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# Multi originator securitisation MOSEC™ in microfinance

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More than 40% of households in India do not have access to financial services from formal channels (Roy, 2011). Microfinance institutions (MFIs) provide a gamut of financial services to low-income households and play an important role in financial inclusion (Sane & Thomas, 2011). Indian MFIs have traditionally relied on banks and development financial institutions (DFIs) for their funding requirements (Stieber, 2007). However, a major part of bank funding is driven by regulatory requirements. Structured finance has provided MFIs the opportunity to diversify their sources of funding by reaching out to previously untapped debt markets. Microfinance securitisation has given MFIs access to investors such as mutual funds, private banks, high net worth individuals (HNIs) and other financial institutions.



During the fiscal year 2011-12, Indian MFIs raised more than INR22bn through securitisation transactions[1]. However, small MFIs (having assets worth less than INR1bn) accounted for less than 15% of the funds raised[2]. A securitised pool must have a minimum critical size in order to make these transactions financially viable. Given this constraint only large MFIs can access capital via the securitisation route. The smaller MFIs find it difficult to provide a critical size portfolio for single-originator securitisation. However via the IFMR Capital multi-originator securitisation (MOSEC™) structure, small and medium originators can combine their loan pools to attain a critical size portfolio that can then be taken to the market. Pooling loans across originators and geographies results in a well-diversified portfolio; this provides an attractive risk-return trade-off to the investor. The MOSEC™ has revolutionised the way MFIs access capital markets in India.

Fernandes provides a detailed discussion on the microfinance model and how the structured finance approach was applied in microfinance in India to provide MFIs access to reliable debt capital (Fernandes, 2011).

In this chapter, we discuss the MOSEC™ transactions in the Indian microfinance sector and how multi-originator structures have helped MFIs to access debt capital and enabled investors to achieve portfolio diversification. In the first section, we briefly discuss securitisation structures in microfinance and the key differences between single-originator and MOSEC™ transactions. In the next section, we explain how MOSEC™ structures help to attain critical portfolio size, enhance diversification and reduce overall risk of the transaction. Next, we discuss the

importance of centralised structuring, reporting and monitoring in a MOSEC™ transaction. A performance summary of all completed microfinance MOSEC™ transactions in India is provided in the last section.

## Securitisation in microfinance

In microfinance securitisation, microloans originated by MFIs are pooled into a stand-alone special purpose vehicle (SPV)[3]. This SPV is typically established as a Trust managed by an appointed trustee. The Trust issues securities to investors in return for a consideration that is paid to the originators. These securities are backed by the cash flows from the pool that is serviced by the originating MFIs. Typically these securities are structured into 'tranches' based on default risk. The cash flows are then distributed across the tranches based on a preset waterfall mechanism. Senior tranches are the first to be paid off. Junior tranches are subordinate in nature and only get paid when the Senior tranche is fully repaid. Thus the Junior tranche provides additional credit enhancement to the Senior tranche. To ensure incentive alignment, IFMR Capital, a Chennai based non-banking financial company (NBFC) invests in the Junior tranche of all transactions structured and arranged by it. By coming in as a subordinated investor, IFMR Capital has created a mainstream market for microfinance backed securitised paper that hereto did not exist in India. (Fernandes, 2011)

In a single-originator securitisation, microloans originated by a single MFI are pooled into an SPV. IFMR Trust Pioneer-II was the first rated single-originator microfinance transaction in India to be placed with capital market investors. A total of 55,993 microloans worth INR515.4m, originated by a single MFI, were pooled into the trust (CRISIL, 2009). In a MOSEC™ transaction, microloans originated by multiple MFIs are pooled into an SPV. IFMR Capital MOSEC-XII, so far the largest completed MOSEC™ transaction in terms of participating originators, had microloans originated by nine MFIs combined into a pool. The transaction had 44,640 microloans worth INR472m underlying it (ICRA, 2012).

