AN EMPIRICAL INVESTIGATION OF FOREIGN BANKS IN INDIA IN POST REFORM PERIOD: TRENDS, DETERMINANTS, AND IMPACT

Thesis

Submitted in partial fulfillment of the requirements for the degree of

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By

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DECLARATION

I hereby declare that the Research Thesis entitled, "**AN EMPIRICAL INVESTIGATION OF FOREIGN BANKS IN INDIA IN POST REFORM PERIOD: TRENDS, DETERMINANTS, AND IMPACT**" which is being submitted to the **National Institute of Technology Karnataka, Surathkal** in partial fulfillment of the requirements for the award of the Degree of **Doctor of Philosophy in Management** is a bonafide report of the research work carried out by me. The material contained in this Research Thesis has not been submitted to any University or Institution for the award of any degree.

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CERTIFICATE

This is to certify that the Research Thesis entitled, "**AN EMPIRICAL INVESTIGATION OF FOREIGN BANKS IN INDIA IN POST REFORM PERIOD: TRENDS, DETERMINANTS, AND IMPACT"** submitted by Massand Ajay Balrambhai (Register Number: 135052 HM13F01) as per the record of the research work carried out by him, is accepted as the Research Thesis in the partial fulfilment of the requirements for the award of the degree of Doctor of Philosophy.

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ABSTRACT

Liberalization of economies and establishment of World Trade Organisation (WTO) brought financial reforms that allowed huge Foreign Direct Investment (FDI) and licensing to foreign banks in most of the developing countries including India. With the increasing number and asset share of foreign banks in the host countries raised the concerns to economies to determine the concrete reasons for foreign banks entry and their impact on the host economies. The present study empirically analysis these concerns over the Indian economy.

Following Dunning's eclectic paradigm, the present study uses country-wise panel data to answer the locational advantages of India. Indian bank-wise panel data is used to analyze the impact of foreign banks' entry on the performance of Indian banks. Further, the study uses firm-wise panel data and bank-group wise panel data to examine the impact on credit access and credit allocation in India. Finally, Generalised method of moments estimator is used to analyze from 1996 to 2015.

The study finds that locational advantages of India attract foreign banks such as the presence of their home country firms and huge profit opportunity. Foreign banks' entry enhances competition and efficiency of Indian banks and reduces profitability. Foreign banks reduce credit access to firms and credit allocation to the agriculture sector in India. This is due to asymmetric information and lending through hard information.

Keywords: Foreign banks, Bank FDI, RBI, Panel data, Indian banking sector.

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ABBREVIATION

A_GDP	Agriculture component of GDP
AF	Country-wise assets of foreign banks in India
ARDL	Autoregressive distributive lag
ATM	Automated teller machines
BF	Country-wise bank FDI inflow into India
BT	Bilateral trade between the home country and India
CA	Credit to Agriculture Sector
CD	Credit-Deposit ratio
CECA	Comprehensive economic co-operation agreement
CEPA	Comprehensive economic partnership agreement
CF	Country wise FDI inflow in India
CI	Credit to Industry
CMIE	Centre for monitoring Indian economy
CONC	The deposits of top five banks in India
CRAR	Capital to risk weighted asset ratio
CRI	Dummy for crisis
CRR	Cash reserve ratio
CS	Credit to Services sector
DIPP	Department of industrial promotion and policy
DP	Deposits of commercial bank in an Indian state
DS	Net domestic savings of India
DUM	Dummy for bank groups
EF	Entry of foreign banks in an Indian state
EFT	Electronic fund transfer
EXIM	Export-Import bank of India
FDI	Foreign Direct Investment
GDP	Growth domestic product
GLM	Generalised linear model

GMM	Generalized method of moment
GNP	Gross national product
GOI	Government of India
HSBC	Hong Kong and Shanghai bank
I_GDP	Industry component of GDP
IMF	International monetary fund
IrI	Interest Income
LIQDT	Liquidity of Indian domestic banks
M_2R	Broad money components (M_2) divided by Exchange rate reserve
MC	Market Capitalization
MIS	Management information system
MNB	Multinational bank
NABARD	National bank for agriculture and rural development
NIM	Net interest margin
NPA	Non-performing asset
OECD	Organization for economic cooperation and development
OF	Country-wise offices of foreign banks in India
OhC	Overhead cost
OLI	Ownership, locational, and internalization
OLS	Ordinary least square
Orl	Other Income
OVHD	Overhead cost of Indian domestic banks
PG	Per capita gross national product
PLR	Prime lending rate
PSB	Public sector bank
RBI	Reserve bank of India
RI	Real interest rate of India minus Real interest rate of home country
RIA	Regional integration agreement
RIR	Real interest rates growth
ROA	Return on asset

ROE	Return on equity
S_GDP	Services component of GDP
SD	State domestic product
SG	Growth of services as a component of GDP in India
SIDBI	Small industries development bank of India
SLR	Statutory liquidity ratio
SME	Small and medium enterprises
TBTF	Too big to fail
TCTF	Too connected to fail
VRS	Voluntary retirement of scheme
WI	Wage bills to Intermediation cost
WOS	Wholly owned subsidiary
WTO	World trade organization

CHAPTER 1

INTRODUCTION

1.0 Overview of the chapter

This chapter motivates to carry out the present study. It highlights various facts about the foreign direct investment (FDI) and foreign banks' entry into various countries including India. It discusses the research aim and objectives. It represents various research questions, objectives, and hypotheses of the study. It also highlights the limitation of the study. It narrates the structure of the thesis.

1.1 Motivation for the research

The research is motivated by huge FDI inflow in developing countries, especially in India. High FDI inflow is considered as the sign of development for the host economy (Shylajan 2011). However, direct investment in the overseas country yields high returns on investment especially when the destination country is an emerging and developing country (IMF 2013). Thus, FDI inflow and outflow are increasing among economies. In 2012, emerging and developing nations succeeded in attracting FDI that have accounted for 52 percent of universal FDI flows due to their high rate of return[1] (IMF 2013). These FDI flows are rising across the sectors including the banking sector in emerging economies.

In recent times, the FDI inflow has increased in the banking sector in the Asian markets. Asian Countries such as Indonesia, Thailand, and South Korea have allowed 100 percent FDI in the banking sector (Rajan 2011). India allows 74 percent FDI in the banking sector[2]. The FDI inflow enters in two forms, brownfield investment and greenfield investment. If the investment is made directly in the domestic banks, it is called a brownfield investment (Meyer and Estrin 2001). However, if the investment is made by establishing a branch or office, it is called a greenfield investment. There are 44 foreign banks from twenty-five nations, which is a result of greenfield bank FDI in India. Both types of investment yield profits. In that case, the question arises, why this investment is made through branches? Theories and empirical studies reveal many

[1] The return on investment is 7 per cent worldwide but greater in both developing nations (8 per cent) and transition nations (13 percent) than in developed nations (5 per cent) (IMF 2013).

