

Capital Formation through Primary Market in India: A Study on Non-Government Public Limited Companies during Post Liberalization Era

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Abstract: The size and character of the primary market have undergone a rapid transformation and expansion since mid-eighties. Before liberalization, resource mobilization through primary market operation was low, but during early nineties with the repeal of Capital Issues Control Act, it increased gradually as many big projects have been launched after liberalization. After establishment of Securities and Exchange Board of India, major reforms in the primary market have taken place and investors' grievances have declined.

In this paper, an attempt has been made to examine the role of new issue market in capital formation in the post reform period in India with special reference to non-government public limited companies.

Key-words: New capital issue, public issue, rights issue.

1. Introduction

The capital market, representing the institutional sources of long-term funds, is the barometer of any country's economic development. The structure of the capital market consists of the primary market/new issue market and the secondary market. The primary market deals in only new securities which were not previously available and are offered to the investors for the first time. It does not have any organizational set-up located in any particular place. The primary market acts as a link-pin between savers and investors and creates the opportunity to put the savings of the investors' to the corporate houses and ultimately helps to promote economic growth.

The Indian economy has been going through economic reforms since 1991 to correct various distortions and disorientation, and generate incentives to foster capital market development. The Indian capital market has received special attention under the new economic policy. Reforms in the securities market, particularly with the establishment of SEBI, abolition of Controller of Capital Issues (CCI), market-determined allocation of resources and interest rate structure have greatly improved the regulatory framework and efficiency of the Indian capital market.

Several studies have been conducted on primary market in India by academicians, researchers and by the primary market advisory committees. Many scholarly books and articles have been brought out. Khan (1977) studied the role of new issues in financing the private corporate sector during the 1960's and early 1970's. He found that new issues were declining during this period. Patil (1986) opined that resource mobilization task was challenging one for the private corporate sector in the seventh plan period. Khambata and Khambata (1989) analyzed the growth and development of the Indian equity market and found that Indian capital market did not play a significant role in financing the industrial sectors during the period 1960 to 1980. Samuel (1996) showed that stock market play a limited role as a source of finance for Indian and U.S firms. Pagano, Panetta, and Zingales (1998) analyzed the market-to-book ratio of existing public firms in an industry and found that it has been the key deciding factor for Initial Public Offer (IPO) decision. Desai (2000) examined the reasons for sluggishness in the primary market. Lowry (2003) found that demand for capital and investors' sentiments are statistically and economically significant determinants of IPO volume. Arwah (2003) observed that primary capital market was unequivocal and IPOs were offered at a discount. Ghosh (2004) made a detailed investigation of the boom and slump phase of the Indian primary capital market during 1993 to 2001 and found that Indian companies might have depended more on long term market sentiments to decide on the timing of their IPOs. Shirai (2004) opined that during 1990-2001, equity market had not proved a stable source for financing.

Brau and Fawcett (2004) observed that condition of the secondary market is the most influential factor in timing an IPO. Ivanov and Lewis (2008), found that time variation in business conditions and investor sentiments prove to be economically significant determinants of IPO issue activity. The empirical evidence of Derrien and Kecskés (2008) has indicated that roughly 40 percent variation in equity issuance could be explained by economic fundamentals of Canadian petroleum industry. Blum (2011) analysed the US primary capital market and concluded that capital demand, investor sentiment and market condition are the major determinants of IPO.

From the above literature review it has been found that resource mobilizations from primary market depend on the factors like condition of the secondary market, rate of interest at which corporate sector can borrow the required funds, condition of the overall economy, investors sentiment etc. In this paper, an attempt has been made to investigate the capital formation through primary market for the non-government public limited (NGP) companies.

2. Objectives of the Study

In the light of above discussion, the current study is aimed at analysing and examining the pattern of resource mobilization in the primary market by the non-government public limited companies in India. The role of primary capital market in India in capital formation in general, and in respect of financing private corporate sectors have been analyzed. More specifically, the study addresses the following objectives.

