

**NON-BANKING FINANCIAL INSTITUTIONS IN  
EMERGING MARKET ECONOMIES: AN EMPIRICAL  
ANALYSIS**

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EMERGING MARKET ECONOMIES: AN EMPIRICAL  
ANALYSIS**

by

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Submitted

in fulfillment of the requirements of the degree of Doctor of Philosophy

to the



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*Dedicated to my parents*

# Certificate

This is to certify that the thesis entitled “**Non-Banking Financial Institutions in Emerging Market Economies: An Empirical Analysis**”, submitted by **Dhulika Arora** to the Indian Institute of Technology Delhi for the award of the degree of **Doctor of Philosophy**, is a record of the original, bona fide research work carried out by her under my supervision and guidance. The thesis has reached the standards fulfilling the requirements of the regulations related to the award of the degree.

The results contained in this thesis have not been submitted in part or in full to any other University or Institute for the award of any degree or diploma to the best of my knowledge.

(**Prof. Smita Kashiramka**)  
Professor  
Department of Management Studies,  
Indian Institute of Technology Delhi.

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# **ABSTRACT**

Non-banking financial institutions (NBFIs) have emerged as an important financial intermediary that caters to the needs of the unbanked population, especially in emerging market economies. They have encouraged competition, innovation and inclusivity in the financial system. However, at the same time, their complex business models, dependence on leverage and lack of government backing may lead these institutions to fail, as evidenced in the global financial crisis of 2008. Their failure can further lead to the instability of the rest of the financial system.

The present study examines the different facets of NBFIs in 11 emerging markets (EMEs) monitored by the Financial Stability Board (FSB). It includes a consolidated analysis of the NBFIs sector in Argentina, Brazil, Chile, China, India, Indonesia, Mexico, Russia, South Africa, Saudi Arabia and Turkey, respectively. It firstly aims to examine the factors affecting the growth of NBFIs (research objective 1) and secondly, analyse the impact of their growth on the financial stability of the sample EMEs (research objective 2) for the period 2002-2019. It also gauges the NBFIs at the firm level to analyse their leverage structure (research objective 3) and the impact of regulations on their risk-taking capacity (research objective 4). It samples 459 NBFIs in 11 EMEs and 189 Systemically Important Non-Banking Finance Companies (NBFC-ND-SI) in India for the period 2011-2020 for the firm-level analysis. The sample period was chosen based on the availability of data for NBFIs.

The findings show that factors (objective 1) such as regulatory arbitrage, search for yield, growth of banks, demand from institutional investors and institutional quality determine the growth of NBFIs in emerging markets. Moreover, the study evidences the negative impact of

bank regulation on the growth of NBFIs, thereby highlighting the interlinkage between banks and non-banks in EMEs.

Further, the study develops a financial vulnerability index (FVI) to gauge the impact of the growth of NBFIs on the financial stability of the nation. It finds that the growth of NBFIs (objective 2) has a negative impact on the stability of the financial system, supporting the existing literature.

The study further gauges the leverage structure of 459 NBFIs in 11 EMEs using the Bankfocus database (objective 3). It finds that firm-level factors impact the leverage structure of NBFIs. However, the minimum capital requirements are found to be inadequate to determine the leverage of an NBFIs in emerging markets. Moreover, the study finds the variation in different types of NBFIs based on their activity (investment or financing) concerning their leverage in the EMEs.

The policymakers have stipulated regulations for the NBFIs sector. However, whether these regulations affect their risk-taking behaviour is yet to be studied (objective 4). The study constructs a regulation index for the sample NBFIs in 11 EMEs using the data from Implementation Monitoring Network (IMN) surveys conducted by the FSB, Bank Regulation and Supervision Surveys (BRSS) conducted by the World Bank and the regulatory websites of the sample EMEs. It finds that regulations affect the risk-taking behaviour of NBFIs except for their leverage risk. The study also finds the role of financing activity, ownership and institutional quality in mediating the relationship between risk and regulation of NBFIs in these economies.