In a MOSEC™ transaction the underlying pool size for each originator is typically smaller than that in a single-originator transaction. This is because small pools from multiple originators are combined to form a critical size portfolio. As a result, MOSEC™ structures allow MFIs with smaller sized assets to participate in securitisation transactions.

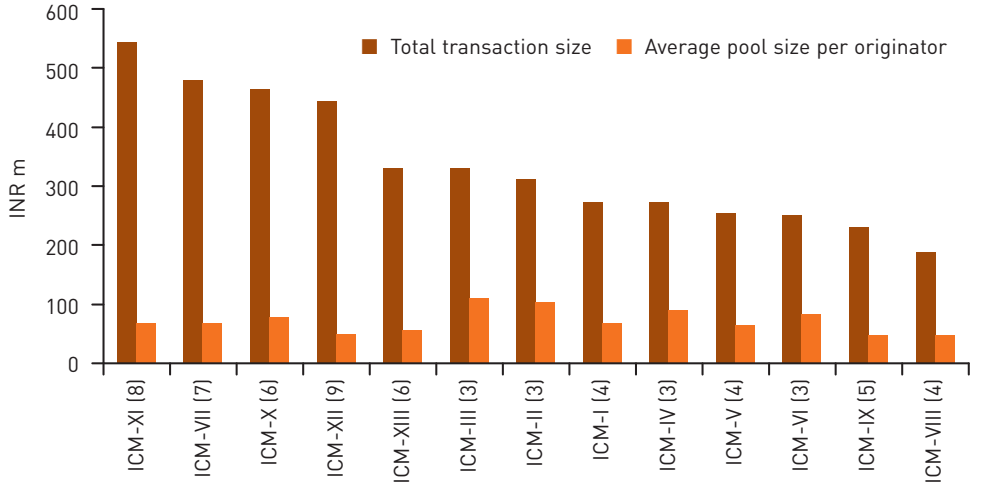
The granularity of the underlying loans (average loan size of US$250), the high frequency of repayments (weekly, fortnightly or monthly) and the participation by multiple originators make MOSEC™ transactions operationally and structurally far more complex than single-originator transactions. Therefore, for MFIs who can generate large sized pools, single-originator transactions may prove to be more attractive.

## MOSEC™: building critical mass

A critical portfolio size is required to make a securitisation transaction financially viable in capital markets. In order to participate in a single-originator securitisation, an MFI should have a sufficiently large unencumbered portfolio of microloans. A small MFI with, say, a total asset size of INR500m may find it difficult to provide a microloan pool of size INR200m for securitisation[4]. MOSEC™ structure allows pooling of small pools from different originators to attain the required critical size portfolio. In IFMR Capital MOSEC-I the first ever multi-originator microfinance securitisation in India, the average size of total loan assets of four participating MFIs was INR330m (CRISIL, 2010). The transaction size was INR274m with an average pool size of INR68m per originator.

Exhibit 1 shows the total transaction size and average pool size per originator for all microfinance MOSEC™ transactions in India. The figures in parentheses show the number of participating originators in respective MOSEC™ transactions. IFMR Capital MOSEC-XI, the biggest microfinance multi-originator transaction in terms of size, had microloan pools from eight MFIs. The underlying pool principal was INR545m and average pool size per originator was INR68m (ICRA, 2011).

**Average pool size per originator in IFMR Capital MOSEC™ (ICM) transactions** **Exhibit 1**



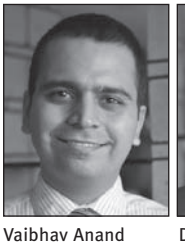

**Source: IFMR Capital**



MOSEC™ structures allow smaller MFIs to participate actively in securitisation transactions. Exhibit 2 shows the distribution of single-originator and MOSEC™ transactions by total assets of participating MFIs in all microfinance securitisations arranged by IFMR Capital. Single-originator transactions are skewed towards bigger MFIs (assets more than INR1bn) whereas smaller MFIs (assets less than INR1bn) show active participation in MOSEC™ transactions. Smaller MFIs accounted for only eight out of 42 pools securitised in single-originator transactions arranged by IFMR Capital. However, similar sized MFIs accounted for 47 out of 64 pools securitised in MOSEC™ transactions[5].

