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Indian Microfinance Sector in Capital Markets: Perils and Prospects

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The borrowing opportunities for the Indian microfinance sector remain limited because of several regulatory constraints. In such a scenario, while the Indian microfinance institutions (MFIs) can potentially tap the capital markets as a major source of funding, they are finding it challenging to do so. This is partly because of the Andhra Pradesh microfinance crisis, which has had a severe negative impact on investor confidence. In this paper, the author identifies other factors that have been discouraging investors from investing in MFIs. Particularly, since the accounting and reporting methods and the monitoring mechanism adopted by MFIs are quite different from conventional practices that the investors are used to, they find it difficult to make meaningful comparisons to gauge the relative potential of MFIs as an asset class in terms of risk and return. Based on the best practices being followed by some MFIs in India, the author suggests that MFIs could strengthen their accounting and monitoring methods, which would give the capital market investors greater confidence to invest in MFIs.

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1. Introduction

The Indian microfinance sector has come a long way since its inception in the 1990s and has established itself as an important component of the Indian financial system. With the growth and maturity of Indian microfinance institutions (MFIs), their capital requirements have increased manifold. However, their sources of funding remain limited and are subject to various constraints. For instance, certain categories of MFIs are barred from accepting deposits due to regulatory stipulations. Thus, the future remains bleak for MFIs with regard to the use of deposits as the source of funds for meeting operational and other expenses because of the sensitivity of the customer base they serve. Loan repayments and interest on loans constitute a significant source of funds for MFIs; however, the high costs of collecting loans and other related expenses deflate the profitability of MFIs. Moreover, widespread defaults in payment/repayments could jeopardize the operations and the very existence of MFIs. Therefore, MFIs have to look for other avenues that can meet the fund requirements of MFIs on a sustained basis at lower cost. This is why most of the big MFIs are heading towards the capital market.

Apart from the issues of operational and financial sustainability, MFIs need funds to expand geographically in order to cover wider areas and to diversify their operations as well as range of financial products and services. Over time, MFIs have received the attention of investors across the world, and donor institutions, governments, and corporations have funded them significantly. However, if one looks at the staggering credit requirements of the poor (estimated to be around USD 350 billion) and the total supply of funds by microfinance institutions (which is estimated to be USD 4 billion), it is evident that these funds are insufficient to meet the increasing demand for microcredit (Swanson, 2007). The mismatch is large; such a wide gap deserves due attention. It highlights the opportunity for microfinance institutions to expand their operations on a much wider scale. If the estimated number of borrowers was 100 million with an average loan size of USD 170, the total market size would be USD 170 billion; the estimated demand for microfinance outstrips its supply by 15 times the current demand.

To address such unmet demands, MFIs need to fund their portfolios on a sustained basis. The capital market provides them with the opportunity for funding with wider prospects in terms of the range of products available as well as scalability. Many Indian MFIs and other MFIs across the world have ventured into the capital market and raised equity, and investors have welcomed their entry into capital market. In the Indian context, the entry of the microfinance sector into the capital market is significant because India has the largest number of MFI borrowers in the world; to meet the credit demands of such a large segment of borrowers, MFIs need to look for different avenues of funding. A collaborative integration of the capital markets with the microfinance sector would be mutually beneficial, as it would provide investors with wider choices and adequate returns.

Across the world, MFIs have forayed into the capital market and raised capital through local bonds, equity investments, debentures, and so on. However, several constraints and difficulties prevent the integration of MFIs with the capital market. In the case of the Indian microfinance sector, the repercussions of the Andhra Pradesh microfinance crisis (2010) on the performance of Indian MFIs in general and that of capital markets in particular have been widespread. It is in the context that the present paper attempts to explore the barriers that impede the successful and sustained integration of Indian MFIs with the capital markets. This paper critically analyses the performance of the Indian microfinance sector in capital markets, especially with reference to the period following the Andhra Pradesh microfinance crisis in 2010.

The rest of the paper is structured as follows. Section 2 deals with the conceptual framework underlying the relevance of capital markets in the microfinance sector; this section briefly discusses the funding scenario of Indian MFIs and the class of investors in the microfinance sector. Section 3 discusses the barriers that impede the integration of the Indian microfinance sector with the capital markets. Section 4 deals with the performance of the Indian microfinance sector in capital markets, with particular reference to the Andhra Pradesh microfinance crisis in 2010 and its aftereffects. Section 5 presents the conclusions of the study and discusses the limitations of the study.

2. Microfinance and Capital Market: Conceptual Framework

The microfinance sector in India as well as across the globe have made headway in capital markets because MFIs are expanding their operations and are moving into newer geographies, with a significant increase in their funding requirements. The ever-expanding businesses of the MFIs have directed them towards capital markets to tap into the mainstream investor community and to benefit from new funding opportunities available in the capital markets. There has been a sense of optimism among MFIs as well investors that MFIs can be part of mainstream investment activity. The continued flow of funds from the capital market and its participants into the microfinance sector is an indication that this sector is a potential source of profitable investment opportunities. The entry of the microfinance sector into capital markets would enhance the liquidity of investors by providing them with an alternative route to exit and by widening/diversifying their investment portfolio. For MFIs, their debut in the capital market would provide better and transparent governance. Unlike traditional asset classes, the microfinance sector is still not accepted as a reliable asset class due to the paucity or even absence of historical prices and performance information about MFIs. This lacuna would gradually be filled once market value information is generated by MFIs, since foraying into capital markets would require MFIs to maintain and manage such information for meeting statutory and investor requirements. It will also set the benchmark for similar institutions looking to access capital markets and for potential investors. The increased emphasis on capital markets as the source for funding of MFIs can be attributed to two peculiar reasons. Firstly, the microfinance sector has given positive returns to investments made during an economic downturn; secondly, the overall industry trends for the microfinance sector are positive, and the microfinance industry experienced double-digit returns over the last 30 years.[1] Table 1 presents a comparison of the performance of the microfinance debt fund indices with that of the major indices for the period 2003–2013 (see Appendix IV for a graphical representation of this comparison).

Table 1 shows that the performance of microfinance funds compared to that of the other indices was quite impressive—annualised returns were 3.87% against volatility of 0.61%. Microfinance funds have established themselves as an alternative to money market plus

[1] Source: http://www.responsability.com/funding/data/docs/en/1872/rA-Microfinance-Market-Outlook-2014.pdf. According to *Microfinance Market Outlook 2014*, the global microfinance sector grew at the rate of 15–20% in 2013.

strategies—they have low returns compared to global bond returns, but they are associated with lower volatility (Dominicé et al., 2014).

Table 1: Asset Class Comparison—Risk, Return, and Correlation

2003-2013	**LIBOR 3-month USD**	**JPM GBI Global (Hedged USD)**	**MSCI World Index**	**HFRX Global Hedge Fund Index**	**SMX MIV Debt USD**
	Cash	Bonds	Stocks	Alternatives	Microfinance
Return	2.08%	4.30%	4.83%	1.02%	3.87%
Annual Volatility	0.57%	2.97%	15-98%	6.00%	0.61%
Correlation					
Cash	1	-0.07	-0.07	-0.02	0.55
Bonds	0.07	1.00	-0.26	-0.33	0.03
Stocks	-0.07	-0.26	1	0.29	-0.09
Alternatives	-0.02	-0.33	0.79	1	-0.15
Microfinance	0.55	0.03	-0.09	-0.15	1
Sharpe Ratio[2]	-1.67	0.43	0.11	-0.33	1.39

Notes: **LIBOR**: average interest rate at which a panel of banks in London are prepared to lend to one another in American dollars with a maturity of three months; **JPM GBI Global (Hedged USD)**: an unmanaged market index representative of the total return performance in US dollars on hedged basis of major world bond markets; **MSCI World Index**: a stock market index that captures large- and mid-cap representation across 23 developed markets; **HFRX Global Hedge Fund Index**: measures the comprehensive overall returns of hedge funds (designed to include the overall composition of hedge funds); **SMX MIV Debt**: the Symbiotics Microfinance Index–Debt is an in-house index that tracks the net asset value of microfinance funds with majority of assets invested in fixed income instruments.

Source: Dominicé et al. (2014)

Supporting the notion of capital markets in microfinance, Lieberman et al. (2009) asserted that investors look for exit opportunity and liquidity in any investment option, and the equity issues of MFIs provide an incentive to the investors to commit their valuable funds in the microfinance sector. Moreover, entry into capital markets leads to positive transformations in MFIs in the form of increased transparency, better reporting (auditing and accounting requirements), and improved and professional management of MFIs. According to Lieberman et al. (2009), the successful equity issues of four MFIs (Bank Rakyat in Indonesia, BRAC in Bangladesh, Banco Compartamos in Mexico, and Equity Bank in Kenya) could be attributed to excellent management, good governance, well-established accounting and management information system (MIS), and technology and infrastructure. This argument is further supplemented by Ryne and Guimon (2007), who discussed the initial public offering (IPO) of Banco Compartamos; according to them, the organisational strength, good governance, and well-articulated policies of Banco Compartamos made its IPO a successful example in the microfinance sector. However, whether these attributes are necessary or sufficient/supplementary conditions for equipping MFIs to tackle capital market dynamics needs to be analysed further. If the answer to this question is 'yes', emphasis should also be placed on assessing the degree or level of generality with which these attributes can be

[2] The Sharpe ratio uses standard deviation to measure a fund's risk-adjusted returns. The higher a fund's Sharpe ratio, the better that fund's returns have been relative to the risk of the fund.

applied to MFIs across regions/countries so that benchmarks/standards can be drawn that would guide MFIs across the world.

