



**WEEKLY MARKET PERSPECTIVE**

**JULY 20, 2010**

**ECONOMY**

**‘Monetary Policy through the Looking Glass’**

This week, Federal Reserve Chairman Ben Bernanke will stand before Congress to deliver his semi-annual state of the monetary union address (formerly known as the Humphrey-Hawkins report). The timing comes on the heels of the Fed’s most recent report, which included downward revisions to economic growth and inflation, and an upward revision to unemployment expectations. While Capitol Hill is infamous for witch hunts and fall guys, lawmakers will be hard pressed to accuse the Fed of being lethargic given its unprecedented maneuvering the past 24 months.

Nonetheless, as the capacity for further fiscal stimulus is drawn into question, lawmakers may be hesitant to let the Fed Chairman off the hook so easily, which means lengthy inquiry into what else can be done from a monetary standpoint. In essence, the real question facing Dr. Bernanke is not, “Why did you do so much?” but rather “Have you done enough?” While this debate will likely wage all summer, there exists an economic calculation known as the Taylor rule that may shed empirical light on what action the Fed will take.

An analysis using the Taylor rule suggests that our current problems, which include a lack of credit flowing through the economy, may be the result of too little liquidity – painting a picture of an economy where the credit well has gone dry. If this is the case, all the Keynesian pump priming in the world cannot help if there is not enough liquidity in the monetary well in the first place.

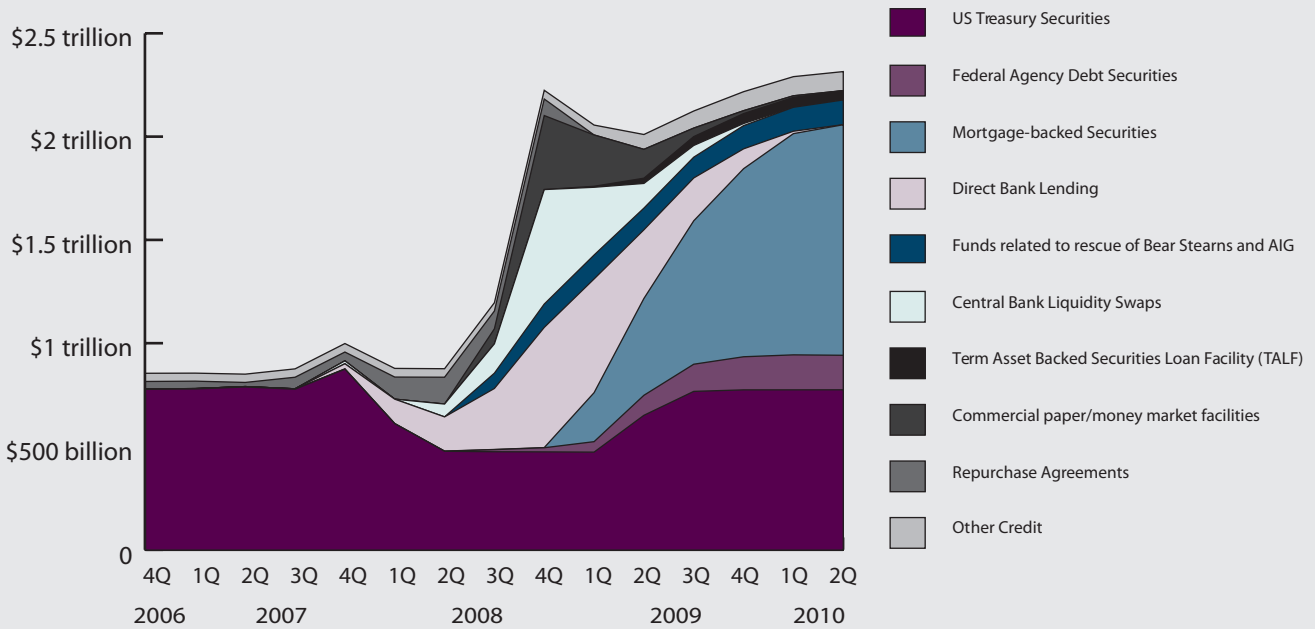


**BY SCOTT MINERD**

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**MONETARY POLICY AT WORK: THE BALOONING BALANCE SHEET OF THE U.S. FEDERAL RESERVE**

As of July 7, 2010, the U.S. Federal Reserve's balance sheet held steady at approximately \$2.3 trillion – a 165% increase from where it stood just two years prior.



