### APPENDIX 3.1

Table 3A: Financial Liberalisation Measures - Total variance Explained

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sums of Squared loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
</tr>
<tr>
<td>1</td>
<td>24.4076</td>
<td>78.7342</td>
</tr>
<tr>
<td>2</td>
<td>3.189855</td>
<td>10.2898</td>
</tr>
<tr>
<td>3</td>
<td>1.25458</td>
<td>4.047032</td>
</tr>
<tr>
<td>4</td>
<td>0.936034</td>
<td>3.019464</td>
</tr>
<tr>
<td>5</td>
<td>0.420453</td>
<td>1.356301</td>
</tr>
<tr>
<td>6</td>
<td>0.264042</td>
<td>0.851748</td>
</tr>
<tr>
<td>7</td>
<td>0.161662</td>
<td>0.521491</td>
</tr>
<tr>
<td>8</td>
<td>0.117135</td>
<td>0.377854</td>
</tr>
<tr>
<td>9</td>
<td>0.091506</td>
<td>0.29518</td>
</tr>
<tr>
<td>10</td>
<td>0.074872</td>
<td>0.241522</td>
</tr>
<tr>
<td>11</td>
<td>0.050605</td>
<td>0.163241</td>
</tr>
<tr>
<td>12</td>
<td>0.031656</td>
<td>0.102116</td>
</tr>
</tbody>
</table>

Source: Extraction Method: Principal Component Analysis

Table 3.B: Dummy Variables - Component matrix

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAR00001</td>
<td>0.885517</td>
<td>-0.29672</td>
<td>0.030245</td>
<td>0.235985</td>
</tr>
<tr>
<td>VAR00002</td>
<td>0.959647</td>
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<td>-0.11684</td>
</tr>
<tr>
<td>VAR00003</td>
<td>0.767031</td>
<td>-0.4099</td>
<td>0.166249</td>
<td>0.393147</td>
</tr>
<tr>
<td>VAR00004</td>
<td>0.908851</td>
<td>0.214793</td>
<td>-0.28235</td>
<td>0.039079</td>
</tr>
<tr>
<td>VAR00005</td>
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<td>0.299662</td>
<td>-0.23848</td>
<td>0.070098</td>
</tr>
<tr>
<td>VAR00006</td>
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<td>0.016448</td>
<td>-0.09989</td>
<td>-0.05237</td>
</tr>
<tr>
<td>VAR00007</td>
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<td>0.371599</td>
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</tr>
<tr>
<td>VAR00008</td>
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<td>0.164245</td>
<td>-0.12488</td>
</tr>
<tr>
<td>VAR00009</td>
<td>0.938168</td>
<td>-0.10325</td>
<td>0.232123</td>
<td>-0.10898</td>
</tr>
<tr>
<td>VAR00010</td>
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<td>0.085322</td>
<td>-0.10351</td>
</tr>
<tr>
<td>VAR00011</td>
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<td>0.085322</td>
<td>-0.10351</td>
</tr>
<tr>
<td>VAR00012</td>
<td>0.90231</td>
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<td>0.085322</td>
<td>-0.10351</td>
</tr>
<tr>
<td>VAR00013</td>
<td>0.90231</td>
<td>-0.38054</td>
<td>0.085322</td>
<td>-0.10351</td>
</tr>
<tr>
<td>VAR00014</td>
<td>0.727036</td>
<td>-0.40783</td>
<td>0.17791</td>
<td>0.501442</td>
</tr>
<tr>
<td>VAR00015</td>
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</tr>
<tr>
<td>VAR00016</td>
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<td>0.17791</td>
<td>0.501442</td>
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</tr>
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</tr>
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</tr>
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<tr>
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</tr>
<tr>
<td>Category</td>
<td>Number of Firms</td>
<td>Percent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Firms</td>
<td>819</td>
<td>36.1</td>
<td></td>
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<tr>
<td>Large Firms</td>
<td>1450</td>
<td>63.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Firms</td>
<td>2269</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group Firms</td>
<td>1308</td>
<td>57.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non Group Firms</td>
<td>961</td>
<td>42.35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Extraction Method: principal Component Analysis.
4 components extracted

APPENDIX 3. II

Frequency of Data for Analysis
APPENDIX 3.II

Construction of Capital Stock

We have measured capital stock in 1993-94 prices. In our firm level data Gross fixed asset (GFA) of the firm in historical cost is reported. This need to be adjusted which requires capital stock estimation at firm level. Using this data we have constructed capital stock through perpetual inventory method by taking 1995-96 as the base year. Once it is estimated for a base year, then using perpetual inventory method, one can arrive at capital stock existing at various points of time. Following Srivastava (1996), we have converted the given GFA of the base year 1994-95 in to replacement cost on the basis of revaluation factor computed.