- i) Ascertain the aggregate pattern of resource mobilization by the non-government public limited companies.
- ii) Discuss the type and instruments-wise pattern of issues.
- iii) Examine the primary market activity in capital formation.
- iv) Analyse the contribution of equity market in total resource mobilization.

3. Database

The study depends exclusively on secondary data. Secondary data are collected from SEBI Bulletin and Annual Reports, Hand Book of Statistics on Indian Economy of Reserve Bank of India (RBI), RBI Annual Reports and various reports published in financial journals, financial magazines and National Stock Exchange of India (NSE) and Bombay Stock Exchange of India (BSE) websites.

In this study, annual data from 1990-91 to 2010-11 have been used in case of all the variables like Gross Domestic Capital Formation (GDCF), Net Domestic Capital Formation (NDCF), Prime Lending Rate (PLR), BSE-SENSEX (Sensitive Index) and Net Resource Mobilized by Non-Government Public Limited Companies (NGP). Annual data have been used because of non-availability of monthly data for GDCF, NDCF, and PLR.

- i) **Gross Domestic Capital Formation (GDCF):** GDCF is the total investment that takes place in an economy within any specific time period. In other words, it refers to the net additions to capital stock in an accounting period, after depreciation.

- ii) **Net Domestic Capital Formation (NDCF):** If we deduct the consumption of fixed capital from GDCF then we get Net Domestic Capital Formation (NDCF). The NDCF is a measure of the net domestic investment during the year.
- iii) **Prime Lending Rate (PLR):** Rate of interest is one of the deciding factors for resource mobilization. Low rate of interest made industries more dependent upon financial institutions. From August 1991, the government of India allowed all term-lending institutions to charge interest rates according to the risk perception of the concerned project. Minimum Prime Lending Rate (PLR) of RBI has been used as the proxy for available lending rate.
- iv) **BSE-SENSEX:** SENSEX i.e. "Sensitive Index" is an indicator of performance of thirty companies at Bombay Stock Exchange (BSE) which are chosen from various sectors of the economy by a committee on the basis of a certain given criteria. It is taken to be an indicator of financial health of the capital market of India.

4. Methodology

With a view to accomplish the stipulated set of objectives of our study, different methods have been adopted. First of all, to analyze the primary market activity, correlation co-efficient is calculated to study the relationship between the new capital issues (NCI) in primary market and the chosen variables. Finally the regression equation is estimated through Ordinary Least Square (OLS) method with the help of E-views statistical package.

In order to avoid a spurious regression situation the variables in a regression model must be stationary or co-integrated. A stationary analysis is also called unit root test. Various parametric and non-parametric tests have been developed for finding out whether a series is stationary or not. The fact whether time series used in this study has unit root or not, has been investigated by using Augmented Dickey-Fuller (ADF) test method. The test is based on the Null Hypothesis (H_0): Y_t is not I (0), if the calculated ADF statistic is less than its critical value from Fuller's table, then the null hypothesis (H_0) is accepted and the series is non-stationary.

Therefore, in the first step of regression, we use ADF tests on the time series variables to investigate whether they are stationary or not. In the second step, we estimate regression. The regression equations estimated by the OLS method is given as:

$$NCI = \alpha_1 + \beta_1 NDCF + \gamma_1 PLR + u_1 \text{ ----- (1)}$$

$$NCI = \alpha_2 + \beta_2 GDCF + \gamma_2 PLR + u_2 \text{ ----- (2)}$$

$$NCI = \alpha_3 + \beta_3 \text{SENSEX} + \gamma_3 \text{PLR} + u_3 \text{ ----- (3)}$$

$$NCI = \alpha_4 + \beta_4 \text{GDCF} + \delta_4 \text{NDCF} + \rho_4 \text{SENSEX} + \gamma_4 \text{PLR} + u_4 \text{ ----- (4)}$$

Hypotheses:

Two sets of hypothesis have been formulated to assess the activity of primary securities market regarding fueling corporate sector growth.

