britain imports disproportionately to its European exports. Considerations like that might explain why the British economy has not shown any of the predicted fallout from the vote in June. Retail sales have been steady, unemployment remains near 11 year lows while the stock market is near all-time highs. Some of that can be attributed to the Bank of England expanding its QE policy and buying financial assets to keep prices high.

Driving interest rates below where they would otherwise settle boosts asset prices in the short term but at the expense of future gains. A security is priced by determining the future cash flows the investment will produce and discounting that back at a given interest rate. As explained above, a lower rate makes those future income streams more valuable today. As prices continue to rise, the future income becomes fully discounted leaving no room for further gains. The only reason to buy at such a point is with the expectation of being able to sell to a greater fool in the future. The greatest fools in the bond market currently are the European Central Bank and The Bank of Japan buying all the bonds they can, driving rates deeper into negative territory for the first time in the history of money. As their programs become increasingly untenable there won't be any buyers left for these bonds. We are so far removed from any normal market that it is impossible to predict what may happen at that point. Certain large technology companies also appear to be trading on the greater fool theory with valuations last seen at the peak of the dot com frenzy.

The stock market dropped more than 15% after the Federal Reserve's first interest rate hike at the end of last year so the central bank has refrained from any more during this election year. The dissenting votes on keeping rates at almost zero have grown as the stated objectives have been reached. When the election gets out of the way there may not be anything left to restrain the Fed from finally normalizing interest rates. We have worried about that happening even as their forward guidance towards higher rates has proven false. Eventually their actions will meet their words so we are still holding excess cash for the buying opportunity that we expect to coincide with that point.

Until then and as always, thank you for your trust and thank you for your business.

Yours truly,

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