CHAPTER IV

SHADOW BANKING IN INDIA

4.1 Introduction

Empirical evidences from cross-country and country-specific studies support the argument that financial sector development plays a significant role in facilitating economic growth and poverty reduction (Zhuang, et al., 2009)[19]. Financial stability and growth are pertinent justifying factors, generally, for the maintenance of a central banking system in some regions[20]. According to the developmental stage, the central monetary authority would take necessary decisions regarding the expansionary limits of each financial intermediary. As long as a financial system pursuit the credentials of capitalism, magnitude of length, breadth and depth of financial intermediation would be large enough. Generally, the pioneers of liberated economies follow a capitalist style and thus the countries have multiplicity of mediators in financial system. In contrast, the countries which framed into a socialist set up have to admit that they have limited diversity in the system. Accordingly, the semi regulated mediators have abundant opportunities in developed economies. This does not mean that these intermediaries are unwarranted things in emerging economies. But the practice of mediation and growth may be a bit different in the case of semi regulated intermediaries. Some scholars term the shadow banks as parallel banks but this

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[19] However, findings of Biswas, (2013) point to the rejection of the theory that upholds importance of financial sector development in the real sector development of the emerging economy like India.
[20] Today, both capitalist and non capitalist countries have a systematic central banking system.

conviction may not be hold true in all circumstances. For instance, in a *controlled monetary atmosphere*[21] like India, these financial intermediaries could not act as banks and hence could not become a perfect substitute. Although the shadow banks' nuance differentiation with the banks stands on the basis of doing of conventional banking practices (like issuance of cheques) or not, the mere doing of bank like activities itself does not raise the standard of shadow banks up to the banks in India.

Thus we have to admit *different practice of shadow banks at different places*. For instance, securitization and related issues are more complex and even hazardous in developed economies. Further, in such economies, shadow banks are ready and capable to advance venture finances but in developing economies, such practices are narrowly followed. Shadow banks depend on the development of other financial intermediaries in such economies.

Table 4.1

Gross Domestic Savings in India

(Figures in Percentage)

Year	1960	1970	1980	1990	2000	2010	2016
Gross Domestic Savings (% of GDP)	13.50	16.78	18.22	27.59	26.12	36.17	28.92

Source: https://data.worldbank.org/country/india

Table 4.1 shows Gross Domestic Savings in India as percentages to GDP for various period. The significant increase in the savings, as percentage of GDP

[21] Indian economy moves to a market system. There, still, exist some policy practices which are fit to a socialist system. In this context, bank autonomy is a debatable matter.

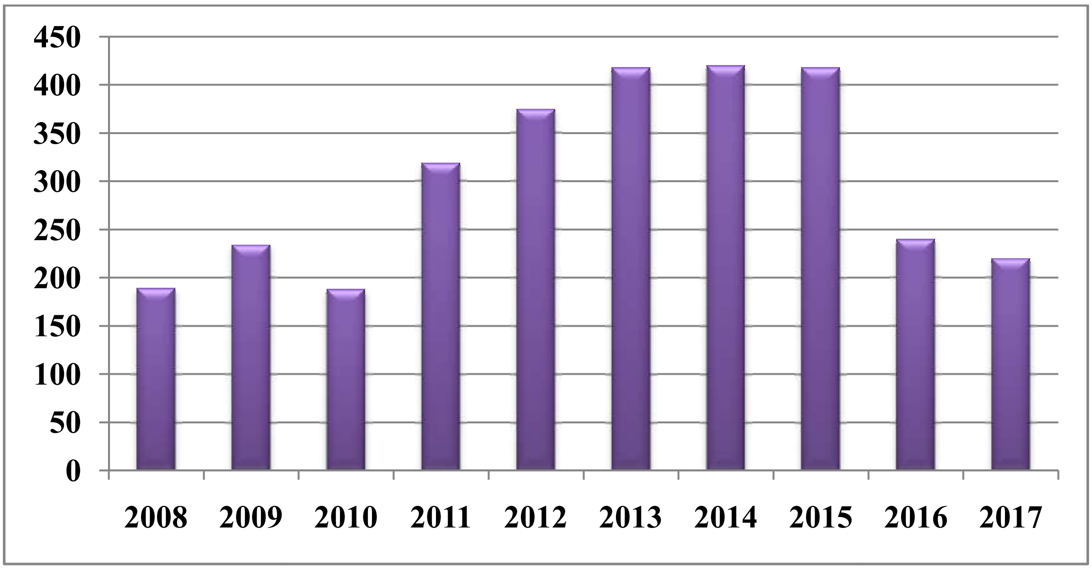
after the financial liberalisation, acknowledges the positive role played by the financial intermediaries. The lengthening in financial intermediation is possible by increasing the number of financial service providers. In India, the fully regulated banks could not achieve a good target in financial intermediation and thereby a good savings. Thus semi formal and informal financial intermediaries play a good role in the provisioning of elaborate financial services in India. In this context, NBFCs shall be categorised as semi formal financial intermediaries.

