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ECONOMIC OUTLOOK

Not the Fed's Fault But it is Their Problem



THE CARLYLE GROUP

GLOBAL ALTERNATIVE ASSET MANAGEMENT

Not the Fed's Fault But it is Their Problem

By Jason M. Thomas

For years, critics have accused the Fed of suppressing interest rates through excessively accommodative monetary policy. Quantitative easing had been labeled the “greatest subsidy to the rich ever,” with the surge in the stock market linked to the Fed’s artificially low interest rates.¹ Yet, instead of releasing upward like a coiled spring, longer-term interest rates and expected future short-term rates have actually *declined* in 2014 even as the Fed “tapered” asset purchases from \$85 billion per month in December 2013 to \$35 billion in June 2014.²

As we outlined in December 2013 (“Don’t Fear the Taper”), the main driver of low interest rates in the U.S. is not Federal Reserve policy, but a surplus of savings over desired investment.³ When everyone wants to be a lender instead of a borrower, as in the immediate aftermath of the U.S. household leverage crisis, equilibrium interest rates naturally adjust downward to clear savings-investment markets. Lower rates make savings less attractive and turn some would-be lenders into spenders and borrowers. Unconventional policies like quantitative easing (QE) were simply the Fed’s attempt to accommodate this downward

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adjustment once overnight interest rates reached zero.⁴ that are increasingly difficult to meet when rates fall close to zero for a prolonged period. Rather than simply accept lower returns, investors often assume incremental risks to achieve return targets. This “reach for yield” can lead to systemic mispricing of risk, fragile liability structures, and greater eventual market volatility.

Fed policymakers have expressed concern about investor complacency,⁵ but they have also expressed a willingness to tolerate somewhat above target future inflation to reverse some of the damage caused by the Great Recession.⁶ This is a potentially dangerous stance, both because of the

unpredictable financial consequences of suppressing rates so late in the cycle and because of the speed with which natural interest rates could adjust upward. While current Fed policy remains roughly neutral given low equilibrium rates, this could change if the boom in mergers and acquisitions activity (M&A) presages an increase in fixed investment and hiring. In this case, the current policy stance would amount to the active suppression of rates, which would seem to be ill-timed given the state of the financial cycle.

Whether or not the Fed’s commitment to low rates is sustainable, investors appear to have become increasingly complacent about interest rate risk. Funds flow data suggest retail investors have actually cut exposure to floating rate debt in 2014 in favor of increasing their fixed rate fund holdings. The danger is that by mistakenly heeding the cries of “wolf” following December’s taper announcement, investors may now ignore the first signs of the real thing.

The Household Leverage Crisis & Unnaturally Low Natural Interest Rates

Interest rates have declined globally because of structural economic factors as well as the influence of central bank policies. Measuring the extent to which the Fed has “suppressed” rates requires some estimate of the market-clearing interest rate that would prevail in the absence of Fed intervention. This “natural” or “equilibrium” interest rate shifts through time in response to shocks to balance sheets, risk perceptions, inflation expectations, and expected returns on capital that are independent of any change in monetary policy.⁷

In the aftermath of the financial crisis, more households, businesses, and financial institutions wanted to save and lend rather than borrow and spend. Households sought to reduce mortgage debt in response to the sharp decline in house prices and wage expectations; financial institutions reduced non-deposit liabilities in an effort to rebuild capital and liquidity positions; and many non-financial businesses responded to the near-death experience of 2008 by building large liquidity buffers through on-balance sheet cash holdings. Even in the absence of central banks, interest rates would have naturally declined to induce some of these would-be savers to borrow instead. The scale of this decline would likely be proportional to the sensitivity of savings and investment decisions to changes in interest rates. If a large enough proportion of households and businesses wanted to save no matter how low the prospective return on that savings, interest rates could fall to

1 CNBC, “QE: The greatest subsidy to the rich ever?” December 18, 2013.

2 U.S. Treasury, Daily Yield Curve Data, June 13, 2014.

3 Conway, W. and Thomas, J. (2013), “Don’t Fear the Taper,” Economic Outlook, The Carlyle Group. Available at: http://www.carlyle.com/sites/default/files/Alpha_Strikes_Back_Dec2013_FINAL.pdf.

