

Is the End Near? How History May Show When the Fed Will Stop Raising Interest Rates

EXECUTIVE SUMMARY:

With 400 basis points of Fed Funds rate increases over the past 24 months, investors are rightfully anxious about the impact of the Fed tightening policy.

Our study finds that historically falling core CPI data tends to encourage the Fed to stop raising rates. Other key indicators, however, do not seem to have strong predictive power.

The yield curve tends to have powerful rallies when the market perceives an upcoming interest rate cut. We believe investors should consider the Fed's potential easing moves in making portfolio extension decisions.

While the decision to extend portfolio maturities ahead of a definitive Fed statement is always a complicated one, the potential benefit of locking in higher yields may justify such a move.

BACKGROUND

In May 2005, we published an article titled "As the Fed Moves from Predictable to Data Dependant: Is the End Near?" In the study, we examined historical data from the last five interest rate tightening cycles since 1977 in order to put current conditions into perspective. At the time of the study, the Federal Reserve had raised interest rates eight times for a total of 200 basis points. Oil futures were hovering around \$50 a barrel, and the market buzz was that the Fed might soon drop the "measured" language.

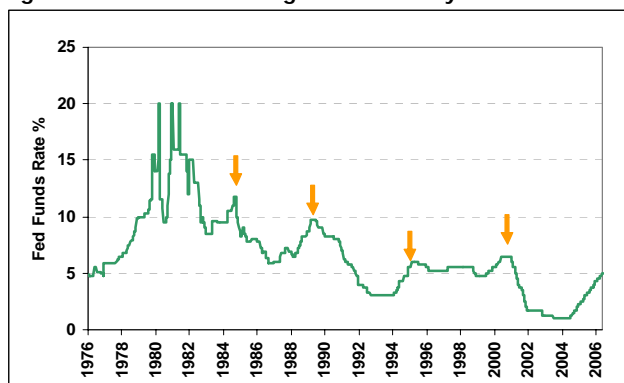
Fast forward 13 months, and the Fed has raised the target rate by another 200 basis points. Crude oil futures are now hovering around \$70 a barrel. A new Fed chairman is in the driver's seat and the housing market is cooling. Economic growth is expected to be tepid for the rest of the year; however, core inflationary pressures are building. Throw in the threat of an avian flu pandemic and a nuclear conflict with Iran, and what is the Fed's position on future interest rates under these circumstances? Data dependant!

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As fixed income investors, we are thrilled to see short-term securities yielding above 5% for the first time in five years. Meanwhile, we are equally aware of the risk of locking in today's levels if the Fed continues to raise rates substantially higher. In keeping with our tradition of reviewing today's interest rate environment within a historical context, we set out to observe the time period from three months prior to the Fed's adoption of a neutral monetary policy stance to the beginning of the next easing cycle.

Figure One: Fed Funds Target Rate History



Source: Bloomberg data of Fed Funds target rates (FDTR) 1976 to 2006.

Table One: Key Observed Dates

3 Months Prior	Last Rate Hike	First Rate Cut
5/21/84	8/21/84	10/2/84
11/25/88	2/24/89	6/5/89
11/1/94	2/1/95	7/6/95
2/16/00	5/16/00	1/3/01

Source: Bloomberg's U.S. Fed's Target Federal Funds Interest Rate Table (May 10th 2006).

Table Two: Historical Fed Funds Rate Increases

Period	Months of Tightening	Total Increases	Months Stable	First Cut
1984-1984	5.0	2.25%	1.4	-1.75%
1988-1989	11.1	3.25%	4.5	-0.12%
1995-1995	12.1	3.00%	5.2	-0.25%
2000-2001	10.7	1.75%	7.7	-0.5%
Average	9.7	2.56%	4.7	-0.66%
Current	23.4	4.00%		

Source: Bloomberg's U.S. Fed's Target Federal Funds Interest Rate Table (May 10th 2006).

DISSECTING THE END OF A CYCLE

In dissecting the end of a cycle, we use a three-month lead time to observe and examine the economic data that may have influenced the Fed's decision to initially shift to a neutral policy stance. We find it equally important to assess the likely yield/return impact on a cash portfolio should one have decided to extend the maturity of their investments three months prior to the last Fed hike. Finally, the length of time for which the funds rate stayed (relatively) stable is also important to review as it may affect decisions regarding the optimal weighted average maturity of a portfolio.