[2] The cap for FDI is 74 and 20 percent in private sector banks and public sector banks respectively in India.

locational advantages of host economies for the entry of foreign banks (Williamson 1975; Buckley and Casson 1976 and Dunning 1993). Recently, the question is raised in the case of the banking sector by many economists[3], does bank FDI follow overall FDI or do foreign banks enter to serve their home clients? Specifically, what are the motives of investors behind the entry of foreign banks?

For investing countries, the determining factors are important for their investment, but for destination countries, the impact of this investment is vital. Moreover, the banking sector is considered vital for any economy due to its role in creating money out of money and safeguarding the major part of the country's savings. Thus, the banking sector needs to be efficient. The intention of any government behind the liberalizing banking sector is to make the banking sector more efficient through competition by allowing more private banks. Thus, various governments allowed private banks, both from domestic private and foreign private banks after liberalization. The banking sector is crucial for economic development because of its direct relation with the major sectors of a country. Thus, it is interesting to study empirically and examine the fulfillment of this objective of the Indian government to liberalize it further. Moreover, it is also essential to study how foreign banks' entry affects the Indian economy, a major concern to the host economy.

1.2 Research aims and objectives

Bank internationalization[4] has been amplified across the nations, especially in the developing countries in Latin America, Eastern Europe, and Asia after the 1990s[5]. The widely accepted reasons for foreign banks' entry are – formation of world trade

[3] Fieleke 1977; Khoury 1979, 1980; Morphy 1981; Ball and Tschoegl 1982; Goldberg and Johnson 1990; Grosse and Goldberg 1991, Brealey and Kaplanis 1996; Nolle and Seth 1996; Yamori 1998; Moshirian 2001; Mutinelli and Piscitello 2001; Wezel 2004; Focarelli and Pozzolo 2005; Van Horen 2007; Mariscal et al. 2012; Molyneux et al. 2013; Mulder and Westerhuis 2015

[4] Bank internationalization refers to the entry of foreign banks into host economies and inflow of foreign direct investment (FDI) in host banking system.

[5] The rise in asset share shows greater penetration of foreign banks across countries. The asset share of foreign banks was raised to 84 percent in 2004 from 2 percent in 1990 in Mexico; the asset share raised to 48 percent in 2004 from mere 10 percent in 1990 in Argentina; in Czech Republic, it increased to 84 percent in 2011 from 10 percent in 1990; the figure reached to 85 percent in 2011 from 10 percent in 1990 in Hungary; in Croatia, it raised to 92 percent in 2011 from mere 4 percent (IMF, 2013). In Indonesia the asset shares of foreign banks rose to 52 percent in 2009.

organization (WTO) that has compelled nations for more entry of foreign banks (Gormely 2010) and the advancement in communication system and sophisticated technology that has helped central banks of home nations to monitor their banks abroad (Berger, Ongena, Smith 2003).

India adopted a restrictive policy towards the entry of foreign banks. Though the first overseas bank has been operating in India since 1853, the existence of foreign banks has been eased in the post-liberalization period in the 1990s. The Narasimham Committee (1991) recommended the government of India to liberalize entry of foreign banks alongside full-fledged banking sector reforms that create a level playing field and boost competition in the Indian banking sector. Foreign banks' entry, however, rose remarkably only after the establishment of WTO in 1995 when India signed the agreement to ease foreign banks' entry further. However, it phased out the entry of foreign banks over a period. In the phase I that began in 2005, RBI published a discussion paper "*Roadmap for the presence of foreign banks in India*." Originally, five branches were permitted. Automated teller machines (ATMs) were considered as a branch, the number was raised to eight in 1995, and after that to twelve branches in 1998 which was continued till 2006, and after that gradually raised the number and excluded ATMs as a branch (Gormely 2010). In the phase II that began in 2013, the reserve bank of India (RBI) recommended foreign banks to be present in any one form, either as a branch or as wholly owned subsidiary (WOS) mode[6]. RBI has incentivized foreign banks to enter India in the form of WOS and provided them with national treatment[7].

The report of the committee on financial sector reforms chaired by Prof. Raghuram Rajan also supported further entry of foreign banks (Government of India 2008). The committee argued that the further entry of foreign banks would have a positive spill-

[6] As per the research carried out in RBI, host nations should welcome foreign banks in the form of wholly owned subsidiaries (WOS) instead of branch forms. The main reason is host regulator has complete control over subsidiary of foreign banks but not on a foreign banks' branch.

[7] 'National treatment' means foreign banks can open their subsidiaries anywhere in India from Tier I to Tier VI cities. However, they were earlier restricted to open their branches in some parts of rural India (in Tier V and Tier VI areas) due to security reasons. In the second phase of reforms, foreign banks are allowed to open up as wholly owned subsidiary (WOS) in any part of the country without RBI's prior permission.

over effect on Indian domestic banks, due to the advanced technology of foreign banks. Moreover, it is also argued that the Indian banking sector is mature enough for the further opening up. However, there are also arguments that Indian banks still need time for further competition by foreign banks (Mohan 2013).

Liberalization aimed to accomplish greater competition, productivity, and efficiency in the Indian banking market (Government of India 1991). However, there is no solid evidence in the literature on the increase in productivity, the efficiency of domestic banks through competition by the entry of foreign banks in India or any other developing country. It is believed that the foreign banks' entry increases competition among domestic banks, introduces new innovative financial instruments, transfers technology to domestic banks that lead to an efficient domestic banking system. Also, foreign banks can improve credit availability as they are well connected with the international financial market. However, prior studies on Indian banks have found the adverse impact of foreign banks' entry on the Indian credit market (Gormely 2010; Kim 2010; and Ghosh 2012). The main reason being, foreign banks have been blamed for cherry-picking behavior that means they offer loans to large sized, profit-making corporates due to the competitive disadvantage in information. This implies that foreign banks ignore the socially weak agriculture sector and small and medium companies. This shows that the credit availability may reduce not only for SMEs and agriculture sector but to the overall market. Furthermore, foreign banks are criticized for withdrawing or shrinking their lending during the financial crisis in host nations[8], e.g., many multinational banks faced problems of liquidity crunch during the global financial crisis (GFC) of 2007-08. International banks transmit their liquidity risk through withdrawing lending in the foreign market (Schnabl 2012).

On the background of the above discussion, many questions can be raised about the impact of the entry of foreign banks. The major question is whether the foreign banks' entry is beneficial to the Indian economy or not. This study examines the following questions (a) what are the determinants of foreign banks' entry (b) the impact of foreign

[8] Aiyar (2011, 2012) finds that foreign banks reduce their lending more sharply than domestic banks during financial crisis period. Such claims are also made in the studies of Peek and Rosengren (1997), Khwaja and Cetorelli and Goldberge (2008), Mian (2008), Gianetti and Laeven (2012), Schnabi (2012).

banks' entry on the domestic banks' performance and (c), the impact of foreign banks' presence on the access to credit for firms and credit allocation to sectors in host economy.