4.1.1 Non-Deposit Taking Systemically Important NBFCs (NBFCs-ND-SI)

Non-deposit taking NBFCs with an asset size of Rs 1 billion or more were systemically important NBFCs. From November 2014, there has been an upward revision in the asset size and now it is Rs 5 billion (as at November 30, 2017). Recent period shows a marked growth in the asset and liabilities of these NBFCs (RBI, 2016). According to the Financial Stability Board (FSB) methodology and classification, the size of the shadow banking sector in India is estimated to be around USD 190 billion. Among the BRICS, India has the third largest shadow banking sector (RBI, 2015). As on 30th November 2017, there have been 220 NBFCs-ND-SI in India. Since 2007, the regulatory requirements for NBFCs-ND-SIs have been increasingly tightened in view of the growing importance of this segment and its inter-linkages with banks and other financial institutions (RBI, 2010). The following figure (4.1) shows the number of NBFCs-ND-SI for various years.

Figure 4.1

Number of NBFCs-ND-SI Registered with RBI



Source: Report on Trend and Progress of Banking in India, RBI, various years.

The general conviction about the growth of shadow banking- *dependence on banks* has been seriously discussed and thus studied in major developed economies. The relationship is not much explored in Indian context. In fact, basic characteristics of shadow banks never accommodate the dependence on banks. Monetary authority in India claims that NBFCs-ND-SI is well regulated. The mode of post crisis regulation was sourced from the bank like characteristics of NBFCs in India- Leverage and Maturity Transformation. This regulation is largely in the interest of depositors/investors, borrowers and for the fair financial intermediation. Previous chapter evaluated the policy framework of NBFCs in India. It was found that NBFCs in India posses interrelationships with other financial intermediaries. There is a well structured policy framework for NBFCs-ND-SI in India. It is necessary to account the state of shadow banking process in India. This can be done through studying the growth of NBFCs-ND-SI in India. What is the effect of functioning of other financial intermediaries on the growth of NBFCs-ND-SI in India? Whether leverage contributes significantly to these mediators? This chapter studies the growth of NBFCs-ND-SI in India. We argue that the *growth of shadow banks in India is largely determined by the functioning of other financial intermediaries*. Major financial intermediaries of financial sector in India are banks and cooperative societies. Further, this chapter evaluates the effect of leverage on the growth of these NBFCs. After evaluating the major financial ratios of NBFCs-ND-SI in India, this chapter focuses on the determinants of growth of NBFCs-ND-SI in India. Role of leverage on growth of these NBFCs is also analysed in this chapter.

4.2 Growth of NBFCs-ND-SI in India

One of the important objectives of financial liberalisation in India after 1990 was the provision of elaborate financial services to the whole segment of the economy. Accordingly, specific policies were formulated for the development of financial infrastructure in India. The properties of large sized NBFCs are, especially after the crisis, worthwhile enough to convey the style of changes taking place in Indian financial system. The major changes in the economic conditions during the period were fairly reflected in the financial properties of NBFCs-ND-SI in India.

4.2.1 Major Financial Items of NBFCs-ND-SI in India

Major financial items show a significant hike during the post crisis period (Table 4.2). The growth in reserve and surplus signals the availability of favourable environment for these entities. The entities' preference for secured borrowings reveals the expansion of safe and inclusive financial practices in the financial market. But, there is a tendency of high accumulation of liability in the form of unsecured debentures. During the period, the amount of unsecured debentures increased by more than four times.

Table 4.2 Major Financial Items of NBFCs-ND-SI in India

(Amount in Billion Rs)

Year	Share Capital	Reserves & Surplus	Total Borrowings	Secured Borrowings
2008	244.90	810.55	2712.88	1210.82
2009	317.56	990.11	3191.75	1495.69
2010	364.62	1271.31	3857.79	1774.08
2011	382.00	1599.00	5175.00	2915.00
2012	524.00	1891.00	6530.00	3627.00
2013	647.29	2276.18	8104.18	4291.92
2014	637.80	2311.07	8668.92	4816.51
2015	629.86	2271.27	9410.97	4981.53
2016	678.08	2550.46	10334.65	5087.58
Year	**Secured Debentures**	**Secured Borrowings from Banks**	**Secured Borrowings from FIs**	**Interest Accrued (Secured)**
2008	444.39	257.74	59.88	20.17
2009	488.33	362.63	57.49	28.97
2010	585.90	458.50	79.71	35.26
2011	984.00	1006.00	103.00	52.00
2012	1746.00	1487.00	98.00	64.00
2013	2113.58	1737.26	131.85	96.53
2014	2457.23	1776.46	116.55	111.44
2015	2387.56	1770.16	94.32	117.42