First Hypothesis:

Null Hypothesis (H₀): Primary market failed to play its role.

Alternative Hypothesis (H₁): Primary market played significant role for capital formation.

Second hypothesis:

Null Hypothesis (H₀): Primary market activity is not influenced by the secondary market activity.

Alternative Hypothesis (H₁): Primary market activity is highly influenced by the secondary market activity.

5. Primary Securities Market in the Pre-liberalization Period

India has been following planned economic development since early 1950's and Controller of Capital Issues (CCI) became the potent instrument for regulating the investment in accordance with the objectives of planning. But despite the commencement of economic planning in 1951-52, the new issue market could not make any remarkable growth until 1955. During the pre-liberalization period, the Indian capital market was not well organized. Primary capital market was highly regulated under the provisions of the Capital Issues (Control) Act, 1947. This Act was passed in April 1947 with a view to facilitating the post war industrial expansion and providing protection to the investors.

In the post-independence period, new issue markets suffered from structural gaps. There was particularly no specialist institutional arrangement for the origination of issues of capital. Another serious drawback of the system was the absence of an inbuilt provision for distributing the securities to the investing public. The companies had to obtain prior approval from the CCI for the issue of new securities for raising capital. In the pre-liberalization period, the shares were issued at par in most of the cases. The issue of shares at a premium was rare.

The size of the premium depended on the formula prescribed by the CCI. As a result, the magnitude of the capital raised remained lower and the primary market lacked the desired flexibility. Table 1 shows the new issue activity in India during 1951-1991 period.

Table 1 : New Capital Issues by Non-government Public Ltd. Companies during the period from 1951-1991

(Rs. in crore)

Period	Equity	Debentures	Preference	Total	Annual Average
1951-1960	202	44	39	285	28.5
1961-1970	462	188	77	728	72.8
1971-1980	746	190	56	992	99.2
1981-82 to 1990-91	7857	15459	40	23356	2335.6

(Source: RBI Annual Reports, Various Years)

The annual average of amount of capital raised by non-government public limited companies increased from Rs. 28 crore during 1951 to 1960, to Rs 2335.7 crore during 1981-91. The capital formation by the non-government public limited companies during the forty years of pre-reform period was very low as compared to post reform period. In the post independent period, no capital was mobilized by the Public Sectors Undertakings (PSU). During 1989-90 to 1991-92, PSUs raised fund only through issue of bonds. They started raising capital through equity after liberalization.

6. Capital Formation through Primary Securities Market in the Post-liberalization Period

The Indian capital market began to expand in the late 1980's. Resource mobilization in primary market got a boost after establishment of SEBI in 1992. After the repeal of CCI Act, availability of free pricing of equities and buoyant conditions of the secondary market have

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been the main reasons behind the massive growth of primary market activity during 1991-92 to 2010-11 which is shown in Table 2 below.

Table 2: Number of Issues and Amount of Resource Mobilized by NGP Companies during 1991-92 to 2010-11

