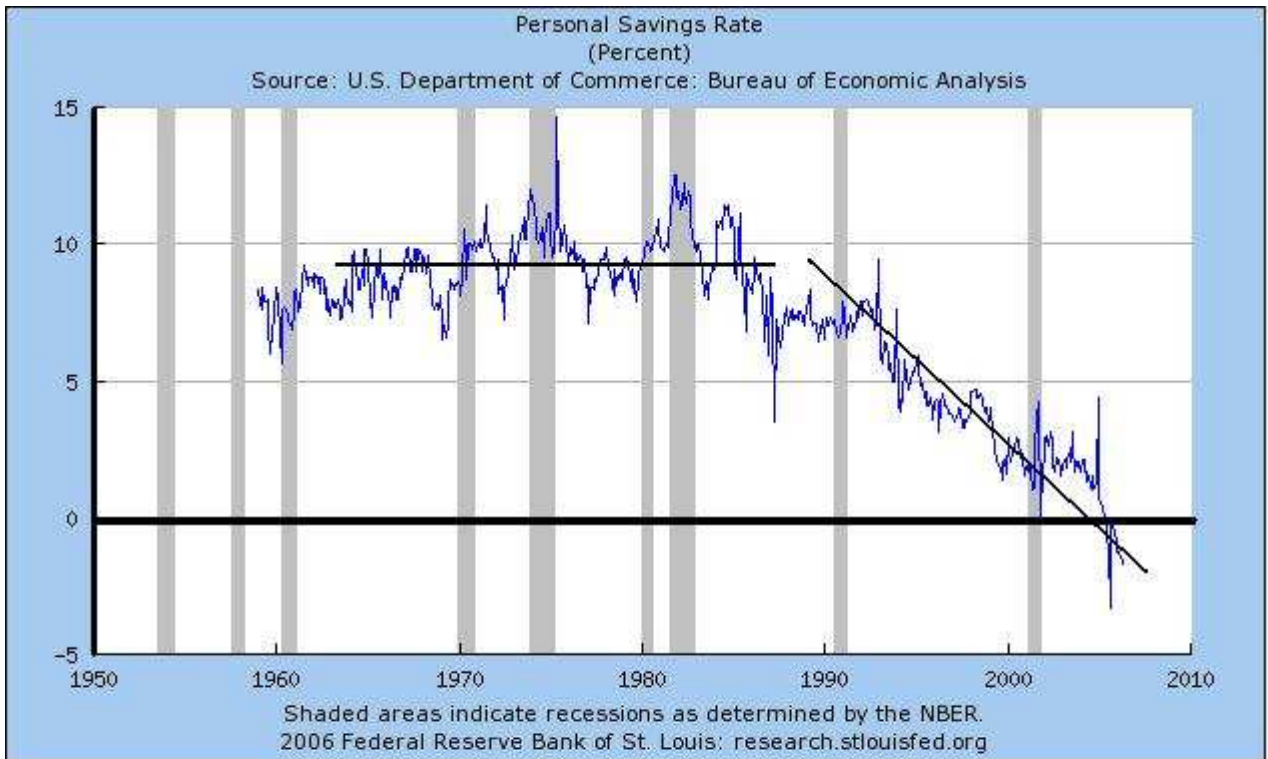


**THIS MONTH'S ECONOMIC HISTORY LESSON (AUGUST 2006).  
FEDERAL RESERVE POLICY AND RECESSIONS:  
(Is the Economy Headed for a Recession?)**

**1.0 INTRODUCTION:** This month we discuss the ramifications of the Fed policy on interest rates and their effect on economic growth. We then go over a recently published econometric model that may be greatly influencing their current course of action. As background, we recall that the Federal Reserve has raised short-term interest rates 17 times in the last 2 years, and they appear poised to continue raising them even more. This is in spite of a large body of evidence showing that the economy is slowing down, is likely to decelerate even more in the coming months, and worse case could even degenerate into a full-blown recession. What can they possibly be thinking?