In the context of systemically important NBFCs, the study finds that undercapitalized NBFCs assume higher leverage risk and liquidity risk, signifying the inadequacy of capital requirements to regulate the risk-taking behaviour of NBFCs.

Thus, the findings of the study make significant recommendations for policymakers. It emphasises the need to monitor the unchecked growth of NBFIs and timely disclosures to regulate the inherent risk of these institutions. The study further points to the need to implement different regulations for different types of NBFIs.

The study further makes recommendations for NBFC-ND-SIs. It reflects the need to regulate the leverage structure of financing and investing companies separately rather than combine them under a single category. The Reserve Bank of India (RBI) should enhance the capital requirements to provide for all types of risks against only credit risk. The study evidenced the devastating effect of the failure of a large NBFC-ND-SI on India. Thus, there is a need to strengthen the governance and regulation of the NBFC sector.

Hence, policymakers should ensure the implementation of the mechanisms to monitor the unchecked growth of the NBFIs while not inhibiting their developmental role in the financial system.

## सारांश

गैर-बैंकिंग वित्तीय संस्थान (NBFI) एक महत्वपूर्ण वित्तीय मध्यस्थ के रूप में उभरे हैं जो विशेष रूप से उभरती बाजार अर्थव्यवस्थाओं में बैंक रहित आबादी की जरूरतों को पूरा करते हैं। उन्होंने वित्तीय प्रणाली में प्रतिस्पर्धा, नवाचार और समावेशिता को प्रोत्साहित किया है। हालांकि, एक ही समय में, उनके जटिल व्यापार मॉडल, उत्तोलन पर निर्भरता और सरकारी समर्थन की कमी इन संस्थानों को विफल करने के लिए प्रेरित कर सकती है, जैसा कि वैश्विक वित्तीय संकट 2008 में स्पष्ट है। उनकी विफलता बाकी वित्तीय प्रणाली की अस्थिरता को और बढ़ा सकती है।

वर्तमान अध्ययन वित्तीय स्थिरता बोर्ड (एफएसबी) द्वारा निगरानी किए गए 11 उभरते बाजारों (ईएमई) में एनबीएफआई के विभिन्न पहलुओं की जांच करता है। इसमें क्रमशः अर्जेंटीना, ब्राजील, चिली, चीन, भारत, इंडोनेशिया, मैक्सिको, रूस, दक्षिण अफ्रीका, सऊदी अरब और तुर्की में एनबीएफआई क्षेत्र का समेकित विश्लेषण शामिल है। इसका उद्देश्य सबसे पहले एनबीएफआई (अनुसंधान उद्देश्य 1) के विकास को प्रभावित करने वाले कारकों की जांच करना है और दूसरा, 2002-2019 की अवधि के लिए नमूना ईएमई (अनुसंधान उद्देश्य 2) की वित्तीय स्थिरता पर उनकी वृद्धि के प्रभाव का विश्लेषण करना है। यह फर्म स्तर पर NBFI को उनकी लीवरेज संरचना (अनुसंधान उद्देश्य 3) और उनकी जोखिम लेने की क्षमता (अनुसंधान उद्देश्य 4) पर नियमों के प्रभाव का विश्लेषण करने के लिए भी मापता है। यह फर्म स्तर के विश्लेषण के लिए 2011-2020 की अवधि के लिए भारत में 11 ईएमई में 459 एनबीएफआई और 189 व्यवस्थित रूप से महत्वपूर्ण गैर-बैंकिंग वित्त कंपनियों (एनबीएफसी-एनडी-एसआई) का नमूना लेता है। नमूना अवधि को एनबीएफसी के लिए डेटा की उपलब्धता के आधार पर चुना गया था।

निष्कर्ष बताते हैं कि कारक (उद्देश्य 1) जैसे नियामक मध्यस्थता, उपज की खोज, बैंकों की वृद्धि, संस्थागत निवेशकों की मांग और संस्थागत गुणवत्ता उभरते बाजारों में एनबीएफआई की वृद्धि को निर्धारित करते