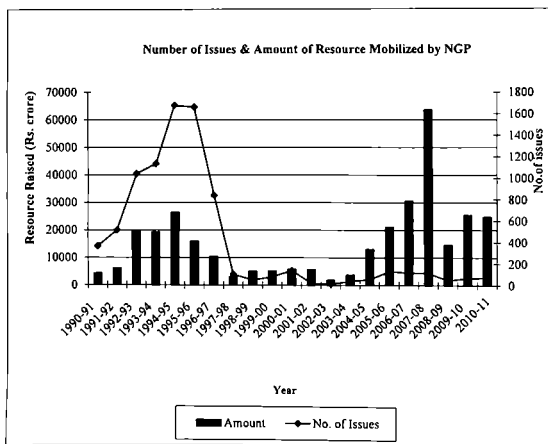
Year	No. of Issues	Amount (Rs. in Crore)	% Change Over Last Year	
			No. of Issues	Amount
1990-91	364	4312.2	NA	NA
1991-92	514	6193.1	41.208	43.618
1992-93	1040	19803.4	102.334	219.76
1993-94	1133	19330.3	8.942	-2.388
1994-95	1678	26416.7	48.102	36.659
1995-96	1663	15997.6	-0.893	-39.441
1996-97	838	10409.5	-49.609	-34.93
1997-98	102	3138.3	-87.828	-69.851
1998-99	48	5013.1	-52.941	59.739
1999-00	79	5153.3	64.583	2.796
2000-01	139	5818.1	75.949	12.9
2001-02	19	5692.4	-86.33	-2.16
2002-03	9	1877.7	-52.631	-67.013
2003-04	38	3721.8	322.222	98.21
2004-05	54	13079.2	42.105	251.421
2005-06	131	21154.0	142.592	61.737
2006-07	117	30603.0	-10.687	44.667
2007-08	115	63637.9	-1.709	107.946
2008-09	45	14670.6	-60.869	-76.946
2009-10	68	25478.7	51.111	73.671
2010-11	70	24830.1	2.9411	-2.5456

Source: RBI Handbook of Statistics 2010-11

From the above table it can be observed that resource mobilization through primary market has shown a significant increase in the years following liberalization with both the number of

issues as well as the amount mobilized. The amount of resource mobilized from primary capital market was the highest ever during 1994-95 but declined in subsequent years (fig.1). During the period from 1995-96 to 1997-98, large number of companies who raised funds from the capital market subsequently disappeared. As a result, huge number of investors lost their investments and confidence in primary market, and preferred bank deposits and safe retirement instrument insurance schemes. As a result, the number of IPO, rights issue etc. declined during the period 1997-98 to 2003-04.

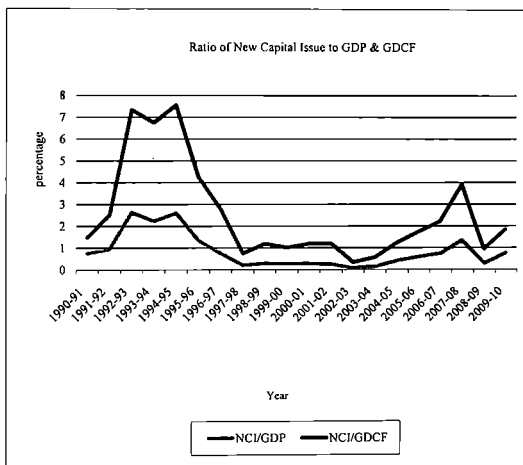
Figure 1: Total Resource Mobilization by NGP Companies



The share of capital issues to GDP as measures of resource mobilization by the capital market shows an increasing trend (fig. 2) up to 1994-95, but is unable to sustain this trend. Also, the new capital issue to GDCF declined after 1994-95. Again, the resource mobilization as a

percent of GDP and GDCF in 2005-06 was lower than that in 1990-91. Fig. 2 shows the ratio of new capital issues to GDP and GDCF.

Figure 2: Ratio of New Capital Issue to GDP and GDCF



7. Analysis of Instrument-wise Contribution in Primary Market

Before 1992, Indian companies were required to obtain approval from the office of CCI for raising capital. New companies were allowed to issue shares only at par values. Only existing companies with substantial reserve were allowed to issue shares at a premium. The Capital Issues (Control) Act was repealed in May 1992. After that, companies were allowed to price their issues without any intervention from the authorities. New capital issues through equity

related instrument in the post 1992 phase increased sharply after the abolition of CCI as shown in Table 3:

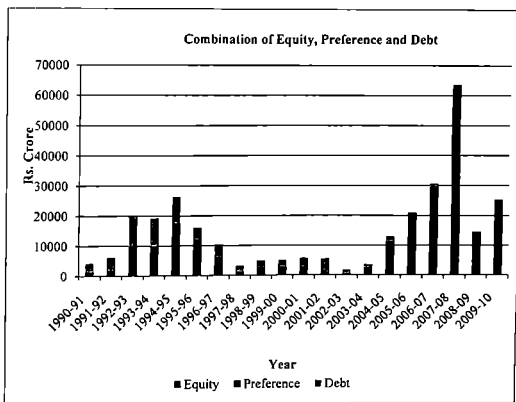
Table 3: Contribution of Equity Market

Year	Equity/ Total Issue (Percentage to Total issues)	Preference/ Total Issue	Debt/ Total Issue
1990-91	29.78	0.3	69.91
1991-92	30.94	0.02	69.03
1992-93	50.26	0.00	49.74
1993-94	51.52	0.49	48.47
1994-95	65.92	0.94	33.58
1995-96	74.24	0.72	24.82
1996-97	58.61	0.14	40.66
1997-98	37.04	1.19	62.82
1998-99	51.12	0	47.69
1999-00	53.41	2.44	46.59
2000-01	44.89	0	52.74
2001-02	15.12	0	84.88
2002-03	24.50	0	75.49
2003-04	66.39	0	33.61
2004-05	87.56	0	12.44
2005-06	98.79	0.05	1.16
2006-07	97.23	0	2.77
2007-08	89.33	8.61	2.06
2008-09	100.00	0	0
2009-10	99.29	0	0.71
2010-11	100.00	0	0

Source: compiled by authors

From the above table it has appeared that issue of equity instruments increased up-to 1995-96, but this increasing trend declined to just only 15.12 % of total resource mobilization in the year 2001-02. From 2003-04, primary market activity increased substantially. Issuance of equity share increased against the other primary market instruments. During the year 2008-09 total capital mobilized through issue of equity shares declined due to global financial crisis. The combination of amount of capital raised by issuing equity, debt and preference shares are shown in Fig. 3.

Figure 3: Combination of Amount of Capital Raised by Issuing Equity Shares, Preference Shares and Debt

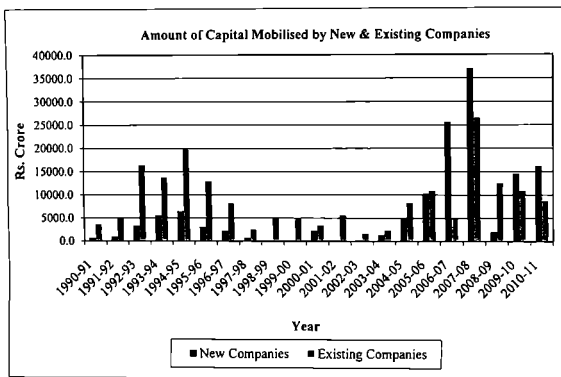


It has been found from the above chart and table that in the early stage of reforms, capital raised through debt instrument was high. But after 2003-04, the importance of debt instrument has declined and this trend continues. The Indian primary market shows a sluggish trend from 1996-97 to 2002-03; during this period percentage of debt issue was more than other instruments. Revival of primary market started from 2004-05. Resource mobilized from the issue of preference share was not effective, except for the year 2007-08. From 2004-05

onwards, maximum funds are mobilized through the issue of equity instrument and it has played a dominant role compared to other instruments.

The existing companies play a dominating role compared to new companies in mobilising funds from the market. Funds raised by the new and existing companies are shown in fig. 4.

Figure 4: Resource Mobilised by New and Existing Companies



Up to 2009-10, existing companies raised Rs. 179711.00 crore with an average of Rs. 31.03 crore per issue. During the last 20 years, total fund mobilized by new companies were Rs. 121789.80 crore, with an average of Rs. 50.68 crore per issue.

8. Empirical Analysis

In this section we have analysed the relationship between the primary market activity and gross domestic capital formation, net domestic capital formation, and gross capital formation by private corporate sectors based on time-series data for the periods 1990-91 to 2010-11. The variables in the equation are selected because of their economic meaningfulness and direct relationship.