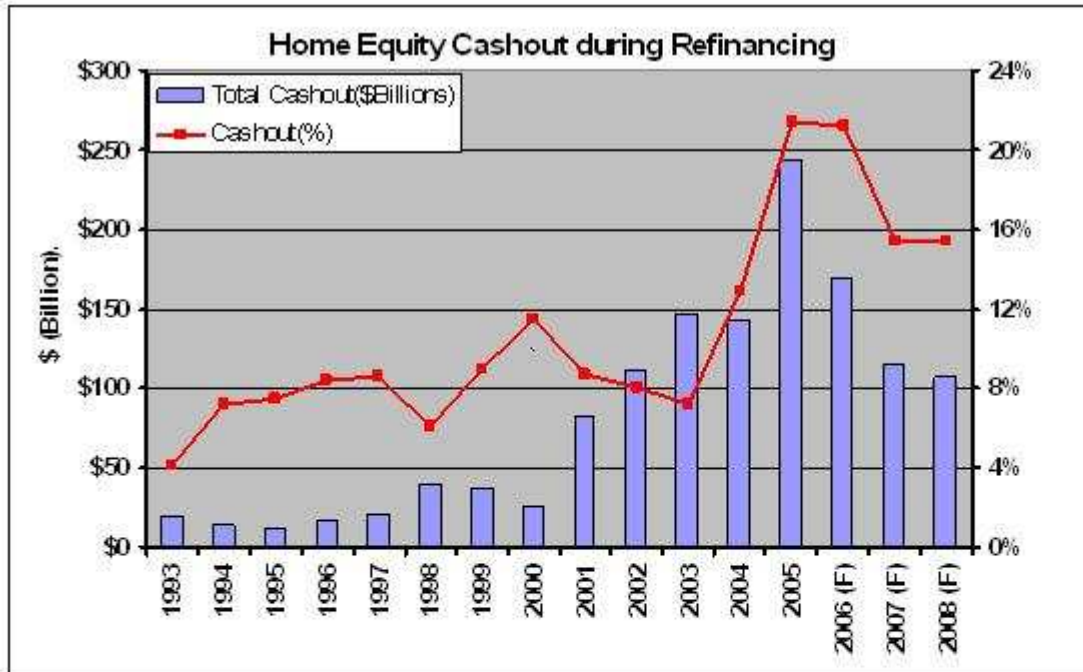
**2.0 CONSUMER SPENDING and GDP:** An amazing statistic is that spending by the consumer accounts for about 2/3rds of the total dollars in the Gross Domestic Product (GDP). We therefore analyze the spending behavior of consumers very closely as any changes in it are immediately reflected in the GDP.

As of last year, 2005, consumers are spending more than they earned, as evidenced by the already low savings rate falling below zero. The last time this happened was in the middle of the great depression, some 75 years ago. For details on the falling national savings rate as a percentage of disposable income, see the Figure below.



The figure shows that for the period 1963 to 1985, the savings rate was holding at an average value of around 9% (horizontal black line). Then in 1985 it started a steady decline over the next 20 years, crossed zero savings and became negative in 2005. This means that consumers are spending more than they receive as earned income, and are making up the difference by other means. The additional money for consumer spending is coming from cashing out their home equity, selling assets, taking on higher levels of debt, or spending previous savings.

Homeowners went on a refinancing spree during the last five years, as home values increased and mortgage rates hit very low levels. But instead of paying down mortgage debt as they had done historically, they cashed out their home equity and used the proceeds for spending. But mortgage rates have been increasing recently, driving down the amount of home refinancing, and spending from cashing in home equity is decreasing. The figure below shows that the peak home equity cashout rate may have occurred last year, bearing in mind that the data for 2006 and beyond are forecasts.



One other item that is affecting consumer spending over the last year is the huge 30%+ price increase in gasoline and other energy needs. These expenses act like a hidden tax, leaving less disposable money in the pockets of the average consumer and further curbing their propensity to spend.