2016	2362.14	2019.07	125.17	126.81
Year	**Other Borrowings (Secured)**	**Un Secured Borrowings**	**Unsecured Debentures**	**Unsecured Borrowings from Banks**
2008	428.64	1502.06	444.32	462.43
2009	558.28	1696.06	645.70	424.30
2010	614.71	2083.71	825.44	435.75
2011	770.00	2260.00	753.00	461.00
2012	232.00	2902.00	1221.00	456.00
2013	212.71	3812.26	1612.99	474.77
2014	354.82	3852.41	1672.78	501.45
2015	612.08	4429.43	2165.34	450.56
2016	454.39	5247.07	2434.23	542.03
Year	**Unsecured Borrowings from FIs**	**Unsecured Borrowings from Relatives**	**Inter-Corporate Borrowings (Unsecured)**	**Commercial Paper (Unsecured)**
2008	29.56	18.22	220.19	200.68
2009	26.87	22.30	138.29	223.37
2010	24.71	18.54	221.53	310.49
2011	31.00	13.00	242.00	314.00
2012	28.00	13.00	242.00	353.00
2013	30.37	12.95	274.60	442.91
2014	20.33	13.56	242.30	402.25
2015	28.30	5.00	249.11	513.49
2016	21.47	10.41	342.85	767.66
Year	**Interest Accrued (Unsecured)**	**Other Borrowings (Unsecured)**	**Total Liabilities / Total Assets**	**Investments**
2008	18.19	108.47	4087.05	796.14
2009	31.98	183.26	4829.07	902.42
2010	36.96	210.29	5888.06	1197.88
2011	44.00	401.00	7613.00	1507.00
2012	71.00	519.00	9353.00	1544.00
2013	100.18	863.47	11601.27	1945.47
2014	124.55	875.20	12225.82	1888.06
2015	249.11	768.53	12919.82	1388.66
2016	342.85	786.00	14288.05	1454.41
Year	**Long Term Investments**	**Current Investments**	**Capital Market Exposure (CME)**	**Total Borrowings from Banks**
2008	538.56	257.58	1116.30	720.17
2009	605.69	296.73	818.65	786.93
2010	829.44	368.44	599.05	894.25
2011	1089.00	417.00	822.00	1467.00

2012	1170.00	374.00	833.00	1943.00
2013	1468.31	477.16	884.71	2212.03
2014	1427.46	460.60	896.56	2277.90
2015	653.46	463.43	1030.06	2220.71
2016	597.48	433.97	1371.09	2561.10

Source: Report on Trend and Progress of Banking in India, RBI, various years.

Table 4.3

Financial Ratios of NBFCs-ND-SI in India

Year	Total Borrowings/ Total Assets	Net worth/Total Assets	Share Capital/Total Assets	Secured Borrowings/ Total Assets
2007	0.67	0.23	0.07	0.29
2008	0.66	0.26	0.06	0.30
2009	0.66	0.27	0.07	0.31
2010	0.66	0.28	0.06	0.30
2011	0.68	0.26	0.05	0.38
2012	0.70	0.26	0.06	0.39
2013	0.70	0.25	0.06	0.37
2014	0.71	0.24	0.05	0.39
2015	0.73	0.22	0.05	0.39
2016	0.72	0.23	0.05	0.36
Year	**Secured Debentures/Total Assets**	**Secured Borrowings from Banks/Total Assets**	**Secured Borrowings from FIs/Total Assets**	**Unsecured Borrowings/Total Assets**
2007	0.10	0.06	0.02	0.37
2008	0.11	0.06	0.01	0.37
2009	0.10	0.08	0.01	0.35
2010	0.10	0.08	0.01	0.35
2011	0.13	0.13	0.01	0.30
2012	0.19	0.16	0.01	0.31
2013	0.18	0.15	0.01	0.33
2014	0.20	0.15	0.01	0.32
2015	0.18	0.14	0.01	0.34
2016	0.17	0.14	0.01	0.37
Year	**Unsecured Debentures to Total Assets**	**Unsecured Borrowings from Banks/Total Assets**	**Unsecured Borrowings from FI/Total Assets**	**Unsecured Inter corporate borrowings/Total Assets**

2007	0.10	0.10	0.013	0.06
2008	0.11	0.11	0.007	0.05
2009	0.13	0.09	0.006	0.03
2010	0.14	0.07	0.004	0.04
2011	0.10	0.06	0.004	0.03
2012	0.13	0.05	0.003	0.03
2013	0.14	0.04	0.003	0.02
2014	0.14	0.04	0.002	0.02
2015	0.17	0.03	0.002	0.02
2016	0.17	0.04	0.002	0.02
Year	**Unsecured Commercial Paper/Total Assets**	**Hire Purchase Assets/Total Assets**	**Investments/ Total Assets**	**Total Borrowing/Total Equity**
2007	0.04	0.09	0.20	2.90
2008	0.05	0.07	0.19	2.57
2009	0.05	0.07	0.19	2.44
2010	0.05	0.07	0.20	2.36
2011	0.04	0.07	0.20	2.61
2012	0.04	0.07	0.17	2.70
2013	0.04	0.07	0.17	2.77
2014	0.03	0.07	0.15	2.94
2015	0.04	0.16	0.11	3.24
2016	0.05	0.14	0.10	3.20

Source: Report on Trend and Progress of Banking in India, RBI, various years.

During the period total borrowings to total assets increased marginally (Table 4.3). Net worth to total assets ratio stood relatively stagnant. This means that the NBFCs used trading on equity during the period. Total share capital to total assets did not show an increase and, in contrast, declined and reached at a mere five percent. About half of the borrowing of the NBFCs is secured. Debentures constitute major secured borrowing of NBFCs. The period witnessed a rough increase in the share of secured debentures to total assets. On average, 14.6 percent of total liability represents secured debentures. Percentage of secured borrowings from banks increased to more than double during the period. Share of unsecured borrowings to total assets does not show a noticeable change. But the trajectory of unsecured debentures is bit different. It reached at 17 percent from 10 percent as in the case of secured debentures. Combining the two types, total share of debenture is 34 percent. Fall in the share of unsecured borrowings from banks is significant. Hire purchase assets to total assets show an increasing trend. Investments to total assets halved during the period.