4 Bernanke, B. (2012), “Monetary Policy since the Onset of the Crisis,” Federal Reserve Bank of Kansas City Policy Symposium.

5 Hilsenrath, J., “Fed Officials Growing Wary of Market Complacency; Expectations for Rate Hikes Might Be Out of Line With Fed’s,” Wall Street Journal, June 4, 2014.

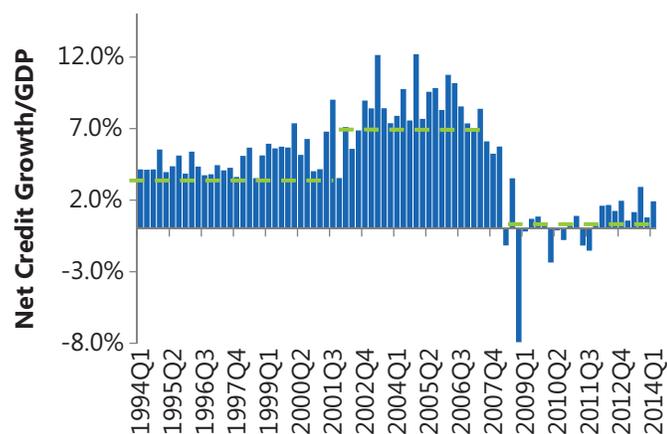
6 Hilsenrath, J., “Inflation Overshoot May be Needed,” Wall Street Journal, May 29, 2014.

7 Woodford, M. (2003), *Interest and Prices*, Princeton University Press.

zero without clearing the market.⁸

Between 2008 and 2013, overnight interest rates had been cut to zero but both employment and inflation remained below target, suggesting the market-clearing interest rate had fallen into negative territory. Savings decisions became less responsive to interest rate changes because of the household leverage crisis. The cumulative interest rate cut between 2001 and 2003 (5.5%) was of virtually the same magnitude as the rate cut between 2007 and 2008 (5.25%), but the household response was quite different.

Figure 1: Growth in Household Borrowing (as a Share of GDP)⁹



In 2002, when household balance sheets were relatively healthy,¹⁰ household borrowing increased by 76% (Figure 1) and the household sector's current account balance (household savings – household investment) swung from a surplus of 1.2% of GDP to a deficit of 0.5% (Figure 2). Conversely, in the 2007-2013 period, virtually the same rate cut had no discernible impact on household spending (Figure 2). The collapse in house prices caused the national average loan-to-value (LTV) ratio to rise into the high 80s, leaving a large swath of homeowners underwater and most homeowners with little-to-no equity to pledge as collateral for new borrowing.¹¹ Household credit growth turned negative between 2008 and 2011 and remains 65% below its long-run average; the surge in savings caused the household sector's current account to improve by 4% of GDP, with cash flow surpluses continuing to average 2.5% of GDP in 2014 with overnight rates still at zero.¹²

8 This hypothetical is similar to the binding leverage constraint in Eggertson G. and Krugman, P. (2012), "Debt, Deleveraging, and the Liquidity Trap: A Fisher-Minsky-Koo Approach," Quarterly Journal of Economics.

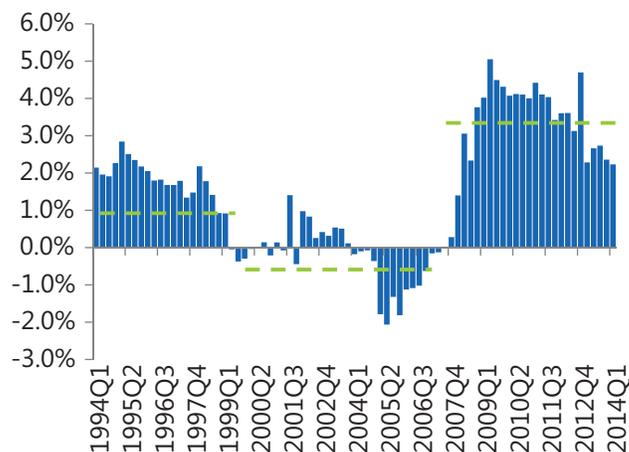
9 Federal Reserve, Financial Accounts of the United States (Q1-2014), Series F.100 and F.7.

