

Is a Bubble in the Treasury Bonds?

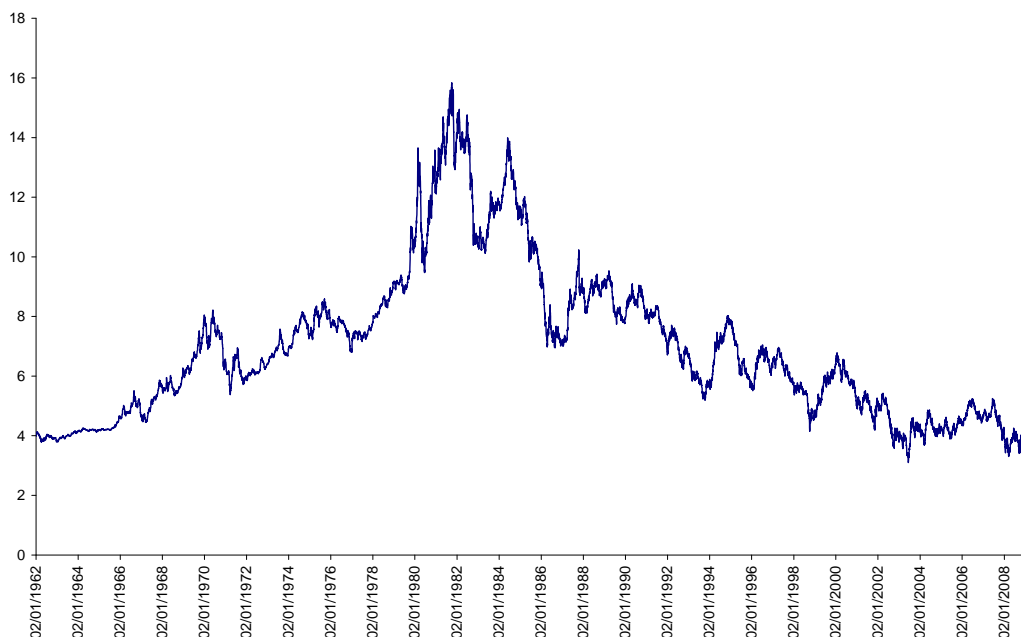
Wiston Adrián Risso
Department of Economy
University of Siena
22/04/2009

As known the long-term Treasuries such as the 10-years notes, are subject to all kinds of long-term risks (currency risk for foreign debt holders, inflation risk and even credit risk). However, it is generally considered as a safe security. After the crisis in the technological sector (DotCom bubble), the real estate sector and the Banking sector, investors have tried to satisfy their appetite for safety moving a growing number of assets into US government bonds decreasing the yield of the bonds and increasing their prices. Remember that bonds prices trade inversely to their yields. Figure 1 shows that after October 1981 the bond yield presents a negative trend and nowadays we are under the values of 1962 (the initial date). The latter is translated in a very high increase in price bonds.

Most of the holders are China, Japan, the petro-powers, and the surplus of emerging Asia. The question is whether the US Government has the capacity of repay all this debt in the future or not.

As it is well known, the US budget deficit has exploded in the last time. Of course, it is because the US Government has loaned, invested and committed around \$7.8 trillions after the financial bank crisis (\$200 billion to nationalize the world's two largest mortgage companies, Fannie Mae and Freddie Mac, \$150 Billion for American International Group, \$300 billion for the Federal Housing Administration rescue bill to refinance bad mortgages, etc.).

Figure 1: Yield for the 10 years Treasury note (1962-2009)



This seems to be the picture of a new bubble about to burst. Actually, some time ago Warren Buffett (often called the "Oracle of Omaha") asserted the following:

“When the financial history of this decade is written, it will surely speak of the Internet bubble of the late 1990s and the housing bubble of the early 2000s. But the U.S. Treasury bond bubble of late 2008 may be regarded as almost equally extraordinary”

On March the China Premier Wen Jiabao, the U.S. government’s largest creditor, was “worried” about its holdings of Treasuries and wanted assurances that the investment is safe. Wen said to the press: *“We have lent a huge amount of money to the United States”. “I request the U.S. to maintain its good credit, to honor its promises and to guarantee the safety of China’s assets.”*

Let’s do some calculations on the 10 years treasury notes. I applied a simple GARCH(1,1) model to the percentage changes in yields (g_y) and compared it with the computation of the evolution of the entropy.