Table-4 shows correlation among the variables under study.

Table 4: Correlation Matrix

Variables	NCI	GDCF	NDCF	PLR	SENSEX
NCI	1	0.654507	0.729811	0.079955	0.863879
GDCF	0.654507	1	0.984737	0.344745	0.861267
NDCF	0.729811	0.984737	1	0.319735	0.886793
PLR	0.079955	0.344745	0.319735	1	0.288324
SENSEX	0.863879	0.861267	0.886793	0.288324	1

From the above table it has been found that almost all the variables are moderately correlated with NCI apart from PLR. Correlation between GDCF and NDCF are very high as GDCF itself constitutes a major part of NDCF.

Test for Stationary

The unit root test is done assuming the data set to have a trend. From Table 5 it can be concluded that NCI, GDCF, NDCF, SENSEX, and PLR are stationary at first difference, if the data set has a trend, as per Augmented Dickey-Fuller (ADF) test. The lag length is chosen based on Schwarz Information Criterion (SIC) as suggested by Enders (2008).

Table 5: Results of Dickey Fuller Unit Root Test for the Variables at First Difference

Variables	Constant	Constant, Linear Trend
NCI	-5.999346 (0) [0.0001]	-5.804382* (0) [0.0010]
GDCF	-1.753278 (1) [0.3889]	-4.871548* (0) [0.0057]
NDCF	-4.38016 (0) [0.0035]	-5.455414* (0) [0.0020]
SENSEX	-4.42077 (0) [0.0032]	-4.622136* (0) [0.0091]
PLR	-5.133503 (0) [0.0008]	-5.516598* (0) [0.0017]

Note: Asterisk (*) denotes rejection of unit root hypothesis at 5% level of significance; () Lag lengths for ADF; [] Mackinnon (1991) one-sided p-values.

Regression Analysis

We have examined the relationship between primary market issues and gross capital formation through regression technique. The model used here has the following functional equations.

$$NCI = \alpha_1 + \beta_1 NDCF + \gamma_1 PLR + u_1 \text{ ----- (1)}$$

$$NCI = \alpha_2 + \beta_2 GDCF + \gamma_2 PLR + u_2 \text{ ----- (2)}$$

$$NCI = \alpha_3 + \beta_3 SENSEX + \gamma_3 PLR + u_3 \text{ ----- (3)}$$

$$NCI = \alpha_4 + \beta_4 GDCF + \delta_4 NDCF + \rho_4 SENSEX + \gamma_4 PLR + u_4 \text{ ----- (4)}$$

Where,

NCI= New Capital Issue

NDCF= Net Domestic Capital Formation

GDCF= Gross Domestic Capital Formation

SENSEX= BSE Sensitive Index

PLR= RBI Prime Lending Rate

$\alpha_1, \alpha_2, \alpha_3, \& \alpha_4$ = Constant terms; $u_1, u_2, u_3 \& u_4$ = Random Error Terms

Findings

The regression results that we have are as follows for equation (Details of the results are given in Annexure: I, II, III, and IV)

Equation (1)

$$NCI = -4850.416 + 0.149566 NDCF + 236.9646 PLR$$

$$t\text{-stat: } (-1.514590) \quad (3.784413) \quad (0.118236)$$

$$p\text{-value: } (0.1494) \quad (0.0016) \quad (0.9074)$$

$$\text{Adjusted R-square} = 0.409526$$

Equation (2)

$$\text{NCI} = -5926.427 + 0.123088 \text{ GDCF} + 212.6577 \text{ PLR}$$

$$\text{t-stat: } (-1.559001) \quad (3.100162) \quad (0.097417)$$

$$\text{p-value: } (0.1386) \quad (0.0069) \quad (0.9236)$$

$$\text{Adjusted R-square} = 0.300916$$

Equation (3)