In this updated version of our May 2005 article, we study the end of the last four monetary tightening cycles: 3/84-8/84, 3/88-2/89, 2/94-2/95, and 6/99-5/00. We define a cycle as a minimum of three rate hikes for a total increase of 100 basis points or more. We choose not to include the period between 1977 and 1979, as the Fed was not specifically targeting Fed Funds rates during that period. The observation points are illustrated in Table One.

HISTORICAL RATE INCREASES REVISITED

The average increase: As Table Two indicates, the average length of the last four tightening cycles was 9.7 months, with an average of a 256 basis-point increase in the Fed funds rate. Our current cycle, at 23 months and 400 basis points, has exceeded these averages by a sizeable margin. In fact, this cycle is already the longest on record since October 1979, when the Fed ended a three-year campaign of raising the funds rate by close to 10%.

Some economists argue that the gradual rate increases of this cycle have been warranted because the Fed has kept short-term rates at artificially low levels to supply liquidity to a financial system coping with the aftershocks of the 9/11 attacks and the subsequent "jobless" recovery. How much higher the Fed will go from here is less clear. Evidence of inflationary pressures notwithstanding, Fed Chairman Ben Bernanke has said publicly that monetary policies must be forward looking, as they affect the economy "only with a considerable lag". Comments such as these suggest that the Chairman may be seriously considering taking a pause to let the effect of previous rate increases work through the system.

Transitional Periods: Table Two also shows that the Fed waited, on average, 4.7 months to start easing rates after adopting a neutral stance, with the first rate cut being 0.66% on average. Noteworthy is the fact that the transitional period data points vary considerably, from a little over a month to more than seven months. Still, the relatively short time lapses found in all four cycles tend to support a strategy of extending duration in a normal and positively sloping yield curve environment *if the outlook forecasts the end of a tightening cycle*. Such a strategy may allow investors to lock in higher current yield levels before interest rates begin to head lower.

KEY ECONOMIC INDICATORS

The market often looks for signs from a few key economic indicators to forecast the end of a rate cycle. Since the Federal Reserve operates under dual mandates from Congress to create full employment while at the same time keeping inflation in check, it may

be helpful to look at how employment and inflation data affected the Fed's decisions toward the end of past cycles.

We use the month-over-month Core Consumer Price Index and Core Producer Price Index, both of which exclude the volatile food and energy sectors, as proxies for inflationary pressure. For the employment sector, we use the three-month moving average of non-farm payroll growth and the national unemployment rate. The indicators were the latest releases available on the record date. For example, the CPI available on November 1st 1984 was as of September, not October of 2004.

Inflationary Pressures: Figure Two is a graph of Core CPI and PPI data available on the date of the last rate hike, as well as three months prior to it and also when the easing cycle began (refer to Table One). Our study finds that, on average, core CPI fell by **0.075%** (0.9% on an annualized basis) in the last three months of a tightening cycle. It also shows that the reduction in Core CPI was more prominent in the last two cycles than in the earlier ones. In contrast, Core PPI showed an increase of **0.1%** (1.2% annualized) during the same periods of study, and the increases were present in the first three cycles.

Historical data seems to suggest that, toward the end of a tightening cycle, the Fed took comfort from lower core CPI indications. On the other hand, policy makers seemed to be less concerned with potential, or pass-through, pipeline inflation that producers may pass on to consumers in the future.

Employment: Figure Three correlates employment statistics with Fed Funds movements. Under normal conditions, one would expect the end of a tightening cycle to correspond with a decline in non-farm payrolls and an increase in unemployment rate. Figure Three shows that for non-farm payroll data, this correlation was true only in 1984 and 1995, only a 50% accuracy rate. For the unemployment rate, the correlation was negative, or contrary to the rational expectation, as fewer people were actually unemployed towards the end of the cycle. As labor statistics tend to be lagging indicators, they appear to be less reliable in forecasting a turn in interest rate cycles.