Microfinance institutions seek to enter capital markets with the additional goal of reducing cost of capital through equity or bond issues, for which the cost of capital is lower compared to that for commercial lines of credit. The reduced cost of capital contributes significantly towards lowering the MFIs' cost of operations, and the savings generated through cost efficiency can be effectively utilised to provide better and improved products and services to clients (Reddy and Rhyne, 2006).[3] Over the past few years, MFIs have grown optimistic about approaching capital markets, primarily due to the successful IPOs of four of the world's leading MFI's (discussed in Lieberman et al., 2009), whose equity issues in capital markets were taken positively. With the successful debut of these MFIs in capital markets, it has become conceivable that MFIs can tap the potential of the capital markets; additionally, they can convince investors that the microfinance sector presents a lucrative option for investment.

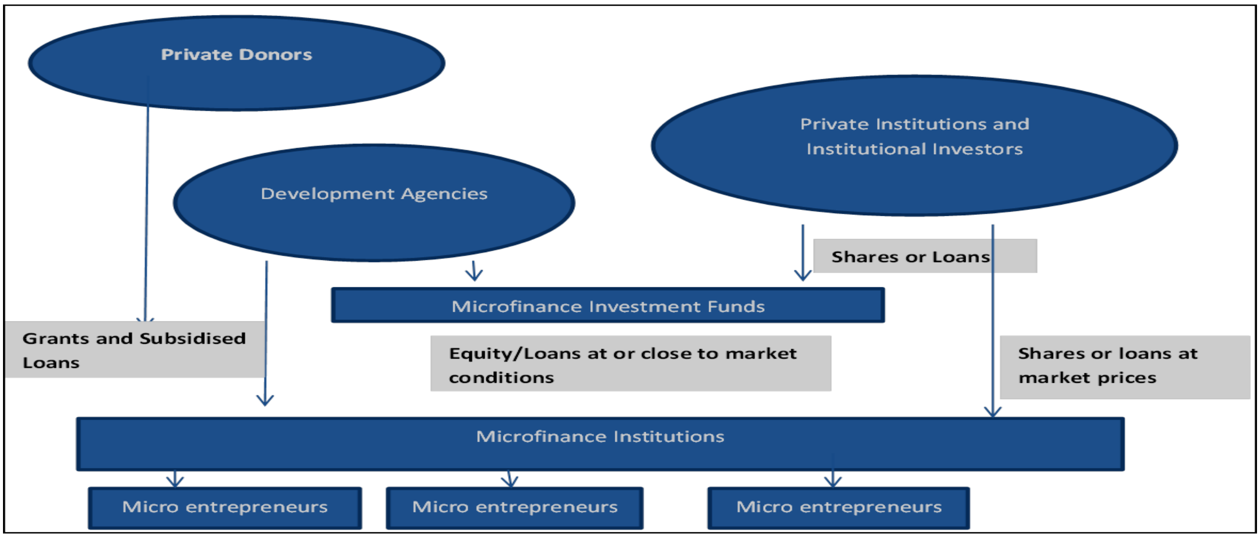
2.1 Investment Class in Microfinance Sector

The class of investors in the microfinance sector includes different categories and involves heterogeneity in character and operations. The capital market provides vast avenues for the funding needs of the MFIs, although the participation of capital market investors in the microfinance sector has been limited; at least an initiation towards this has been made in the recent past. Moreover, as the microfinance sector globally matures and evolves, it would become part of mainstream capital markets. Investors' interest is usually defined by the maximum returns on the investment made; they are generally averse to uncertainty and constantly weigh the risk-return matrix. Moreover, before investors in capital markets invest in any portfolio, they look for proven track records and documents of the MFIs (financial statements and tax returns). Investors in the microfinance sector include donors, financial institutions (including development financial institutions and commercial banks), social/impact investors, private investors, limited liability fund investors, and so on. While donors and development financial institutions are welfare-seeking entities, private investors in the microfinance sector are guided by profits on the investment made Goodman (2006) discussed the funding mechanism in the microfinance sector and explained different

[3] Reddy and Rhyne (2006) cite the example of MiBanco, a Peru-based MFI whose local bond issuance helped reduce the cost of capital and cost of operation of the MFI.

categories and channels through which funding is provided to this sector (see Figure 1).Additionally, a moderate approach has been adopted by investors defined as social impact investors, who have a double bottom line approach and seek social impact plus social returns on their investments in the microfinance sector. Another development in microfinance investment vehicles (MIVs) are funds that are structured products providing debt obligations to or taking equity stakes in MFIs.

Figure 1: Funding Mechanism in Microfinance Sector



Source: Goodman (2006)

2.2 Funding of Indian Microfinance Sector

The Indian microfinance sector is funded by equity as well as debt capital, with the latter dominating, as three-fourths of the funding of Indian MFIs comes from debt sources. Debt funding in Indian MFIs is in the form of lines of credit,[4] term loans, subordinated debts,[5] bond issues, and non-convertible debentures.[6] According to the Microfinance Information Exchange's (MIX) funding structure database, the total funding for Indian MFIs in 2011 from debt sources stood at USD 196 million; commercial banks provided USD 104.40 million at the average rate of 13% for an average period of 36 months.[7] Indian MFIs rely more on local sources for their funding. Regional distribution indicates that South Asia is the largest

[4] An arrangement between a financial institution and customer that establishes a maximum loan balance that the bank will permit to that borrower.
[5] Subordinated debts are debt obligations that rank below other loans with regard to claim on assets. These are unsecured instruments that carry high risk and are often convertible into equity.
[6] Non-convertible debts are debt obligations that cannot be transformed or converted into other securities.
[7] Source: http://www.mixmarket.org/mfi/funding-structure.

contributor of funding for Indian MFIs;[8] other geographical regions have negligible presence in terms of funding in Indian MFIs. In terms of bond issuance, SKS Microfinance is the only Indian MFI that has raised bonds worth INR 250 million,[9] with a coupon rate of 10.5% and a tenor of one year from the date of bond issue. This was a standalone rated bond issuance without any credit enhancement[10] in the form of third-party guarantee or collateral.[11] MFIs in India also raised funds via private equity transactions and non-convertible debenture issues in 2011 (see Appendices II and III for details of these transactions). Overall, MFIs are dependent on borrowed funds and variants of this for meeting their funding requirements; owned funds are negligible contributors to funding in Indian MFIs.

2.3 Securitisation in Microfinance: Making debts marketable

Securitisation is the process through which homogenous illiquid financial assets are pooled and repackaged into marketable securities (Basu, 2005). The process of securitisation comes under the broader spectrum of structured finance, which is defined by the United Nations Conference on Trade and Development (UNCTAD)[12] as “a technique whereby certain assets with more or less predictable cash flows can be isolated from the originator and used to mitigate risks (e.g. transfer of foreign exchange, contract performance and sovereign risk), and thus secure a credit”. Jobst (2007) proposed a 3-tiered definition of structured microfinance involving direct securitisation[13] or local issuance, microfinance investment funds (MFIFs), and indirect securitisation or local issuance. Indirect securitisation involves collateralised debt obligations (CDOs).[14] The concept of tranching,[15] which enables investors to build different risk-return blends that offer optimal returns and lesser degree of risk, falls within the scope of this approach.

Securitisation of the microfinance portfolio would be an ideal source of funding for an MFI since it is difficult for MFIs to pursue the mainstream capital market route because they lack scale of operations. Moreover, capital market investors deal in hard currencies while MFIs

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[8] Region-wise, South Asia accounts for 96% of the funding in Indian MFIs.
[9] For more details visit http://www.sksindia.com/press_releases_details.php?id=154
[10] Credit enhancement is a method whereby a company attempts to improve its debt or credit worthiness. Credit enhancement reduces the default risk of a debt.
[11] The bond issuance of SKS Microfinance was managed by YES bank.
[12] The UNCTAD was started in 1964 to promote trade and investment in developing countries.
[13] In direct securitisation, microloans originated by MFIs are pooled into an SPV that is typically a trust. Microloans originated by multiple MFIs could also be pooled.
[14] A collateralised debt obligation is a structured financial product that pools together cash flow-generating assets and repackages this asset pool into discrete tranches that can be sold to investors.
[15] “Tranche” is often used to describe a specific class of bonds within an offering, where each tranche offers varying degrees of risk to the investor.

lend in local currencies, and the interest rate structures of MFIs are inelastic. Adopting the securitisation route would make the risk assessment process transparent, and potential risks could be analysed by the capital market investors. However, the securitisation of microfinance portfolios involves high investment fees and is affected by the lack of transparency in MFIs. Further, the illiquidity of microfinance funds, frequent restructuring, and amortisation add up to the securitisation costs of MFIs and thereby, those of investors (Basu, 2005).

Securitisation deals in the Indian microfinance sector have seen an upward trend in recent times. For instance, IFMR Capital securitised deals worth INR 5 billion in 2011; SKS Microfinance had the largest single rated pool in Indian microfinance with two deals worth INR 5.2 billion (Srinivasan, 2011). Table 2 shows the major securitisation deals clinched by Indian MFIs during 2011 and 2012, which totalled INR 8019 million and INR 16583.2 million, respectively; the major share of these deals was contributed by SKS Microfinance followed by Bandhan and Utkarsh Microfinance. The growth trend continued in 2012, and MFIs sold deals worth INR 30 billion. Further, the capping of interest rates at 26% by the Reserve Bank of India (RBI) reaffirmed the confidence of banks in the microfinance sector and favoured the market for securitisation deals (Puhazhendhi, 2012). However, securitisation deals by banks are largely part of their priority sector lending requirements, and there is pressure on MFIs to have secured assets against loans and independent evaluations of loan quality. Further, these have reduced the bargaining power of MFI vis-à-vis banks, and the interest rates charged from MFIs have seen an upward trend (Srinivasan, 2011). Though the securitisation of loan portfolios provides for immediate liquidity by freeing up equity to MFIs, getting into a top-rated pool is a difficult task for an MFI portfolio. For instance, many Andhra Pradesh-based MFIs found it very difficult to meet the pool prerequisites.