If it is assumed more realistically that the capital stock does not dates back infinitely, but that the capital stock of the earliest vintage is \( t \) period old, then we can derive the revaluation factor as follows.

\[
R^G = \frac{[(1+g)^{t+1} - 1]}{(1+\pi)^t} \frac{[(1+g) (1+\pi) - 1]}{g[(1+g) (1+\pi)]^{t+1} - 1}
\]

The method that we have used is based on the following assumptions. First, no firm has any capital stock in the base year (1995-96) of a vintage earlier than 1976-77. The year 1976-77 itself is chosen because the life of a machinery is assumed to be twenty years, as noted in the Report of the Census of Machine Tools (1986) of the Central Machine Tool Institute Bangalore (National Accounts Statistics: Sources and Methods, New Delhi: Central Statistical Organisation, 1989). For firms incorporated before 1976-77 it is assumed that the earliest vintage capital in their capital mix dates back to the year of incorporation. Clearly as stated by Srivastava (1996) the year of incorporation and the vintage of the oldest capital in the firm’s asset mix may not coincide for some firms, but the assumption is made for want of a better alternative. Secondly, the price of capital has changed at a constant rate, \( \pi = \frac{P_t}{P_{t-1}} - 1 \) from 1976-77 or from the date of incorporation of the firm (which ever is later) up to 1995-96 (base year). Value of \( \pi \) was obtained by constructing capital formation price indices from the series for gross fixed capital formation in manufacturing obtained from various issues of the National Accounts Statistics of India. The constant inflation rate \( \pi \) is not uniform but it varies with the year of incorporation, provided the firm was incorporated after 1976-77. Thirdly, investment has increased at a constant rate for all firms and the rate of growth of investment, \( g=(I_t/ I_{t-1})-1 \). Here the rate of growth of fixed capital formation in manufacturing at 1980-81 prices is assumed to apply to all firms. Again different average annual growth rates are obtained for firms established after 1976-77.
APPENDIX 3.IV

POLICY MEASURES USED FOR THE INDEX

Interest Rate Liberalisation

The rationale for liberalising interest rates in the banking system was to allow banks greater flexibility and encourage competition. Banks were able to vary rates charged to borrowers according to their cost of funds and also to reflect the credit worthiness of different borrowers. They could also vary nominal rates offered on deposits in line with changes in inflation to maintain real returns. The objective of interest liberalisation was to bring the real interest rates to market equilibrium, which will promote investment in the economy. In India during 1990s, interest liberalisation followed reduction in nominal interest rates and increase in real interest rates.

a. 1994 (October): Abolition of minimum lending rate for credit limits over Rs 2 lakhs and abolition of ceiling on term loans.
b. 1997 (April): All instructions relating to Maximum Permissible Bank Finance (MPFB) scheme and Credit Monitoring Arrangement (CMA)\(^3\) have been withdrawn and lending rates were freed in a series of steps.
c. 1998 (April): Lending rates for loans less than Rs 2 lakhs have been partially deregulated.
d. 1992 (October): Banks were freed to set interest rates on their term deposits
e. 1997 (October): With effect from October 1997 interest rates on all time deposits (except savings deposits), including fifteen day deposits, have been freed.
f. 1998 (April): Interest rates on NRI term deposits under the Non-Resident (External) Rupee Accounts (NR(E)RA) scheme have also been regulated, and banks have given freedom to determine their own interest rates on deposits under the Foreign Currency Non-Resident Accounts (Banks) (FCNR (B)) scheme subject to a ceiling that is prescribed by RBI from time to time.
g. 1996: Interest rates on advances of all co-operative banks (except urban co-operative banks) have been deregulated subject to a minimum lending rate of 13 per cent.
h. 2001: Co-operative banks free to determine the lending rates with the withdrawal of MLR concept.