4.2.2 Shadow Banking in India: Major Determinants

Financial institutions need to carefully look into their performance and the role they are called upon to play in the economies of the 21st century (Harker & Zenios, 2000). So, the context and time require a diversification in the role of financial intermediaries. Non Banking Financial Institutions have the ability to facilitate a sound competitive environment in the financial market in developing economies (Gupta, Yesmin, & Khan, 2013). Thus it could be deducted that non banking financial institutions have an important bearing on the emerging market economies. Definitely, there would be some driving forces behind such intermediaries in the emerging markets. Such forces may be different from that of the supporting factors available in the advanced economies.

Acharya, Khandwala, & Oncu (2013) studied the determinants of the growth of non-deposit taking NBFCs. They documented that bank lending to these NBFCs forms a significant proportion of their liabilities, and fluctuates in line with bank allocation to priority sectors. Bank lending to these NBFCs also appears to be greater for banks that have lower branches in semi-urban areas relative to metropolitan areas. It was found that the lending to these NBFCs is virtually non-existent for the largest state owned bank and its affiliates. Financial crisis resulted in a permanent contraction shock and there was a shift of deposits towards State Bank of India (SBI) away from other banks. These bank-linkages affected the credit growth of the NBFCs. Thus bank advance has an important bearing on the asset growth of NBFCs-ND-SI in India.

4.2.3 Determinants of Financial Development

Large and well- organised capital markets would enhance productive resource allocation (Bagehot, 1873). The increase in the private non banks will surely facilitate such an organised financial market. The resource allocation with the help of variant financial intermediaries would thus become a vitality. Generally, financial development demands an inter play of different financial intermediaries. This veracity in the type of financial intermediaries contributed significantly towards a good savings in India after the financial liberalisation (Table 4.1). This veracity is determined by various other factors. Strong legal institutions, good democratic governance and adequate implementation of financial reforms can have very large positive impact on financial development (Ayadi, Arbak, Naceur, & De Groen, 2013)[22]. The role and effectiveness of democratic governance on financial development, significantly in the form of co operative establishments, was empirically proven by many. Providing a framework for democratic participation, co operatives make an instrumental

[22] Authors used a sample of northern and southern Mediterranean countries for the years 1985 to 2009. The study empirically assessed the reasons for the unwillingness of the financial systems to productively divert the financial resources of private enterprises.

contribution to transformational international development (OCDC, 2007).Using GMM estimation on averaged data and common factor approach on annual data, Huang, (2010) established a positive causal effect going from aggregate private investment to financial development, and vice versa.

4.2.4 Growth of Small and Medium Enterprises (SMEs) and Micro Finance

Asian Development Bank (2015) report that the economic slowdown necessiates a new growth model for Asia, where SMEs play a key role in boosting national productivity. As per the report, SMEs accounted for an average of 96 percent of all enterprises. It accounted for 62 percent of the national labor forces in Asia. These SMEs contributed only 42 percent of the gross domestic product or manufacturing value added in Asia. The report further says that main structural problem is the limited access to bank credit. Bank loans to SMEs made up an average of 11.6 percent of GDP and 18.7 percent of total bank lending in the region. It shows a decreasing trend of the bank loan since the financial crisis (2008/09). NBFI financing is, on average, 3.1 % of GDP which is one tenth of bank loan assets in the region. Although it is marginal, the share of non bank finance is effctive in develping such regions. Development assistance, involving microcredit progrmas, to the financial sector in developing countries has often been found to have real development impact and contribute to poverty reduction by broadening the access to, and reducing the cost of finance for SMEs and poor households (Zhuang, et al., 2009). The development of small business in Nigeria is depending up on the effectiveness and performance of microfinance banks (Obadeyi, 2015). Provision of credit helps the growth of SMEs in Kenya (Osoro & Muturi, 2013). Increase in the number of SMEs demands an increase in the number of micro financiers and that will have a positive effect on the social and economic development of a country like Zambia (Nuwagaba, 2015). So, there is a symbiotic relationship between SMEs' growth and non bank finance in emerging markets. Murthy (1994) studied the financial assistance given to the SSI sector in Karnataka. He found that one of the major issues to be addressed primarily is the availability of adequate and timely finance for the growth of this sector. Lack of access to bank credit leads to dependence on a wide range of alternative sources, including informal finance, by SMEs in China (Tsai, 2015). SME development requires abundant and accessible finance (OECD, 2004). The further development in financial market by way of the industrialization would be an important determinant of development of financial intermediaries.

In India, banks account for nearly 85 percent of debt supply to the MSME sector, with scheduled commercial banks comprising Rs 5.9 trillion. NBFCs and smaller banks like RRBs, UCBs and government financial institutions constitute the rest of the formal MSME debt flow (IFC, 2012).

Singh & Wasdani (2016) conducted a survey of 85 MSMEs mainly in the city of Bangalore. Main challenges faced in the underutilisation of formal sources of finance were the inadequacy of collateral assets and lack of financial awareness of entrepreneurs. Their findings reinforce that utilization of formal sources like banks is significantly small compared with informal sources like personal and family wealth. However, the rate of inclusion available to MSMEs and households is very low in India. Table 4.5 Shows concentration of NBFCs-ND-SI in India.