Table 2: Major Securitisation Deals by Indian MFIs in 2010 and 2011[16]

Originator	**Amount (INR Million)**	**Originator**	**Amount (INR Million)**
Grama Vidiyal	108	SKS Microfinance	10000
Satin Creditcare Network	300	Bandhan Financial Services Private Ltd	5000
SKS Microfinance	500	Grameen Financial Services	249.5

[16] With respect to microloan securitisations of MFIs, IFMR completed the securitisation of a pool of microloans originated by Equitas Micro Finance in 2009. This deal marked the entry of mutual funds into the microfinance sector (basically, microloan-backed securities and the treasury desk of Indian banks), allowing MFIs to expand their funding base.

Originator	Amount (INR Million)	Originator	Amount (INR Million)
Ujjivan Financial Services	173	GramaVidiyal	279.2
SKS Microfinance	5500	Annapurna	331.43
Utkarsh Microfinance	871	Grameen Financial Services	188.3
Grama Vidiyal Micro Finance	120	Satin Creditcare Network Limited	197.4
Grameen Financial Services	153	GramaVidiyal, Disha, Fusion	225.2
Grameen Financial Services	250	GramaVidiyal, Disha, Fusion, Mimoza, Satin, S.M.I.L.E., Suryoday, SVCL	443.6
Grama Vidiyal Micro Finance	173		
Grameen Financial Services	165		
Janalakshmi Financial Services	370		
Satin Creditcare Network	792		
Grama Vidiyal Micro Finance	449		
Total	8019	**Total**	16583.2

Source: Srinivasan (2011); Puhazhendhi (2012)

3. Barriers to Integration with Capital Markets: Case of Indian Microfinance Institutions

The barriers that affect the integration of MFIs with capital markets broadly falls into two categories: organisation/industry-specific micro level issues and macroeconomic issues covering regulation, monetary and fiscal policies, inflation, tax laws, and so on. Organisation-specific issues are exclusive to particular MFIs and the microfinance sector. As an industry, the microfinance sector is plagued by a number of limitations, such as low number of skilled personnel, high cost of funds, scalability issues, lack of transparent governance, lack of data records, and so on. Though the MFIs have offered to provide all relevant information to the capital markets for their funding purposes, their potential as an asset class and their ability to offer lucrative returns remain unclear to the investors. The credit rating methodology and monitoring mechanism adopted by the microfinance sector are quite different from conventional industry practices; therefore, investors cannot make uniform comparisons. This is possibly what prevents investors from investing in the microfinance sector as they find it an information-opaque sector that does not provide the *de facto* situation of MFIs.

Another constraint to integration with capital markets comes from the identity issues or stereotyping of MFIs. The commonly held view of MFIs as philanthropic, non-profit seeking, pro-poor, non-professional, donor dependent institutions—an industry with no corporate culture—has stopped investors from approaching the microfinance sector. Further, any attempt by MFIs to enter the capital market is viewed as a diversion from the social objectives of the MFIs. The ownership structure of MFIs is another important factor affecting their entry into capital markets, especially in India, where 80% of the MFIs are registered as non-government organisations (NGOs). Accessing capital markets becomes a daunting task for NGOs as they have to undergo several transformations in terms of staff, products and services, funding strategies, and management structure. Calling for transformation also creates issues of governance risks, and conflicts between old and new stakeholders (if any) would invariably become difficult for the MFIs to manage. Going commercial also demands meeting the accounting and disclosure requirements stipulated by regulators and investors. Compliance with norms involves cost and expertise that add to the cost of operations of MFIs; consequently, these costs are passed on to end users in the form of higher-priced services. Chasnow and Johnson (2010) discussed the issues of governance and management information system (MIS)[17] with respect to private equity investments in MFIs. According to them, MFIs do not follow standardised governance procedures and do not have an effective MIS that can deal with over borrowing, client poaching, and issues related to high-risk clients, and that can allay the concerns of investors.

To qualify for capital markets, MFIs need to establish themselves as an asset class.[18] However, the microfinance sector still lacks a well-defined asset class unlike conventional asset classes. Shields (2006) postulated that the intention of investors hardly differs across countries; moreover, the risks and returns of investment options should be comparable across countries with well-defined benchmarks for asset classes. However, in the case of the microfinance sector, differences persist at the country level with respect to legal forms, funding patterns, asset composition, profitability definition, and so on. At the global level, it becomes difficult for investors to make informed decisions as confusion and lack of clarity persist in the microfinance sector regarding the risks and returns of the (potential) investments.[19] The profitability of the MFIs is an important determinant affecting their growth prospects, as a low level of profit is associated with lesser stability and solvency of

[17] A management information system is an information system that is designed to increase the operational and cost efficiency of organisations.
[18] Greer (1997) defines an asset class as a set of assets that bear some fundamental economic similarities to one another, and that have characteristics that make them distinct from other assets that are not part of that class.
[19] While Reddy and Rhyne (2006) as well as Swanson (2007) do not regard microfinance funds as a separate asset class, Ananth (2005) considers them an asset class.

the MFIs. It is important to note that the industry-/MFI-specific factors are controllable factors that can be improved over time.

The debut of the microfinance sector in the capital market is also a function of the key macroeconomic determinants operating in an economy. These determinants include a broad range of issues including banking laws and regulations,[20] tax laws[21] (local as well foreign), inflationary tendencies, exchange rate movements, political risk/instability, and economic uncertainty. La Porta et al. (1998) showed that the legal system of a country and its financial system are intimately correlated and specified how different sets of laws and regulations can affect the debt and equity contracts in a country. The regulatory framework under which an MFI operates has a lasting effect on the existence of the MFI. Regulatory risks largely emanate from minimum capital requirements, interest rate regulations, compliance with anti-money laundering norms, prohibition on foreign investments by government, or caps on investment. In India, regulation has acted both ways. Two regulatory stipulations by the government have stepped up the demand for funds by the MFIs. First, putting MFIs or the microfinance sector under the priority sector lending category has provided MFIs with easy access to funds. Second, the regulator has stepped up the minimum capital adequacy norms for MFIs.[22] However, under both the cases, smaller MFIs find it difficult to access funds and meet capital adequacy norms.

The funding of MFIs is tied to their legal structure. Kline and Sadhu (2009) pointed out that only non-banking financial company-MFIs (NBFC-MFIs) can recourse to debt as well as equity financing, while NGO-MFIs have to be satisfied with lesser sources and smaller amounts of funds; section 25 companies, which constitute a fair portion of MFIs, are prevented from making direct/indirect forays into capital markets. The regulatory provision with respect to investments in MFIs has been a contentious issue as an MFI can raise equity when it is registered as an NBFC-MFI; the maximum cap of USD 5,00,000 on foreign investments made in the equities of MFIs should be equally matched by the MFI with an equal amount of domestic equity. How regulations can determine the fate of a particular industry can be best illustrated through the Andhra Pradesh microfinance crisis of 2010,

[20] Bank regulations also affect the financial development in any country. Countries with regulations that prevent/restrict banks from engaging in the securities market and/or insurance and real estate market activities tend to have an underdeveloped financial system.

[21] Taxes do affect financial development, which is evident in the dividend and capital gains tax disadvantages.

[22] According to RBI norms, microfinance institutions in India are required to maintain 15% capital adequacy ratio.

which halted the operations of MFIs in Andhra Pradesh and led to widespread loan defaults and mounting losses for the MFIs operating there.

The issue of foreign exchange risk also becomes a crucial aspect when MFIs rely on international sources of funding. As Briere and Szafaraz (2011) pointed out, MFIs are exposed to foreign exchange risks such as the possible devaluation of their funding sources, since holding foreign currency funds also involves additional risks in terms of interest rate risks and country (political) risks. While interest rate risks emerge out of interest rate differentials of the MFI and the lending country, political risks arise out of adverse political and economic conditions in the lending and borrowing countries. Though a broad range of instruments is available for hedging against adverse foreign exchange risks, cost issues together with hedging issues (fixed as well as variable costs) deter investors from investing in MFIs. The management of foreign currency risk is a sensitive issue as the parties to such investments face risk (since the MFI may lose its source of funds) and the investors may bear losses or have to reorient and reframe their investment strategies.

As far as the Indian microfinance sector is concerned, foreign exchange risk in the microfinance sector has not been very prominent as Indian MFIs are largely funded through domestic sources. However, with the maturing of Indian MFIs and given the inclination of foreign investors to invest in the Indian microfinance sector, this issue will soon become relevant in the Indian context. Adverse movements in foreign exchange rates could be a source of concern for the MFIs as fluctuations in exchange rates and continued depreciation of local currency would deter them from approaching foreign capital markets (which generally operate in hard currency); moreover, funds obtained by the MFIs would be costly. Therefore, stability in exchange rates is desirable for MFIs to have continued presence in capital markets.

The consolidation of MFIs with capital markets is also a function of the state of inflation[23] and the monetary policy prevailing in a country. Additional fiscal budgetary provisions[24] for the microfinance sector would determine whether or not MFIs would be integrated with capital markets. With regard to the issue of liquidity, Calderon (2006) argued that a strict

[23] Inflationary tendencies narrow down the return on investments for the investors, as was seen in the case of private equity investors in the Indian microfinance sector in 2010–2011—they found it difficult to exit from investments as inflationary tendencies had eroded the value of their investment in private equity (Acharya, 2013).