The dummies for these policies are D1 which takes value 1 after 1993-94 for capturing events (a), (b) and (c); D2 = 1 after 1991-92 for capturing event (d), D3 = 2 after 1996-97 for capturing events (e) and (f); and D4 = 2 after 1995-96 for capturing event (g) and (h).
Reduction in Reserve Requirements

A significant feature of the post-reforms policy framework has been gradual reduction in reserve ratios, the Cash reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR). While CRR obligates a bank to hold certain fraction of its net demand and time liabilities (NDTL) as reserves with the central bank in order to ensure liquidity of the banking system, the SLR requires banks to invest a pre-determined proportion of its NDTL in government and other approved securities. These reserves often pre-empt lendable resources of banks and thereby affect the investment adversely. This also leads to high interest rate spreads as banks, being able to lend only part of the deposits mobilised, have to charge substantially higher lending rates to deposit rates to cover the cost of funds. The reduction in reserves increases the resources available for lending.

a. 1993 (April): The base SLR was reduced from 38.5 per cent in 1991-92 to 34.75 per cent in 1993-94
b. 1997 (October): SLR was further reduced to 25 per cent in 1997-98 which is the minimum stipulated under section 24 of Banking Regulation Act, 1949.
c. 1993 (April): CRR was reduced from 15 per cent to 14 per cent
d. 1997 (January): CRR was drastically reduced to 10 per cent and reduced gradually in the subsequent years up to 7.5 per cent and in 2003 it stands at a very low rate of 4.75 percent.
e. 2001 (August): Maintenance of daily minimum cash balance by banks with the Reserve Bank reduced from 65.0 per cent to 50.0 per cent for the first 7 days of the reporting fortnight, with the minimum requirement of 65.0 per cent continuing for the following 7 days, with effect from the fortnight beginning August 11, 2001.
f. 2001 (May): CRR reduced by 0.50 percentage point from 8.0 per cent to 7.5 per cent effective fortnight beginning May 19, 2001, augmenting the lendable resources of banks by about Rs.4,500 crore.
g. 2001: CRR rationalised through (a) reduction by 200 basis points from 7.50 per cent to 5.50 per cent and (b) withdrawal of exemptions on all liabilities, except inter-bank, for the computation of net demand and time liabilities (NDTL) for the purpose of maintenance of CRR, with effect from the fortnight beginning November 3, 2001.
h. 2002: Cash reserve ratio (CRR) to be reduced from 5.5 per cent to 5.0 per cent effective fortnight beginning June 15, 2002.
i. 2003: CRR to be reduced to 4.50 per cent with effect from fortnight beginning June 14, 2003.

The dummies used are D4 with value 1 after 1992-93 to capture the event (a) and (b); D5 = 2 after 1992-93 to capture the events (c) and (d) and D6 = 3 after 2000-01 to capture the events (e), (f), (g) and (h) and (i) respectively.
Money Market Reforms

a. 1997: The bank rate was fixed at 12 per cent in 1991 and was maintained at that rate for six years (till 1997). On account of improved liquidity position with the banking system and also because of the need to stimulate the economy, RBI has continued to reduce the bank rate to 6.5 per cent per annum.
b. 1993 (January): The Government introduced the system of selling 91 day Treasury bills through weekly auctions. The weekly auctions of these bills have become quite popular, with larger participation of banks and the Government has been able to raise between Rs. 15,000 crores to Rs. 16,000 crores annually.
c. 1997: RBI introduced two more treasury bills namely 14-day Intermediate Treasury bills and a new category of 14-days treasury bills.
d. 1999: 182 days treasury bills have been reintroduced in the money market.
e. 1992 (December): Repurchase auctions (Repos) are introduced in the money market to even out short term fluctuations in liquidity of the money market.
f. 1996 (November): RBI has introduced “Reverse Repos”, i.e., to sell dated government securities through auction at fixed cut-off rate of interest. The objective is to provide a short-term avenue to banks to park their surplus funds, when there is considerable liquidity in the money market and the call rate has a tendency to decline.
g. 1997: The bank rate was fixed at 12 per cent in 1991 and was maintained at that rate for six years (till 1997). On account of improved liquidity position with the banking system and also because of the need to stimulate the economy, RBI has continued to reduce the bank rate to 6.5 per cent per annum.
h. Bank rate was reduced to 6.0 per cent with effect from close of business on April 29, 2003 with a policy bias to keep it stable until the Mid-term Review of October 2003.
i. 1993 (January): The Government introduced the system of selling 91 day treasury bills through weekly auctions. The weekly auctions of these bills have become quite popular, with larger participation of banks and the Government has been able to raise between Rs. 15,000 crores to Rs. 16,000 crores annually.
j. 1997: RBI introduced two more treasury bills namely 14-day Intermediate Treasury bills and a new category of 14-days treasury bills.
k. 1999: 182 days treasury bills have been reintroduced in the money market.
l. 1992 (December): Repurchase auctions (Repos) are introduced in the money market to even out short term fluctuations in liquidity of the money market.
m. 1996 (November): RBI has introduced “Reverse Repos”, i.e., to sell dated government securities through auction at fixed cut-off rate of interest. The objective is to provide a short-term avenue to banks to park their surplus funds, when there is considerable liquidity in the money market and the call rate has a tendency to decline.
o. 2000: RBI has adopted a policy of using Repos and Reverse Repos, which is called Liquidity Adjustment Facility (LAF) for adjusting liquidity on a day to day basis. LAF has emerged as a major instrument of monetary policy in 2000-01.
p. 1992 (May): RBI raised the limits for issue of Certificate of Deposits (CDs) by scheduled commercial banks from 5 to 7 per cent of their average aggregate
deposits. RBI also permitted IDBI, ICICI, and IDCI to issues CDs with a maturity period of more than one year and up to 3 years. The aim of this step was to provide flexibility of financial institutions to raise resources from the market.