1.3 Research questions

1. What are the determinants of foreign banks' entry in India?
2. Does the foreign banks' entry impact upon the performance of Indian domestic banks?
3. Does the foreign banks' entry impact upon the credit access to business firms in India?
4. Does the foreign banks' entry impact upon the credit allocation to various sectors of the Indian economy?

1.4 Research objectives

1. To identify the determinants of foreign banks' entry in the Indian banking sector.
2. To analyze the impact of foreign banks' entry on the performance of Indian commercial banks.
3. To investigate the impact of foreign banks' entry on credit access to the firms in India.
4. To investigate the impact of foreign banks' entry on credit allocation to the different sectors in India.

1.5 Hypotheses of the study

Hypothesis 1

H_0: The entry of foreign banks in India is not related to its home county clients FDI activity in India.

H_1: The entry of foreign banks in India is positively related to its home county clients FDI activity in India.

Hypothesis 2

H_0: The entry of foreign banks in India is not related to the bilateral-trade-relationship of its home county and India.

$H_{1:}$ The entry of foreign banks in India is positively related to bilateral-trade-relationship of its home county and India.

Hypothesis 3

H_0: The entry of foreign banks in India is not related to the economic growth of India.

$H_{1:}$ The entry of foreign banks in India is positively related to the economic growth of India.

Hypothesis 4

H_0: The entry of foreign banks in India is not related to the net interest margin of the Indian banking sector.

$H_{1:}$ The entry of foreign banks in India is positively related to the net interest margin of the Indian banking sector.

Hypothesis 5

H_0: The entry of foreign banks in India is not related to the interest rate differential between the home country and India.

$H_{1:}$ The entry of foreign banks in India is positively related to the interest rate differential between the home country and India.

Hypothesis 6

H_0: The entry of foreign banks in India does not change during the economic or financial crisis period in India.

$H_{1:}$ The entry of foreign banks in India increases during the economic or financial crisis period in India.

Hypothesis 7

H_0: The entry of foreign banks in India has no impact on competition in the Indian banking sector.

H_1: The entry of foreign banks in India increases competition in the Indian banking sector.

Hypothesis 8

H_0: The entry of foreign banks in India has no impact on the non-performing assets of Indian domestic banks.

H_1: The entry of foreign banks in India has an impact on the non-performing assets of Indian domestic banks.

Hypothesis 9

H_0: The entry of foreign banks in India has no impact on the overheads of Indian domestic banks.

H_1: The entry of foreign banks in India increases the overheads of Indian domestic banks.

Hypothesis 10

H_0: The entry of foreign banks in India has no impact on the net interest margin of Indian domestic banks.

H_1: The entry of foreign banks in India reduces the net interest margin of Indian domestic banks.

Hypothesis 11

H_0: The entry of foreign banks in India has no impact on the profitability of Indian domestic banks.

H_1: The entry of foreign banks in India has an impact on the profitability of Indian domestic banks.

Hypothesis 12

H_0: The entry of foreign banks in India does not reduce credit accessibility to firms in India.

H_1: The entry of foreign banks in India reduces credit accessibility to firms in India.

Hypothesis 13

H_0: The foreign banks in India do not avail more credit to large firms than small firms in India.

H_1: The foreign banks in India avail more credit to large firms than small firms in India.

Hypothesis 14

H_0**:** The entry of foreign banks in India does not reduce credit allocation to the agriculture sector in India.

H_1: The entry of foreign banks in India reduces credit allocation to the agriculture sector in India.

Hypothesis 15

H_0: The entry of foreign banks in India does not reduce credit allocation to the industrial sector in India.

H_1: The entry of foreign banks in India reduces credit allocation to the industrial sector in India.

Hypothesis 16

H_0: The entry of foreign banks in India does not reduce credit allocation to the service sector in India.

H_1: The entry of foreign banks in India reduces credit allocation to the service sector in India.

1.6 Limitation of the study

The present study captures the country wise motives of foreign banks' entry. However, there are foreign banks with their independent motives that could not be captured in this study[9]. Foreign banks from the same home country may have different reasons for their entry into India. The main reason being the formation of country-wise panel data.

The availability of data limits the study. The lack of data of higher frequency (monthly or quarterly) for a few variables compels the study to be conducted using yearly data. Though the study has examined the impact of foreign banks' entry on credit allocation to different sectors considering bank-group wise data, the study could not determine the impact of individual foreign bank wise on credit allocation again due to lack of availability of data.

1.7 Structure of the thesis

The thesis is divided into eight Chapters. Chapter 1 introduces the topic and motivates the present research. Chapter 2 reviews the literature and provides theoretical support for the study. It further, elucidates the reasons and needs for testing various hypotheses. Chapter 3 enumerates various trends and mode of entry of foreign banks in India. Chapter 4 elaborates on the data used and methods adopted to investigate. It provides the link

[9] The motive of formation of United Overseas Bank Ltd from Singapore was to serve Fujji community. The objective of Abu Dhabi Commercial bank was to increase trade relationships between India and Abu Dhabi. The objective of JSC VTB bank from Russia to improve trade relationships of Russia with the other nations.

between research questions, hypotheses, variables, and estimation methods of the present research. Chapter 5 determines various influencing factors for foreign banks' entry empirically. Chapter 6 analyses the impact on the performance of Indian commercial banks due to foreign banks' entry. Chapter 7 investigates the impact of foreign banks' entry into the Indian credit market in two different areas: i) Impact on access to credit by firms in India and ii) Impact on the allocation of credit to different sectors. Chapter 8 summarizes the findings and concludes with various policy recommendations.

CHAPTER 2

REVIEW OF LITERATURE AND HYPOTHESES DEVELOPMENT

2.0 Overview of the chapter

This chapter provides a detailed review of relevant literature and theoretical support for the study and also develops various hypotheses. Based on the reviewed literature, this chapter is divided into three themes. First, the determinants of foreign banks' entry; second, the impact on the domestic banks' performance due to foreign banks' entry and finally, the impact of foreign banks' presence on the credit access to firms and credit allocation to sectors in host economy.

2.1 Introduction

The role of the financial system is to gather information about the investment alternatives, mobilize savings and the efficient allocation of capital (Levine 1997, 2005). There is a close relationship between the financial system and economic growth (King and Levine 1993). For a developing country, it is essential to develop a financial system to achieve economic growth[10]. The financial sector reforms are the way chosen by most of the developing countries to achieve it. The financial liberalization brings more investment that can bring competition, efficiency, and productivity (Government of India 1991). Thus, finance-led economic growth is the choice of developing and emerging economies.

The banking sector is a crucial part of the financial system. Along with the financial sector reforms, the banking sector has also undergone reforms in most of countries. Liberalization of the banking sector involves more for private and foreign players, deregulation of administered interest rates, softening of prudential norms and regulatory norms, less government intervention in credit allocation, novel policy framework for foreign investment in the banking sector, etc. are observed in the liberalized developing economies (Demirguc-Kunt and Detragiache 1998).