[24] Budgetary provisions may earmark funds for the development of the microfinance sector, which could help MFIs in expanding their operations; moreover, budgetary norms may also specify the norms for the funding of the microfinance sector. This could act in both ways, i.e., budgetary moves need not always be favourable to MFIs.

monetary policy resulting in higher interest rates and restricted liquidity conditions would make it difficult for the investors/banks/financial institutions to lend to MFIs; further, the MFIs themselves may not be very keen on raising funds from capital markets because of the associated cost issues. As long as inflationary tendencies persist, MFIs may avoid raising funds through the capital markets and may depend on other sources. Moreover, procuring funds via the capital market route would become a privilege of bigger MFIs; medium and smaller MFIs would be left with insufficient funds to carry on with their operations. The country to which an MFI belongs and associated country risks (such as the state of security, war, as well as economic and political instability) could also deter investors from investing in MFIs; in such situations, MFIs would be in a disadvantageous position and would be deprived of funding facilities (Reddy and Rhyne, 2006).

As far as the integration of MFIs with capital markets is concerned, it is still far from being part of capital market operations (Helms, 2006). Moreover, the thin and underdeveloped nature of the capital markets (equity, debt, and derivative markets) adds to the woes of the MFIs. It would be difficult for an MFI that cannot mobilise/accept deposits or that has limited deposits to procure funds from the capital markets on a sustained basis to finance its operations, considering the bottlenecks affecting the association of the microfinance sector and capital markets in India. A discussion of the macroeconomic and microeconomic challenges affecting the integration of microfinance sector becomes increasingly important given that microfinance has been instrumental in meeting the financial inclusion and gender empowerment needs in India. To provide financial services to the poor and the financially excluded on a sustained basis requires steady availability of funds for the MFIs; the capital market could be a source for these funds.

The question might be raised as to which of the barriers (external or internal) might be comfortably managed by the MFIs given the resources and capacity they possess. External barriers are largely macro-economic issues that are beyond the MFIs' control. Internal barriers can be managed with more ease compared to external challenges/barriers. The MFIs would be better placed in the dynamics of the capital market if they attempted to counter the internal barriers more efficiently; their internal strength would shield them from the external and internal challenges. Moreover, internal barriers are under the control of the MFIs, can handled with sufficient maturity, and are less subject to volatility. Given the customer base that the MFIs serve, it becomes all the more important for MFIs aspiring to enter capital markets to be internally strong enough to counter the challenges that they could witness in the larger macro-economic scenario. They should be flexible and adaptive enough to meet the new/existing challenges of the capital market, in particular, and of the financial markets/systems, in general. Initiatives in this direction have been taken by MFIs and microfinance industry-specific organisations that seek to strengthen the internal mechanisms of the MFIs in India and across globe. For example to improve the accounting operations of PRADAN,[25] its management came up with the novel idea of "Computer Munshi System" that calls for the digitisation of the book-keeping records of PRADAN's self-help group (SHG). This is an ideal example of techno-human cooperation that aims at connecting SHGs with trained accountants who use a personal computer with an accounting software for maintaining the electronic database of the SHG's accounting records and dealing with database management or inconsistencies (Ratan, 2012).

The intensity of internal barriers faced by MFIs, especially with respect to accounting and database issues, can be solved to a large extent by the adoption of information and communication technology (ICT) by the financial institutions. However, the initial investment required for the deployment of ICT in an organisation is substantial. Gardiner (2006) pointed out that it is not necessary for banks/MFIs to develop their own core banking systems/MIS and other technology channels; rather, they can depend on a technology solution provider[26] (TSP) for specialised technical services on a fee-for-service basis. MFIs can use technology services from the TSPs on a commission or revenue sharing basis (which suits their objectives). Moreover, those MFIs that cannot develop their own software can use free and open-source software[27] (FOSS) for their accounting and database related activities. Moreover, MFIs across the country could develop a single, uniform database management system (either on a national/regional basis) that would reduce the inconsistencies experienced across MFIs; thus, they would be maintaining data that would be uniform and consistent in terms of typology and period of time.

In addition to technological solutions, various institutions engaged in the microfinance sector have attempted to solve the lack of transparency and the accounting/reporting issues in this

[25] PRADAN is an India-based microfinance institution that works for the economic empowerment of women from socially excluded communities.

[26] A technology solution provider provides hardware and software facilities and connectivity. A TSP acts as the bridge between a business correspondent (BC) and a client, as well as a BC and a bank. They are largely accountable/responsible for the security of transactions as well as the authentication, processing, and storage of data.

[27] FOSS is software that anyone can freely use, copy, and change.

sector. One such positive move by Sa-Dhan,[28] the network of MFIs in India, was to provide MFIs with guidelines and minimum reporting standards. It also provides MFIs technical manuals, organises workshops on the performance of data, and helps them comply with standards. With specific reference to the impact on investments made by the investors, the MIX has called for standard performance metrics across MFIs at the global level. It also makes the data related to MFIs publically available, which eases the stress of investors who need to constantly assess the financial performance of MFIs for making investment decisions. Moreover, the adoption of the Microfinance Investment Disclosure Guidelines 2010[29] by investment managers to codify standard indicators and ratios for MFIs will further strengthen reporting by microfinance investment managers. It will bring about greater transparency and uniformity in data handling and analysis by the investment managers, which would consequently lead to better and quick decision making. Improved accounting, auditing, and database management would ultimately result in good governance for the MFIs. Focussing on the governance of the MFIs, former president of ACCION International,[30] Michael Chu stated, "… the fundamental factor that determines sustainability of access to capital markets over time is the institution's creditability as perceived by investors, whether as lenders or shareholders. If microfinance is to truly link to the capital markets over time, the field must provide clear and solid answers to the critical issue of governance." According to Meehan (2005), good governance equals beefed-up transparency, better accounting/reporting and audit practices, and a well-defined and established legal structure that would eventually help MFIs in meeting capital market requirements. While the initiatives taken by the microfinance community to improve the internal environment/barriers of the MFIs are commendable, they are rather dispersed and are not uniformly followed across MFIs. Since the microfinance sector is a new entrant to the mainstream financial system (more specifically to the capital market), it will take time to adapt to the new situations and challenges given the limited resources and capacity that MFIs command. With the passage of time, the microfinance sector is expected to evolve and integrate well with mainstream capital markets.

[28] Sa-Dhan is a network of microfinance institutions in India that aims to build the field of community development finance in India.

[29] It is an initiative of the Consultative Group to Assist the Poor (CGAP) that aims at establishing clear guidelines for MIVs reporting to investors. It was started in 2010.

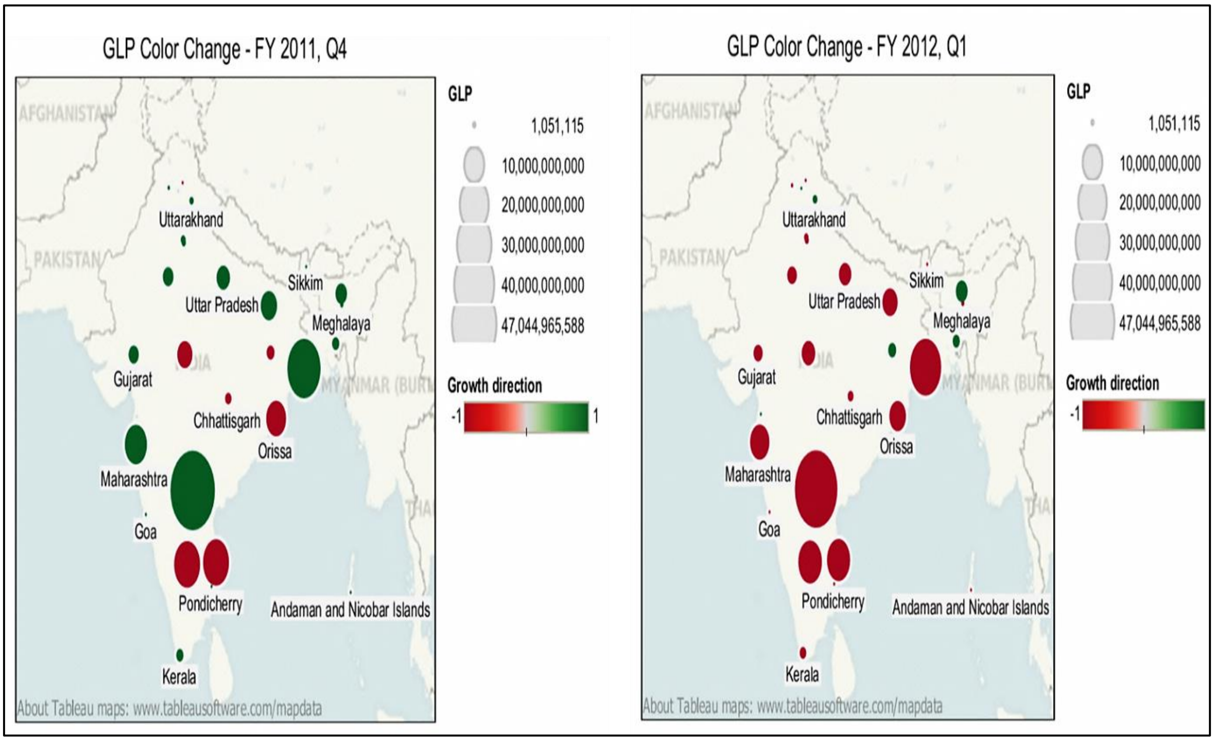
[30] ACCION International is a global non-profit organisation that supports MFIs in their work of providing financial services to low-income clients.