q. 1993: Commercial paper (CP) is introduced to enable the high level corporate borrowers to diversify their sources of short-term borrowing on the one hand, and provide an additional instrument to the banks and financial institutions in the money market, on the other.

r. 1994: The new instruments like zero coupon bonds, Tap-stock and partly paid government stock etc were introduced in money market.

s. 1992 (April): Government announced the setting up of Money Market Mutual Funds (MMMFs) with the purpose of bringing money market instruments within.

The dummies D7 to D12 continuously are used to capture money market reforms. D7 is used to capture event (a) with value 1 after 1996-97. D8 captures (b), (c) and (d) with values 1 after 1992-93 to capture (b) and (c), and value 2 after 1997-98 to capture (d). D9 include events (e) (f) and (g) with value 1 after 1992-93. Events (h), (i), (j), (k) and (l) is represented by dummy D10 which takes value 2 after 1992-93 to capture these events. D11 captures the events (m) and (n) with value 1 after 1991-92 and (o) with value 2 after 1999-2000. D12 is used to capture (p), (q), (r) and (s) with value 2 after 1991-92.

Pro-competition Measures

a. 1992: New Prudential Norms relating to income recognition,

b. 1992: classification of assets and provisioning for bad debts introduced. Banks had to make at least 30 per cent provision against doubtful and bad debts during 1992-93 and the balance 70 per cent in 1993-94.

c. 1992 (April): Capital adequacy norms were fixed at 8 per cent by RBI in April 1992 and banks had to comply with them over a three year period.

d. 1996 (March): All public sector banks had attained capital to risk weighted assets ratio of 8 per cent. The full norm of 8 per cent was also attained by foreign banks in India and by some Indian banks.

e. 1999: Income recognition and provisioning norms on government guaranteed advances brought on par with those on other advances with effect from the financial year 2000-01.

f. 1992: New Board of Financial Supervision set up in Reserve Bank of India to strengthen the supervisory system of banks and financial institutions.

g. 1993 (December): A separate department of supervision was established in RBI for assisting the Board of financial supervision.

h. 1993 (January): Entry of private banks was deregulated in January 1993, Between January 1993 and March 1997, 19 new private sector banks-9 domestic with UTI as the first private sector bank, and 10 foreign-were started. Capital norms of foreign banks have also been substantially liberalised. Joint ventures between foreign and Indian banks have been permitted for the first time since independence, with foreign banks being allowed to own up to 20 per cent of equity.

i. 1996: the Government of India announced the setting up of new private local area banks (LABs) to mobilise rural savings and to channellise them in
to investment in rural areas. In 1996, RBI issued license to 5 LABs, located in Andhra Pradesh, Karnataka, Rajasthan, Punjab and Gujarat.

j. 1992 (April): Scheduled commercial Banks attaining capital adequacy norms and prudential accounting standards given freedom to open new branches without the prior approval of RBI. In line with the Bhandari Committee’s recommendation, the branch licensing policy for RRBs was modified to free 70 RRBs from Service Area obligations and given freedom to relocate loss making branches.

k. 2002: To ensure that the loan assets relating to projects under implementation were appropriately classified and asset quality correctly reflected, the norms on income recognition, asset classification and provisioning with respect to industrial projects under implementation, which involve time overrun, earlier applicable to FIIs only, were made applicable to banks also.

In this aspect, dummy D13 captures the event (a) with value 1 after 1991-92. Dummy D14 represents event (b), (c) and (d) with value 1 after 1991-92. Dummy D15 is the dummy for event (e) with value 1 after 1998-99. D16 captures events (f) and (g) with values 1 after 1992-93. D17 captures the event (h) with value 2 after 1992-93. D18 captures event (i) with value 1 after 1995-96. The event (j) is captured by D19, which is given a value 1 after 1991-92. D20 captures the event (k) with value 1 after 2001-02.

