

in Context

WEALTH STRATEGY FROM A DIFFERENT PERSPECTIVE



UNDERSTANDING THE ROLE CENTRAL BANKS PLAY IN FINANCIAL MARKETS

The European central bank made headlines in December 2011 when it committed to providing longer-term liquidity to the European banking system. Actions like this can have a major impact on financial markets, yet many investors do not understand central banks.

Three responsibilities for most central banks are to: 1) control short-term interest rates, 2) oversee the domestic commercial banking system and 3) act as a lender of last resort during periods of severe financial distress. Here, we will focus on how the U.S.'s central bank, the Federal Reserve System, accomplishes its first responsibility and how that affects the financial markets.

The federal funds rate is the short-term interest rate that banks charge to borrow and lend reserves to each other. Excess reserves are cash that banks hold and could choose to lend to businesses or individuals or other banks that need additional reserves.

The Federal Reserve controls the federal funds rate by controlling the supply of reserves in the banking system. A higher supply of reserves in the banking system leads to a lower federal funds rate and vice versa. The federal funds rate is important because virtually all other short-term interest rates are affected by it. For example, a relatively low federal funds rate will lead to relatively low money market rates and short-term municipal bond rates.

In short, when the federal funds rate is low (high), most other short-term rates are low (high). This is the primary channel by which investors — in particular, fixed income investors — are affected by the Federal Reserve's actions. It is also one of the principal reasons that fixed income rates have generally been low since late 2008.

2011: THE YEAR IN REVIEW

2011 was a roller-coaster year in the financial markets. To give some perspective on just how bumpy it was, the S&P 500 Index was down more than 5 percent in August, roughly 7 percent in September and then up more than 10 percent in October.

In large part, the volatility appears to have been caused by the ongoing European debt crisis and its implications for the European banking system and worldwide economic growth. During the year, the crisis intensified with yields on Greek, Portuguese and Italian government bonds all increasing by substantial amounts. It also became increasingly clear that European banks had substantial exposure to European government debt, which continues to threaten their financial health and desire to lend to each other as well businesses and individuals in much the same way that mortgage-backed securities affected Wall Street and the U.S. economy in 2008.

In 2011, several bold predictions fell flat. These failed forecasts included the Big Three: interest rates would go up, Treasuries would be harmed by a ratings downgrade and municipal bonds would default in large quantities.

At the end of 2010, the yield (or interest rate) on the five-year Treasury bond was 2.01 percent. At the end of 2011, it was 0.84 percent. Instead of increasing, interest rates fell by more than 1 percent. What prevented such an "obvious" outcome from materializing? Even in hindsight, it is difficult to say for certain, but it is likely that slower-than-expected economic growth and the Federal Reserve's announcement that it intended to keep short-term interest rates low until 2013 (if not longer) both played a major role.

Pundits predicted that a ratings downgrade of U.S. Treasury debt would lead to an increase in interest rates and a potentially large-scale selling of Treasury bonds. Neither of these events occurred.

Standard & Poor's downgraded U.S. Treasuries from AAA to AA+ on August 5. On that day, the yield of the five-year Treasury was 1.25 percent and had fallen to 0.84 percent by the end of the year (as noted above). This is exactly the opposite of what you would expect to happen if investors had become generally fearful of U.S. Treasuries in light of the ratings downgrade.

Several commentators — most notably financial analyst Meredith Whitney on "60 Minutes" in December 2010 — forecasted turmoil in the municipal bond market in 2011. Whitney went as far as predicting "hundreds of billions of dollars' worth of defaults." In a market that is approximately \$3 trillion in size, 2011 saw approximately \$2 billion of municipal bonds default, or just 0.07 percent of the total size of the market.

It turned out that tax revenues generally began to recover last year, and debt service was a relatively small portion of most municipalities' budgets.

We often hear the claim that some markets are less efficient than others—small company stocks, emerging markets, foreign exchange, and so on. Is there any evidence to support this assertion?

EFF: Nothing convincing we know of.

KRF: It is interesting to consider a few of the arguments behind this conclusion. One of the simplest is that there are neglected assets. If no one is paying attention to a group of small stocks, for example, how could their prices possibly be accurate? Although I am skeptical, this argument may have had some merit 150 years ago. It seems implausible today, however, given modern technology and the hundreds of billions of dollars investors spend each year trying to find pricing errors.