4. Indian Microfinance Sector and Capital Markets: Before and After Andhra Pradesh Microfinance Crisis

The Indian microfinance sector, which was relatively untouched by the global economic crisis in 2008, could not withstand the crisis that originated in Andhra Pradesh; this crisis dealt a blow to the progress made by this sector in recent years. The state of Andhra Pradesh is regarded as the birthplace of Indian microfinance. In 2010, it faced an unforeseen and unprecedented crisis that hit MFIs in India (especially Andhra Pradesh-based MFIs) and affected all aspects of their performance. According to MIX (2011) that took stock of 90 Indian MFIs, MIX[31] analysed the growth of Indian MFIs before and after the Andhra Pradesh microfinance crisis. The results showed that growth in loan portfolios as well as the number of clients stood at 17% for 2010, while the growth rate in the previous year (2009) was 95% and 57%, respectively. The level of riskiness for MFIs was also high as there were upwards trends in the portfolio at risk (PAR)[32] (1.02% in 2010 against 1.03% in 2011) as well as in the loan write-offs by MFIs (0.50% in 2011 compared to 0.34% in 2010). Returns on assets and equity both registered negative growth following the Andhra Pradesh microfinance crisis; yield on gross portfolio also registered negative growth. The effect of the Andhra Pradesh microfinance crisis was not felt outside the state in the last quarters of 2011; however, in the first quarter of 2012, the gross loan portfolios (GLPs) of MFIs outside Andhra Pradesh had substantial reductions in their GLPs (year-to-year basis). The state-wise changes in GLPs before and after the Andhra Pradesh microfinance crisis are shown in Figure 2.

[31] The Microfinance Information Exchange (MIX) provides data services, analysis, and research about the institutions that provide financial services to the world's poor.
[32] Portfolio at risk (PAR) measures the outstanding balance of loans that are not repaid on time against the outstanding balance of total loans.

Figure 2: State-wise Changes in Gross Loan Portfolio Before and After Andhra Pradesh Crisis

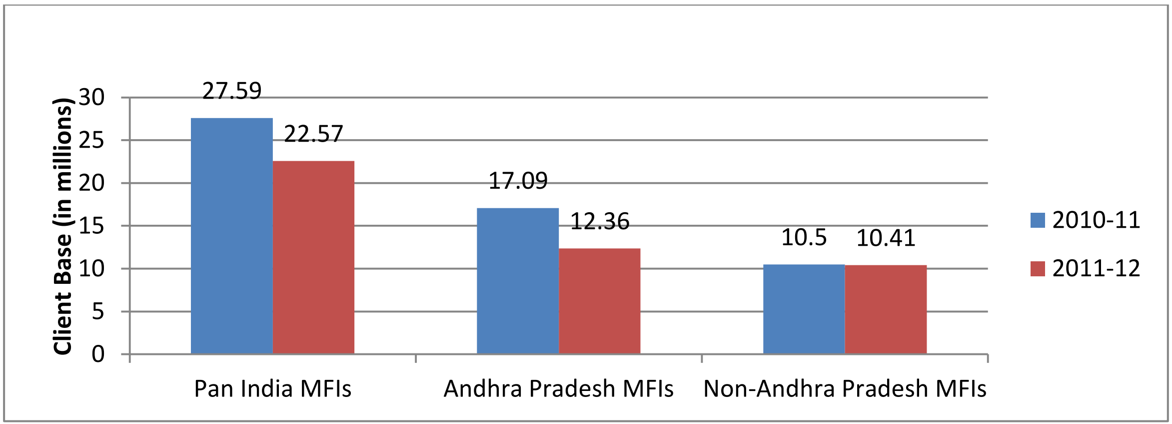


Note: Red dots indicate negative growth in the gross loan portfolio while green dots represent positive growth in the loan portfolio.

Source: Shyamsukha (2011)

Figure 2 shows that the Andhra Pradesh MFIs were hit the hardest by the crisis while the performance of the MFIs in other states was relatively unaffected (except for minor hiccups); however, the effect on the Andhra Pradesh microfinance sector was magnified because it constitutes a lion's share of the total market for microfinance in India. In terms of client base, Andhra-based MFIs recorded negative growth while MFIs in other states were stable. However, on a pan-India basis, there was a decline in the client base of MFIs. The effect of the Andhra Pradesh Microfinance Crisis is graphically represented in Figure 3.

Figure 3: Effect of Andhra Pradesh Microfinance Crisis on Client Base of Indian MFIs



Source: M-CRIL Microfinance Review 2012

The microfinance crisis in Andhra Pradesh and the subsequent government ordinance related to the microfinance sector in 2010 wiped out the microfinance institutions in the state, and a whopping amount of INR 7000 crore in loans became bad and irrecoverable, which led to increasing bad debts in the books of the MFIs. Further, due to the prohibition on lending by MFIs, customers had to rely on traditional moneylenders and other forms of informal financing. Table 3 presents the financial and non-financial performance indicators for Indian MFIs before and after the Andhra Pradesh microfinance crisis in 2010. The table shows that before the onset of the crisis, MFIs were performing well and yielded positive results; however, following the Andhra Pradesh microfinance crisis, almost all the performance indicators exhibited negative results from 2010 to 2012.

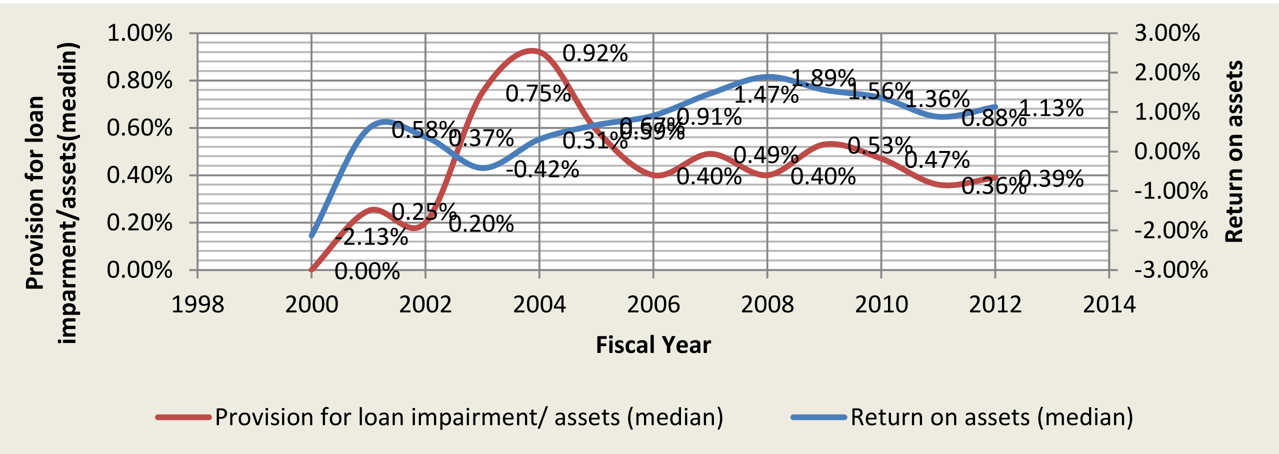
The risk-return matrix of the MFIs summarises the overall profitability of the Indian microfinance sector. In this context, it would be interesting to explore the risk-return matrix of Indian MFIs before and after the Andhra Pradesh microfinance crisis. Analysing the risk-return matrix of MFIs would help investors to gauge the profitability of the MFIs, which would enable better investment decisions. Figure 4 presents the risk-return matrix of Indian MFIs. This figure shows that a higher provision of debt reduces the returns on assets of the MFIs, as MFIs are left with lesser amount of profits/funds to procure assets for expanding operations. The risk-return matrix of SKS Microfinance (the only Indian MFI that went public) shows that higher loan loss provisions are inversely related to the return on assets of the MFIs (Figure 5).

Table 3: Profitability Indicators of Indian MFIs Before and After Andhra Pradesh Microfinance Crisis

Fiscal Year	Number of MFIs[33]	Yield on gross portfolio (median)	Return on equity (median)	Return on assets (median)
2006	105	21.05%	17.37%	0.27%
2007	79	22.30%	9.61%	0.75%
2008	98	24.11%	14.17%	1.98%
2009	121	23.93%	7.21%	1.18%
2010	125	26.61%	-2.06%	-0.72%
2011	118	23.92%	-6.20%	-2.08%
2012	77	22.42%	-1.61%	-2.50%

Source: http://reports.mixmarket.org/crossmarket

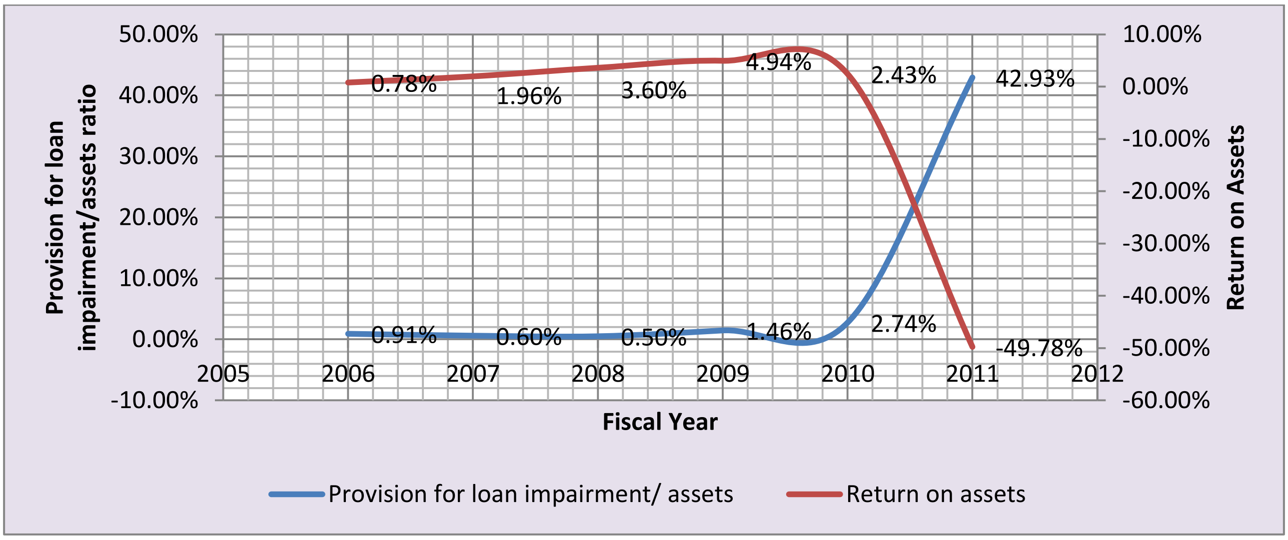
Figure 4: Risk vs. Return of Indian MFIs



Source: http://reports.mixmarket.org/crossmarket

[33] Since reporting by MFIs to the MIX market is voluntary, the data reported to the MIX varies over the years. The MFIs that are covered include large and medium/smaller MFIs; however, the exact composition of the group of MFIs is not available. Between 2010 and 2012, the number of MFIs that reported to MIX witnessed a reduction; whether they wound up operations following the crisis in the microfinance sector or willingly refrained from reporting to MIX cannot be established with certainty.