[10] The perspectives on financial development and economic growth are broadly divided into four views: i) finance-led growth, ii) growth-led finance, iii) bidirectional relationship between financial development and economic growth, and iv) non-linear relationship between the two (Levine 2005).

The banking sector is more vulnerable to opening up as it deals with direct lending and safeguarding the deposits of society. The foreign investment in the banking sector also encompasses investment in other sectors[11]. The Herms and Lensink (2003) study[12] showed that the impact of foreign banks' entry differed by country, e.g., after opening up of foreign banks in Latin America, the domestic banks vanished. In the case of Mexico, there is only one national bank left. However, the efficiency of Australian banks has improved since foreign banks' entry. Therefore, understanding the determinants of foreign banks' entry and the impact they can have on the host economies is crucial for further research and policy suggestion on financial sector reforms. Furthermore, this can address many concerns and behavior of foreign banks such as following client behavior, cherry-picking behavior and the impact of foreign banks presence on the domestic banks' performance (Claessens et al. 2001; Clarke et al. 2001).

2.2 Determinants of entry of foreign banks

It is important to understand the determinants of entry of foreign banks in any host nation because it indicates the strategies of the foreign direct investment in the banking sector and the possible impact on the host economy (Voinea and Mihaescu 2006). The banking sector is a crucial sector for an economy due to its role of financial intermediation (Cole 1974). Therefore, when a nation liberalizes its economy for such intermediary, it becomes vital for a nation to understand the motives behind the entry of foreign intermediaries.

2.2.1 Theoretical review

The theories on FDI postulate the reasons for foreign bank entering in the host nations. There are micro and macro level theories suggesting the reasons for investment. Researchers have shown that there is no concrete theory on foreign banks' entry into the host nation. However, some of the prior studies have applied the theories of manufacturing FDI in the banking sector[13] (Kim 2010). Many theories related to the

[11] Banks receive deposits from and allocate credit to all the sectors of economy hence any investment on bank would have an impact on all the sectors of economy (Kim 2010)

[12] The impact of foreign banks' entry differs from a nation to another due to their different policies and financial market developments etc. (Herms and Lensink 2003).

[13] For detailed FDI theories read Chowdhary and Nayak (2014)

manufacturing industry explaining the inflow of FDI are the product lifecycle hypothesis, Hymer's theory, internalization theory, eclectic theory, the gravity model, etc. Units are established by manufacturing multinational firms with cheap and skilled labor to reduce production costs. However, banking is a service industry, that is, non-tangible which has production as well as consumption function at the same place. Being considered a customer oriented industry, banks' businesses were expanded in a profitable and large market (Focarelli and Pozzolo 2001). Factors affecting global FDI can also be determinants of banking FDI and vice versa. Thus, it is possible to apply the determinants of overall FDI to that of the banking sector FDI. However, researchers have found only two theories, i.e., internalization theory and eclectic theory that are appropriate to explain why banks invest in foreign countries (Kim 2010).

2.2.1.1 Initial theories

The development of theories on FDI is based on international trade theories. The international trade theories of Smith (1776) and then Ricardo (1817) considered labor a factor of production and explained that an economy would produce and export the product which has a cost advantage and import the product which has least cost advantage. Later, Heckscher and Ohlin (1933) explained this concept by using two factors of production, labor, and capital. FDI from capital endowment country would enter into the country with labor as an endowment factor to produce more and reduce imports or increase export. Vernon (1966) assimilated the theory of trade with the theories of FDI that is referred to as the product life cycle theory. He proclaimed that as the product matures competition increases, thus, the chance of losing market share arises in the domestic market. Hence, the firm would enter into a foreign market to introduce its product for which the firm has a cost advantage. In the same line, the firm has many advantages than the domestic firms in the host markets. This theory had set the ground for the competitive advantage theory.

Theories on FDI inflow initially started with the country-specific endowments. It was argued that foreign investment happens in capital endowment, natural resource endowment or labor endowment countries (Esperanca and Gulamhussen 2002). Thus, it was believed that the country must have a high per capita GDP or otherwise with

abundant resources can attract FDI. Thus, the country-specific endowment conferred locational advantage theory.

The Gravity model was first proposed in international economics by Tinbergen (1962). The empirical equation of this study postulates that the flow of trade and investment between the countries rises with their economic size and falls with the increase in distance and transportation costs. The model also suggests that the nearer border, common language, past colonial links, similar time-zone, etc. and geographical reasons also play an important role in deciding the entry of multinationals in a host country. Moreover, it is similar to the Dunning (1987) efficiency-seeking FDI.

2.2.1.2 Hymer's imperfect market theory

Hymer's imperfect market theory (1960, 1978) stated that a firm chooses to go abroad instead of exporting or licensing due to its monopolistic advantage. The advantage of the firm could be patented technology, managerial skills, marketing skills, and brand name. Hymer (1978) proclaimed that the market for the monopolistic advantages and knowledge of the firm tend to be imperfect. Thus, a firm can exploit its advantages by investing abroad physically. This theory sets the platform for Internalization theory (Buckely and Casson 1991).

2.2.1.3 Internalization theory

Internalization theory was developed by Williamson (1975) and Buckley and Casson (1976). The roots of the theory were in the work of Ronald Coase (1937) that was rejected then. The study had claimed that the technological difference among the countries had been an endowment factor. Williamson (1975) added operational integration for the reason of vertical integration and Buckley, and Casson (1976) considered knowledge integration along with the operational integration which explained the growth of the multinational firm. Hence, the theory of internalization was developed. Thus, the internalization of the firm transfers technological know-how and managerial skills when it establishes abroad.

Internalization theory claims that a firm fails to get an efficient external market to benefit from its competitive advantages and resources in its home country. This could be because of the saturation of the market through competition. Thus, it creates an

internal market[14] by investing abroad in geographically diversified areas to seek business opportunities. Hence, a bank would invest elsewhere when its market gets saturated, and it does not have more opportunity in its home country. Thus, a bank moves abroad by investing in other markets.

2.2.1.4 Eclectic paradigm

Dunning's theory (1973, 1977, 1980, and 1993) of the eclectic paradigm combines three theories to explain the same concept and considers the conditions for internalization. The eclectic approach is also called the OLI paradigm that represents three types of advantages: Ownership, Locational, and Internalization.

Ownership advantage – It is an advantage of a firm over its competitors in the host market. A foreign bank should have some advantage over the domestic banks so it can perform better than its competitor in the host nation. The firm has to differentiate its products that happens when it has better superior marketing skills and research & development (R&D), accumulated commercial knowledge and international experience.

A foreign bank may have advanced technology, managerial skills, brand name, marketing skills, easy access to international financial markets, experience in the multinational operations, efficient networks, established credit worthiness, etc. (Cho 1986).