$$\text{NCI} = -4738.48 + 7.151924 \text{ SENSEX} - 1608.788 \text{ PLR}$$

$$\text{t-stat: } (-2.343132) \quad (7.217945) \quad (-1.170136)$$

$$\text{p-value: } (0.0324) \quad (0.0000) \quad (0.2591)$$

$$\text{Adjusted R-square} = 0.737084$$

Equation (4)

$$\text{NCI} = 965.0278 - 0.349930 \text{ GDCF} + 0.352667 \text{ NDCF} + 7.555069 \text{ SENSEX} - 1400.321 \text{ PLR}$$

$$\text{t-stat: } (0.374657) \quad (-2.763472) \quad (2.364156) \quad (4.685577) \quad (-1.162137)$$

$$\text{p-value: } (0.7135) \quad (0.0152) \quad (0.0331) \quad (0.0004) \quad (0.2646)$$

$$\text{Adjusted R-square} = 0.814598$$

Hence the parameters of the explanatory variables are significant and signs as desired. The values of R^2 (0.475134) and adjusted R^2 (0.409526) are high and it is significantly different from zero in (1). There is a rule of thumb, according to Granger and Newbold [Gujrati (2007)-page-826] to check whether any estimated regression is spurious or not. If $R^2 > d$, the estimated equation said to be spurious-where d refers to Durbin-Watson value. In the above estimated equation, Durbin-Watson Statistic ($d=1.861540$) is sufficiently greater than the value of R^2 (0.475), which strongly proves that the relationship between new capital issue by NGP (NCI) and other explanatory variables is not spurious. Another noteworthy feature, revealed from the Durbin-Watson (DW) statistic is that there is no specification error in the model at 1% level (as the significance points of d_L and d_U at 0.01 level of significance are 0.952 and 1.147 respectively, where the null hypothesis is mis-specification of the model). As the Durbin-Watson (DW) statistic is more than 2 in the case of (2) and (4) and near to 2 in (1) and (3), one can conclude that autocorrelation does not arise in these results.

With regard to the explanatory variables, the coefficient of SENSEX is significant at 1% level and coefficients of GDGF and NDCF are significant at 5% level. As GDGF and NDCF are highly correlated with each other (coefficient of correlation is 0.984), the sign of the coefficient of GDGF is not desired in (4). The coefficient of PLR is insignificant in all the equations where it is included. Therefore we may conclude that primary securities market activity is not influenced by the RBI prime lending rate. Again, we analyze the primary securities market activity with gross domestic capital formation in (2). The results show that there is a moderate relationship with capital formation, where GDGF is significant at 1% level. Though the values of R^2 (0.3785) and adjusted R^2 (0.3009) are not so high but are significant.

9. Conclusion

In the post- liberalization period, after the abolition of CCI, resource mobilization from the primary market has increased, but after mid-nineties number of issues declined sharply. However, during 1992 to 1996 more than Rs. 81548 crore were raised through public issues and right issues by four thousand odd companies. Many new companies who had tapped this market were no longer traceable and investors lost their money. As a result primary market remained dull up to 2004-05. Scams of Harshad Mehta, vanishing companies, IPO Demat were not only affecting the stock market, but the investors' sentiment as well, and as a result investors willingness to invest in the capital market instruments declined and they looked to other avenues of investment.

The regression result shows that there is statistically significant relationship between primary market activities in the post liberalization era and the net and gross domestic capital formation of the country and also the activity of secondary capital market. We may conclude that the capital market and capital formation are closely related. We also accept our alternative hypothesis that the primary capital market activity is influenced by the condition of the secondary market as it played a significant role in capital formation of the country. But the share of non-government public limited company in the gross capital formation has decreased in the post liberalization period as compared to pre liberalization period, though the resource mobilization activity has increased after the establishment of SEBI.