Table 4.4

Concentration of NBFCs-ND-SI and SME Clusters in India

City	No of NBFC-ND-SI	Population	Population Rank	No. of SME Clusters
Mumbai	91	12442373	1	7
New Delhi	44	11034555	2	19
Chennai	28	4646732	6	3
Kolkata	19	4496694	7	7
Bengaluru	18	8443675	3	6
Ahmedabad	10	5577940	5	17
Thiruvananthapuram	8	957730	49	0
Hyderabad	7	6731790	4	6
Kanpur	3	2765348	12	3
Chandigarh	2	960787	48	0
Guwahati	1	963429	47	0
Jaipur	1	3046163	10	7

Source: 1) Report on Trend and Progress of Banking in India 2016, RBI
2) *"Provisional Population Totals, Census of India 2011; Cities having population 1 lakh and above"* . Office of the Registrar General & Census Commissioner, India.
3) Indian SME Clusters, UNIDO (2015), http://www.dcmsme.gov.in/clusters/clus/smelist.htm#clus

The literature establishes that semi formal financial intermediaries like non bank financial institutions have great role in the productive channelisation of finance especially for small scale industrial units. In India, the flow of funds into medium and small scale industries through NBFCs has been greater than by statutory bodies established for this purpose (Parekh, 1995).

4.2.5 Agricultural Credit and Co operatives in India

The credit availability in agricultural sector, historically, shows more sensitivity towards the productivity. Survey in Sub Saharan African countries carried out by Kibaara (2006) revealed that provision of agricultural credit is skewed toward the productive region and it's largely provided by the commodity based credit providers and co-operatives.

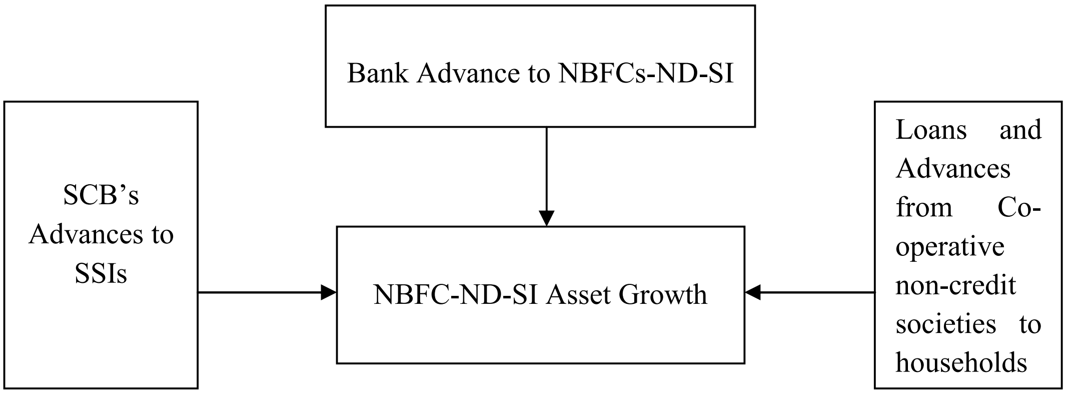
The structure of the sources of credit to agriculture has witnessed a clear shift and commercial banks have emerged as the major source of institutional credit to agriculture (Kumar, Singh, & Sinha, 2010). But the share of investment credit in total credit has declined over time. In India, majority of the agricultural credit goes to small (holding 1-2 hectares of land) and marginal (holding up to 1 hectare land) farmers.

Desai & Namboodiri (1991) found that Farmers' Service Societies (FSS) have performed better than Primary Agricultural Cooperative Societies (PACS) and hence FSS type cooperative financial institutions may be preferred to PACS.

Further, in a financial framework, which is sufficiently characterised with democratic values, there is ample scope for economic growth. In Indian context, Co operatives are the best representative for such intermediary which is functioning on the principles of democratic values. A connected reading offer a hypothesis to be proven in Indian context; growth of shadow banks is decided by the growth of real sector along with the growth of other financial intermediaries. Figure 4.2 depicts the relationship.

Figure 4.2

Asset Growth of NBFCs-ND-SI



4.2.6 Model

Following regression model is used to understand the relationship among the variables;

$$\boldsymbol{Asset\ gr = \alpha + \beta_1 \Delta\ BNK\ Ad\ NBFC + \beta_2\ SCB\ Ad\ SSI\ gr + \beta_3\ Coop\ Ad\ gr + \varepsilon}$$

Where, α is constant and ε is error term.

Here, advance to SSIs and households bring growth in real sector. Other financial intermediary, here the banks and co operatives would augment advance according to their own growth.

In the low-income countries, the growth-promoting effects are more pronounced (Odedokun,1998). The study used a cross-country data of 71 less developed countries (LDCs) for the period 1960 to 1980. Lobour force growth, investment-GDP ratio, real export growth and financial depth were regressors. The models were estimated using the ordinary least squares (OLS) technique, as well as the Generalised Least Squares (GLS) technique. Economic growth was the dependent variable. The study established a strong positive relationship between financial intermediation and economic growth. Asset growth of financial intermediaries represent financial development.

Edet, Anoka, & Antakikam (2014) examined the impact of bank lending and macroeconomic policy on the growth of small scale enterprises in Nigeria. They used OLS techniqe for analysis. Commercial bank credit finance, for the period 1992-2011, has a significant positive impact on the growth of small scale enterprises.