**Capital Market reforms**

(a) 1988: Securities Exchange Board of India (SEBI) was set up as a regulatory body of Indian Securities Market.

(b) 1992: SEBI was set up as a statutory body, which gave it necessary powers to supervise securities market in India. The requirement of prior government permission for accessing capital markets and for prior approval of issue pricing was abolished and companies were allowed to access markets and price issues freely, subject only to disclosure norms laid down by SEBI.

(c) 1992: Approval for setting up of a National stock Exchange of India by financial institutions and banks with IDBI as nodal agency and Over the Counter Exchange of India (OTCEI).

(d) 1993: SEBI notified several regulations for intermediaries in the secondary market bringing these intermediaries within regulatory framework for the first time.

(e) 1993: SEBI introduced new reforms in the primary market for improving the disclosure standards, introducing prudential norms and simplifying issue procedures.

(f) 2000 (June): SEBI increased the maximum investment limit for mutual funds in listed companies from 5 per cent to 10 per cent of NAV in respect of open-ended funds. Also, any change in the fundamental attributes of a scheme was allowed to be made without the consent of three fourths of the unit holders provided that unit holders are given the exit option at NAV without any exit load.

(g) 1994: National Stock Exchange was set up in Mumbai in 1994 as an automated electronic exchange.
(h) 1995: the introduction of electronic trading by the NSE generated competitive pressure which forced the BSE to also introduce electronic trading in 1995.

(i) 1994: 'Badla' system was banned by SEBI in March 1994. A new carry forward system was introduced in the place of 'Badla' system.

(j) 1997 (November): National Securities Depository Limited (NSDL), the first and only depository in India was set up in 1996, to provide an efficient solution to the ills associated with paper in Indian capital market, reduce risk and facilitate movement towards rolling settlement.

(k) 1996: The entry restrictions for public sector banks to access capital market were removed.

(l) 1993: Opening up of the capital market to foreign institutional investors (FIIs) and allowing Indian companies to raise capital abroad by issue of equity in the form of Global Depository Receipts (GDRs).

(m) 1993: The Government of India has liberalised investment norms for NRIs so that NRIs and Overseas corporate bodies can buy shares and debentures without prior permission of RBI.

(n) 1999: The ending up of the monopoly of the Government in the insurance sector to promote the private sector (including limited foreign equity) in the insurance sector.

(o) 1994: term Lending Institutions viz. IDBI, IFCI, ICICI, IRBI, and EXIM Bank were required to achieve capital adequacy norm of 4 per cent by end March 1994.

(p) 2001: The SEBI allowed the mutual fund schemes to invest in the listed or unlisted securities or units of venture capital funds, within the specified overall ceilings.

(q) 2003: SEBI allowed MFs to invest in equity of listed overseas companies which have shareholding of at least 10 per cent in an Indian company listed on a recognised stock exchange in India. The overall ceiling for the entire mutual fund industry to invest in ADRs/GDRs issued by Indian companies and foreign equity and debt securities would be US$ 1 billion. Each MF can invest up to 10 per cent of its net assets in these securities as on January 31, 2003 subject to a maximum of US$ 50 million.

The dummies for these events are D21 that capture events (a) to (f) continuously which takes value 1 after 1991-92 for capturing events (a), (b) and (c) and value 2 after 1993-94 to capture the events (d), (e) and (f); D22 = 1 after 1993-94 to capture the events (g), (h) and (i) and 2 after 1996-97 to capture the event (j); D23 = 1 after 1995-96 to capture the event (k); D24 = 2 after 1992-93 to capture the events (k) and (m); D25 = 2 after 1998-99 to capture the event (n) and D26 = 1 after 1993-94 to capture the events (o) and (p). D27 captures events (q) and (r) which takes value 2 after 2000-01.
Legal Reforms

(a) 1993: Recovery of Debts due to banks and financial Institutions Act (1993) passed to set up Special Tribunals to facilitate quicker recoveries of loan arrears.

(b) 1993: Nationalised Banks enabled to access the capital market through amendment of Banking Companies Act (1980).

(c) 1993: SBI Act (1955) amended on October 15, 1993 to enable the bank to access capital market and allow per cent voting rights to share holders.

(d) 1993: Banking regulation Act, 1949 amended to enable a banking company to have a non-executive Chairman, up to three directors from among the directors of promoting institutions, to raise the ceiling for the exercise of voting rights for a share holder to 1000 per cent and to raise the penalties for contravention of the Act.

