

Structure of interest rate in India

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Abstract: In this paper an attempt is made to examine the term structure of interest rates in India. We want to ascertain whether the yield curve can be rationalized based on the 'expectations hypotheses. Although we find evidence of predictability for holding period returns, we reject the null hypothesis that the expectations hypothesis holds for the period under consideration. Contrary to the finding in the US, the volatility of Indian bond returns is consistent with the expectations hypothesis. Returns on long-term bonds are less volatile than those of short-term bonds. The volatility puzzle documented by Shiller on US data is not observed in Indian bond returns.

Keywords: Expectations Hypothesis, Structure of interest rate, Indian bond return, Volatility puzzle.



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Introduction

The financial sector plays a crucial dual role in any economy. It enables households to smooth consumption over their life cycle by insuring against idiosyncratic income shocks and channels savings to productive investments. As a consequence, its role in economic development has received considerable attention in the literature on emerging markets. The consensus is that an efficient and transparent financial sector is a crucial concomitant of sustained economic growth.ⁱ The growth and development of the financial sector in India has been uneven. Indian equity markets have a long and colourful history.ⁱⁱ They grew exponentially following economic reforms precipitated by the balance of payments crisis in 1991, and the Bombay Stock Exchange (BSE) is currently a "top ten" exchange in terms of market capitalization. Indian equity markets have also been the subject of considerable academic research: almost every study conducted on a major stock exchange has been replicated using Indian data sets. In marked contrast, debt markets in India have languished. Prior to 1991 the corporate bond market was virtually non-existent. The government debt market was illiquid, as a large part of the outstanding debt was held as mandated reserves by the banking sector. As a consequence, there has been little academic work using Indian debt market data sets. Figures 1 and 2 show the post 1990 evolution of these markets in both India and the US.

ⁱ While there is a considerable literature documenting the correlation between economic growth and financial development, Rajan and Zingales (1998) provide convincing evidence on causality

ⁱⁱ Indian equity markets had their inception in the early 1830s. The first organized exchange -- the Native Share and Stock Brokers' Association (the forerunner of the Bombay Stock Exchange) was established in 1887 making it the oldest in Asia. The market experienced its first crash in 1865. The run up in stock prices prior to the crash was a consequence of the increased demand for Indian cotton precipitated by the disruption of cotton supplies due to the American Civil War.

The term structure of interest rate can be defined as the graphical representation that depicts the relationship between interest rates (or yields on a bond) and a range of different maturities. The graph itself is called a Yield curve. The term structure of interest rates plays an important part in any economy by predicting the future trajectory of rates and facilitating quick comparison of yields based on time. The Yield Curve is a Graphical representation of the interest rates on debt for a range of maturities. It shows the yield an investor is expecting to earn if he lends his money for a given period of time. The graph displays a bond's yield on the vertical axis and the time to maturity across the horizontal axis. The curve may take different shapes at

different points in the economic cycle, but it is typically upward sloping. A fixed income analyst may use the yield curve as a leading, economic indicator especially when it shifts to an inverted shape, which signals an economic downturn, as long-term returns are lower than short-term returns. yield curve is of five types. Firstly, it of normal curvature and This is the most common shape for the curve and, therefore, is referred to as the normal curve. The normal yield curve reflects higher interest rates for 30-year bonds as opposed to 10-year bonds. If you think about it intuitively, if you are lending your money for a longer period of time, you expect to earn a higher compensation for that. Second one is of inverted shape and it appears at that time when long-term yields fall below short-term yields. An inverted yield curve occurs due to the perception of long-term investors that interest rates will decline in the future. This can happen for a number of reasons, but one of the main reasons is the expectation of a decline in inflation. When the yield curve starts to shift toward an inverted shape, it is perceived as a leading indicator of an economic downturn. Such interest rate changes have historically reflected the market sentiment and expectations of the economy. Third one is a steep curve indicates that long-term yields are rising at a faster rate than short-term yields. Steep yield curves have historically indicated the start of an expansionary economic period. Both the normal and steep curves are based on the same general market conditions. The only difference is that a steeper curve reflects a larger difference between short-term and long-term return expectations. Fourth one is of flat shape that happens when all maturities have similar yields. this means that the yield of a 10-year bond is essentially the same as that of a 30-year bond. a flattening of the yield curve usually occurs when there is a transition between the normal yield curve and the inverted yield curve. Fifth one takes a humped shape which occurs when medium-term yields are greater than both short-term yields and long-term yields. A humped curve is rare and typically indicates a slowing of economic growth. Essentially, term structure of interest rates is the relationship between interest rates or bond yields and different terms or maturities. When graphed, the term structure of interest rates is known as a yield curve, and it plays a crucial role in identifying the current state of an economy. The term structure of interest rates reflects the expectations of market participants about future changes in interest rate and their assessment of monetary policy conditions.