Source: U.S. Federal Reserve

In order to get more liquidity into the current environment of ultra-low inflation and high unemployment Dr. Bernanke would need to fire up the printing presses and once again purchase public and private debt.

**‘Beginning with Open Market Operations’**

To better understand the implications of the Taylor rule, it helps to start with a foundation of how monetary policy works. When the Fed wants to stimulate the economy, it does so by lowering the interest rate for overnight loans made among banks. To accomplish this, the Fed creates money from scratch and uses it to buy assets on the open market, hence the term “open market operations.”

By purchasing assets from private-sector financial institutions, the Fed is able to increase the supply of money (i.e., the stock of banking reserves) in the economy. Like anything in economics, as the supply goes up, the price goes down. Money is no different. As the supply of money increases due to the

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Fed's open market purchases, the interest rate (or the price of holding money) declines. The Fed continues to conduct such open market purchases, adding more and more assets to its balance sheet, until such a time as the observed interest rate meets its desired objective. The goal of lowering the Fed funds rate is to get credit flowing through the economy, which in turn spurs investment, growth, and consumption.

## 'An Introduction to Quantitative Easing'

When a central bank like the Fed has lowered its target interest rate to near zero, and yet it still hasn't produced its desired effect on the economy, the action of last resort is a policy called "quantitative easing." Quantitative easing, or what others would historically refer to as debt monetization, is essentially the same process of printing money and buying assets, but it just happens to be done when interest rate targeting is no longer the name of the game.

By purchasing long-term government debt and private-sector debt (U.S. Treasuries and mortgage securities, for the most part), the Fed can provide incremental liquidity to the financial markets. The short-run impact of the most recent round of quantitative easing has been to lower long-term interest rates, which should be a boon to housing market healing and the deleveraging of the household balance sheets.

The danger of too much quantitative easing, of course, is inflation. While we will return to the debate on inflation expectations in future issues, today's topic pertains to Dr. Bernanke and his crucial visit to Capital Hill. More specifically, we focus on the main question that Congress will likely ask, "What can the Fed do to help the economy given unemployment is alarmingly high, inflation is low, and growth is slowing by all accounts?"

## 'Quantitative Easing Meets the Taylor Rule'

One way to answer this question is to look not only at where the Fed funds rate is currently (0.25 percent), but where it should be given the economic backdrop. This is where the Taylor rule comes in to effect.

First put forth by U.S. economist John Taylor in 1993, the Taylor rule calculates where the Fed should target its benchmark interest rate based on an economy's level of inflation and unemployment. While not perfectly predictive (what economic tool is?), most economists agree the Taylor rule has done a pretty