(e) 1999: Ordinance issued in 1999 to amend the Recovery of Dues to the Banks and financial Institutions Act, 1993. The amendment strengthens for recovery of dues owned to banks and financial institutions.

(f) 1992: Capital Issues (Control) Act, 1947 was repealed and the office of the controller of Capital Issues (CCI) was subsequently abolished. With the abolition of CCI, prior government permission is no longer needed by companies to access capital markets.

(g) 1995: The Depositories Ordinance Promulgated in September 1995 to provide a legal framework for the establishment of depositories to record ownership details in book entry form.

(h) 1995 (October): An Amendment of the SEBI Act in 1995 has given SEBI the powers of a Civil Court under the Code of Civil Procedure in respect of discovery and accounts, summoning and enforcing attendance to persons and examining them on oath,

(i) 1997 (January): An ordinance for amending the RBI Act for regulating the activities of NBFCs and unincorporated bodies was passed.

(j) 1998: The Insurance Regulatory Authority (IRA) Bill passed in December 15, 1998 allows 26 per cent equity in domestic insurance companies and additional 14 per cent by investors comprising Non-Resident Indians, Overseas Corporate Bodies and Financial Institutions.

(k) 1999: Insurance Regulatory and Development Authority Act passed in 1999, which provided a legal framework for entry of private sector in insurance sector.

(l) 1999: The Securities Laws Bill, 1999 passed by the Parliament incorporating derivatives and units of collective Investment schemes (CIS) in the definition of securities in the securities contract Regulation Act, 1956

(m) 2000: The Companies (Amendment Act), 2000 passed which facilitates better corporate governance and increased protection of the interest of small investors.

The dummies to capture these policy changes are D28 = 2 after 1992-93 to capture the events (a), (b), (c) and (d); D29 = 1 after 1992-93 to capture the events (e) and (f); D30 = 2 after 1991-92 to capture the event (g); D31 = 1 after 1994-95 to capture the events (h), (i) and (j); D32 = 1 after 1997-98 to capture the events (k) and (l); D33 = 1 after 1998-99 to capture the events (m) and (n).
International Financial Liberalisation

(a) 1991 (July): RBI effected an exchange rate adjustment on 1 July 1991 in which the value of the rupee declined by 1 to 9 per cent against the major currencies.

(b) 1991 (July): Another exchange rate adjustment on July 3, 1991 in which the value of the rupee declined by about 10 to 11 per cent against the major currencies.

(c) 1992 (March): Dual exchange rates, administered/market-determined, under the Liberalised Exchange Rate Management System (LERMS).

(d) 1993 (March): Unification of dual exchange rates into single-market-determined rate. Under the system, there is no officially fixed exchange rate of the rupee. Instead the rate is determined by the demand and supply conditions in the foreign exchange market, while the RBI stands ready to intervene to maintain orderly market conditions and to curb excessive speculation.

(e) 1994 (August): Current Account Convertibility (IMF Article VIII), with notified, category specific caps on outflows.

(f) 1997 (January): Caps on trade-related outflows removed.

(g) 1997 (January): RBI announced major relaxations in exchange control. The monetary ceilings prescribed for remittance of foreign exchange for a wide range of purposes were removed and ADs can now allow remittances for these purposes without prior clearance from RBI. This will reduce delay and thus further facilitate all current transactions.

(h) 1999 (July): The DGFT made the following changes in the guidelines for import of second hand capital goods. The Inter-Ministerial Restricted Item Licensing Committee in DGFT will normally allow import of such capital goods automatically that is not older than 5 years.

(i) 1999 (August): Request for procurement of capital goods against EPCG licenses from indigenous sources need not be placed before the EPCG Committee.

(j) 2000 (March): Quantitative restrictions on 714 out of 1,429 items were removed by shifting them from the SIL List to the OGL List. The remaining items would be shifted to the OGL List by March 31, 2001 and the SIL List would be abolished. Import of second hand capital goods, which are less than 10 years old, will be allowed without obtaining any license on surrender of SIL.

(k) 2003: Indian corporates were permitted to invest in rated bonds/fixed income securitie of listed foreign companies abroad subject to certain conditions.

These policies changes are captured by dummies $D_{34} = 1$ after 1990-91 to capture the events (a), (b), (c) and (d); $D_{35} = 1$ after 1993-94 and 2 after 1996-97 to capture the events (e), (f) and (g); $D_{36} = 2$ after 1998-99 to capture the events (h) and (i) and $D_{37} = 3$ after 1999-2000 to capture the event (j) and (k).