10 Federal Reserve, F.102 and F.7.

11 Federal Reserve, B.100; Census Bureau.

12 Federal Reserve, F.100 and F.7. Net credit growth relative to GDP.

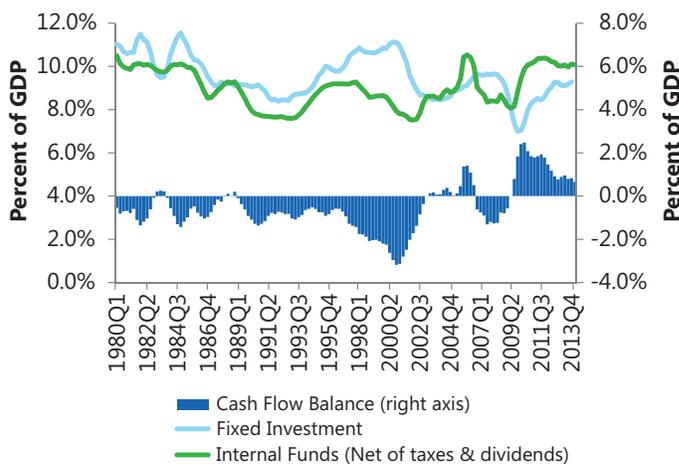
Figure 2: Household Current Account (Savings – Investment) Balance (as a Share of GDP)¹³



Businesses Don't Want or Need the Additional Savings of Households

With household spending largely unresponsive to the decline in interest rates and banks facing more stringent capital and liquidity standards, non-financial businesses were the only sector of the economy likely to respond to the rate cuts. But instead of accelerating capital spending in response to low rates, operating businesses chose to build large cash and securities portfolios and increase distributions to investors. Non-financial corporations' after-tax cash flow from domestic operations has exceeded domestic fixed investment for each of the past 20 quarters and averaged 1.4% of GDP over this period (\$250 billion). This compares to a 0.4% cash flow deficit in the 30-years prior to the crisis.

Figure 3: Current Account Balance, U.S. Non-financial Corporate Businesses¹⁴



While some degree of cash accumulation was a reasonable response to the 2008 liquidity crisis, cash flow surpluses have continued but taken the form of increases in

13 Federal Reserve, L.100 and F.7.

14 Federal Reserve, F. 102, F.7.

dividends and stock buybacks (Figure 3). In 2013, businesses returned \$1.18 trillion to shareholders (on a gross basis), added more than \$220 billion to their liquid securities holdings, and invested \$1.65 trillion in property, plant, and equipment in 2013. With depreciation of the existing capital stock equal to about \$1.2 trillion, distributions were more than 2.5x greater than net investment.¹⁵

Under normal conditions, the savings of households and financial institutions are generally channeled to non-financial businesses, which use the funds to buy new property, plant, and equipment to increase output, productivity, and living standards.¹⁶ Non-financial businesses invest in and (through management) control the non-residential portion of the economy's capital stock, which serves as the basis and ultimate collateral for all financial claims (excluding residential mortgages and their derivatives). When the non-financial corporate business sector saves more than it invests, it slows the growth of the capital stock and effectively creates a scarcity of physical assets. Instead of funding new productive capacity, incremental household savings just bids up the price of the existing capital stock.

While subdued business investment is largely explained by weak final demand, final demand would not be so weak if business investment were not so subdued! Household income, wage expectations, and desired savings rates are all determined in large part by business demand for investment and labor. Increased investment and hiring would likely increase current household spending. As shown in Figure 4, the yield on the 10-year Treasury has been 77% correlated with the economy-wide hiring rate since 2000. Aside from the period in 2009 when interest rates prematurely reset upward, the two series have moved in lockstep, as weakness in labor demand has resulted in cash surpluses that have placed downward pressure on interest rates.