From a combination of these causes, consumer spending and the GDP appear to be slowing. There is plenty of opportunity left for steady growth of the GDP in the future, provided it grows at a steady annual rate of around 3% and with core inflation rate running around 2%. But in spite of this, the Fed appears adamant on increasing rates even further. To understand this we must delve first into some history to understand the motivation behind their apparent indifference.

**3.0 FEDERAL RESERVE SYSTEM:** The Federal Reserve System is the central bank of the US. Congress established the Federal Reserve in 1913 to set up a sound banking system and a healthy economy. Its main charter was cleverly set up with several conflicting objectives. These were to maintain stable prices (i.e., low inflation), and achieve high employment and high economic growth. These often contradictory

requirements mean that the Fed has to juggle constantly to reach its goals.

Maximizing employment requires a fast growing economy with low interest rates and easy availability of credit and loans. This results in high levels of consumer spending and therefore high GDP growth. But a hot economy, and lots of easy money, is an environment where consumers spend freely and are less concerned about prices. Businesses can get away with raising prices, which inevitably leads to higher inflation. That sets up a very perverse “inflation mentality”, where consumers expect that prices will be higher tomorrow than they are today. So they rush out and borrow excessively to buy the goods today, before the prices go up some more. The job at the Fed therefore is to carefully balance between these contradictory requirements, always aiming for just the right amount of growth, but not enough that it ignites inflation.

The Fed has several tools to accomplish this, and the two most commonly used are by setting the “Federal Funds rate”, and by controlling the “money supply”. The Federal Funds rate is the overnight borrowing rate, which is the shortest possible term for which banks borrow from each other. The second tool that the Fed uses is the money supply, which is the amount of money in circulation. When the Fed wants the economy to grow, it lowers the Fed funds rate, or increases the money supply, both of which make it easier for individuals and businesses to borrow money. To slow down the economy, the Fed does the opposite, increasing the Fed funds rate or reducing the money supply, which it has been doing for the last 2 years.

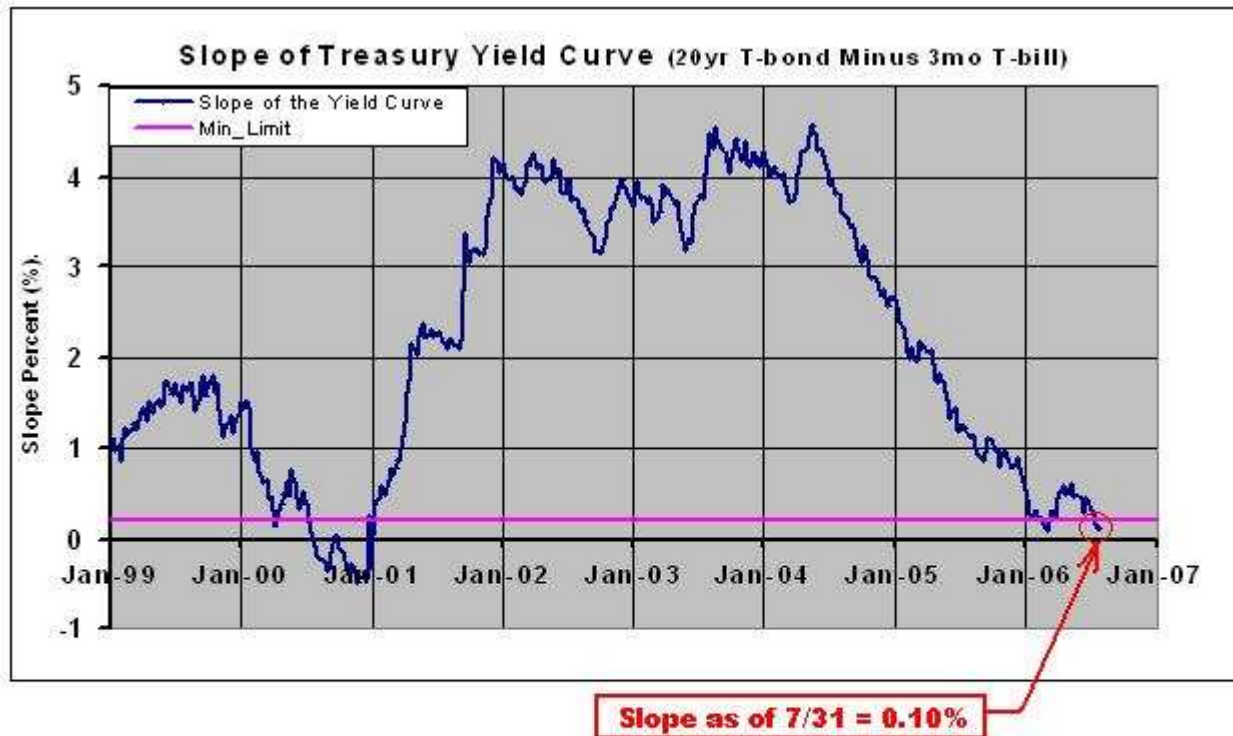
It is to be noted that the Fed only sets the very shortest term overnight lending rate, and does not control any other longer-term interest rate. All the other longer term interest rates are affected by general economic conditions and are priced through supply and demand in the open bond markets. Also, any change in the Fed funds rate by the Fed works its way slowly through the economy and its full effect usually takes between 6 and 9 months to show up in the general economy.