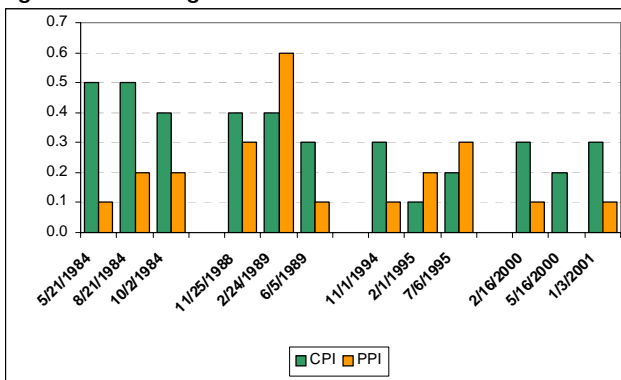
The case study of key inflation and employment data suggests that the sometimes contradictory nature of inflation and employment statistics can make it difficult to accurately forecast a turning point in the interest rate cycle. The poor correlation of these key indicators should also serve as a reminder that the Fed's final decision may be as much influenced by the occurrence of an event as by the continuation of a trend. After all, policy making should be forward looking.

THE SHAPE OF THE YIELD CURVE

For cash investors, it is relevant to discuss how the shape of the yield curve behaves towards the end of a tightening cycle. We plotted data collected from our study to observe the shifts in the yield curve at four key data points: the Fed Funds rate, the 3-month Treasury bill, the 6-month Treasury bill, and the 2-year Treasury note.

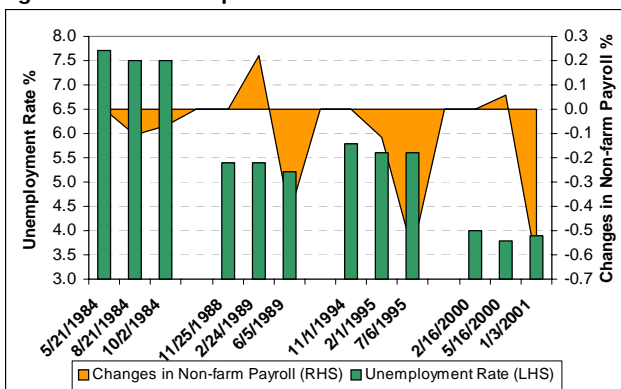
Figure Four illustrates the changes in the shape of the yield curve for each of the last four cycles. Although it is difficult to generalize the

Figure Two: Changes in Inflation Levels



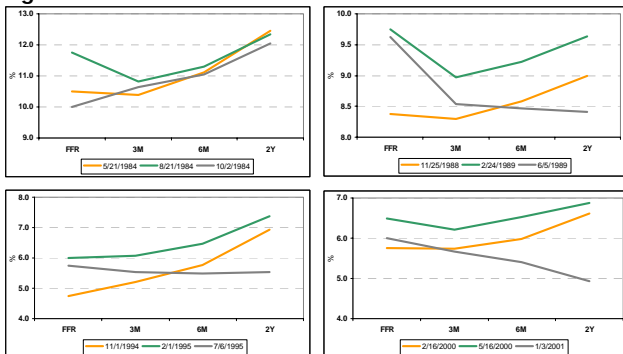
Source: Bloomberg data of seasonally adjusted month-over-month Consumer Price Index and Producer Price Index, both excluding the volatile food and energy sectors.

Figure Three: Yield Spread and the Fed Funds Rate



Source: Bloomberg data of seasonally adjusted non-farm payroll and unemployment rate releases.

Figure Four: Historical Yield Curves



Source: Bloomberg data of historical Fed funds target rate and generic yield history of respective Treasury securities.