हैं। इसके अलावा, अध्ययन एनबीएफसी के विकास पर बैंक विनियमन के नकारात्मक प्रभाव का प्रमाण देता है, जिससे ईएमई में बैंकों और गैर-बैंकों के बीच अंतरसंबंध पर प्रकाश डाला जाता है।

इसके अलावा, अध्ययन राष्ट्र की वित्तीय स्थिरता पर एनबीएफआई के विकास के प्रभाव को मापने के लिए एक वित्तीय भेद्यता सूचकांक (एफवीआई) विकसित करता है। यह पाता है कि एनबीएफआई (उद्देश्य 2) की वृद्धि का वित्तीय प्रणाली की स्थिरता पर नकारात्मक प्रभाव पड़ता है, जो मौजूदा साहित्य का समर्थन करता है।

अध्ययन आगे बैंकफोकस डेटाबेस (उद्देश्य 3) का उपयोग करते हुए 11 ईएमई में 459 एनबीएफआई की उत्तोलन संरचना का आकलन करता है। यह पता चलता है कि फर्म-स्तरीय कारक NBF1 की लीवरेज संरचना को प्रभावित करते हैं। हालांकि, उभरते बाजारों में एनबीएफआई के लाभ को निर्धारित करने के लिए न्यूनतम पूंजी आवश्यकताएं अपर्याप्त पाई जाती हैं। इसके अलावा, अध्ययन में ईएमई में उनके उत्तोलन के संबंध में उनकी गतिविधि (निवेश या वित्तपोषण) के आधार पर विभिन्न प्रकार के एनबीएफआई में भिन्नता पाई गई है।

नीति निर्माताओं ने एनबीएफआई क्षेत्र के लिए नियम निर्धारित किए हैं। हालांकि, क्या ये नियम उनके जोखिम लेने वाले व्यवहार को प्रभावित करते हैं, इसका अध्ययन किया जाना बाकी है (उद्देश्य 4)। अध्ययन में एफएसबी द्वारा किए गए कार्यान्वयन निगरानी नेटवर्क (आईएमएन) सर्वेक्षणों, विश्व बैंक द्वारा आयोजित बैंक विनियमन और पर्यवेक्षण सर्वेक्षण (बीआरएसएस) और नमूना ईएमई की नियामक वेबसाइटों के आंकड़ों का उपयोग करके 11 ईएमई में नमूना एनबीएफआई के लिए एक विनियमन सूचकांक का निर्माण किया गया है। यह पाया गया है कि नियम एनबीएफसी के जोखिम लेने वाले व्यवहार को प्रभावित करते हैं, सिवाय उनके उत्तोलन जोखिम के। अध्ययन में इन अर्थव्यवस्थाओं में एनबीएफसी के जोखिम और विनियमन के बीच संबंधों की मध्यस्थता में वित्तपोषण गतिविधि, स्वामित्व और संस्थागत गुणवत्ता की भूमिका भी पाई गई है।

प्रणालीगत रूप से महत्वपूर्ण एनबीएफसी के संदर्भ में, अध्ययन में पाया गया है कि अल्पपूंजीकृत एनबीएफसी उच्च उत्तोलन जोखिम और तरलता जोखिम को मानते हैं, जो एनबीएफसी के जोखिम लेने वाले व्यवहार को विनियमित करने के लिए पूंजी आवश्यकताओं की अपर्याप्तता को दर्शाता है।

इस प्रकार, अध्ययन के निष्कर्ष नीति निर्माताओं के लिए महत्वपूर्ण सिफारिशें करते हैं। यह NBFİ के अनियंत्रित विकास की निगरानी करने और इन संस्थानों के अंतर्निहित जोखिम को विनियमित करने के लिए समय पर प्रकटीकरण की आवश्यकता पर जोर देता है। अध्ययन आगे विभिन्न प्रकार के एनबीएफआई के लिए विभिन्न नियमों को लागू करने की आवश्यकता की ओर इशारा करता है।