Generally there are two uses of Multiple Linear Regression (MLR) - prediction and explanation. The determination of minimum size of the sample depends on which of these two applications the researcher will utilize (Knofczynski & Mundfrom, 2008). What sample size is needed to ensure, with a desired amount of accuracy, that the sample regression equation will perform similarity to the population regression equation? Knofczynski & Mundfrom (2008) determined minimum sample sizes by conducting a series of Monte Carlo simulations. Table 4.5 contains sample size recommendations.

There is a relationship between minimum sample size and the squared multiple correlation coefficient. As the squared multiple correlation coefficient decreases, the sample size increases.

Table 4.5

Sample Size Recommendations

Number of Predictor Variables						
R^2	2	3	4	5	7	9
Good prediction level						
0.1	240	380	440	550	700	900
0.15	160	220	280	340	440	550
0.2	110	170	200	260	320	400
0.25	85	120	150	180	240	300
0.3	65	95	130	150	190	240
0.4	45	65	80	95	120	150
0.5	35	45	55	65	85	100
0.7	15	21	25	35	40	50
0.9	7	9	10	11	14	16
Excellent prediction level						
0.1	950	1,500	1,800	2,200	2,800	—
0.15	600	850	1,200	1,400	1,800	2,200
0.2	420	650	800	950	1,300	1,500
0.25	320	460	600	750	950	1,200
0.3	260	360	480	600	800	1,000
0.4	160	260	300	380	480	600
0.5	110	130	220	230	320	400
0.7	50	70	95	110	140	170
0.9	15	21	29	35	40	50

Note: Sample size recommendations at Selected Levels of Squared Population Multiple Correlation Coefficients for Varying Numbers of Predictor Variables
Source: Knofczynski & Mundfrom (2008)

Underestimating R^2 will result in recommending a larger sample size than necessary. Overestimating R^2, on the other hand, will recommend sample sizes that are too small and may result in inaccurate or false results. In this study, sample size is the number of observations. Thus MLRs is run with 9 observations to know the statistical significance. There is no need to predict the parameters. Rather, this section intends to know the statistical significance of relationships. The predictors are growths in respective items. Table 4.6 and 4.7 give explanation to the variables and regression results respectively.

Table 4.6

Explanation to Variables

Variable	Explanation
Asset gr	Change in assets of NBFCs-ND-SI/Assets (Pr)
Coop Ad gr	Growth in Loans and advances from cooperative non credit societies
Δ BNK Ad NBFC	Change bank loans from previous year to the current year scaled by previous year assets of NBFC-ND-SI
SCB Ad SSIgr	Growth in SCB's Advances to Small Scale Industries

Note: Pr- Previous year

Table 4.7

Regression Results: Determinants of Shadow Banking

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	-0.31285	0.0652698	-4.7932	0.00491	***
Δ BNK Ad NBFC	1.02056	0.269324	3.7893	0.01277	**
Coop Ad gr	18.4369	3.10693	5.9341	0.00194	***
SCB Ad SSI gr	0.112494	0.0382007	2.9448	0.03208	**

Mean dependent var	0.184988	S.D. dependent var	0.092088
Sum squared resid	0.001760	S.E. of regression	0.018762
R-squared	0.974057	Adjusted R-squared	0.958492
F(3, 5)	62.57779	P-value(F)	0.000219
Log-likelihood	25.65809	Akaike criterion	-43.31617
Schwarz criterion	-42.52727	Hannan-Quinn	-45.01861
rho	-0.421559	Durbin-Watson	2.166693

Dependent variable: *Asset gr*

Bank advance to *NBFCs-ND-SI*, advances by cooperative non credit societies to household and bank advance to small scale industries positively and significantly affect the asset growth of NBFCs-ND-SI. The latter two variables act as lubricants for production in India and thus need further finance. This further finance is skilfully provided by the so called shadow banks in India. Among the two types of channels (banks and co operatives), cooperatives largely help in the aggregation of assets of NBFCs. This is a case of development of one financial intermediary on the platform of another. The development of former financial intermediary, co operative non- credit society, shall always be a proxy for the small scale (micro) productive activity of households. So, NBFCs' growth is depending on small scale productive activities of households in India. This deduction is strengthened when we look into the positive impact of growth in advance to SSIs by commercial banks on the growth of NBFCs' assets. Thus, combining the two, we can deduct that the growth of shadow banks is largely attributed to the growth of micro, small and medium scale enterprises and activities both by households and firms. The growth would be surged when banks are ready to advance more to these shadow banks.

If we are ready to accept the advance by co operatives to households and advance by banks to SSIs are proxies for production and thus of economic growth, then the growth in the assets of NBFCs would be a proxy for financial development. Growth in the assets of financial intermediaries, generally, results in the narrowing of spread. The more narrowed spread means an efficient financial intermediation. Thus, the regression result confirms the reverse causality of financial development and economic growth in India. Economic growth matters for financial development.

Advance to NBFCs by banks denote a finance support to one financial intermediary by another. Advance to households by cooperative non credit societies is a finance support to households by a financial intermediary. Banks' credit to SSIs is a finance support to firms by a financial intermediary. This empirical result corroborates the finding of Huang (2010), who held that institutional improvement stimulates financial development. He used a panel of 90 economies over the perod 1960-99. His research showed that improved institutional quality is associated with increase in financial development at least in the short run. Figure 4.3 describes the growth of shadow banking in India. Here assets growth of NBFCs-ND-SI represents shadow banking. Table 4.8 shows the data used for regression analysis.

