

Debt market

Movements of interest rates

4.59 On the government bond market, the yield curve has exhibited interesting movements. The interest rate at the short end of the yield curve (91 days) dropped from 5.63 per cent on 31 March, 2003 to 4.72 per cent on 31 March, 2004. The interest rate at the long end of the yield curve (10 years) dropped from 6.52 per cent to 5.44 per cent over this same period.

4.60 Given 4.5 per cent inflation, this translates to a real rate of return as of 31 March, 2004 of roughly 20 basis points at the short end, and roughly 90 basis points at the long end.

4.61 Through these rate reductions, strong positive returns were obtained on both, the 1-year bond (+1.03 per cent) and the 10-year bond (+11.5 per cent) in 2003-04. These came on the back of rate reductions, and hence strong positive returns, in 2002-03 also.

4.62 The total return on the GOI bond index - inclusive of coupons and capital gains - of 9.4 per cent in 2002-03 was followed by returns of 11.9 per cent in 2003-04. This reflects the overall average returns delivered by government bonds as an asset class.

4.63 The GOI bond index, i.e. the portfolio of all government bonds, has had a steadily lengthening maturity, going from a duration of 5.11 years on March 30, 2002 to 5.544 years on March 31, 2003 to 6.359 years on March 31, 2004.

4.64 The bond market was less volatile in 2003-04 as compared with the previous year. The daily returns volatility of the 10-year zero coupon bond dropped sharply from 0.71 per cent per day in 2002-03 to 0.47 per cent per

day in 2003-04. As a consequence, the daily returns volatility of the NSE GOI bond index fell from 0.43 per cent per day in 2002-03 to 0.27 per cent per day in 2003-04.

Liquidity

4.65 Impact cost, which is the best measure of financial market liquidity, is not observed on the bond market, owing to the bilateral trading procedures that presently prevail. The total turnover for government bonds (both central and state), which is a rough proxy of market liquidity, was Rs.24.6 trillion in 2001-02. This grew to Rs.28 trillion in 2002-03, and rose further to Rs.30.7 trillion for the period April-January of 2003-04. This turnover is highly concentrated in a few bonds. Roughly 20 of the bonds that exist have turnover ratios in excess of 75 per cent.

4.66 Expressed in terms of turnover ratio, i.e. taking into account the growth of the market capitalisation, bond market liquidity has not grown. In February 2002, the turnover ratio of the government bond market was 190 per cent. This dropped slightly to 181 per cent in February 2003 and further to 152 per cent in February 2004.

4.67 As a consequence of a series of policy decisions aimed at converting the call money market into a pure inter-bank market, the call money market has seen a decline in turnover, from levels like Rs.30,000 crore per day in 2002 to levels of roughly Rs.10,000 crore per day towards the end of 2003-04. At the same time, the CBLO market, which is comparable in some respects to the call money market, has grown to a level of Rs.2,506 crore per day in March 2004.

Market size

4.68 The government bond market has grown rapidly, fueled by large fiscal deficits.

The market capitalisation of the government bond market grew from Rs.6.7 trillion in March 2003 to a level of Rs.9.7 trillion in March 2004. The state government bond market also grew from Rs.1.4 trillion in March 2003 to Rs.1.8 trillion in March 2004.

4.69 The corporate bond market grew from Rs.0.85 trillion to Rs.1.36 trillion over these two years. These values only reflect the securities trading on the NSE Wholesale Debt Market (WDM) and are likely to be biased downwards.

Electronic trading for collateralised borrowing

4.70 Given the success of electronic trading in numerous other asset markets, there is a natural interest in modernising the debt market also, in order to move away from the archaic bilateral trading procedures.

4.71 In order to address concerns of the burgeoning unsecured inter-bank call money market, an important innovation took place at the Clearing Corporation of India (CCIL) through the launch of its new product *Collateralised Borrowing and Lending Obligation* (CBLO). The CBLO is like a repo, i.e. it can be interpreted as borrowing backed by securities as collateral. Issued at a discount to face value, CBLOs always redeem at par, similar to treasury bills or zero coupon bonds. The maturities range from 1 day to 1 year.

4.72 There are many unique innovations, by world standards, in how CBLO is structured. It includes facilities for closing out of borrowing positions prior to maturity.