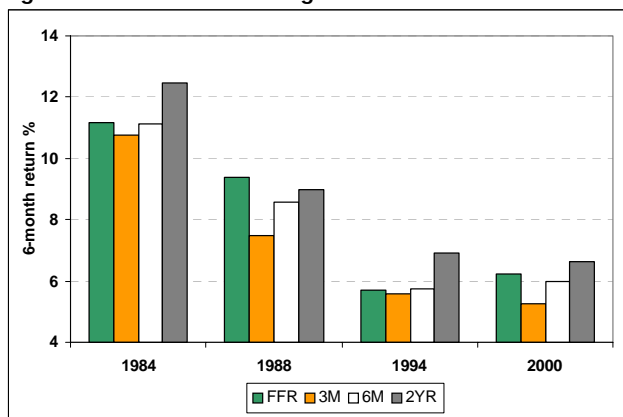
yield curve shifts, we find one common theme in all four time periods - a flattening of the curve, or more specifically, larger increases in the Fed Funds rate than in the Treasury securities. This flattening move is generally the result of investor expectations that an end to the cycle is near. The average yield change in the last three months of a tightening cycle was 1.15% for the Fed Funds rate, 0.61% for the three month Treasury bill, 0.52% for the 6-month Treasury bill and 0.31% for the 2-year Treasury note.

The four historical yield curves may not provide us with much valuable insight as our current yield curve is much flatter than all four historical scenarios. In fact, it was briefly inverted in the first half of 2006. Perhaps, what may be more helpful is to examine the magnitude of the yield curve rally when the Fed started its easing move. On average, the 2-year Treasury note yield rallied (moved lower by) 133 basis points in the 4.7 months between the last rate hike and the first rate cut. For buy-and-hold investors, such a large rally in a short period of time can make a strong case for maturity extensions, at the appropriate time.

HORIZON RETURN COMPARISON

The last part of our data analysis examines six-month holding period returns for securities purchased three months prior to the last rate hike in the cycle. The purpose of this study is to assess whether the incremental yield potential of extending maturities compensates for the risk of a premature extension before the Fed is actually finished with rate hikes.

Figure Five: 6-Month Holding Period Income Return



Source: Bloomberg data of hypothetical income returns based on historical Fed funds target rate and generic yield history of respective Treasury securities.

In this simulated study, we use the Fed Funds rate and 3-month, 6-month and 2-year Treasury securities to represent securities of like maturities. Figure Five provides the annualized income returns for each maturity during the last four cycles. Note that principal fluctuations of the two-year security are not considered as we assume a buy-and-hold investment mandate.

In this study, the 2-year Treasury's income return of 8.8% (annualized) was the highest, followed by the Fed funds rate at 8.1%. Returns for the 3- and 6- month Treasury Bills were 7.3% and 7.9%, respectively. These findings suggest that a "barbelled" portfolio strategy of buying overnight and two-year securities may provide better income returns than a "bulleted" portfolio consisting of 3- and 6-month securities.

However, this observation may oversimplify historical yield performance, as the relatively steep yield curve in all four cycles helps to explain why portfolio extension was a better strategy for maximizing income returns. Since our current yield curve is flatter than the average, the benefit of curve extensions may be diminished in today's environment.

CONCLUSION

After 400 basis points of Fed Funds rate increases over the past 24 months, investors cannot help but contemplate when the Fed may end the current interest rate tightening cycle. Economic data continues to provide conflicting signals, and the lagging nature of monetary policy action adds further uncertainty as to the timing of a pause. Extending portfolio maturities ahead of a Fed Funds rate cut is a strategy that

many investors may consider, however, our study of previous tightening cycles raises, rather than resolves, many key questions.

Our study finds that falling core CPI data tends to encourage the Fed to cease raising rates. Other key indicators, however, do not seem to have strong predictive power.

We also find that the yield curve tends to rally when the market has perceived an upcoming interest rate cut. However, yield and income return potential in our current yield curve environment, which is significantly flatter than all four previous cycles, may differ significantly from historical experience.

As we said a year ago, the key takeaway of this article is not to try to predict when the Fed will stop raising rates, but to become vigilant as to available market data and the potential outcome from different interest rate scenarios, to stay defensive on the yield curve, and to formulate a patient interest rate strategy to opportunistically and gradually extend farther out on the yield curve.

Reading these conflicting signals with a forward looking mind, we believe that the tightening cycle has largely run its course. While the decision to extend portfolio maturities ahead of a definitive Fed statement is always risky, the potential benefit of locking in higher yields may justify such a move. After all, Fed officials often publicly default to a "data dependant" mindset in their comments, so a definitive Fed statement may never come.

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