Locational advantage – It is an advantage in the host country for the business. There should be some advantage of moving into a host location. These advantages should be gained by the firm from the business operations of the host nation. Thus, location-specific endowments play an important role in attracting a foreign firm. However, this should not be the only reason for a firm to internationalize. There should be combined locational advantages that are considered by the home firm. These advantages could be in terms of differences between home and host nation such as national regulations, interest rate differences, foreign exchange regulations, effective tax system or

[14] Internal market denotes the investing abroad. When a firm cannot get benefit from its competitive advantage in its own country that is referred as external market, then it creates internal market establishing its branch abroad. Hence, the name of the theory is Internalization. Furthermore, Internalization leads to Internationalization.

advantages specific to host location such as home county clients, a huge market to serve in terms of population, high savings, cheap labor, skilled labor etc.

A foreign bank may seek advantage of the presence of their home clients (Grubel 1977). Due to imperfection in the factor markets, the banks have unique knowledge about their clients, and they cannot sell this unique knowledge. Thus, they choose to serve them in terms of physical presence by following them in the host nation (Gray and Gray 1981).

Internalization – a firm decides to go abroad to gain more profit instead of selling its license to another company. The firm can gain from its monopolistic advantages after establishing in the host nation. These factors could be related to the cost of funds transfers, proficient customer contacts in the host nation, network of market information (Cho 1986).

Banking is a service Industry that needs face-to-face contacts with customers. Thus, Internalization can help to serve potential customers easily. A foreign bank can explain its advantages over the domestic banks and establish its customer base. This can help in market penetration and gain market share in the host nation.

Dunning (1987) has extended eclectic theory and categorized the FDI into four types. i) market-seeking FDI, ii) resource seeking FDI, iii) efficiency-seeking FDI, iv) strategically motivated FDI. When a firm sees the abundant market size in the form of potential clients, an untapped market that can increase the profitability of the firm in the host country, it is considered as market-seeking FDI; When a firm sees abundant natural resources and cheap labor for the production, it is considered as a resource seeking FDI; When a firm sees the economy of scale, less transaction and communication costs that can enhance the profit of the firm with the usage of natural resources of the host nation then, it is considered as efficiency-seeking FDI. Moreover, efficiency-seeking FDI also considers the distance between home and host countries, similar cultures, language and currency of the host nation. When a firm follows the market leader or grabs the first mover advantage then, it is called as strategically motivated FDI.

Thus, Dunning's theory takes into consideration all the aspects of a service industry and answers why a foreign bank would go abroad.

2.2.2 Empirical studies

As the economies are integrating globally, the factors affecting the economic system are also changing. Thus, the determinants of investment in the banking sector are also changing (Mulder and Westerhuis 2015). The size of the market, trade relationship, and factor pricing are the traditional determinants of direct investment in a host country, whereas, following home clients and international experience are the new determinants. Moreover, the establishment of WTO and the development of sophisticated technology also played a significant role in economic integration through direct investment and fostering internationalization of banks.

Largely, the studies on the liberalization of the banking sector divide the entry of foreign banks in three periods: i) nineteenth century period; ii) 1960-1985; iii) the mid-1990s to the present. The first period, the nineteenth century, was a colonial period that allowed the rich countries to open their banks' branches and subsidiaries in the host nation for their convenient capital movement. During the second period, the foreign banks from developed countries entered into the developed countries. For examples, the US banks expanded into the UK; the Japanese banks expanded into the USA. After mid-eighties, the direct foreign investment in the banking sector reduced and hence the studies on them were also limited. However, during the third period, many countries had signed the agreement with WTO for allowing more foreign banks into their country and therefore, the trend regained. The banks from developed countries established their branches in developing countries. Moreover, the banks from developing countries also expanded their presence in other developing countries (Brealey and Kaplanis 1996; Herero and Simon 2003).

The determinants that are widely accepted for the entry of foreign banks and empirically proven are presented here. Following the OLI paradigm (Dunning 1993), the present study explores the possible determinants for the entry of foreign banks in the host nation. However, as specified earlier, the ownership advantages and internalization are the factors specific to banks whereas, the locational advantages are the main pull factors related to the host nation[15]. Thus, the determinants discussed in this thesis are the pull

[15] The Ownership advantages and Internalization factors represent push factors of banks going abroad. In this study, it is not possible to capture push factors of foreign banks which entered into India as each

factors or the factors that have attracted foreign banks into the host nations. They are neither from the perspective of the specific home country nor related to a particular bank's motives. Thus, they are general factors accepted and proven in the empirical literature.

2.2.2.1 Follow your home client hypothesis

The *follow your home client* pronounces that bank FDI enters after general FDI in an economy or different terminology, foreign banks enter after the entry of its client from home-county into the host nation. The hypothesis is the result of the locational advantage of the eclectic paradigm (Yeoman and Morello 2004).

Based on the Dunning's (1993) OLI Paradigm, stating the locational advantage, The various studies empirically testing the *follow your home client hypothesis* is, Fieleke 1977; Khoury 1979, 1980; Morphy 1981; Ball and Tschoegl 1982; Goldberg and Johnson 1990; Grosse and Goldberg 1991, Brealey and Kaplanis 1996; Nolle and Seth 1996; Yamori 1998; Moshirian 2001; Mutinelli and Piscitello 2001; Wezel 2004; Focarelli and Pozzolo 2005; Van Horen 2007; Mariscal et al. 2012; Molyneux et al 2013; Mulder and Westerhuis 2015.

The theoretical justification that a bank *follows home client* was provided by Grubel (1977) and first empirically tested by Gray and Gray (1981). Grubel (1977) answered as foreign banks follow their home clients abroad, of the raised question, what are the advantages multinational banks have that drive them to the alien country and successfully compete with the domestic banks there? Williamson (1997) explained that foreign banks incur costs on the learning about the requirements of domestic corporates that incur a heavy cost for them. Thus, following the client can help them in the reduction of transaction costs (Ursacki and Vertinsky 1992), as they have complete knowledge about their home clients (Night et al. 1986). Furthermore, their brand name and already established relationship with home clients allow further reduction in costs in the host market.

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bank has its unique advantage. Moreover, the decision of internalization purely rely upon the decision of banks' top management. However, "the history of foreign banks in India" can somewhat answer specific reasons for the entry of home bank in the host nation. The history of foreign banks entered into India is provided in Appendix.

Most of the studies testing the *follow your home client* hypothesis are either cross-national or on developed economies. Moreover, the studies are further divided as cross-national studies, foreign banks expanding from a single home country to many host countries; foreign banks from various home countries entering into a single host nation[16]. However, the studies extended to developing countries have gained their attention after the WTO establishment. Thus, there are many studies across emerging economies. However, there is a lack of systematic empirical research in the Indian context.