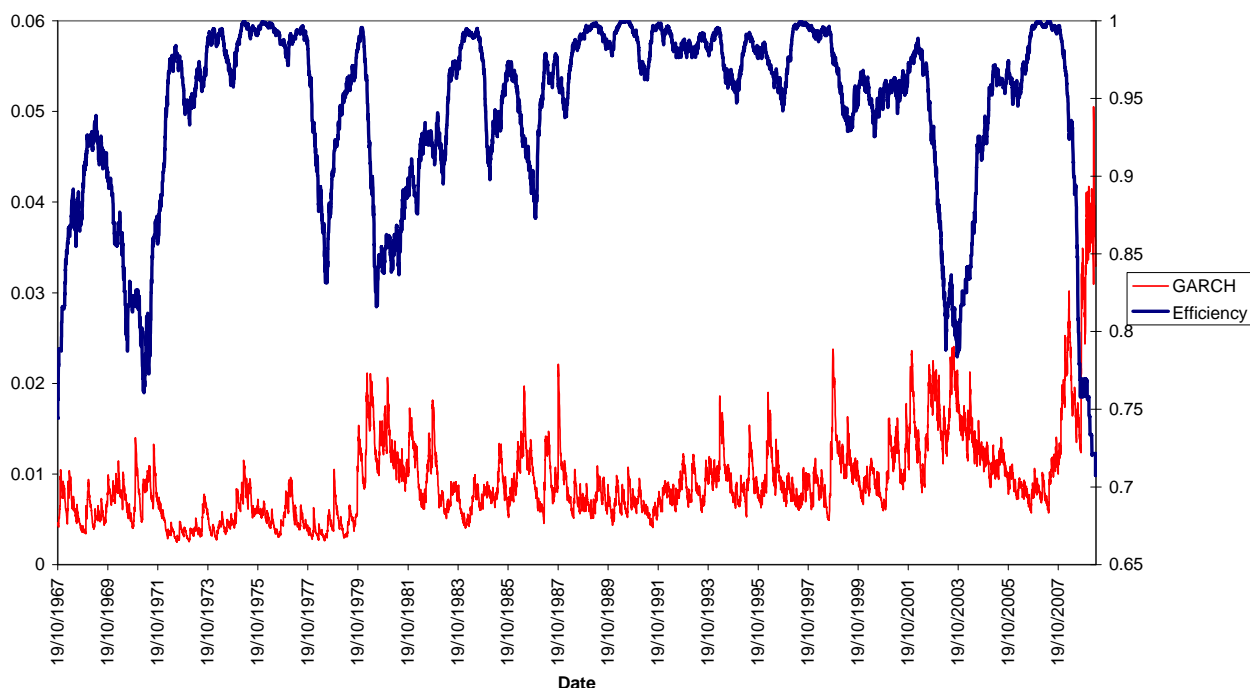
The following model was estimated for the changes:

$$g_y = 0.000160$$

$$\sigma_t^2 = 0.0000002 + 0.9325\sigma_{t-1}^2 + 0.0673\varepsilon_{t-1}^2$$

Figure 2 shows the evolution of the informational efficiency and the volatility (according to the GARCH model). The results are amazing, the efficiency decreases since November 2007 arriving to a minimum nowadays. On the other hand, the volatility increases after June 2007 arriving to a maximum at the present. Note that they are the global minimum and maximum for the whole period since October 19th, 1967 to April 22nd, 2009.