## MOSEC™: diversification across servicer and geography

In MOSEC™, pools from multiple originators are combined and each contributing originator acts as a servicer to its securitised pool. This allows investors in a MOSEC™ transaction to diversify across multiple originators-cum-servicers. Since the pool size per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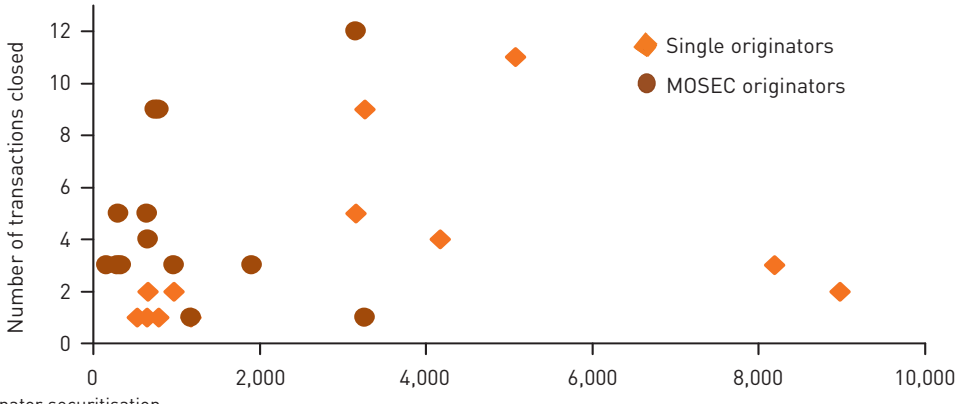
**Distribution of MOSEC™* and single-originator transactions by MFI** assets** **Exhibit 2**




*multi-originator securitisation
**Microfinance institution

**Source: IFMR Capital**



originator is a small portion of total transaction size, diversification across servicer reduces the overall servicer risk of the transaction.

MOSEC™ transactions also offer a high degree of geographic diversification in the portfolio. Typically small MFIs have regional focus limited to certain geographies or states[6]. MOSEC™ allows investors to reduce their geographical concentration risk while allowing regional originators to focus on operational efficiencies in their respective geographies. Also, diversifying across states and districts helps to reduce political and event risks in a transaction.

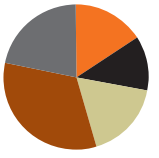
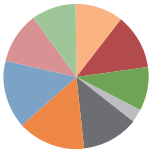
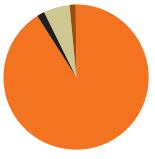
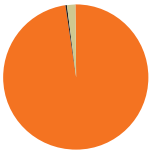
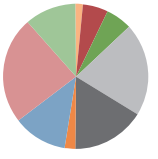
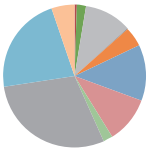
Exhibit 3 compares diversification provided by select MOSEC™ and single-originator transactions. MOSEC™ transactions provide higher diversification across originators and geographies.

## MOSEC™: understanding underlying default risk

MOSEC™ structures reduce overall transaction risk through increased diversification across originators and geographies. For a given set of microloan pools, this diversification results in superior performance for MOSEC™ transactions when compared to the performance of single-originator transactions with the same microloan pools. In this section, to illustrate the effects of MOSEC™ diversification, we use the historical default-instance distributions for three MFIs. The default-instance distribution is a probability distribution of observed default-instances[7] for each microloan portfolio originated by the respective MFI. We compare the performance of three hypothetical single-originator transactions to the performance of a hypothetical MOSEC™ transaction with microloans originated by three MFIs underlying it. The MFI default-instance distributions used here have been estimated using the performance of securitised microloan pools of the three MFIs (Anand & Fernandes, 2012). We refer to these MFIs as MFI-A, MFI-B and MFI-C. The first panel of Exhibit 4 shows the estimated default-instance distribution for three MFIs[8].