(a) 1993 (January): Major alterations in Foreign Exchange Regulation Act (FERA) of 1973 granting parity of status to foreign and Indian-owned companies, and liberalising outward investments by Indian companies in joint ventures overseas.

(b) 1997 (May): Report of the (Tarapore) Committee on Capital Account Convertibility (CAC) recommending a three-year phased move to CAC,
subject to macro targets: Gross fiscal Deficit/GDP 3.5 per cent (1999-2000);
debt service ratio of 20 per cent (1999-2000).

(c) 1999 (April): All trading in India's two main stock indices, Nifty (NSE-50
stock index) and Sensex (BSE-30 stock index) dematerialised.

(d) 2000 (June): Replacement of FERA by Foreign Exchange Management Act
(FEMA); contraventions hereafter to be dealt with under civil, not criminal law.

D38 = 1 after 1992-93 to capture the event (a), (b), and (c) and D39 = 1 after 1999-
2000 to capture the event (d).

(a) 1991 (July): Under new industrial policy, first-time automatic approval
(with export obligations) of FDI up to 51 per cent in 34 specified sectors,
higher that 51 per cent permissible with approval; in place of earlier case-
by-case approval subject to 40 per cent ceiling in all but high-technology or
export-oriented projects.

(b) 1997 (January): With a view to providing greater access to investment
proposals under the automatic approval route to foreign investors, the
government announced the inclusion in Annexure 3 of the statement of
Industrial policy 1991: (1) 3 categories of industries/items relating to
mining activities for foreign equity up to 50 per cent. (2) 13 additional
categories of industries/items for foreign equity up to 51 per cent and (3) 9
additional categories of industries/items for foreign equity up to 74 per
cent.

(c) 1998 (January): In order to simplify procedures for FDI under the
'automatic route' of the RBI, the RBI dispensed with the need for its prior
approval of such proposals. Accordingly, Indian companies were granted
the permission for investment under the automatic route to RBI to issue
and export shares to foreign investors.

(d) 1999 (November): With a view to promoting foreign direct investment by
Indian companies under the Reserve Bank Fast Track Route and Normal
Route the condition that the amount of investment should be repatriated in
full by way of dividend, royalty, etc. within a period of five years was
dispensed with.

(e) 2002: The Government announced that the FII portfolio investments will not
be subject to the sectoral limits applicable for FDI except in specified sectors.

These policies are captured by dummies D 40 = 1 after 1990-91 to capture the
event (a); D41 = 1 after 1996-97 to capture events (b) and D42 = 2 after 1997-98 to
capture the events (c), (d), and (e).

(a) 1992 (January): FIIs allowed to invest with full repatriability of principal
and income in primary/secondary markets, subject to registration with
SEBI; aggregate ceiling of 24 per cent of issued share capital; and
individual ceiling of 5 per cent.

(b) 1996 (July): Individual ceiling raised from 5 to 10 per cent

(c) 1997 (April): Aggregate ceiling raised from 24 to 30 per cent.

(d) 2000 (April): With a view to further liberalising investment by Foreign
Institutional Investors (FIIs) in Indian companies in the primary/secondary
markets in India, Indian companies (other than Banking Companies) were
permitted to enhance the aggregate ceiling on investment from 30 per cent
to 40 per cent of issued and paid-up capital of the Indian company.
(e) 2001 (March): FIs can invest in a company under the portfolio investment route up to 24 per cent of the paid up capital of the company. This can be increased to 40 per cent with the approval of the General Body of the shareholders by a special resolution. This limit was increased from 40 per cent to 49 per cent.

(f) 2002: Export oriented units and other exporters are permitted to credit up to 70 per cent and 50 per cent of their foreign exchange earnings to their Exchange Earners' Foreign Currency (EEFC) accounts, respectively. To enable the corporates to take advantage of lower interest rates and prepay the ECBs, the corporates were permitted, on a case by case basis, to credit higher than above percentages of export proceeds to their EEFC account.

(g) 2002: Corporates were allowed to issue foreign currency convertible bonds (FCCBs) up to US $ 50 million, in any one financial year, under the automatic route i.e., without the approval from the Government or the Reserve Bank.

(h) 2004: As a step towards further liberalisation, under the revised ECB Guidelines with effect from February 1, 2004, ECBs were allowed under two routes, viz. (i) Automatic route and (ii) Approval route. Under the Automatic route, ECB can be raised for investment in real sector - industrial sector, especially infrastructure sector in India. ECB up to US $ 500 million or equivalent with a minimum average maturity of five years was permitted under this route. Under the Approval Route, borrowings by FIs dealing with infrastructure or export finance would be considered. The Liberalisation made for ECB was also extended to FCCB in all respects.