A closely related argument is that investors in some markets are ripe for the picking because they are just not as sharp as the rest of us. This seems to be the logic behind some investors' belief that emerging markets are less efficient than developed markets. It does not take much thought to reject the premise of the argument. People are bright and highly motivated in markets around the world. But even if we ignore that fact, there are so many developed-market investors looking for opportunities in emerging markets (and so many emerging-market investors looking for opportunities in developed markets), it again seems implausible that differences in ability produce differences in the level of efficiency.

Perhaps the most sophisticated justification for these claims is based on Shleifer and Vishny's (1997) limits of arbitrage argument. This theory suggests that if there are pricing errors, they will be larger in markets with relatively high trading costs and other frictions. For example, in many regions of the US, residential real estate commissions are 6%. These costs prevent informed real estate investors from setting up trading strategies to exploit relatively large deviations from the "right" price. In other words, pricing errors may persist because active strategies designed to exploit them are hampered by trading costs and other frictions.

The limits of arbitrage put an upper bound, not a floor, on the size of pricing mistakes. Competition among investors who are trading anyway — for example, those moving to a new community, in the case of real estate — can keep the price close to the right price. It is an empirical question whether they do.

Recent empirical papers by Mitchell, Pedersen, and Pulvino (2007) and Pedersen (2009), among others, suggest that the limits of arbitrage are important during times of stress. There were many apparent violations of the law of one price during the financial crisis, for example. It is not so clear, however, that the limits are important at other times. Patterns in the cross-section of stock returns, for example, are generally larger among small stocks. Some suggest this is evidence that trading costs, idiosyncratic volatility, and other frictions prevent arbitrageurs from keeping small stock prices in line. In Fama and French (2008), however, Gene and I show that there is far more variation in the characteristics of small stocks than there is among big stocks. Thus, if expected returns are linked to these characteristics for rational reasons, more variation in the expected returns of small stocks is warranted.

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Continued from Page 1...

Further, many states and municipalities cut other expenditures to balance their budgets, which generally benefitted bondholders. Whitney and others apparently did not account for any of these possibilities in their analyses. The real-world impact of these dire predictions: Many investors chose to sell their municipal bonds and municipal bond funds in 2011 only to see municipal bonds generally earn high returns.

So what lessons can we take with us from 2011? The most immediate lesson is to ignore forecasters no matter how intelligent they sound. Forecasting financial market movements is incredibly difficult. Some forecasts will be fulfilled while most will not. Moreover, over longer periods of time, we have scant evidence that anyone can successfully foretell financial market movements.



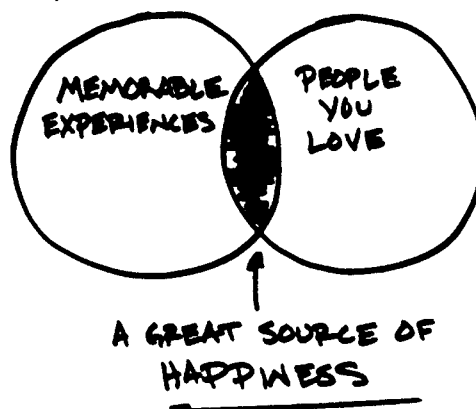
PERSPECTIVES

Perspectives features different topics of interest that offer viewpoints on improving quality of life. This quarter, we are excited to introduce Carl Richards, author of *The Behavior Gap: Simple Ways to Stop Doing Dumb Things With Money* (2012). Using simple drawings, Carl shows how investors can make smart financial decisions by recognizing their own "behavior gap." The following excerpt from the book features one of Carl's favorite sketches.

"I spend a lot of time talking and writing about worst-case scenarios: investors behaving badly, people losing their retirement, and so on.

But let's not forget why we're so focused on our financial security. We want to be happy, and to provide a good life for our loved ones.

This sketch is one of my favorites, even though it doesn't say a word about money. When I get up in the morning, I try to remember what really makes me happy — great experiences with the people I love. When I use that goal as the baseline for my decision-making, it becomes a lot easier to focus on the things that really matter when it comes to investing: things like working hard, saving a lot, and behaving wisely."



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