Figure 5: Risk vs. Return Profile of SKS Microfinance Before and After Andhra Pradesh Microfinance Crisis



Source: http://reports.mixmarket.org/crossmarket

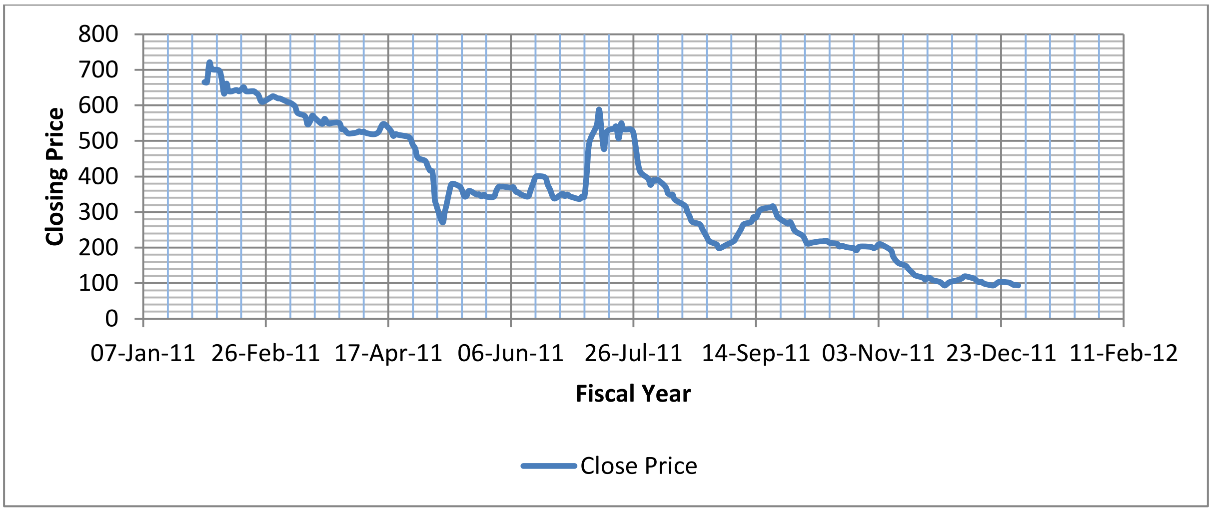
The MFIs' access to capital markets for funds suffered a setback in 2010—there were no deals in private equity. The microfinance sector had fetched some of the biggest deals in private equity in 2007–2009 worth USD 230 million (with tenure of 4–5 years); however, the Andhra Pradesh microfinance crisis badly hit their investment prospects and PE investors found it difficult to get a fair exit. Moreover, the majority of their portfolios was stuck in Andhra Pradesh and they were compelled to write off their investments.[34] According to Venkatesan and Sukumar (2012), with the onset of the Andhra Pradesh crisis and its ripple effect, the value of equity deals declined in 2010–2011 to INR 3.55 billion (declining 41% from 2009–2010). However, in 2011–2012, there were multiple private equity deals in the microfinance sector (see Appendix II). There were a few loan deals in 2010–2011 totalling around INR 205 million, primarily funded by Okiocredit and Microfin Private Limited.[35] According to Srinivasan (2011), the total loans disbursed by commercial banks stood at INR 7328.4 million (disbursed to 502 MFIs), while the loan outstanding at the end of March 2011 stood at INR 12618.8 million for 2274 MFIs. Further, the only MFI that went public was SKS microfinance, whose shares nosedived following the Andhra Pradesh microfinance crisis; the value of its shares was at its lowest in 2011. However, the value of its shares

[34] http://www.business-standard.com/article/finance/rupee-fall-clogs-pe-exit-routes-in-mfis-113082800458_1.html

[35] Okiocredit is a funder to the microfinance sector that is based in the Netherlands.

rebounded in 2012–2013 (see Figure 6).[36] This was the only IPO by any MFI in the Indian microfinance sector as of January 2014.

Figure 6: Share Price Movements of SKS Microfinance Before and After Andhra Pradesh Microfinance Crisis



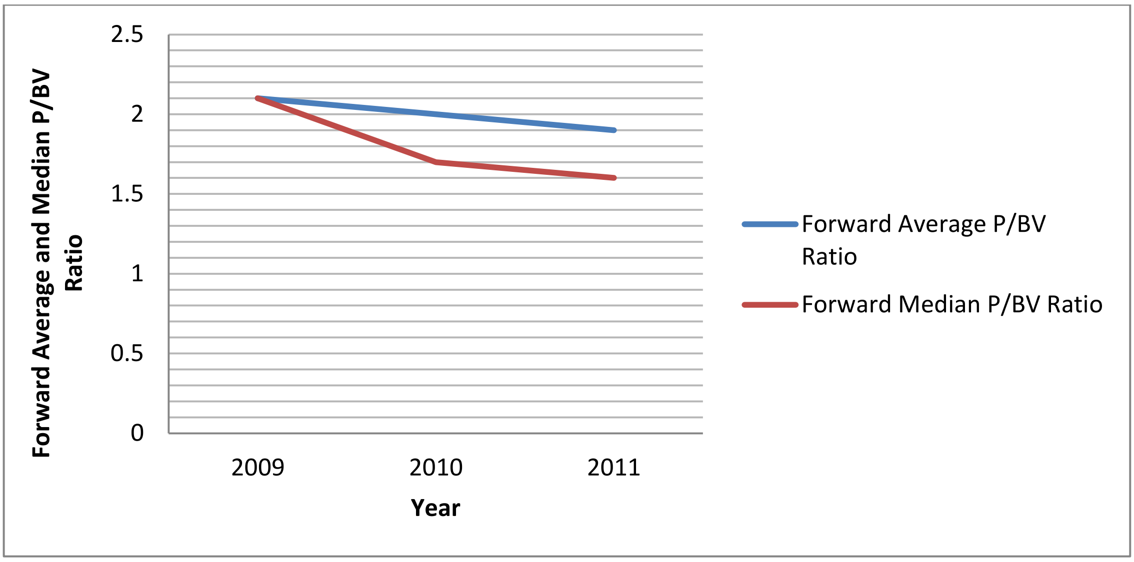
Source: http://www.bseindia.com/stock-share-price/sks-microfinance-ltd/sksmicro/533228/

The pessimistic portfolios of Andhra Pradesh MFIs initially halted and then negatively affected funding to other Indian MFIs. While the funding situation improved in the last six months of 2011–2012, MFI investors remained cautious and MFIs with small portfolios faced difficulties in obtaining funds from investors. The Andhra Pradesh microfinance crisis badly affected the operations of MFIs in India and their funding through the capital market; however, on a global level, this phenomenon had little or no impact on the performance of other markets/MFIs. According to Glisovic et al. (2012), Indian MFIs whose deals were funded by development financial institutions[37] (DFIs) were behind only Peru (which attracted funds worth USD 112 million from investors) in procuring private equity deals, followed by Mongolia; however, the Andhra Pradesh microfinance crisis had an adverse effect on the price-to-book value (P/BV)[38] ratios (see Figure 7) of Indian MFIs. The aftermath of the Andhra Pradesh microfinance crisis shook the private equity transactions in the Indian microfinance sector—the number of PE deals stood at zero in 2010, and the number of new shares issues went below the half mark; further, most of the share issuances took place in the secondary market. According to Glisovic et al. (2012), the number of private equity transactions by Indian MFIs stood second followed by those in Mongolia; they lagged behind

[36] The total market capitalisation of SKS microfinance stood at INR 1974.65 crore as on January 2014.
[37] Development financial institutions finance development projects.
[38] The price-to-book value ratio measures the market value of a stock to its book value.

those from Peru, which attracted funds worth 112 USD million from investors. In terms of regional growth, in Asia, India dominated the scene—92% of the total volume in the Asian region was attributed to India. The comparative position of the forward average and median P/BV ratio of Indian microfinance companies before and after the Andhra Pradesh microfinance crisis are shown in Figure 7.