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Annexure I

Summary output of regression:

$$NCI = \alpha_1 + \beta_1 NDCF + \gamma_1 PLR + u_1 \text{ ----- (1)}$$

Dependent Variable: NCI				
Method: Least Squares				
Sample Period: 1990-91 to 2010-11				
Included Observations: 18 after adjustment				
Variable	Coefficient	Std. error	t-statistic	P-value
Intercept	-4850.416	3202.462	-1.514590	0.1494
NDCF	0.149566	0.039522	3.784413	0.0016
PLR	236.9646	2004.170	0.118236	0.9074
R-square	0.475134	Mean dependent var		1114.026
Adjusted R-square	0.409526	S.D. dependent var		15416.80
S.E of regression	11846.63	Akaike info criterion		21.74141
Sum square resid	2.25E+09	Schwarz info criterion		21.89054
Log likelihood	-203.5434	F-Statistic		7.241983
Durbin-Watson Stat	1.861540	Prob (F-Statistic)		0.005760

Annexure II

Summary output of regression:

$$NCI = \alpha_2 + \beta_2 GDCF + \gamma_2 PLR + u_2 \text{ ----- (2)}$$

Dependent Variable: NCI				
Method: Least Squares				
Sample Period: 1990-91 to 2010-11				
Included Observations: 19 after adjustment				
Variable	Coefficient	Std. error	t-statistic	P-value
Intercept	-5926.427	3801.425	-1.559001	0.1386
GDCF	0.123088	0.039704	3.100162	0.0069
PLR	212.6577	2182.966	0.097417	0.9236
R-square	0.378592	Mean dependent var		1114.026
Adjusted R-square	0.300916	S.D. dependent var		15416.80
S.E of regression	12890.18	Akaike info criterion		21.91026
Sum square residual	2.66E+09	Schwarz info criterion		22.05938
Log likelihood	-205.1475	F-Statistic		4.873993
Durbin-Watson Stat	2.024951	Prob (F-Statistic)		0.022234

Annexure III

Summary output of regression:

$$NCI = \alpha_3 + \beta_3 \text{SENSEX} + \gamma_3 \text{PLR} + u_3 \text{ ----- (3)}$$

Dependent Variable: NCI				
Method: Least Squares				
Sample Period: 1990-91 to 2009-10				
Included Observations: 18 after adjustment				
Variable	Coefficient	Std. error	t-statistic	P-value
Intercept	-4738.480	2022.285	-2.343132	0.0324
SENSEX	7.151924	0.990853	7.217945	0.0000
PLR	-1608.788	1374.873	-1.170136	0.2591
R-square	0.766297	Mean dependent var		1114.026
Adjusted R-square	0.737084	S.D. dependent var		15416.80
S.E of regression	7905.016	Akaike info criterion		20.93232
Sum square resid	1.00E+09	Schwarz info criterion		21.08144
Log likelihood	-195.8571	F-Statistic		26.23148
Durbin-Watson Stat	1.944534	Prob (F-Statistic)		0.000009

Annexure IV

Summary output of regression:

$$NCI = \alpha_4 + \beta_4 \text{GDCF} + \delta_4 \text{NDCF} + \gamma_4 \text{PLR} + u_4 \text{ ----- (4)}$$

Dependent Variable: NCI				
Method: Least Squares				
Sample Period: 1990-91 to 2009-10				
Included Observations: 19 after adjustment				
Variable	Coefficient	Std. error	t-statistic	P-value
Intercept	965.0278	2575.763	0.374657	0.7135
GDCF	-0.349930	0.126627	-2.763472	0.0152
NDCF	0.352667	0.149172	2.364156	0.0331
SENSEX	7.555069	1.612409	4.685577	0.0004
PLR	-1400.321	1204.954	-1.162137	0.2646
R-square	0.855799	Mean dependent var		1114.026
Adjusted R-square	0.814598	S.D. dependent var		15416.80
S.E of regression	6638.218	Akaike info criterion		20.66001
Sum square resid	6.17E+08	Schwarz info criterion		20.90855
Log likelihood	-191.2701	F-Statistic		20.77159
Durbin-Watson Stat	2.233932	Prob (F-Statistic)		0.000009