The dummies are D43 = 1 after 1991-92 to capture the event (a); D44 = 1 after 1995-96 to capture (b) and (c); and D45 = 2 after 1999-2000 to capture the events from (d) to (h).

(a) 1992 (April): Indian companies permitted to issue, subject to government approval, Foreign currency Convertible Bonds and Ordinary shares through Global/ American Depository Receipts (GDRs and ADRs) on Overseas Stock/Over the Counter Exchanges, with full repatriation benefits and no lock-in period, but with end-use restrictions.

(b) 1998 (May): All end-use restrictions lifted except for ban on use of GDR/ADR issue proceeds for investment in real estate/stock market.

(c) 1991: Norms for NRIs and OCBs liberalised.

(d) 1998 (July): With a view to simplifying the procedure for investments from NRIs/OCBs in Indian companies, the RBI decided to grant general permission under FERA 1973, in respect of 100 per cent scheme.

(e) 1998 (October): In order to simplify the procedure for NRI/OCB investment schemes, the RBI granted general permission for issue and export of shares/convertible debentures by Indian companies under the 24 per cent/40 per cent schemes applicable to NRIs/OCBs and for acquisition of shares by NRIs/OCBs.

(f) 1999 (November): Simplifying the procedure for NRI/OCB investment in India, the Reserve Bank granted general permission to Indian companies for issuing non-convertible debentures to such investors on non-repatriation/ repatriation basis, subject to certain conditions. Further, all portfolio investments made by NRIs and/or OCBs on non-
repatriation/repatriation basis in shares/debentures of Indian companies and other securities through designated branches of authorised dealers will not require specific permission from the Reserve Bank. Authorised dealers were permitted to grant loans and advances to Non-Resident Indians (NRIs) and Persons of Indian Origin (PIOs) against the security of shares/debentures/immovable property held by them in India, according to their commercial judgement and subject to certain conditions.

(g) Subject to an overall annual ceiling with preference for infrastructure and export sector financing, and restrictions on utilisation for rupee expenditure relaxed for:

   1995 (May): Manufacturing Companies: Limit: $ 1 million; Minimum maturity: 3 years
   1996 (January): Non-manufacturing companies: Same limits as for manufacturing
   1996 (June): Limit: $ 3 million.
   1997 (March): Long term limit: $ 100- $ 2000 million Minimum maturity: 10-20 years
   1997 (March): Inward remittance of funds for imports permissible with utilisation lags of up to one year.
   1998 (June): loans with minimum average maturity of 10 years outside aggregate cap on ECB
   1998 (May): No end-use restrictions. Minimum maturity between 3 years (simple) to 5 years (average) varying directly with amount borrowed; 8-16 years for long-term window.

(h) 2004: To promote overseas direct investment by Indian corporates, permitted end-use of ECBs was enlarged to include overseas direct investment in Joints Ventures and Wholly Owned Subsidiaries (WOSs).

These policies are captured by dummies D46 = 1 after 1991-92 to capture the event (a) and (b); D47 = 2 after 1990-91 to capture the events (c), (d) and (e); D48 = 2 after 1998-99 to capture the event (f); and D49 = 2 after 1994-95 to capture the events of (g) and (h).

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
</tr>
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<tbody>
<tr>
<td>1997 (April)</td>
<td>(a) scrapping of CRR and SLR on inter-bank borrowings leads to MIBOR.</td>
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<tr>
<td>1997 (April)</td>
<td>(b) First-time permission for forward foreign exchange contracts without documentary evidence of underlying exposure, and beyond six months; subject to a declaration of exposure supported by average export/import turnover of last two years. (ii) Case-by-case approval of rupee/foreign currency swaps replaced by permission for authorised dealers to operate “swap book” within their open position limits.</td>
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<tr>
<td>1998 (June)</td>
<td>First-time permission for forward exchange cover to FIIs to the extent of 15 per cent of outstanding investments as on that date.</td>
</tr>
<tr>
<td>1999 (April)</td>
<td>Limit for forward cover: 15 per cent of investments as on 31 March 1999 (with utilisation, further extension of cover possible); entire incremental investment thereafter.</td>
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These policies are represented by dummies D50 = 1 after 1996-97 to capture the events (a) and (b) and D51 = 2 after 1997-98 to capture the events (c) and (d).