



Munich Personal RePEc Archive

Relationship between Consumer Price Index (CPI) and Government Bonds

Subhani, Muhammad Imtiaz and Osman, Ms. Amber

Iqra University Research Centre (IURC), Iqra university Main Campus Karachi, Pakistan

2012

Online at <https://mpra.ub.uni-muenchen.de/40385/>
MPRA Paper No. 40385, posted 31 Jul 2012 09:03 UTC

Published in

South Asian Journal of Management Sciences (SAJMS)
Vol 3, No. 1, pp. 11 – 14, (2009)

Relationship between Consumer Price Index (CPI) and Government Bonds

Muhammad Imtiaz Subhani, Kiran Panjwani and Amber Osman

ABSTRACT

This study examines the association between the daily investments in government bonds with Consumer price index (CPI) for Pakistani space for the period beginning from July 2001 to September 2009. The findings significantly supports the proposition that consumer price index (CPI) has an association with the investments in government bonds and also the non-seasonal investments in government bonds for lag 1 also effects the investment in government bonds for the current period.

Key words: Consumer price index (CPI), Government bonds, VAR.

Introduction

The purpose of this study is to examine the monthly response of investments in government bonds to announcements of consumer price index (CPI).

Previous studies have examined that the financial markets always have various responses to the consumer price index (CPI) announcements. But this research was only concerned with the hypothesis that consumer price index has an association with the investments in government bonds.

Consumer Price Index (CPI)

A different method was used to measure inflation. (CPI) was evaluated by considering the price value of goods and services acquired by households. It is evaluated by taking average of price change for a pre-given group of goods.

Many economists analyzed that the key indicator is the Core CPI which measures two most unstable components, food and energy. This allowed economists to realize if goods and services which had stable increase in price were starting to accelerate faster than the average rate.

CPI was most important for measuring price at retail level. In Pakistan CPI cover up the retail prices of 374 items in 35 major cities and reflect almost the changes in the cost of living of urban areas.

Government Bond

A Government bond was an official paper given by the government or a company to show that an investor had lent government or company, money that government or company can pay back to an investor at an interest rate that did not change.

If a business wants to develop, one of alternatives was to borrow funds from single entity, financier or shared funds. The corporation issues bonds at different interest rates for sale bonds to the public. The purchased bonds are then bought by the Investors with the perceptive that the corporation can pay back the investor's principal amount (the amount the investor finance to the corporation) with any interest that was due by a maturity date.

According to the strength of the corporation which issues bonds, the bondholder expected a rate of interest.

Literature Review

Smirlock (1986) analyzed the Inflation response of the long-term bond market. Smirlock (1986) study discovered a significant positive response of long-term rates to unpredicted price increases. This result may be consistent with either increases in expected inflation (the expected inflation hypothesis) or potential of a tighter monetary policy (the policy anticipation hypothesis).

Smirlock (1986) study classified the post-announcement period as being the five trading days straight away after the announcement day t , i.e., day's $t + 1$ to $t + 5$. The five days match to the first trading week following the inflation announcements. As the anticipated component of inflation announcements did not affect interest rates, to study the speed of adjustment.

Kim and Shukla (2006) study showed that the price increase sensitivity of a security was positively or negatively linked to the sensitivity to the world bond index (world stock index). Whereas, the model was appropriate to one person securities and portfolios, was experienced by means of portfolios only. Kim and Shukla (2006) study showed that the outcome permits individual to evaluate the price raise sensitivity.

Ilmanen (1995) examined the difference in government bond returns. it can predict 4 to 12 percent of monthly dissimilarity in excess bond returns.

Bond returns was influenced by relatively few factors. The excess returns of long-term government bonds' was focused only to interest rate risk. There was no default risk or cash flow uncertainty and almost all foreign exchange risk can be enclosed. The simplicity of government bonds made possible the identification of useful forecasting instruments and the interpretation of empirical findings. Any return predictability can reflect the time-varying reward for bearing interest rate risk.