Assume that each MFI participates in a single-originator transaction and each transaction has a microloan pool of size INR300m underlying it. Also, assume that all underlying microloans in a pool are of equal size. Based on

**Diversification of select MOSEC™* and single-originator transactions** **Exhibit 3**

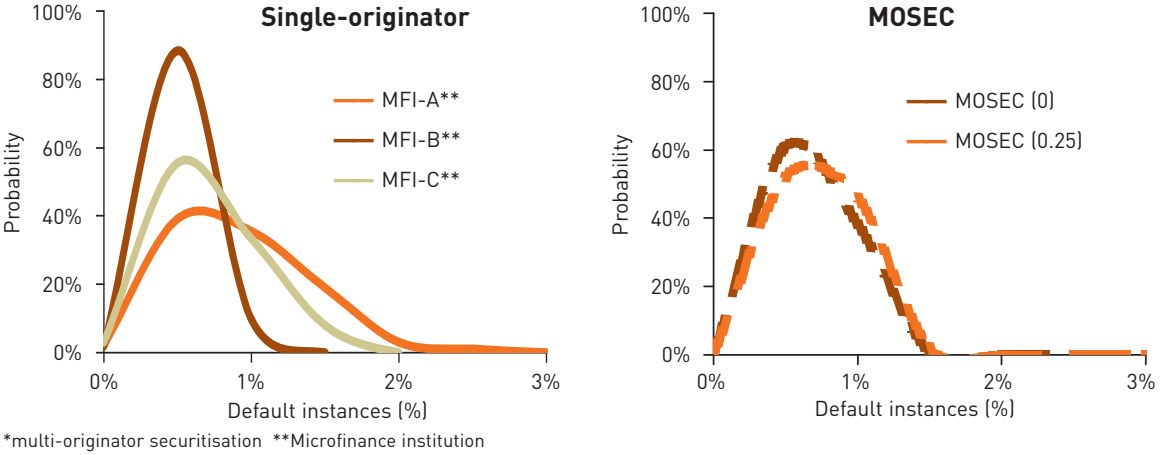
| Transaction name | IFMR Capital Gamma pioneer | IFMR Capital Zeta pioneer | IFMR Capital MOSEC-IX | IFMR Capital MOSEC-XII |
|---|---|---|---|---|
| Transaction type | Single-originator | Single-originator | MOSEC™ | MOSEC™ |
| Transaction size | INR1063.8m | INR468m | INR258m | INR472m |
| Exposure details | Originators: 1<br>States: 4 | Originators: 1<br>States: 3 | Originators: 5<br>States: 9 | Originators: 9<br>States: 12 |
| Originator-wise diversification |  |  |  |  |
| Geography (state)-wise diversification |  |  |  |  |

*multi-originator securitisation

**Source: IFMR Capital**



**Default distribution of MOSEC™* and single-originator transactions** **Exhibit 4**




*multi-originator securitisation **Microfinance institution

**Source: IFMR Capital**

**Maximum default-instances calculated for a given confidence level** **Exhibit 5**

| | Single-originator transaction | | | MOSEC™** Transaction | |
|---|---|---|---|---|---|
| Confidence level | MFI-A* | MFI-B* | MFI-C* | Correlation=0 | Correlation=0.25 |
| 95% | 1.47% | 0.57% | 1.23% | 0.82% | 0.90% |
| 99% | 2.01% | 0.63% | 1.35% | 0.99% | 1.08% |
| 99.99% | 2.24% | 0.68% | 1.41% | 1.24% | 1.35% |

*Microfinance institution **multi-originator securitisation

**Source: IFMR Capital**

the historical default-instance distribution of each originator, the default-instance distribution of underlying pools can be estimated as shown in first panel of Exhibit 4.