Figure 4: Hiring Rate & 10-year Treasury Yield, 2000-2014¹⁷



15 It is important to note that this figure excludes the estimated \$224 billion of foreign after-tax earnings retained abroad and cannot be explained by tax sensitivity to repatriation. Federal Reserve, F.102 and SIMFA Equity Underwriting Data, 2014.

16 The savings-investment and real interest rate connection is modeled in an open economy context in Caballero R, et al. (2008), "An equilibrium model of "global imbalances and low interest rates," American Economic Review.

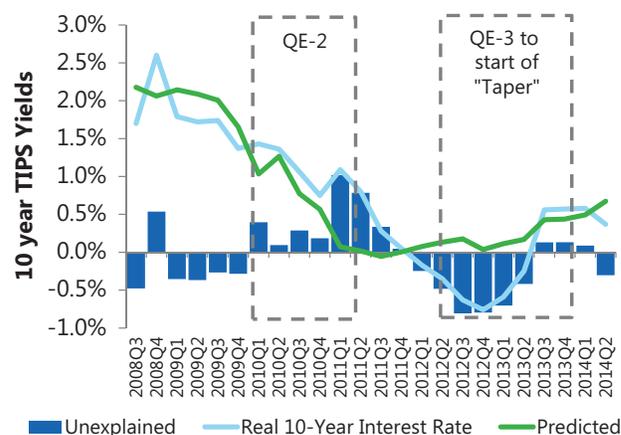
17 U.S. Treasury; U.S. Bureau of Labor Statistics.

Structural Factors Explain Virtually all of the Decline in Real Interest Rates

When adding the effect of decreased corporate investment to that of rising household savings, it becomes clear that these structural economic factors explain virtually all of the decline in interest rates since 2007. Since the introduction of the 10-year Treasury Inflation-Protected Security (TIPS), the quarterly variation in the non-financial corporate cash flow balance has been 65% correlated with the subsequent change in TIPS yields; the correlation with the quarterly variation in the household cash flow balance has been 85%.¹⁸ As shown in Figure 5, changes in the household and non-financial savings-investment account combine to explain 80% of the subsequent variation in real interest rates (an 89% correlation between the predictive series and the realized interest rate).

The fraction of the decline in real rates explained by savings-investment balances is so large that the impact of QE is barely discernible. The only period where real interest rates appear to have dropped well below equilibrium levels was the second half of 2013 when the anticipation and announcement of "QE-3" may have pushed rates about 0.8% below predicted levels. Yet, in other periods, the observed real interest rate was actually higher than predicted by the model, suggesting that most of the "unexplained" variation in rates could be random.¹⁹ For example, rates were 1.02% above equilibrium levels in Q1-2011 when QE-2 was still underway. At the very least, these results suggest that much of the impact from QE comes from traders attempting to "front run" the Fed rather than the mechanics of bond purchases themselves. Rates increased in early-2011 in anticipation of the end of QE-2 and then fell in mid-2012 in anticipation of the start of QE-3.²⁰

Figure 5: Non-financial Corporate Cash Flow & Real Interest Rates²¹



18 Carlyle Analysis of Federal Reserve, F.7, F.100, and F.102.

19 This is not the predictable result of least squares estimation. The parameters are estimated using pre-2008 data.

20 For a fuller discussion of this phenomenon, see: "Investor Implementation of Fed Policy," The Carlyle Group. Available at: <http://files.shareholder.com/downloads/AMDA-UYH8V/0x0x564921/d21da181-d599-421d-b7d1-0d9ea13c1bba/564921.pdf>.

21 Carlyle Analysis of Federal Reserve, F.7, F.100, and F.102.

Is the M&A Boom a Possible Turning Point in the Interest Rate Cycle?