There was also used conditional asset pricing models and test the ability which explain the bond return expectedness. The test of a single latent variable model indicated that expected excess bond returns was proportional to the expected excess return of one unobservable risk factor.

Cochrane and Piazzesi (2005) studied time variation in projected surplus bond returns. Cochrane and Piazzesi (2005) ran regressions of one-year surplus returns on before time forward rates. This study came across that a single issue, a single tent-shaped linear mixture of forward rates, forecasted surplus returns on 1 to 5 year maturity bonds throughout R2 up to 0.44. Campbell and Ammer (1993) used a vector autoregressive model to reduce stock and 10 year returns on bond into changes in opportunity of potential stock dividends, price rises or falls, temporary real interest rates and surplus returns on stock and bond. Stock and bond returns given in monthly postwar U.S. data, was fixated mostly by reports about future surplus returns on stock and inflation, respectively.

Methodology of Research

Econometrical Framework

Vector auto regression (VAR) was applied on the 3005 daily observations of government bonds and consumer price index (CPI) to test the hypothesis that “Consumer price index (CPI) has a significant association with the government bonds”.

Data Collection

The sample period used in this study covered 3005 daily observations beginning from July 2001 to September 2009. The monthly government bonds data was obtained from State Bank of Pakistan and monthly consumer price index (CPI) data was obtained from Federal bureau of statistics.

Results and Findings

Table 1: Estimations of VAR

	Investments in Govt. Bonds
Investments in Govt. Bonds (-1)	0.892752
	(0.16040)
	[5.56566]
Investments in Govt. Bonds (-2)	0.020329
	(0.15737)
	[0.12918]
CPI (-1)	-1.519864
	(0.70532)
	[-2.15485]
CPI (-2)	1.711307
	(0.77629)
	[0.20448]
C	2.638868
	(4.73712)
	[0.55706]
R- Squared	0.748252
Adjusted R- Squared	0.721036
F-Statistics	27.49315

The findings of this paper reveals that CPI for the previous day has an impact on the investments in Govt bonds for current day as t- statistics is $5.5656 > 1.5$, found significant for the coefficient showing the relations ship between these two. While, the non-seasonal investments in government bonds for lag 1 also effects the investment in government bonds for the current period as t- statistics is also found significant for the coefficient gauging the association between the investments in government bonds for lag 1 and current lag as shown in table 1. It should also be noted that ARDL model which is deployed to gauge the variations

in investments in Govt bonds due to the predictors outlined in table 1, is also found significant that portrays that the deployed model to execute VAR is reliable.

Discussions and Conclusion

Campbell and Ammer (1993) found via using auto regressive process that there is a significant association between CPI and investments in govt. bond in the European space. The objective of the study was to find out the possible explanatory power the consumer price index (CPI) has, for the investments in government bonds for Pakistani space. VAR results in this paper supported the hypothesis that “Consumer price index (CPI) has significant but negative association with the investments in government bonds”, but the non-seasonal investment (AR1) in government bonds also explains the investments in the government bonds for current period.

References

- Campbell, J.Y. & Ammer, J. (1993). What moves the stock and bond markets? A variance decomposition for long-term asset returns. *Journal of Finance*, 48, 3-37.
- Carlton, D.W. (1983). Futures trading, market interrelationships, and industry structure. *American Journal of Agricultural Economics*, 65, 380-387.
- Cochrane, J. H. & Piazzesi, M. (2005). Bond Risk Premia. *The American Economic Review*, 95, 138-160.
- Ilmanen, A. (1995). Time Varying Expected Returns in International Bond Markets. *Journal of Finance*, 50, 481-506.
- Kim, M. K. & Shukla, R. (2006). Inflation and bond-stock characteristics of international security returns. *International Journal of Managerial Finance*, 2 (3), 241 – 251.
- Smirlock, M. (1986). Inflation Announcements and Financial Market Reaction: Evidence from the Long-Term Bond Market. *The Review of Economics and Statistics*, 68, 329-333.