Using this distribution, we calculate the maximum number of default-instance to be observed at a certain confidence level for three single-originator transactions. The calculated values are tabulated in columns two-four of Exhibit 5. For the single-originator transaction with MFI-A, there are 99.99% chances that the observed defaults will not exceed 2.24% of the underlying pool. At this confidence level, credit cover of 2.5 times against microloan defaults translates into credit-enhancement of INR16.8m for MFI-A single-originator transaction[10]. Similar calculation results in credit-enhancement requirement of INR5.2m and INR10.6m for single-originator transactions with MFI-B and MFI-C Respectively. Thus the total credit-enhancement required from all MFIs is INR32.6m.

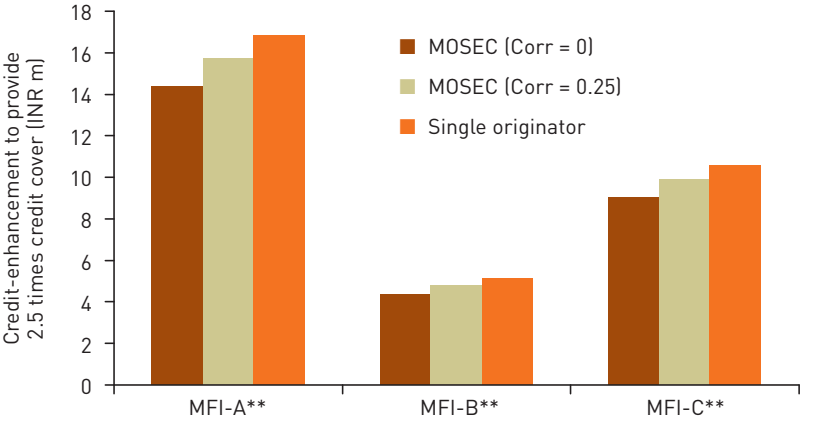
The term 'credit-enhancement' is used as a credit cover against the microloan default risk only. The actual credit-enhancement requirement in a microfinance securitisation typically accounts for other factors as well e.g., current state of the microfinance industry, political risk and strengths and weaknesses of originators.

Now assume a scenario where the microloan pools of three MFIs are combined in a MOSEC™ transaction. The transaction size is INR900m and each originator contributes INR300m worth of microloans. The performance of MOSEC™ transaction is simulated using the default-instance distribution of each originator. The simulations are performed for two scenarios; first with the assumption that the three microloan pools have zero correlation among them and the second with the assumption that pools have a correlation of 0.25[10]. The default-instance distribution for the MOSEC™ transaction is estimated for different correlation values: correlation=0 and correlation=0.25. The estimated distributions for the MOSEC™ and single-originator transactions are compared in Exhibit 4.

Maximum default-instances to be observed at certain confidence levels in the MOSEC™ transaction are calculated using the estimated distribution. These values are tabulated in columns five-six of Exhibit 5. At 99.99% confidence level, the total credit-enhancement requirement to provide 2.5 times credit cover against default risk is INR27.8m for zero correlation among microloan pools of MFIs[11]. Credit-enhancement for each originator is calculated by allocating the total credit-enhancement in proportion to the maximum default-instances observed at 99.99% confidence level for each MFI.

Exhibit 6 compares credit-enhancement requirement from each MFI under single-originator and MOSEC™ transactions. Credit cover requirement against default risk is less for all MFIs when their microloans are combined in a MOSEC™ transaction.

**Credit-enhancement requirement under MOSEC™* and single-originator transactions** **Exhibit 6**




*multi-originator securitisation
**Microfinance institution

**Source: IFMR Capital**



## Centralised structuring, reporting and monitoring

In a MOSEC™ transaction the microloans from multiple originators are pooled into a single Trust. The securities issued to investors are backed by cash flows from the pooled microloans. These cash flows are tranched depending upon the investors' risk-return requirements. However, the timing and frequency of the cash flows may vary significantly from one originator to another. Thus an effective MOSEC™ structure requires adequate structuring and underlying sector expertise.

Reporting and monitoring are two of the key components of risk and performance management in a securitisation transaction. Servicers report the collections, pre-closures, prepayments and overdue cases for every collection period. These reports form the basis of all risk and performance analysis for the transaction. In MOSEC™ transactions, the challenge is to ensure uniform reporting standards across the servicers to maintain data integrity. It is essential to perform a pre-transaction due diligence of originators' MIS and IT capabilities to ensure their post-transaction compliance with reporting requirements.