Figure 4.3

Growth of Shadow Banking

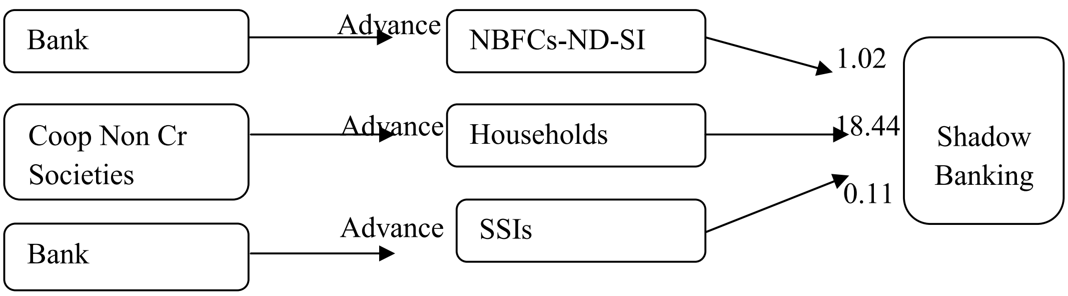


Table 4.8

Data

Year	NBFCs Asset growth	Change in Bank Loans/Assets (pr)	Growth in Loans & advances from co-operative non-credit societies to households	Growth in SCB's Advances to Small Scale Industries
2008	0.286	0.0608	0.0245	0.6771
2009	0.182	0.0163	0.0250	0.1994
2010	0.219	0.0222	0.0252	0.4145
2011	0.293	0.0973	0.0260	0.3208
2012	0.229	0.0625	0.0257	0.1027
2013	0.240	0.0288	0.0257	0.3023
2014	0.054	0.0057	0.0195	0.2385
2015	0.057	-0.0047	0.0195	0.1293
2016	0.106	0.0263	0.0197	0.0359

Pr: Previous year, Source: Report on Trend and Progress of Banking in India, RBI for various years and Data Base on Indian Economy, RBI.

4.3 Leverage and Growth of NBFCs-ND-SI in India

Empirical literature views that, shadow banking is a net result of financial leverage.

"Since the advent of federal deposit insurance in the 1930s, the U.S. financial sector has had two segments that can be labelled as its "core" and its "real money periphery". The core is federally supported; it includes the Fed, the GSEs (backed by the Treasury), and the banking system (with federal deposit insurance and Fed liquidity). The real money periphery is equity funded; it comprises mutual funds, pension funds, and insurers. In recent decades, however, a third segment has risen to prominence, dubbed the "shadow banking system"; this is a network of nonbank financial intermediaries that do not (normally) benefit from federal support but whose main business is leveraged maturity transformation—i.e., banking. The shadow banking system was at the heart of the crisis of 2007–09" – (Bhatia & Bayoumi 2012).

"In any case, it needs to be underlined that, high dependency of NBFCs on the banking system for their resources, not only will strain banks at the time of crisis but also place NBFCs themselves into vulnerable situation as banks can become over sensitive to a liquidity crisis or imminent crisis and they can either become too reluctant to lend to NBFCs or at the extreme case, they may completely refrain from lending to NBFCs which would further aggravate the precarious condition. The recent global crisis is a pointer in this direction"- (Report on Trend and Progress of Banking in India 2010-11, RBI).

High financial leverage, a feature of shadow banking, accentuates policy makers to strictly regulate them since it is a matter of systemic concern (Sinha, 2013). Regulatory requirements of these NBFCs have been tightened to curb the shocks due to interlink with other financial intermediaries (RBI, 2010).

Well capitalised banks have ability to grow faster than undercapitalised banks (Johnson, 1991). The contraction in commercial loan supply was precipitated by both credit crumble and bank capital shortfalls. This matter is important in the case of NBFCs-ND-SI in India. Because, the regulatory authority in India entertain these entities to advance using more owned capital. Accordingly the regulator stipulates a minimum capital requirement. Cantor & Johnson (1992) presented that capital adequacy has an indepenedent effect on asset growth. Of the 983 bank holding companies were included both at the beginning and the end of their sample, the institutions that were well-capitalised had asset growth of 15.5 percent, the adequately capitalised grew 9.9 percent, and the undercapitalised shrank 10.6 percent.

Rother (1999) investigated the effects of macroeconomic and structural variables on financial intermediation. It was a theoretical analysis of the factors driving financial intermediation. He introduced two new measures of intermediation- the money multiplier and the ratio of private sector credit to monetary base. His study was based on a comprehensive collection of macroeconomic and financial sector data for 19 transition economies. The author assessed the relative importance of the various factors. The share of bad loans in bank portfolios, the concentration in the banking sector, and expected inflation are significant variables which may prevent deep financial intermediation. Capital adequacy ratios and the minimum reserve requirements are found to possess less explanatory power.