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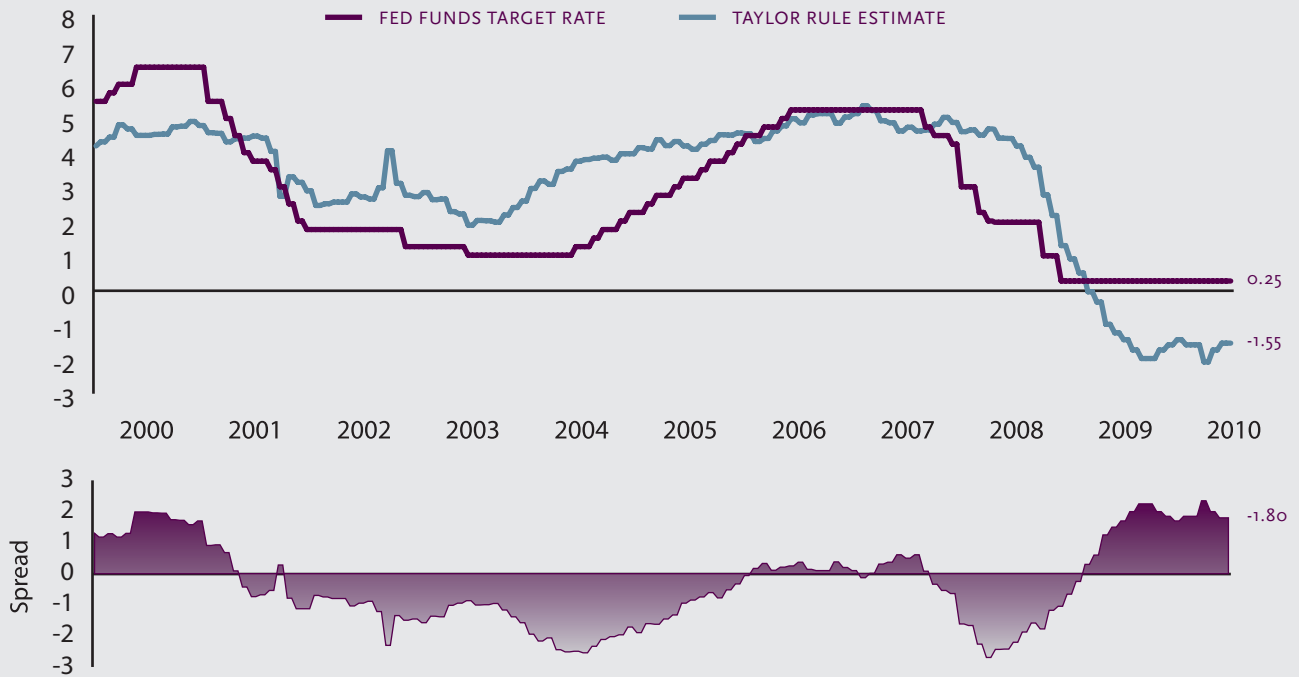
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THE TAYLOR RULE IN ACTION

The Taylor rule is an economic model used for estimating where Federal Reserve should set the Fed Funds target rate given inflation and unemployment. It is a simplistic mechanical model that has worked fairly well over time. Below is a graph of the Taylor rule estimate over the past decade, compared with the observed Fed Funds rate. The Taylor Rule equations is as follows:

$$\text{Taylor Rule Estimate} = \text{Neutral Real Rate} + \text{Inflation} + [\text{Alpha} * (\text{Inflation} - \text{Target Inflation})] + [\text{Beta} * \text{Factor} * (\text{NAIRU} - \text{Unemployment Rate})]$$



Note: Annual data. Source: Bloomberg.

good job tracking with the Fed funds rate over a long period of time.

For example, in 2006 and 2007, the Taylor rule estimates were nearly spot on with actual Fed funds rates. In 2003 and 2004, the Taylor rule hovered below the Fed funds rate, yet this seeming discrepancy actually helped to further prove its merit. In retrospect, many economists have come to agree the Fed was too loose during those years and it would have served them well to have raised rates further, more in line with the Taylor rule estimate.

Thus, the Taylor rule, as a rather simplistic mechanical model, has actually worked fairly well over the course of decades to predict monetary policy.

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## ‘Monetary Policy through the Looking Glass’

So where does the Taylor rule say the Fed funds rate should be today? Given an unemployment rate of 9.5 percent and inflation (generously estimated) at 1.3 percent, the Taylor rule proposes the Fed funds rate should be  $-1.55$  percent. Yes, as you can quickly surmise, this is 180 basis points below the current Fed funds target rate of 0.25 percent.

To further put into context the magnitude of our present economic crisis, for the first time ever the Taylor rule has predicted a negative estimate for the Fed funds rate. If this seems like a strange output, it is because we are living in a world of strange inputs. Everything seems to be contrary to normal intuition. Simultaneously, we have negative inflation, slow economic growth, and high unemployment, all while the Fed funds rate has been near zero for two years and we’re nearly done cycling through two years of massive government stimulus. It’s like economics through the looking glass – everything is upside down and rightside round.