Post-transaction monitoring of originator-cum-servicer operations is essential to ensure consistently high performance. It enables the detection of early warnings and stress signals which can then be addressed in time. In MOSEC™ transactions, the required monitoring effort increases many fold due to the presence of multiple originators. However, MOSEC™ transactions help build efficiencies through centralised processing of the transaction. The structuring and performance management functions are typically centralised and offer economies of scales when pools of multiple originators are combined.

Since the closure of the first MOSEC™ transaction in January 2010, IFMR Capital has consistently demonstrated the usefulness, performance and sustainability of the structure for enabling access to capital for small and medium sized MFIs. The same model with similar outcomes could be used for any asset class provided the same standards of high quality origination, structuring and risk management are applied.

**Performance of completed MOSEC™** transactions** **Exhibit 7**

| Date | Transaction name | Number of MFIs* | Rating agency | Transaction size (INR m) | Collection efficiency |
|---|---|---|---|---|---|
| 15-Jan-10 | IFMR Capital MOSEC-I | 4 | CRISIL | 308.6 | 99.03% |
| 14-May-10 | IFMR Capital MOSEC-II | 3 | CRISIL | 353.7 | 97.54% |
| 16-Sep-10 | IFMR Capital MOSEC-III | 3 | CRISIL | 368.8 | 98.95% |
| 17-Jun-11 | IFMR Capital MOSEC-IV | 3 | ICRA | 272.3 | 98.54% |
| 30-Jun-11 | IFMR Capital MOSEC-V | 4 | ICRA | 269.0 | 99.67% |
| 02-Aug-11 | IFMR Capital MOSEC-VI | 3 | ICRA | 276.3 | 98.37% |
| 21-Aug-11 | IFMR Capital MOSEC-VII | 7 | ICRA | 511.9 | 99.77% |
| 07-Oct-11 | IFMR Capital MOSEC-VIII | 4 | ICRA | 200.9 | 98.73% |
| 09-Nov-11 | IFMR Capital MOSEC-IX | 5 | ICRA | 248.1 | 99.98% |
| 12-Dec-11 | IFMR Capital MOSEC-X | 6 | ICRA | 492.8 | 100.00% |
| 27-Dec-11 | IFMR Capital MOSEC-XI | 8 | ICRA | 574.6 | 99.91% |
| 23-Feb-12 | IFMR Capital MOSEC-XII | 9 | ICRA | 472.1 | 99.87% |
| 30-Mar-12 | IFMR Capital MOSEC-XIII | 6 | ICRA | 351.2 | 100.00% |

*Microfinance institutions **multi-originator securitisation

**Source: IFMR Capital**



**Reference:**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**Notes:**

1 IFMR Capital arranged securitisation transactions worth INR8bn during 2011-12. MFIs SKS Microfinance and Bandhan Microfinance together completed securitisations for around INR14bn during the period.

2 Source: IFMR Capital.

3 Committee on Global Financial System (2005) identifies three features of structured finance: pooling of assets, tranching of liabilities backed by pool cash flows and delinking of credit risk through an SPV.

4 Average portfolio size for all securitisation transactions arranged by IFMR Capital is INR250m.

5 Source: IFMR Capital.

6 A State is a federated territory in a federal union of states. There are 28 states and seven union territories (ruled by federal government directly) in India.

7 A single instance of payment failure on the scheduled repayment date or late payment is classified as 'default-instance'.

8 The default distribution of microloan pool in a single-originator transaction is same as the default distribution of the originating MFI. It is assumed here that portfolio quality and business environment for the MFI will remain fairly constant with time.

9 2.24%x2.5x300m≈INR16.8m.

10 In a study conducted by IFMR Capital, the average positive correlation among its seven MFI partners was estimated to be 0.20.

11 1.24%x2.5x900m≈INR27.8m.

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