Bank borrowing by the NBFCs is a good proxy for financial linkage as well as leverage. It is expected that the more borrowing by the NBFCs results in the growth of assets of NBFCs. In the case of NBFCs-ND-SIs in India, the volume of capital, as percentage of total assets, is not showing a significant increase. Capital as percentage to total assets of these NBFCs was mere 7 percent in 2007. It reached at 5 percent during 2016. Based on the findings of Rother (1999), it is expected that the growth in networth will not have a bearing on the asset growth of NBFCs.

Aggregate liquidity can be understood as the rate of growth of aggregate balance sheets (Shin & Adrian, 2008). Authors' focus was on the reactions of the financial intermediaries to changes in the net worth, and the market-wide consequences of such reactions. They documented the determinants of balance sheet size and leverage for the group of financial intermediaries. Further, short-term interest rates are determinants of the cost of leverage and are found to be important in influencing the size of balance sheet of financial intermediaries (Adrian & Shin, 2008). The interest rates are expected to affect the volume of bank borrowings of financial intermediaries. Thus growth in the bank borrowings of NBFCs has a bearing on the assets growth. It is expected that both the bank borrowings growth and net worth growth positively affect the total assets growth of NBFCs-ND-SI.

4.3.1 Model

Following regression model is used to understand the relationship between leverage and asset growth of NBFCs-ND-SI in India.

$$\textit{Asset gr} = \alpha + \beta_1 \textit{ Bank Borgr} + \beta_2 \textit{ Networthgr} + \varepsilon$$

α is constant and ε is error term

Asset gr= Growth in the total assets of NBFCs-ND-SIs

Bank Borgr= Growth in the borrowings from banks by NBFCs-ND-SIs

Networthgr= Growth in the net worth (Share Capital + Reserves and Surplus) of NBFCs-ND-SIs

Regression results are showed in Table 4.9

Table 4.9

Regression Results: Leverage and Asset Growth

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	0.0665793	0.0208653	3.1909	0.01881	**
Bank Borgr	0.199258	0.0726934	2.7411	0.03369	**
Networthgr	0.414542	0.108196	3.8314	0.00864	***

Mean dependent var	0.184988	S.D. dependent var	0.092088
Sum squared resid	0.007446	S.E. of regression	0.035227
R-squared	0.890248	Adjusted R-squared	0.853663
F(2, 6)	24.33425	P-value(F)	0.001322
Log-likelihood	19.16755	Akaike criterion	-32.33510
Schwarz criterion	-31.74342	Hannan-Quinn	-33.61193
rho	-0.114462	Durbin-Watson	1.803814

Dependent variable: *Asset gr*

Bank borrowing and capital infusion result in the growth of assets of NBFCs-ND-SI. This means that both debt and net worth have a positive bearing on the growth of assets of NBFCs-ND-SI during the post crisis period. The former, growth in bank borrowing, signals the shadow banking characteristics of NBFCs. Thus there is a strong linkage with banks and that linkage contributes to the growth of NBFCs. Further, growth in the net worth fairly contributes towards the growth of assets of NBFCs.

As a simple accounting matter, the growth in the volume of net worth, being the larger figure, will definitely contribute to asset growth. But in this model, relative contribution of each internal variable is analyzed. During the post crisis period, both banks and capital funds augmented shadow banking intermediation in India.

International perspective on shadow banking maintains that the existence of high volume of leverage is the primary determiner of the shadow banking. The increase in debt of these shadow banks will contribute towards the growth in owners' equity (at good times). NBFCs in India have to assure a good premium on perpetual debt instruments (Interest up to 13 % on Non-convertible debentures) to compensate the insecurity. The rest of the sources of funds in unsecured debt category- borrowings from financial institutions and inter corporate borrowings are less costly and thus act as positive determiners during post crisis period[23]. Financial institutions charge more on shadow banks and the cost has a definite adverse bearing on the growth. So, the empirical evidence

[23] Post crisis period shall not be a good time for shadow banks.

supports the conventional wisdom on the financial leverage effect and growth- which advices to shorten the debt during a bad time. Harnessing of funds navigates these NBFCs towards the costliest debt instruments having long maturity. The appearance of such instruments demands cost overruns in the form of financial expenses. This overrun is, at present, against good intermediation. At firm level, the primary determiner- leverage- itself will become the destructor of the intermediary.

4.4 Conclusion

Increase in the volume of debt of NBFCs-ND-SI will generate more risks in total shadow banking system in India. Support of commercial banks to NBFCs and SSIs and support of Co-operative non credit societies to households help in the asset growth of NBFCs-ND-SI in India. This shall be read in two perspectives. If the support of banks and cooperatives are proxies of financial development indicators, then it is assumed that shadow banking is well sustained under financial development. If the support of commercial banks and co operatives are presumed as the indicators or proxies for economic growth, then it can be inferred that economic growth contributes towards financial development.

Table 4.10

Data

(Figures in Billion Rupees)

Year	Total Borrowings from Banks	Net worth	Total Assets of NBFCs-ND-SIs
2007	526.94	731.86	3178.98
2008	720.17	1055.45	4087.05
2009	786.93	1307.67	4829.07
2010	894.25	1635.93	5888.06
2011	1467.00	1981.00	7613.00
2012	1943.00	2415.00	9353.00
2013	2212.03	2923.47	11601.27
2014	2277.90	2948.86	12225.82
2015	2220.71	2901.13	12919.82
2016	2561.10	3228.54	14288.05

Source: Report on Trend and Progress of Banking in India for various years, RBI

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