**4.0 DISCOUNT RATE and SLOPE OF THE TREASURY YIELD CURVE:** The “discount rate” is the rate at which banks can borrow money from the Federal Reserve bank, as opposed to the Fed funds rate where banks borrow from each other. Commercial banks borrow money from the Fed at the discount rate, and then turn around and make loans to consumers and businesses at higher rates and for longer term durations. They pocket the difference between the long-term and short-term rates as profit. The difference between the 20 Year T-bond and the 3 Month T-bill rates, is called the “Slope of the Treasury Yield Curve”, the “Treasury Yield Slope” or “Treasury Yield Spread”. When the Yield Slope is positive, banks make lots of money and are eager to make loans. If the Yield slope is close to zero, banks are reluctant to loan money, since they do not make any profit on these loans.

There is also a rare circumstance where the Yield slope is negative, where long term rates are actually lower than short-term rates. This is called an “inverted yield curve”. This situation does not last for more than a few months, and the yield slope then returns to a normal positive curve. The return to the positive yield slope requires that

either short-term rates have to drop (meaning the Fed will cut rates) or long-term rates will have to rise. We shall see later that an inverted yield curve can be a potent early warning of a future recession.

The Slope of the yield curve for the last 7.5 years is plotted below:



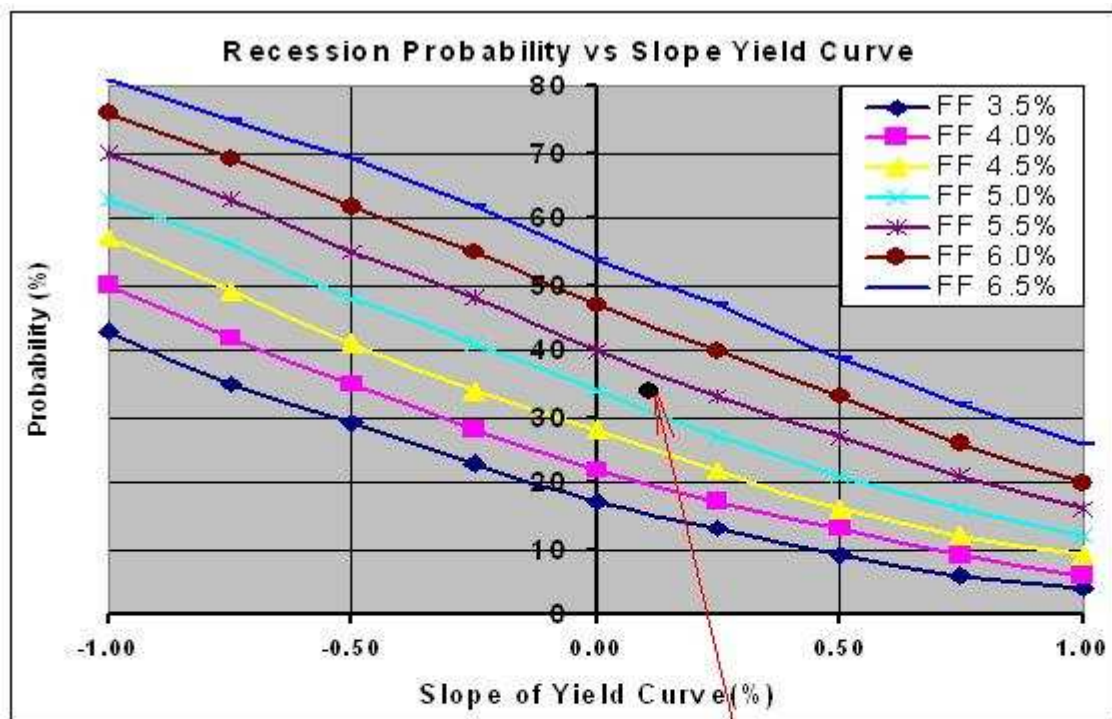
As of the July 31st, the slope of the yield curve is at 0.10% which is almost flat. The economy is moderating from fast growth earlier this year, and inflation is slowly rising. The Fed is clearly more worried about inflation and appears to be prioritizing it at the expense of killing growth. They seem poised to raise rates again for the 18th time in August, and possibly again in the next few months. If the Fed Funds rate is raised another 0.25%, and the 20 year T-bond does not also increase, we could get an inverted yield curve. This makes it likely that a recession could follow about one year later, depending on certain circumstances that are discussed in the next section.