2.2.2.1.1 Cross-national studies

Ball and Tschoegl (1982) studied the reasons for the entry of foreign banks into Japan and California in 1978. The study found that home country clients is the main reason for the entry of foreign banks into these places. Though the study was on the developed counties and only for a single year, it was a stepping stone for the exploration of "following your client hypothesis" for the other studies. The extensive cross-national study of that time was by Brealey and Kaplanis (1996) that analyzed the role of trade and foreign direct investment as the determinants for bank internationalization by examining 2000 bank offices across 37 parents and 82 host countries. The study found international trade and FDI as strong determinants to pull foreign banks into the host nations, and they also argued that home country clients located their businesses abroad could generate more sales for parent banks. Moshirian (2001) tested the hypothesis "follow your client" for the banks entering in the US, the UK, and Germany. The study found that non-finance FDI is a strong determinant for foreign direct investment in the banking sector. Following the location-specific factors of eclectic paradigm, Mariscal et al. (2012) studied the factors for bank FDI in the seven Latin American countries[17]. The study did not find banking FDI following non-finance FDI in these seven developing Latin American countries. Molyneux et al. (2013) found manufacturing FDI and bilateral trade as less relevant for attracting foreign banks in South East Asian Countries.

[16] The present study adopts this pattern, foreign banks from various home countries entering into single country (India).

[17] The seven Latin American countries are Argentina, Brazil, Chile, Columbia, Mexico, Peru, and Venezuela.

2.2.2.1.2 One host and many home countries

Nolle and Seth (1996) tested the hypothesis *follow your customers* for multinational banks originating from Japan, Canada, France, Germany, the Netherland, and UK entering into US market; the results of the study claimed limited applicability of *following your home client* hypothesis. Song (2009) followed eclectic theory to test *follow your client hypothesis* in China. The growth of FDI and the asset share of foreign banks were found positively significant from 1991 to 2008.

2.2.2.1.3 One home country and many host countries

Using eclectic theory, Cho (1986) explained the entry of US banks in the major countries of the Asia-Pacific region. The study found not only profit opportunity in the host nations, but also "following the client," is the determinant factor as the locational advantage for US banks. However, considering the 1975 to 1982 period, Goldberg and Johnson (1990) found US banks follow their clients abroad. Their results specified that large foreign banks followed their clients settled in abroad to serve them and establish their businesses quickly in the host nation, whereas, it was not true in the case of the smaller foreign banks from the US. The results of an empirical study by Yamori (1998) claimed that following manufacturing FDI as the leading cause of the choice of Japanese banks to enter into various host markets including the US. Blandon (2001) tested follow your home client hypothesis for the entry of multinational banks in Spain, and the results confirmed it as a leading cause. The study argued that foreign banks attempt to capture the advantage of information about their home client's financial needs in the host economy. Wezel (2004) studied the factors influencing the decision of German multinational banks to choose a location for establishing their offices in Central and Eastern Europe, Latin America, and Asia from 1994 to 2001. The results of the study found non-bank FDI as the primary determinant. Similar results were found in the case of the Italian banking sector by Mutinelli and Piscitello (2001) which indicate that the bank-client relationship was the major boost. According to Hellman (1994), Finnish banks do follow Finnish insurance companies but not manufacturing companies abroad.

As the detailed insight above, "follow your home client" hypothesis is found relevant in some cases and irrelevant in the others. However, this determinant for foreign banks'

entry depends upon the host country and the parent country. According to Noll and Seth (1996), in the case of a developing country, the follow your client hypothesis is relevant to the entry-level regulations. If the regulation is very stringent, then this hypothesis may not be true. Consequently, it is important in the context of India to examine the relevance of *following your client* behavior of foreign banks.

Hypothesis 1

H_0: The entry of foreign banks in India is not related to its home county clients FDI activity in India.

H_1: The entry of foreign banks in India is positively related to its home county clients FDI activity in India.

The various studies testing this hypothesis have used different proxies for foreign banks' entry. Studies used bank FDI (Yamori 1998; Moshirian 2001; Wezel 2004; Mariscal et al. 2012; Molyneux et al. 2013); number of foreign banks (Goldberg and Johnson 1990; Brealey and Kaplanis 1996; Mutinelli and Piscitello 2001; Van Horen 2007); asset share of foreign banks (Morphy 1981; Goldberg and Johnson 1990; Focarelli and Pozzolo 2005; Van Horen 2007; Molyneux et al. 2013; Mulder and Westerhuis 2015); and number of employees in foreign banks (Mulder and Westerhuis 2015) etc. However, neither of the variables comprehends the real entry of foreign banks due to many reasons[18]. Moreover, the empirical studies used different explanatory variables to prove the follow-your-client relationship, e.g., bank FDI, Manufacturing FDI, non-finance FDI, and overall FDI. The present study uses overall FDI as the explanatory variable.

2.2.2.2 Bilateral trade

According to Rivoli and Salorio (1996), the ownership-location-internalization (OLI) advantages such as trade openness, can create a rationale for foreign investment in the

[18] Foreign banks had not entered in India in 1857 in the form of Chartered Bank of India, Australia and China but its first branch was established by foreigners (British) in India. Then many foreign banks were either established in India or entered from abroad. Thus, foreign banks entry in the sense of numbers and asset share were available before liberalization and WTO establishment. Moreover, the data for FDI in banking sector is a consolidated data that consists of FII, ADR, GDR, and NRI investment in Indian banking sector. Thus, none of the proxy actually indicates the real entry of the foreign banks in India. However, the yearly data of all the proxies at first difference provides close proxies for foreign banks' entry in a single year.

host nation relatively for a long period. The literature argues that there is more chance that foreign banks established in the countries where bilateral trade or openness is already existing. Moreover, the theories of international trade (Buckley and Casson 2009) also suggest that capital endowment countries can invest in countries to promote export by using labor and other natural resources. Thus, bilateral trade regarding the import, export, or total trade may be the reasons for foreign banks' entry.

Goldberg and Johnson (1990) found that American banks expand in the economies with a high trade relationship. Brealey and Kaplani (1996) found trade as a positive determinants to pull foreign banks in the 82 host economies. Yamori (1998) found a positive relation for export, however, the negative relationship for imports as determinants of Japanese banks into host economies. Millar and Parkhe (1998) found the negative relationship of foreign banks' entry into the US with the bilateral trade. Focarelli and Pozzolo (2005) found trade as a highly positive and statistically significant variable to attract both foreign branches and subsidiaries from OECD countries. However, Wezel (2004) did not find trade as a strong pull factor for German banks into the host economies. Moshirian (2001) found bilateral trade as one of the major determinants of foreign investment in banking. Van Horen (2007) considered the gravity model for banking FDI and found that foreign banks' entry into the 98 developing countries from both developed and developing countries are due to bilateral trade. Song (2009) found a positive relationship between export trade and foreign banks' entry during the period from 1991 to 2008 in China. However, the study found a negative relationship with the import data. Mariscal et al. (2012) studied the determinants of bank FDI into seven Latin American studies found a negative relationship between trade and bank FDI. Clare et al. (2013) also found that higher economic activities including imports and exports are real motives for bank Internationalization[19]. Molyneux et al. (2013) found the least connection between bilateral trade and foreign banks' entry into the South East Asian countries such as Indonesia, Malaysia, Philippines, Thailand and Vietnam in the period 1998 to 2014. Mulder and Westerhuis (2015) studied the determinants of larger banks from Germany,

[19] Clare et al. (2013) studied the reasons for continuing banking activities by foreign banks in London from 77 countries from the period 1945 to 1999.