Still, since the Fed cannot target a negative interest rate, what is the Taylor rule realistically telling us? Advocates of the Taylor rule would argue the Fed should provide additional liquidity (i.e., increasing reserves to the banking system) until such a time that the unemployment rate declines or the inflation rises. Interestingly, a Keynesian argument would stipulate that once the Fed funds rate hits zero, it doesn’t matter how much excess reserves banks have (i.e., the famous Keynesian “liquidity trap”). At such a point, Keynesian economics advocates that fiscal policy should step in to stimulate aggregate demand via government spending. But even if you believe this, the Taylor rule would suggest that as long as the equilibrium Fed funds rate is below the actual Fed funds rate, the Fed should continue to provide the market with liquidity. So even if you believe the Keynesian argument, the Taylor rule may suggest liquidity and the flow of credit through the banking system is a concern that monetary policy should presently address.

To put it another way, recalling the analogy of Keynesian pump priming, if there is not enough liquidity in the well, it doesn’t matter how hard you prime the pump. You can think of it as a pump with a 100 foot pipe descending into the well. If the water level is 150 feet down, it won’t matter how much pump

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priming you do, the level of liquidity is simply too low for the system to work. Thus, there is impetus for the Fed to take action to provide further liquidity.

These concepts seem simple to grasp, and yet they can be extremely difficult to fathom. After all, how can we say that even after trillions of dollars of monetary and fiscal policy there is more work to do? Well, the answer may be because we have not dealt with a crisis of this magnitude since the Great Depression, and hence it will take a lot longer to clean up than most people think.

### ‘Yet another Case for Low Interest Rates’

An interesting implication of the Taylor rule is that it can be used as a means to forecast the direction for long-term interest rates. For example, in times of monetary ease, the 10-year Treasury note has traded in a range of 225 to 400 basis points over the Fed funds rate. Taking the Taylor rule’s estimate of a –1.55 percent target for the Fed funds rate, and layering on top of it this historic spread, we get 10-year Treasury bonds trading between 2.25 and 4.0 percent above a –1.55 percent target rate. As the math would have it, this would project 10-year Treasury yields of 0.75 to 2.5 percent. As of the time of writing, the 10-year Treasury yield is 2.92, or 42 to 217 basis points too high.

While long-term interest rates this low would seem inconceivable at first, we need look no further than the second largest economy in the world for proof that it is indeed a realistic possibility. Japan’s 10-year government bond is currently trading around 1.1 percent. And it’s not only trading that low due to the current global economic slowdown. Over the past decade, the average yield for Japan’s benchmark 10-year government bond is approximately 1.43 percent. Can you imagine witnessing an entire decade where long-term interest rates were half of our current 10-year Treasury rate of roughly 3 percent? If you can’t, don’t feel bad; I bet the Japanese couldn’t imagine it 10 years ago either.

### ‘The End of the Rabbit Trail’

The point of this long exploration is to reach some important final implications for the future. In the short run, further quantitative easing on the part of the Fed should put a cap on long term rates and probably push them even lower – into the 0.75 to 2.5 percent range, as predicted by the work of the Taylor rule and the study of historic Treasury spreads over the Fed funds rate. In the long-run, any further quantitative easing on the part of the Fed will stoke the debate over how it will eventually unwind its balance sheet.