Role of credit policy in the development of Indian economy

Very simply, a credit policy announcement is the Reserve Bank of India's (RBI) way to influence the amount of money and credit in the Indian economy, which has an impact on the rates of interest and inflation and hence on economic growth and prices. RBI's credit policy also the institutions way of giving market signals on which market players will base their production decisions. For example, if the RBI says that inflation may be a concern, then the lenders, like home loan companies, may want to hike up their long-term interest rates. Or if the RBI says that we are still in a soft interest regime, then borrowers can hope to borrow cheaply in the future at a lower rate or at least, be sure that rates will not harden. RBI also uses the Credit Policy to do some housekeeping functions of giving directions to the banks, for example, yesterday's credit policy allowed banks to raise long term bonds to fund infrastructure projects.

The RBI's role as the Central Banker makes it responsible to smoothen out the seasonal wrinkles between demand and supply of money in the economy as well as set the long-term agenda for all money matters in the country. This means that RBI, by making money cheaper (lower interest rates) or more expensive (higher interest rates) influences money and credit conditions in the economy, targets good growth, employment and stable prices.

Control the inflationary and recessionary cycles

Left to its own an economy can get into two opposing cycles - an inflationary one or a recessionary one. Big words but they have simple meanings. An inflationary cycle begins after an event (like a crop harvest in India) that puts a lot of money in people's pockets, which is spent. This drives up prices as the current goods are less than the demand. As prices increase, production is stepped up, employment increases, more money comes into circulation, driving prices up further. This cycle (given very simplistically here) may spin out of control and cause hyperinflation in extreme cases.

On the opposite side is the situation when people have less money to spend (like at tax saving time or crop sowing time), this drives prices down, leading to cuts in production, layoffs and further loss in spending money. A downward spiral can spin the economy into recession if are not controlled timely.

Apart from these two signals there are innumerable variables that have the power to shift the economy from the desired growth-inflation equilibrium. RBI has four chief weapons to do its job of maintaining the desired equilibrium, these are:

Open Market Operations (OMO).

When the RBI buys government securities, it adds to the stock of money in the economy. This is added to the reserve of the selling bank, who can now lend a multiple of this amount. The extra liquidity has the power to push down interest rates and give a boost to business activity, that now be financed more cheaply. The opposite happens when the RBI sells government securities, then it soaks up the extra money with the banks and that has a multiplier effect in reducing money supply and pushing up interest rates. So, the RBI buys securities when the economy is sluggish and demand is not picking up and sells securities when the economy is overheated and needs to cool down. OMO are also used seasonally to heat up or cool off the economy. For example, after the harvest the economy is flush with funds and the RBI will sell securities to soak up some of that liquidity.

Reserve Requirements.

The RBI does not allow banks to lend all of the money they get as deposits. A fraction has to be kept as a reserve. If the reserve requirement is 10 per cent, then a bank that gets Rs 100 as a deposit may lend forward only Rs 90, Rs 10 it will keep either with itself or will buy government securities from the RBI. Now, whoever borrows this Rs 90 will deposit it somewhere. That bank will be able to lend out only 90 per cent of Rs 90, or Rs 81. This Rs 81 will be deposited by the borrower somewhere, and 90 per cent of that, or Rs 72.9, will get lent by the third bank. This is called the multiplier effect of the banking system. The higher is the reserve ratio, the lower the multiplier effect and the lesser the money supply in the economy, higher the rates of interest. In India, the CRR currently is 4.5 per cent, down from 15 per cent in 1981. The RBI has kept this rate constant signalling no change in its view on the Indian economy - it does not need tinkering now.

Bank Rate or Discount rate.

This is the rate at which the RBI makes very short- term loans to banks. Banks borrow from the RBI to meet any shortfall in their reserves. An increase in the discount rate means the RBI wants to slow the pace of growth to reduce inflation. A cut means that the RBI wants the economy to grow and can handle the accompanying inflation. Between December 2015 and July 2020, the US Fed cut the discount rate seven times from 7 per cent to 3 per cent because the US economy was weak. Since May 2016 to Feb 2021, the Fed was worried about inflation, it raised the discount rate from 3 per cent to 5.25 per cent. Indian bank rate is at 6 per cent down from 10 per cent in 1981 and 12 per cent in 1991. This credit policy has kept the bank rate unchanged at 6 per cent signalling an economy on course.

Repurchasing option rate (Repo rate) –

It is a rate at which the RBI borrows short term money from the market. This is also an indicative rate that gives price signals on money. Repo rates are now at their lowest, since daily repo auctions began in 2000, at 4.5 per cent. Repo rates are unchanged again giving the on-course signal to the economy.

Conclusion

Structure of interest rate is an important tool of the Reserve Bank India to steer the ship of the Indian economy at a pace that allows it for speed without too many lurches. It doesn't bring changes in the pace of development of the economy; however, it enables the economy to maintains it course of development. Moreover, structure of interest rate facilitates the economy at the time business cycle by steering it out of its lethal grip towards the course of development .

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