**5.0 INVERTED YIELD CURVE and PREDICTING RECESSIONS:** Previous econometric (meaning “mathematics and statistics applied to economic modeling”) models have had limited success in forecasting the probability of a recession following an

inversion of the yield curve.

A new model was published recently by Jonathan Wright, a senior economist at the Fed, (see reference [10] on the [Links Page](#)) entitled “The Yield Curve and Predicting Recessions”. His analysis goes one step further by including the Fed funds rate as an additional parameter. He postulates that an inversion that occurs when the Fed funds rate is high is more likely to cause a recession, than one that happens when the Fed funds rate is low. In other words when interest rates are already high, and the curve inverts, it is easier to push the economy into recession than when interest rates are low.

The results from Wright’s model are predictions of the probability of a recession occurring 4 quarters in the future, and are plotted below:



**As of 7/31 Recession Probability = 34%**

Previous models have demonstrated that the Recession Probability increases as the slope of the yield curve decreases. The new feature in Wright’s model is the addition of the effect of interest rates. It shows that the Recession Probability also increases as the Fed funds rate increases (marked FF). For instance, at a Yield slope of 0% which is a flat yield curve, the Recession Probability is 17% for a Fed funds rate of 3.5% (bottom-dark

blue curve). For the same flat yield curve, the Recession Probability increases to 54% for a Fed funds rate of 6.5% (top- blue curve).

As of the end of July, the Fed funds rate is 5.25%, and the Yield slope is 0.10%, giving a 34% probability of a recession occurring one year from today (black dot). This model also predicts that some further increases in interest rates may be possible without significantly increasing the probability of a recession.

My belief is that Fed chairman Bernanke may be banking on the correctness of this model as he continues raising rates to fight inflation. He apparently believes that some further tightening is still possible without inviting a recession. And that is why I believe we are facing at least one more increase in the Fed funds rate at the August 8th FOMC meeting.