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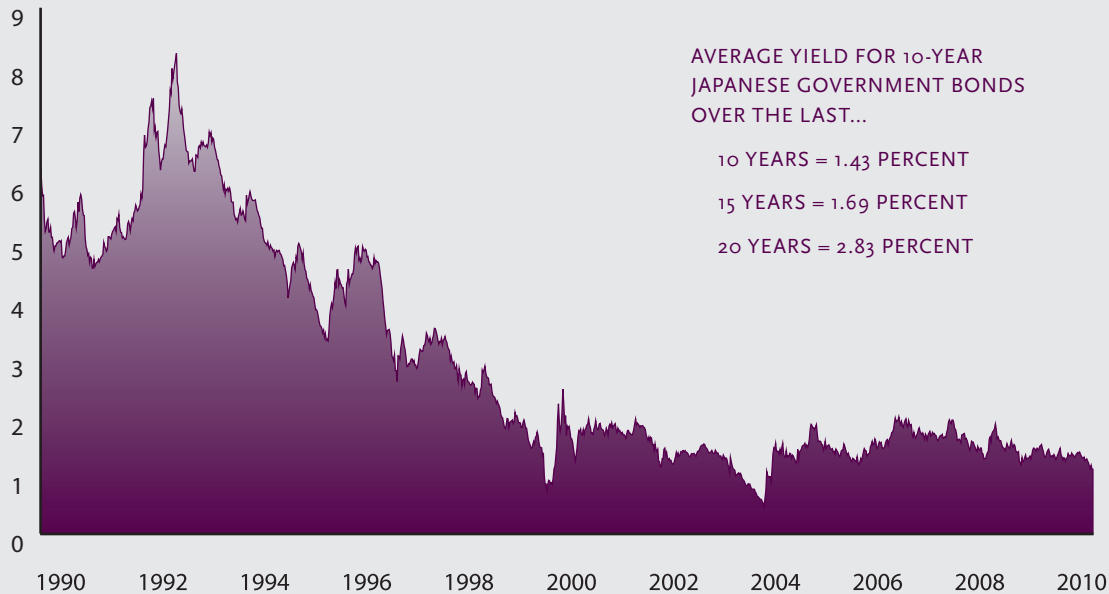
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### LOW YIELD AS A WAY OF LIFE – 10-YEAR JAPANESE GOVERNMENT BONDS RATES SINCE 1990

Over the past decade, the average yield for the benchmark 10-year Japanese government bond is 1.43 percent. If this can happen in the second largest economy in the world, are lower Treasury yields that unfathomable for the United States?



Source: Bloomberg

The Taylor rule may not take into account the specter of inflation, but the Fed is already planning for such a day of reckoning. Unfortunately, that day may be too far off in the future to avoid further monetary expansion of the Fed's balance sheet. In the near term, with the fiscal side of policy locked into an unusual form of austerity (we visited recently in the "Beggar Thy Neighbor" commentary), the pressure to open the monetary flood gates grows by the day.

As the economy enters the third quarter, the stimulus package is beginning to fade and along with it the pump-priming lift to economic activity. The new government fiscal year does not appear to offer much in the way of new funds for the states and "shovel-ready projects." In fact, the increasing fiscal drag as a result of continued deterioration in state and local finance, as well as the expiration of the Bush tax cuts, will provide strong headwinds as we approach 2011. These fiscal headwinds will increase the likelihood that the Fed will be forced to dramatically expand its balance sheet and push long-term rates much lower than we would otherwise expect.

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Where does this end? Well, according to the Taylor rule, only if unemployment were to fall to 7.7 percent would the current target rate of 0.25 percent for the Fed funds be appropriate. Until then, the rule implies that the Fed should add more liquidity through open market operations.

Until we have clarity on the final direction of monetary and fiscal policy for 2011, markets should only continue to remain volatile. Both equities and commodities will remain under pressure as deflationary forces continue to mount. Uncertainty around fiscal policy (e.g., resolution on tax policies, extended unemployment benefits, etc.) is reducing confidence and causing both businesses and households to remain cautious.

The Fed will hold out as long as it possibly can before expanding its current program of quantitative easing, but ultimately Chairman Bernanke is a student of the Great Depression. One of the major policy blunders of the 1930s was an overly restrictive monetary policy. Dr. Bernanke understands the Taylor rule better than I, yet I doubt he would disagree that it is currently signaling the need for more liquidity.

In the 1865 classic, "Alice's Adventures in Wonderland" by Lewis Carroll, Alice asks the Cheshire Cat, "Which way ought I go from here?" To which the Cat replies, "That depends a good deal on where you want to get to." I believe Dr. Bernanke knows where he wants to "get to." Unfortunately, the Taylor rule may be showing him that where he "ought" to go is an entirely different direction.

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