France, Japan, the UK, the USA, the Netherland, Spain, and Switzerland that claimed that the reasons have changed to attract foreign banks in an economy and bilateral trade is no more relevant influencing factor in this regard.

Hypothesis 2

H_0: The entry of foreign banks in India is not related to bilateral-trade-relationship of its home county and India.

$H_{1:}$ The entry of foreign banks in India is positively related to bilateral-trade-relationship of its home county and India.

2.2.2.3 Other locational advantages

According to the OLI paradigm, the locational advantages for the investment made by foreign banks' entry are considered as market seeking. Foreign banks seek advantages of the local market that enhance their opportunity to earn a higher profit and expand their business. However, what exact local determinants attract foreign banks is the central question to be discussed. According to Cho (1986), primary sources of location-specific advantages can be found in five areas: different national regulatory frameworks, effective interest rate differentials, various economic situations, the nationality of banks, and general socio-economic differences.

Various studies have used different locational advantages of both developed and developing host nations as the determinants of foreign banks' entry. However, some of the studies found them as relevant, and the others did not. Focarelli and Pozzolo (2005) studied 260 large banks from 29 OECD countries from 1994 to 1997 and found local banking opportunities as primary determinants for foreign investment inflow into the banking sector. However, Night et al. (1986) did not find local banking opportunities as the major factor impacting US banks entry overseas whereas Goldberg and Johnson (1990) empirically found local opportunities like per capita income, foreign trade, less strict regulative measures, and lower amount of domestic deposits do matter. Moreover, Yamori (1998) found locational advantages as the primary determinants of Japanese banks entering into various host countries including the US along with the following your home client factor.

2.2.2.3.1 Market seeking-profit opportunity

According to a survey report on *foreign direct investment in the financial sector of emerging market economies* submitted by the committee on the Global Financial System of the BIS, profit margin seems to be the primary driver for foreign banks' entry (Bank for International Settlement 2004, p. 28) whereas other factors appear to be less important. According to Internalization theory (Williamson 1997), when the home markets are saturated, foreign banks enter the host market to seek higher profits. Moreover, the county where the banking sector is protected and inefficient, the foreign bank can generate more profits (Magri et al. 2004).

The profit opportunity is measured differently by various studies in the literature. Usually, market size, untapped market, interest rates differentials are observed as profit opportunities. Many macroeconomic variables are used to represent the big untapped market that allows profit opportunity. The macro level indicators used for market seeking profit opportunity are, per capita GDP (Buch 2000; Focarelli and Pozzolo, 2003; Wezel 2004; Focarelli and Pozzolo 2005; Haselmann 2006), per capita GNP (Goldberg and Johnson 1990; Yamori 1998), GDP (Brealey and Kaplani 1996; Voinea and Mihaescu 2006; Cerutti et al. 2007). Thus, higher economic growth is considered as the large market offering profit opportunity to foreign banks.

The banking sector is a consumer based industry hence, if there are more potential consumers, the market size is considered as big. Foreign banks need a big potential market to gain high profits (Massand and Gopalakrishna 2017). Savings is the backbone of investment. Higher the savings higher the investment (Joshi 2007). Domestic savings reduce the risk and enhance the demand for sophisticated products. Domestic deposit is considered as an influencing factor for US banks expansion abroad (Goldberg and Johnson 1990). Sabi (1988) found loan volume as an influencing factor for market size.

Moreover, the profit giving market size was not found as the influencing factor in the study of Nigh et al. (1986) for US banks. Financial market development also represents growth in the economy. Brealey and Kaplanis (1996) and Focarelli and Pozzolo (2003) have emphasized that foreign banks attracted to the developed financial markets. The studies use stock market capitalization (Wezel 2005), and credit availability to private sectors (Fontagne 2007) was used to indicate the financial development of the country.

There are studies that used the micro-level indicator to represent profit opportunities such as net interest margin (NIM) (Grosse and Goldberg 1991; Molyneux et al. 1998; Claessens et al. 2001)[20] and interest rate differential (Magri et al. 2004; Voinea and Mihaescu 2006; Molyneux et al. 2013). This represents the financial profit of foreign banks. Moreover, the average NIM for the developed countries is below 2 percent (Das 2013), but, in the case of India, it is as high as 2.9 percent (Mohan et al. 2005). The high NIM represents less competition, and foreign banks prefer such locations to enter (Claessens et al. 2001). In the case of Magri et al. (2004) interest rate differential was found as a statistically significant variable. However, Voinea and Mihaescu (2006) did not find interest rate differential as statistically significant. This implies that there is ample scope to examine the influence of market seeking factors of foreign banks' entry.

Hypothesis 3

H_0: The entry of foreign banks in India is not related to the economic growth of India.

$H_{1:}$ The entry of foreign banks in India is positively related to the economic growth of India.

Hypothesis 4

H_0: The entry of foreign banks in India is not related to the net interest margin of the Indian banking sector.

$H_{1:}$ The entry of foreign banks in India is positively related to the net interest margin of the Indian banking sector.

Hypothesis 5

H_0: The entry of foreign banks in India is not related to the interest rate differential between the home country and India.

$H_{1:}$ The entry of foreign banks in India is positively related to the interest rate differential between the home country and India.

2.2.2.4 Crisis period

Foreign banks are believed to adapt themselves to the changing environment, especially during a financial crisis or economic crisis. It also depends upon whether the crisis is happening in the host county or home country or both the countries. If the crisis erupts in the home country, banks may hesitate for further investment of capital losses. During

[20] These studies provided indirect evidence of profitability for the entry of foreign banks.

the global financial crisis, the entry of foreign banks reduced drastically after 2007 across countries (Claessens and Horen 2012). However, if the financial or economic crisis erupted in the host country alone and not in the home country, there is a possibility that more foreign banks would enter. For an instant, bank FDI was introduced in Thailand during the Asian financial crisis in 1997 (Clark 2008). In developing countries, foreign banks have a competitive advantage over domestic banks because of their advanced risk management techniques, brand name, and experience in the international markets (Uiboupin and Sorg 2006). Thus, this period is considered as crucial for the investment. Crisis period in the host country does attract foreign banks to buy the assets at cheaper rates and expand their businesses (Clark 2008; Mohan 2014). Therefore, it is essential to know whether foreign banks change their strategies for entry into the host nation such as India, during the crisis period.