अध्ययन आगे एनबीएफसी-एनडी-एसआई के लिए सिफारिशें करता है। यह वित्तपोषण और निवेश कंपनियों की उत्तोलन संरचना को एक ही श्रेणी के तहत संयोजित करने के बजाय अलग-अलग विनियमित करने की आवश्यकता को दर्शाता है। भारतीय रिजर्व बैंक (आरबीआई) को केवल क्रेडिट जोखिम के खिलाफ सभी प्रकार के जोखिमों के लिए प्रदान करने के लिए पूंजी आवश्यकताओं को बढ़ाना चाहिए। अध्ययन ने भारत पर एक बड़े एनबीएफसी-एनडी-एसआई की विफलता के विनाशकारी प्रभाव का प्रमाण दिया। इस प्रकार, एनबीएफसी क्षेत्र के शासन और विनियमन को मजबूत करने की आवश्यकता है।

इसलिये नीति निर्माताओं को वित्तीय प्रणाली में उनकी विकासात्मक भूमिका को बाधित न करते हुए NBFİ के अनियंत्रित विकास की निगरानी के लिये तंत्र के कार्यान्वयन को सुनिश्चित करना चाहिये।

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# List of Abbreviations

ABCP	Asset-Backed Commercial Paper
ABS	Asset-Backed Securities
ACRI	Advanced Capital Regulation Index
AFC	Asset Financing Companies
AIFIs	All India Financial Institutions
ALM	Asset Liability Management
ANOVA	Analysis of Variances
BCBS	Basel Committee for Banking Supervision
BIS	Bank for International Settlements
BRSS	Bank Regulation and Supervision Surveys
CAMEL	Capital adequacy, Asset quality, Management, Earnings and Liquidity
CCPs	Central counterparties
CD	Cross-section dependence
CDO	Collateralized Debt Obligation
CFIMLS	Captive financial institutions and moneylenders
CMIE	Centre for Monitoring Indian Economy
CRAR	Capital to Risk-Weighted Assets Ratio/ Capital Adequacy Ratio
CT	Credit Transformation
CU	Capacity utilisation
EF	Economic Function
EMEs	Emerging market economies
EU	European Union
FC	Financing company
FDI	Foreign Direct Investment
Fintech	Financial technologies
FSB	Financial Stability Board
FOD-GMM	Forward Orthogonal GMM
FVI	Financial Vulnerability Index
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GFDD	Global Financial Development Database
GMM	Generalized method of moments
IC	Investment Company
IFS	International Financial Statistics
IIP	Industrial Investment Position
IL & FS	Infrastructure leasing and Financial Services Ltd.
IMF	International Monetary Fund
IMN	Implementation Monitoring Network
LAF	Liquidity Adjustment Facility
LCs	Loan companies
LDMFs	Liquid Debt Mutual Funds
MMF	Money Market Fund
MSCI	Morgan Stanley Capital International

MSME	Micro, Small and Medium Enterprises
NBFCs	Non-Banking Financial (Finance) Companies
NBFI	Non-Banking Financial Institutions
NBFC-D	Non-Banking Finance Companies accepting deposits
NBFC-ND	Non-Banking Finance Companies which do not accept deposits and are systemically unimportant.
NBFC-ND-SI	Systemically Important Non-Banking Finance Companies not accepting deposits.
NIM	Net interest margin
NPA	Non-Performing Assets
OECD	Organisation for Economic Cooperation and Development
OFI	Other Financial Institutions
OLS	Ordinary Least Squares regression
PCSEs	Panels Corrected Standard Errors Estimation
RBI	Reserve Bank of India
REITs	Real Estate Investment Trusts
SADC	South African Development Community
SFVs	Structured Finance Vehicles
SPVs	Special Purpose Vehicles
RBI	Reserve Bank of India
ROA	Return on Assets
SEBI	Securities and Exchange Board of India
SIVs	Structured Investment Vehicles
SOFOLLES	Non-bank financial corporations of limited purpose' in Mexico (Sociedades Financieras de Objeto Limitado)
SOFOMES	Non-bank financial corporations with multiple purposes and subject to significantly less regulation in Mexico.
UK	United Kingdom
USA	United States of America
VIF	Variance inflation factor
WB	World Bank
WDI	World Development Indicators
WGI	World Governance Indicators
WLS	Weighted Least Squares