Figure 7: Comparative Position of Forward Average and Median P/BV Ratio Before and After Andhra Pradesh Microfinance Crisis



Source: Glisovic et al. (2012)

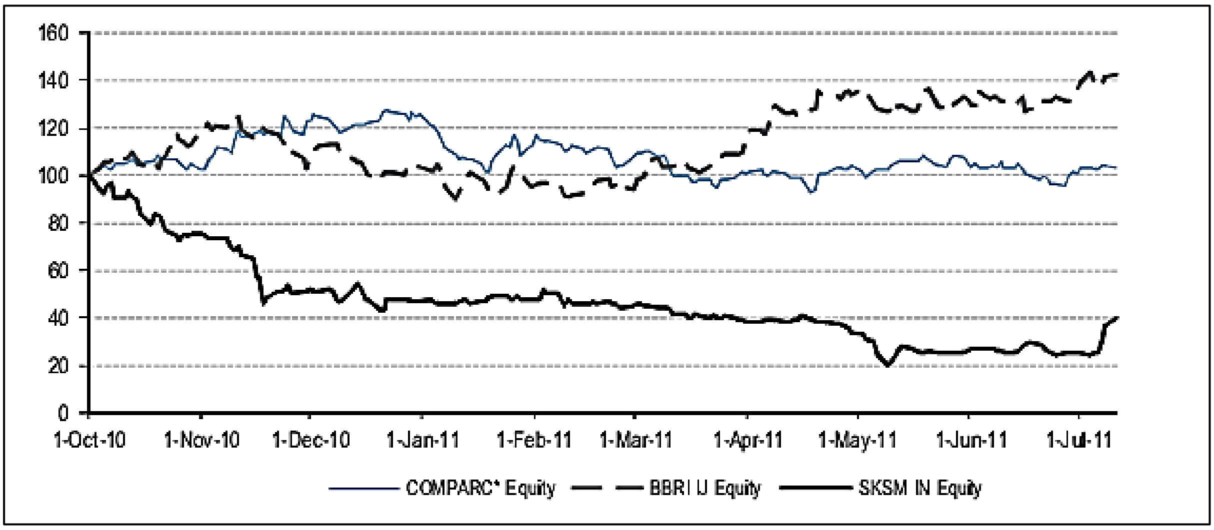
The effect of the Indian microfinance crisis was not contagious; global MFIs remained insulated from it, as shown by the private equity transactions of MFIs across the globe and the related estimates that non-Indian MFIs/equities did not experience any downfall/fluctuation in their stocks. However, the value of SKS Microfinance's equity exhibited negative results; thus, the betas of SKS Microfinance did not have a negative impact on the performance of the other stocks in the index.

Figure 8 shows the relative stock performance of two big global MFIs. Compartamos and Bank Rakyat of Indonesia did not experience adverse fluctuations in their stocks unlike SKS Microfinance, and they performed well in the private equity space. The index for publicly listed MFIs is the low-income financial institutions (LIFI)[39] index, which is a market cap-weighted index of 11 MFIs with different organisational structures and from different geographies. India constitutes just 4% of the total weight allotted to MFIs, and the stock

[39] The low-income financial institutions (LIFI) index is a market cap-weighted index of 11 companies, encompassing various geographies and business models. The index includes banks that do not exclusively offer working capital loans to micro entrepreneurs, broadening the scope to include consumer loans and other financial services. The LIFI index was developed by JP Morgan.

breakdown of SKS constitutes just 1% of the total stock composition of the LIFI index (Reille and Daniel, 2011).

Figure 8: Relative Stock Performance of Compartamos and BRI vis-à-vis SKS Microfinance



Note: The comparison pertains to the low-income financial institutions (LIFI) index.

Source: Reille and Daniel (2011)

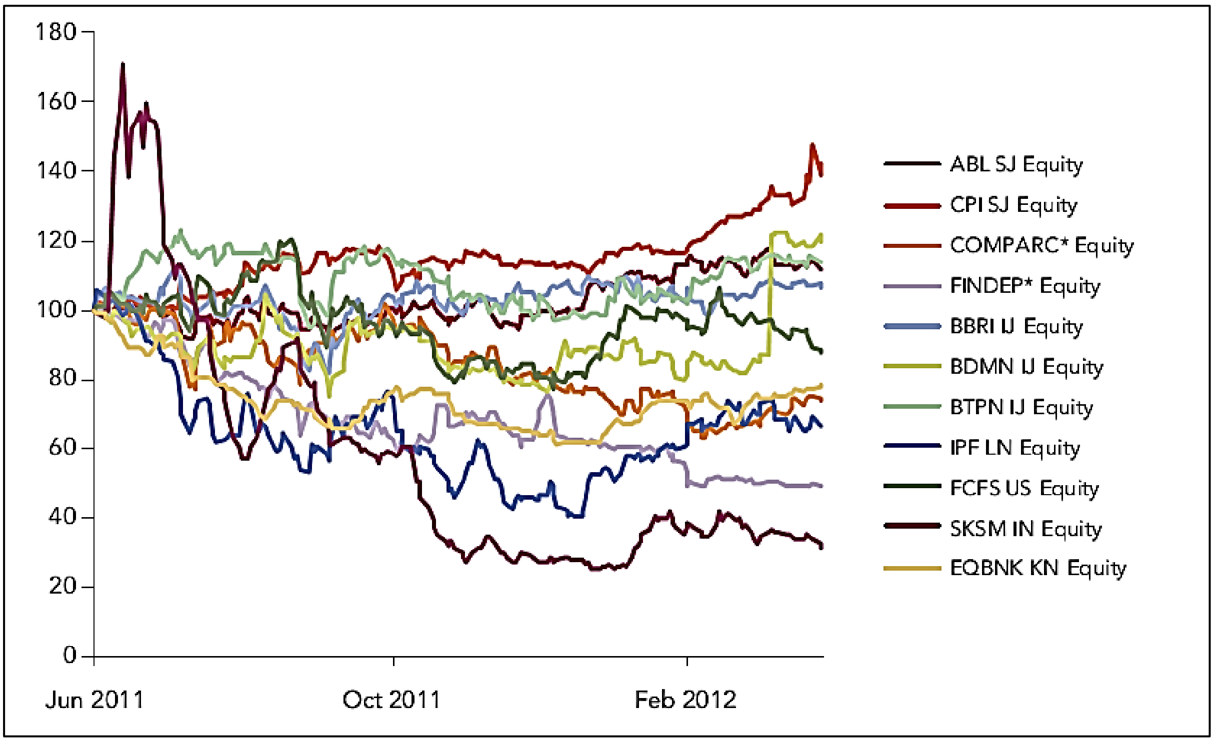
The effect of the Andhra Pradesh microfinance crisis was clearly visible in the stock performance of SKS Microfinance, which is the only contributor to the LIFI index from India. Other stocks on this index seemed to perform well in comparison to SKS Microfinance (Figure 9).

Thus, it can be concluded that the Andhra Pradesh microfinance crisis did not have an adverse impact on the performance of the other stocks of the LIFI index. Although the LIFI index performed well during the crisis, it remained volatile. The lack of impact of the Andhra Pradesh microfinance crisis on the stock performance of the other financial institutions in the LIFI index indicates the possibility of company-specific and country-specific factors (Reille and Daniel, 2011). The movement of the LIFI index against those of MSCI World Financials and EM Banks are shown in Figure 10.

In addition to the LIFI index, the impact of the Andhra Pradesh microfinance crisis was visible in the SYM-MFI Equity indexThe SYM-MFI equity index experienced three months of negative returns due to the falling values of SKS shares (index values declined over 50%). Figure 11 shows the performance of SMX-Equity (in local currency and USD) before and after the Andhra Pradesh microfinance crisis.

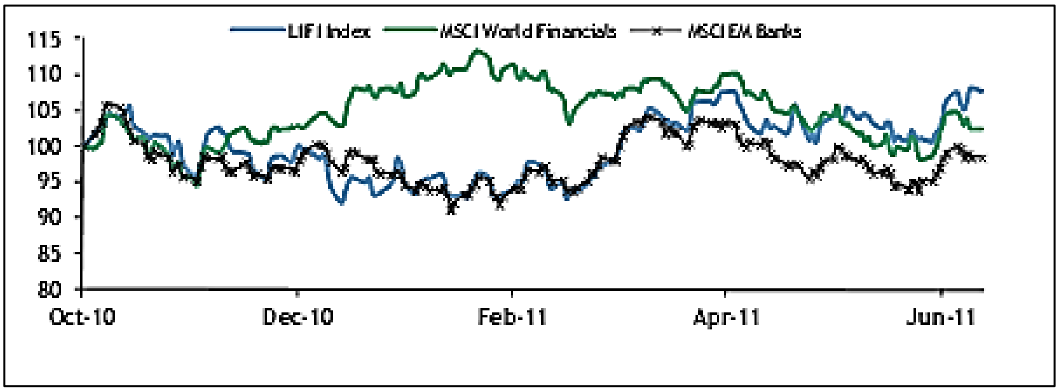
In both cases, the impact of the Andhra Pradesh microfinance crisis was felt, although the magnitude differed. This shows that when MFIs closely cooperate with capital markets, they will witness such consequences and would be prone to such upheavals. It depends upon the investors and MFIs how they would cope with such unforeseen events that could occur in the future.