This desire to “front run” the Fed led many investors to position themselves for a sharp upturn in longer-dated interest rates as the Fed “tapered” its asset purchases. Instead, the yield on the 10-year gradually fell from 3% at the start of 2014 to just 2.5% by the end of May even as the Fed has tapered asset purchases from \$85 billion to \$35 billion per month. The fall in longer-term rates has been matched by a decline in expected future short-term interest rates. Eurodollar futures imply that 90-day LIBOR is expected to be just 0.5% in one year (June 2015), down 0.73% from September 2013 and within 0.1% of the lowest expected rate in the history of the June 2015 contract. Expectations for 90-day LIBOR in two and three years’ time (June 2016 and June 2017) have fallen by over 0.85% since September 2013.²²

While the persistence of low rates in early 2014 should have been no surprise, the cash flow surpluses that sustain these rates will eventually come to an end.²³ The boom in mergers and acquisitions (M&A) activity suggests that day could come more suddenly than many suspect. Through the end of May, global M&A deal volume has exceeded \$1.35 trillion, already 16% above the first half of 2013 with an entire month to spare. In the U.S, announced and completed deals have totaled \$654 billion, up 22% relative to the first six months of 2013. Overall deal activity appears certain to reach post-crisis highs, with high stock valuations, record cash positions, and frothy credit markets all contributing to especially favorable deal finance conditions.

While an increase in M&A does little to impact corporate cash balances in and of itself, deals could be a precursor to an upturn in fixed investment. Pervasive underinvestment has left many businesses devoid of growth prospects. While the 10% decline in corporate profits in Q1-2014 was attributable to the decline in financial sector earnings, trend earnings growth has clearly decelerated since the middle of 2012. One of the easiest solutions to the problem of slowing growth is to make an accretive acquisition, often using inflated share prices as currency.²⁴ The problem is that the rising prices of targets is increasingly making acquisitions an uneconomic way to add capacity.

The average multiple paid on U.S. deals is 15.3x trailing twelve month’s EBITDA, a premium of about 40% relative to the average valuation for public companies in the U.S.²⁵ Given that the stock market value of the existing capital stock is already priced 11% above its replacement cost,

businesses appear to be paying about 55% more in the “second hand” market, on average, than it would cost to build the incremental capacity themselves. If rising valuations make further acquisitions uneconomic, businesses could respond by substantially increasing capital budgets. Assuming after-tax profits remain constant, a 7% increase in business fixed investment would wipe out current cash flow surpluses; a 12% increase would bring corporate funding requirements back to their long-run average. If after-tax cash flow contracts due to rising wages and payrolls, non-financial businesses could become net borrowers very soon and require financial inflows from the rest of the economy.

Implications for Investors: Time to Re-Examine Interest Rate Risk

The potential upward pressures on equilibrium interest rates come at a time when investors appear to have become increasingly dismissive of interest rate risk. Since February 2014, floating-rate loan funds have gone from average weekly net inflows of \$800 million to net outflows averaging \$620 million. Conversely, fixed-rate high-yield bond funds have seen \$350 million in average weekly outflows in February turn to \$500 million in average net inflows (Figure 6). Market participants appear to have responded to the “surprise” rate declines in the first half of 2014 by pouring back into higher-yielding fixed rate obligations. These flows indicate investors may be raising net exposure to interest rate risk at what may turn out to be the worst possible time.

Increased exposure to fixed rate debt could be justified by the Fed’s commitment to keep short-term interest rates lower for a longer period. The goal of such “forward guidance” is to encourage investors to accept lower yields in an effort to spur additional consumption and investment that would reduce unemployment and increase price pressures.²⁶ Such faith in the resolve of the human beings that serve on the Federal Open Market Committee (FOMC) may be unwarranted, especially if the face of a sustained increase in equilibrium interest rates. Several FOMC members have expressed concern about excesses in financial markets, including mispriced credit risk, exceptionally low implied stock market volatility, and interest rate futures that appear to assign very low weights to the probability that the Fed may have to tighten aggressively.²⁷ If these financial market excesses are then coupled with signs of increased investment and labor demand, it seems reasonable to suspect the Fed would tighten at a faster pace than the cumulative 1.3% increase over the next two years implied by Eurodollar futures.