Figure 2: Evolution of the Efficiency and the GARCH volatility (1967-2009)

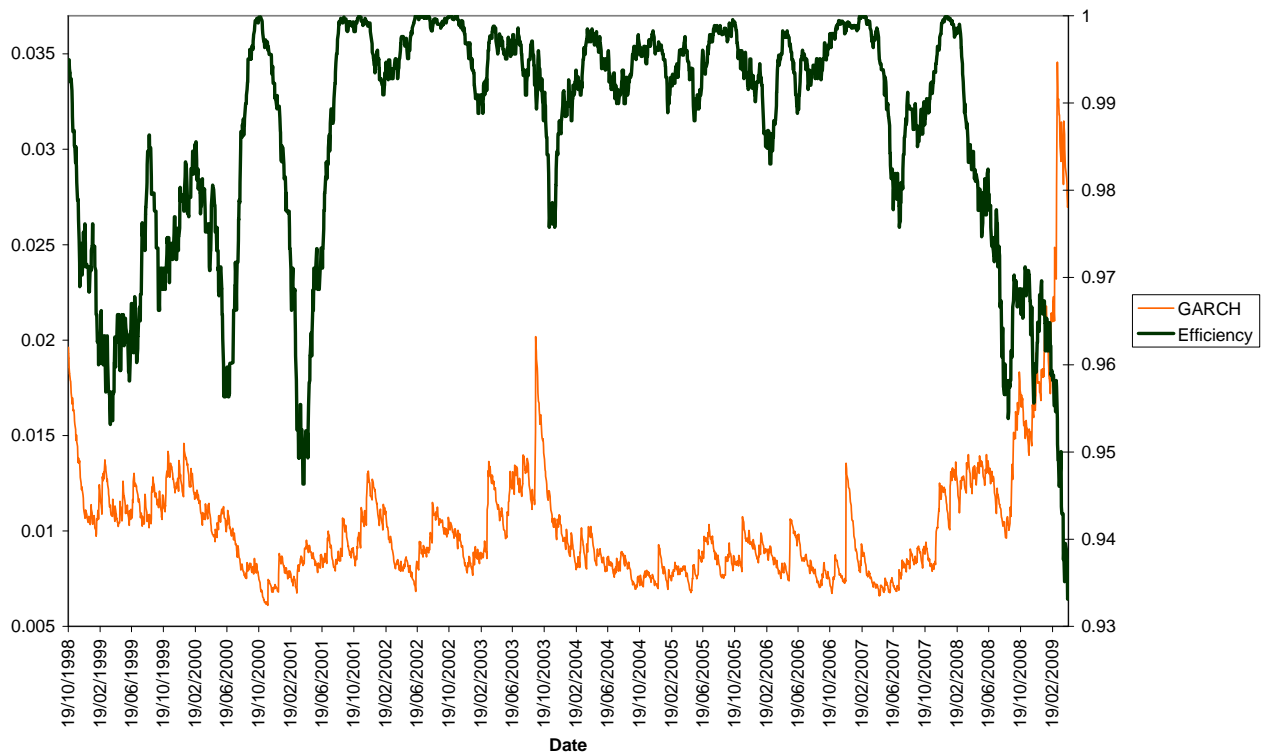


Kenneth Rogoff, an economics professor at Harvard University and former chief economist of the International Monetary Fund asserted this month that annual inflation in USA could

go as high as 8% to 10% within three to five years, and sooner in the UK. That can have a big impact on bond prices.

In order to see if this phenomenon happens only in USA I obtained data from UK. I took the yields of a 10 years security from the British Government. I calculated the entropy and estimate a GARCH(1,1) model.

Figure 3: Evolution of the efficiency and the volatility of the bond in UK (according to GARCH)



The results are similar to the previous one. Since the beginning of 2008 the efficiency decreases and the volatility starts to rise since the middle of 2007.

Of course, since the last year many high powered hedge funds are getting short US bonds and George Soros agreed that there is a bubble in treasury bonds about to burst. He said *“That’s the fear that drives people into gold”*, however he wouldn’t say whether he’s now actively trading gold.