4.73 In addition to running the trading system, CCIL is the central counterparty; i.e. it does netting by novation for the CBLO. This eliminates counterparty credit risk. As in the equity market, where novation first came about in India, this has helped grow the market size, and enable transactions between heterogeneous counterparties. Private firms, NBFCs, etc., who would normally be excluded from the OTC bond market because they are considered unsafe by the existing market participants, are all able to participate in the CBLO market thus contributing to market

liquidity, increasing competition, and delivering the gains from trading to a wider range of economic agents in the country.

4.74 The importance of CBLO lies in the fact that it marks the first successful use of anonymous electronic trading in the bond market in India. In contrast with many initiatives in modernising the bond market which have faced difficulties, CBLO has been a remarkable success in terms of attracting turnover. Trading began in January 2003. From July 2003 onwards, trading grew rapidly, to reach an average daily turnover of Rs.2506 crore in March 2004. This makes CBLO one of the important markets in the country. It combines both the transparency and market efficiency of a modern market design, and the significant market size, that is required to obtain reliable prices.

Netting for fixed income and currencies

4.75 Once the idea of novation at a central counterparty was proven in the equity market, it has found favour in many other areas. In close consultation with RBI, the Clearing Corporation of India (CCIL) has applied this idea on the fixed income and the currency markets.

4.76 CCIL has setup novation and multilateral netting processes, backed by guaranteed settlement, which are comparable to what NSCC had done on the equity market in 1996. Through this, funds settlement of all markets that CCIL serves migrated to the multilateral netting arrangement, whereby individual member obligations to pay or receive funds arising out of every single transaction are aggregated and offset into a single net fund obligation.

4.77 In addition to substantially reducing individual member funding requirement, such netting reduces liquidity risk as also counterparty credit risk from a gross to net basis. By reducing the number and overall value of payments between its members, this has enhanced the efficiency of the payment system and reduced settlement costs associated with growing volumes of market activity. It has also reduced the size of credit

and liquidity exposures incurred by market participants on their unsettled transactions. The reduced need for intra-day liquidity or credit used to bridge timing gaps between gross payments and gross receipts has led to better liquidity management. The earlier instances of 'gridlock' and 'SGL bounce' in the gilts markets due to problems associated with management of funds have vanished through the use of netting by novation at the central counterparty. Netting by CCIL has increased trading opportunities for its members without need for re-allocation of existing credit facilities apart from reducing capital allocation for claims on counterparties.

4.78 In the currency market, delivery of currencies involved in a typical transaction do not happen at the same time due to time zone differences. By becoming a central counterparty and guaranteeing settlement of such trades after effecting multilateral netting, CCIL has made settlement of such trades possible on a netted basis. To take care of the risks emanating from settlement of trades at different points of time (in separate time zones), CCIL set up a robust risk control mechanism by setting exposure limits for the market entities and by resorting to a sound loss allocation mechanism. In this area, while CCIL delivers the benefits of netting, this is not based on the principle of novation.

4.79 CCIL is a unique experiment in market design, by world standards. It links up the idea of netting at a central counterparty with an OTC market. This is relatively unconventional by world standards, where the technology of netting by novation is generally only applied when trading itself is centralised at an exchange. CCIL is an innovative effort where a design component of the exchange (i.e. the clearing corporation) has been linked up to a fragmented OTC market.

4.80 CCIL thus represents an effort to modernise the post-trade processes of the fixed income and currency markets, while their trading systems continue in an archaic form. It represents a different line of attack when compared with the reforms program on the equity market, where the first target of the reforms program was the modernisation of

trading (1994), after which improvements in clearing (early 1996) and settlement (end 1996) took place.

4.81 The transactions flowing through CCIL owing to these activities are enormous. On the currency market, in 2003-04, there was an average daily volume of \$1.5 billion on the currency spot market and \$0.6 billion on the currency forward market.

4.82 CCIL achieved a funds netting factor of 75.74 per cent in gilts markets in 2003-04 as compared with 71.88 per cent in 2002-03 translating to an actual reduction in member fund requirements to the tune of Rs. 30,58,793 crores in 2003-04. In the currency market, CCIL achieved a netting factor of 83.28 per cent in 2003-04 as compared with 82.86 per cent in 2002-03 leading to an actual reduction in member funding requirements to the tune of USD 417 billion in 2003-04.