22 Bloomberg; CME.

23 As shown in Figure 6, the 2014 average real interest rate is about 0.3% below its predicted level. This is likely due to short-covering, as investors were forced to buy back Treasury notes, providing a bid that pushed their price up further (depressed their yield).

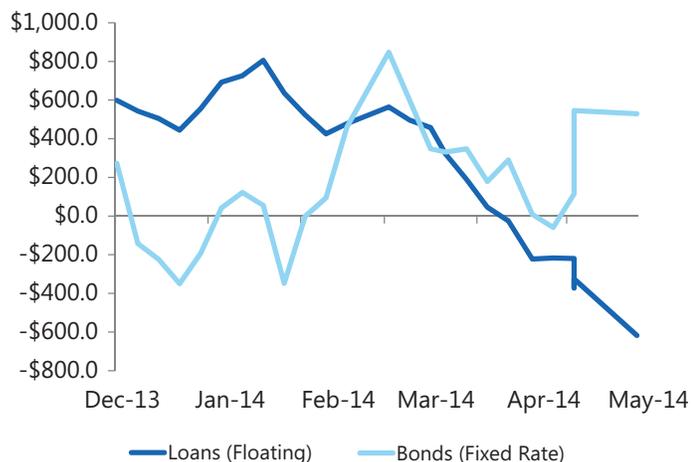
24 David, I. et al. (2013), “Acquirer Valuation and Acquisition Decisions: Identifying Mispricing Using Short Interest,” *Journal of Financial and Quantitative Analysis*.

25 S&P Capital IQ, June 6, 2014.

26 Woodford, M. (2012), “Methods of Policy Accommodation at the Interest Rate Lower Bound,” FRBKC Policy Symposium.

27 C.f., “Fed’s Dudley cites leverage loan, low volatility concerns,” among many similar articles.

Figure 6: Retail Fund Flows (\$M; four-week moving average)²⁸



Conclusion

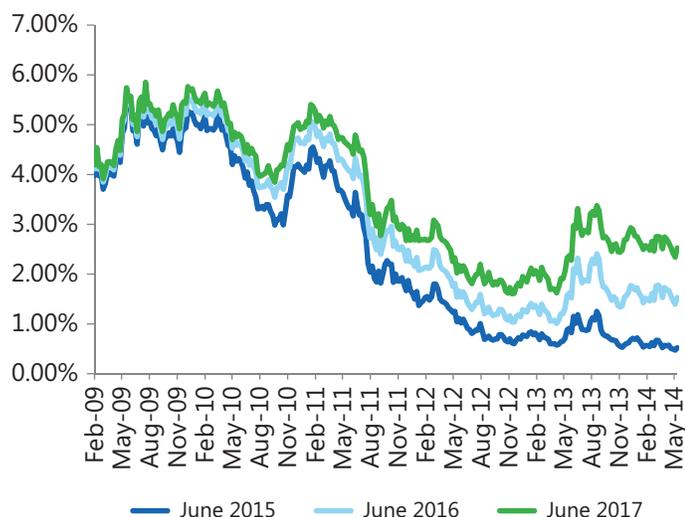
Although low interest rates are not primarily the Fed's fault, they are its problem. The nominal return targets that anchor investment decisions introduce risk-seeking behavior among investors that must be considered by policymakers. While current Fed policy remains roughly neutral given low natural rates sustained by structural surpluses, this could change if the increase in M&A activity presages an increase in fixed investment and hiring. In this case, the current policy stance would amount to the active suppression of rates, which would seem to be ill-timed given the state of the financial cycle. Just as the main impact of QE comes through the signals it sends market participants, a sooner-than-expected rate hike would signal the reintroduction of volatility to the rates, credit, and stock markets. Investors should be prepared.

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Figure 7: 90-Day LIBOR Implied by Eurodollar Futures Contracts²⁹



²⁸ Lipper; S&P LCD, June 6, 2014.

²⁹ Bloomberg; CME.