Figure 9: Performance of Stocks in LIFI Index in 2011–2012



Source: Glisovic et al. (2012)

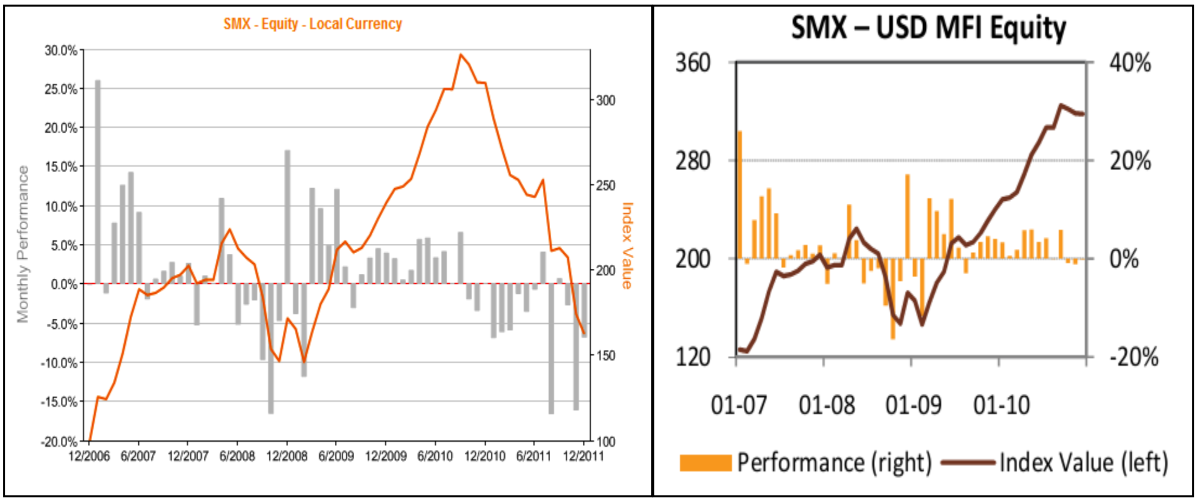
Figure 10: Movement in LIFI Index against MSCI World Financials[40] and EM Banks



Source: Reille and Daniel (2011)

[40] This index captures large and mid-cap representations across 23 developed market countries.

Figure 11: Performance of SMX-Equity[41] (Local Currency and USD)



Source: Syminvest Website[42] and Symbiotic Quarterly Corporate Newsletter (2011)[43]

5. Conclusions

The microfinance sector is a relatively new entrant to the capital market. While it well recognised that the microfinance sector needs to approach capital markets for funding their operations, some compelling issues require the attention of the stakeholders in the microfinance sector. The first issue is related to how far the risk management of MFIs would be able to counter the micro- and macro-economic barriers constraining/affecting the integration of MFIs with capital markets. Are MFIs fully equipped to take on the capital market operations? Do they have sufficient resources (monetary as well as non-monetary) to take on the capital markets of India? If the microfinance sector attempts to penetrate capital markets, it would have to deal with the issue of three Cs—concentration, compliance, and credit risk. If the funds of the MFIs based in Andhra Pradesh had been diversified across geographies, the loan losses would have been relatively low and the MFIs would have been able to cross-subside. Similarly, compliance risk on the part of customers as well as the MFIs was not followed (customers over borrowed and MFIs did not follow regulatory norms). Finally, the credit risk assessment on the part of the MFIs in assessing the credibility of customers and the credit risk assessment on the part of investors before investing in MFIs holds the key to the successful and sustained presence of the Indian microfinance sector in capital markets.

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[41] The SYM-MFI equity index tracks the daily value of the stock prices of select listed microfinance institutions in US dollars and local currency.

[42] http://www.syminvest.com/research-account#fund_group_screenshot

[43] http://www.symbioticsgroup.com/media/44427/symbiotics-quarterly_newsletter_q1_2011_en.pdf

The Andhra Pradesh microfinance debacle is a lesson to every stakeholder in the microfinance sector, and it highlights the need for ethical business practices in keeping with the code of conduct. If MFIs in India want to reap the benefit of the capital markets, they would need to adopt transparent governance and follow the disclosure norms so that their financial credentials and activities can be assessed by investors. Further, regulatory provisions should take into account the concerns of MFIs with different legal structures and should provide them with sustainable sources of funds. Before going commercial, the microfinance sector needs to fortify its fundamentals so that it can face the negatives happening in the capital markets as well as absorb/accommodate the scale of activities of the capital markets. As the microfinance sector matures and becomes an active participant in the capital market, it would be faced with macro-economic challenges of greater intensity. How they would react to such circumstances should form the policy objectives of all MFIs. Finally, in order to classify as an asset class for investors, MFIs will have to transform themselves and become profit oriented. Only then would they be able to pursue their social objectives along with their financial objectives.

One limitation of the present study is that it provides only a broad perspective of the Indian microfinance sector; an analysis of the funding structure and prospects of MFIs entering capital markets based on legal structure, capital base, type of clients served, and geographical concentration would have added to the study. Further, the study would have benefitted from an intra-country comparison of the relative strengths and weaknesses of Indian MFIs in capital markets and those of MFIs in other countries.

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Appendix I

Major Non-convertible Debenture Deals in Microfinance Sector

Company	Amount (INR Million)	Year/Period
Ujjivan	45	Aug-10
Share Microfin	500	Aug-10
Grameen Koota	350	Feb-11
Satin Credit Care	120	Mar-11
Sahayata Microfinance	195	Apr-11
Ujjivan Financial Services	230	Jul-11
Bandhan	280	Jun-11
Ujjivan	290	Aug-11
Equitas	500	Nov-11
Ujjivan	320	Jan-12
Sahayata	195	Apr-12
Grameen Koota	250	Jun-12

Appendix II

Private Equity Transactions by Indian MFIs in 2011-2012

Investor	Investee	Amount (INR Million)	Period/Date
Blue Orchard	Svasti Microfinance	45	May 2011
Citi-Venture Capital International	Janalakshmi Financial Services	650	June 2011
Sequoia, Lok Capital, Unitus Equity, India Financial Inclusion Fund and SIDBI	Ujjivan Microfinance	940	June 2011
Norwegian Microfinance Initiative	Utkarsh Microfinance Private Ltd	410	September 2011
International Finance Corporation	Bandhan Financial Services	1350	September 2011
Incofin	Arman	150	November 2011
Netherlands Development Finance and WCP Mauritius Holding III	Ujjivan Microfinance	1279	February 2012
International Finance Corporation	Ujjivan Microfinance	500	May 2012
International Finance Corporation	Equitas Holdings Private Ltd	1000	May 2012
Accion	Sajja	122.6	June 2012
India Financial Inclusion Fund and Gawa Microfinance	Janlakshmi Financial Services	800	July 2012

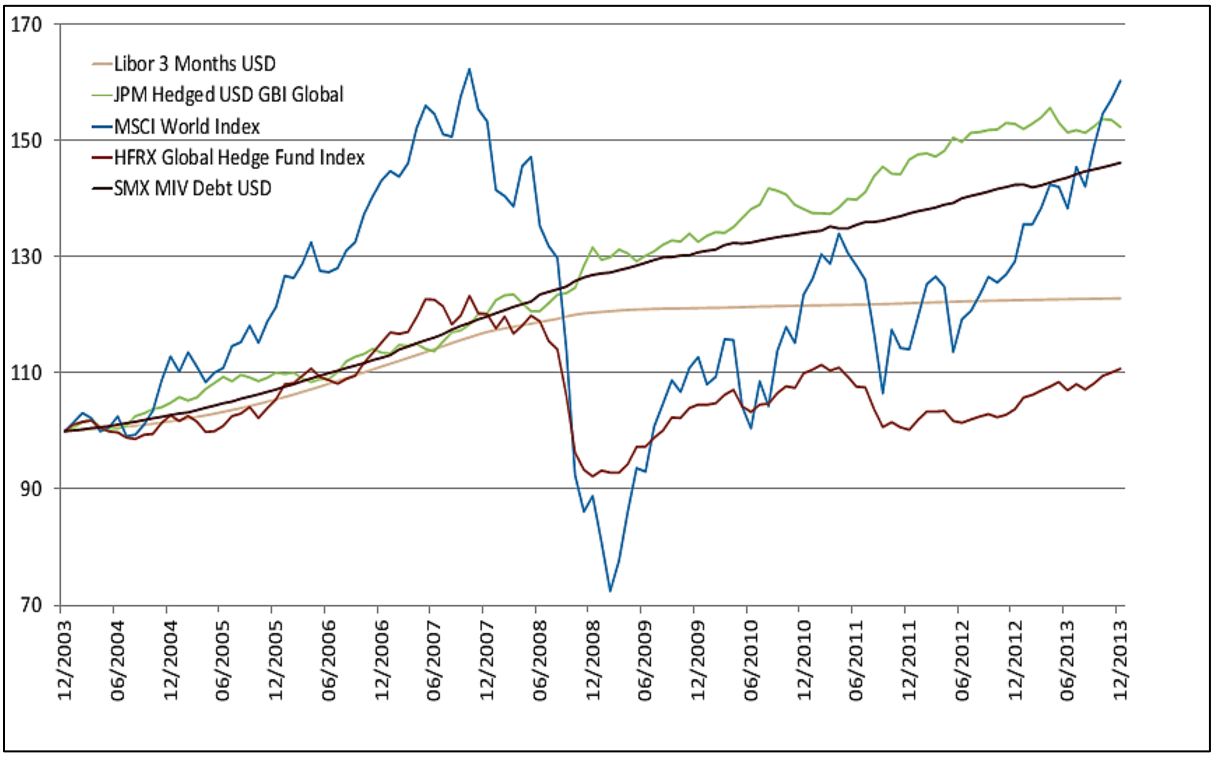
Appendix III

Selected Indicators of Indian Capital Market

Indicator Name	2006	2007	2008	2009	2010	2011	2012
S&P Global Equity Indices (annual % change)	46.70103093	78.58046381	-64.13702188	94.13996825	18.72243	-38.04853051	23.33122
Market capitalisation of listed companies (% of GDP)	86.27796876	146.8555996	52.73095431	86.36725325	94.44408	54.21536643	68.59551
Listed domestic companies, total	4796	4887	4921	4955	4987	5112	5191
Stocks traded, total value (% of GDP)	67.27138751	89.41228345	85.75699239	79.75027674	61.76851	39.52153731	33.79882
Stocks traded, turnover ratio (%)	93.07668278	83.96958555	85.18685682	119.3490404	75.61876	56.2609347	54.63441

Appendix IV

Performance of Microfinance vs. Other Assets Class



Source: Dominicé (2014)[44]

[44] http://www.syminvest.com/papers