4.83 The equity market has long used 'DVP-3' settlement, where netting takes place for both funds and securities. Earlier, RBI regulations prohibited netting on securities; i.e. only netting on funds was permitted. From April 2, 2004, securities settlement at CCIL shifted to DVP-3. This has led to a securities netting factor of 36 per cent during April 2004. The netting efficiency on securities is expected to improve in coming months, as more firms build internal systems and human capital that is consistent with DVP-3.

4.84 The success of CCIL marks an important milestone for improving the market design of the fixed income and currency markets, which now have a strong 'middle component', the clearing corporation.

RTGS: A revolution in the wholesale payments system

4.85 Traditionally, payments transactions between finance companies were generally settled through an inter-bank multilateral net settlement mechanism. Difficulties in the payments system have been a long-standing problem in the Indian financial system.

4.86 One major effort for modernising the mechanisms for settlement of funds between banks is the Real Time Gross Settlement

(RTGS) system. The RTGS system ensures transfer of funds on a real time and on a one-to-one basis (i.e. between a sender and a beneficiary) in an electronic mode. RTGS systems lead to reduced settlement and systemic risks, especially in high-value inter-bank transactions.

4.87 RBI's RTGS system went into live operation on March 26, 2004. It offers just-in-time money transfer capabilities. Some of the salient features of the RTGS system are as follows: Payments are settled transaction by transaction; settlement of funds is final and irrevocable; settlement is done in real time; funds settled can be further used immediately. It is a fully secure system which uses digital signatures and public-key encryption for safe and secure message transmission. There is a facility for intra-day collateralised liquidity support for the member-banks to smoothen temporary mismatch of fund flows and thereby ensure smooth settlements.

4.88 Under the RTGS System, inter-bank transactions, customer based inter-bank transactions and net clearing transactions can be settled. Both high value and retail payments can be effected through the RTGS system. It is a single, all-India system.

4.89 The RTGS system commenced operations with four banks as members. Expansion of the RTGS system in terms of scope and coverage is taking place in phases. By late 2004, it is expected that RTGS payment services will be offered from 3000 bank branches in about 275 cities.

4.90 It is expected that banks will utilise the underlying RTGS capabilities, and create payments products through which households and firms of the country will achieve more effective payments. By itself, RTGS only constitutes the infrastructure which will enable such developmental work by banks.

Use of electronic auction for debt buy-back scheme

4.91 The Union Budget 2003-04 envisaged measures for debt restructuring as a part of fiscal consolidation. The buy-back of loans by the Central Government from banks on a voluntary basis was one such measure - the

others being pre-payment of external debt and restructuring of State Governments' debt to the Centre through a debt swap scheme.

4.92 Accordingly, the Reserve Bank conducted the first buy-back auction on July 19, 2003, which envisaged buying back of 19 relatively illiquid securities. The market price of 18 of the securities ranged from Rs.122.75-148.87.

4.93 The anonymous auction was conducted through a live interactive platform developed by the Clearing Corporation of India Limited (CCIL) where the participants were allowed to revise their bids. This was the first use of electronic systems in the primary market for bonds, on the lines of the screen-based bookbuilding which has been in use for public issues on the equity market. The demand function was displayed on the screen in realtime, and participants could use this information to refine their bidding strategy.

4.94 There were 131 offers amounting to a total of Rs.14,434 crore (face value). The entire amount was accepted as these were at or above the minimum discount of 7.5 per cent (to the market value) expected by the Government.

4.95 The market value of these securities bought back amounted to Rs.19,394 crore. The difference between the market value and the face value (i.e. Rs.4,960 crore) was shared between the Government and market participants.

4.96 While the premium paid to market participants amounted to Rs.3,472 crore, the Government saved Rs.1,488 crore being the discount amounting to 7.67 per cent of the market value. In exchange of the securities bought back, the Government reissued four existing liquid securities of equal face value (Rs. 14,434 crore).

4.97 The prices at which the securities were reissued were the weighted average prices based on SGL transactions during the period July 14-18, 2003. Banks were allowed additional income deduction for tax purposes to the extent such business income was used for provisioning of their non-performing assets.