Hypothesis 6

H_0: The entry of foreign banks in India does not change during the economic or financial crisis period in India.

H_1: The entry of foreign banks in India increases during the economic or financial crisis period in India.

2.3 Impact of foreign banks' entry on the domestic banks' performance

The financial sectors are reformed to develop a financial system and growth of their economy especially for the developing countries (King and Levine 1993). The banking sector is crucial for economic growth and development of the financial system in any economy (Das et al. 2005). Many developing countries including India have liberalized their banking sector, primarily to enhance the efficiency of their banking sector through competition.

Foreign banks are considered highly efficient and globally competent. The entry of these banks into the domestic banking system encourages other banks to be competent (Barajas et al. 2000; Jeon et al. 2011; Lee et al. 2012; Mulyaningsih et al. 2015). Moreover, the increase in the number of foreign banks and the capture of more assets by foreign banks in the domestic market can put pressure on the domestic banks to defend their share in the market. However, the study by Claessens et al. (2001) claimed that not the large number, but the mere entry of foreign banks alert domestic banks.

Foreign banks' entry brings technology spill-over, and that compels domestic banks to adopt the latest technology (Mohan 2013). This further leads to more efficient domestic banks. Moreover, direct investment in domestic banks could influence the performance of domestic banks (Smarzynska 2004). Foreign investment in the domestic banks brings more capital to the bank that can improve the technology know-how, effective management, etc. (Gormley 2010; Seo et al. 2012; Ghosh 2012; Luo et al. 2015). They could further ask for more return on their investment that leads to improvement in the overall performance of the domestic banks.

Both theoretically and empirically, the areas in conflict are, one, there is no clarity on whether foreign banks' entry increases competition in the host domestic banking sector; second, whether the increase in foreign ownership in the domestic banks enhance competition in the banking sector or not; lastly, the entry of foreign banks and the foreign direct investment in the domestic banks would affect the businesses of domestic banks positively or negatively especially for the developing country like India.

2.3.1 Theoretical review

The home field advantage and the global advantage hypothesis

Berger et al. (2000) developed and tested two hypotheses related to domestic and foreign firms' efficiency and performance in the destination country. The first hypothesis is, the *home field advantage hypothesis* that postulates that local firms are more efficient and profitable than the foreign firms entering from other countries. The primary reason could be the foreign firms' diseconomies and difficulty in monitoring their branches from a distance. However, the study further proclaims that there are many other reasons, such as difference in culture, language, currency, regulatory and supervisory norms, other country-specific barriers, etc. The latter hypothesis is the global advantage hypothesis that has two forms. The general form of the hypothesis postulates that foreign banks are more profitable and efficient in the host nations than the local banks. However, this form of the hypothesis is not accepted in the literature (Sturm and Williams 2004). The limited form of hypothesis proposes that some foreign firms have advantages over their domestic counterpart and hence they can overcome the barriers in the destination country. These advantages of foreign banks can be

advanced technology, superior managerial skills, effective resources, company's best-practices, etc.

Initially, Berger et al. (2000) tested these hypotheses for foreign banks from five countries, such as France, Germany, Spain, the UK, and the USA. Later, the study was extended to foreign banks from Canada, Italy, Japan, the Netherland, South Korea, and Switzerland. The finding of the study is that local banks have more efficiency than foreign-owned banks. However, the study found heterogeneity among the group and cited the example of the US banks; they found that US banks are more efficient than the local banks in the destination country. The support for the limited form of global advantage theory is also found in the works of Buckley and Casson (1976), Caves (1974), Hennart (1982) that claim that foreign institutions can raise revenue and reduce cost in the host countries by utilizing their firm-specific advantages.

Claessens et al. (2001) developed over these hypotheses and evaluated how the foreign banks' entry affects domestic banks' business. The study argued that, following the global advantage hypothesis, if foreign banks are more profitable and efficient in the host countries, then they would capture the market in the host nation. This would be reflected in the balance-sheet performance of the host domestic banks. Hence, local banks would directly compete with foreign banks and attempt to enhance their efficiency. In the second case, following the home field hypothesis, if foreign banks are not profitable than domestic banks in the destination country, foreign banks may reduce their margins to capture the market. Thus, domestic banks may also reduce their margins that lead to change in the balance-sheet performance of local banks. Thus, in both cases, the foreign banks' entry would affect the local banks' business performance.

Claesssens et al. (2001) have developed following accounting equation (i) that denotes that profit of banks is determined by the summation of Interest income (IrI) and other income (OrI) that is subtracted from Overhead cost (OhC) and non-performing asset (NPA). Alteration in any of the constituents in the equation leads to variation in the profit. Furthermore, the theory supports the assumption that any alteration in the asset share of a foreign bank (AF) or offices share of foreign banks (OF) or bank FDI (BF) brings change in the local banks' profits. This change may derive from the change in

the decision of local bank management to compete with foreign banks that change any of the explanatory variables of equation (i).

$$PB = IrI + OrI - OhC - NPA \quad \text{(i)}$$

PB= Profit of Banks, IrI=Interest Income, OrI=Other Income, OhC=Overhead Cost, NPA= Non-performing Asset

The present research study aims to analyze the extent of the impact, the foreign banks' entry has on the local banks' balance sheet in the post-reform period in India. The present study considers Claessens et al. (2001) study as a base study and expands it in the Indian context.

2.3.2 Empirical studies

The literature is initially concentrated on which type of banks, domestic local banks or the foreign banks are more profitable and efficient. Gradually, the studies began to concentrate on whether the foreign entrants increased the competition in the banking sector of the host countries or not. Later, they shifted to investigate the impact on the overall businesses of the domestic banks due to foreign banks' entry. There are studies that support home field advantage and concludes higher profitability and efficiency of domestic banks that of foreign banks (DeYoung and Nolle 1996; Mahajan et al. 1996; Berger et al. 2000; Millar and Parkhe 2002), whereas there is another strand of literature that supports foreign banks on the basis of their advantages that help them to earn more profits than their domestic host banks (Sabi 1996; Majnoni et al. 2003; Chen and Liao 2011). However, Mian (2003) and Bonin et al. (2005) did not find statistically significant results for the home field advantage theory and the global advantage theory. According to Demirguc-Kunt and Huizinga (1999), foreign banks are found more profitable than domestic banks in developing countries while the vice versa in the case of developed countries.

The extensive study by Berger and Hannan (1998) found that foreign banks could enhance competition by lowering the concentration of local banks. The sample for the

[21] Claessens et al. (2001) has considered loan loss assets due to unavailability of data on NPA and suggested to use NPA for the further studies.

study was over 5000 banks having high market concertation. The same issue was examined in Australia by McFadden (1994). The study found the improved operation of local banks after foreign banks' entry. In the case of developing countries, the results of panel data study by Jeon et al. (2011) confirmed the positive spillover effects due to rise in competition from foreign banks in Latin America and Asia. In Indonesia, foreign banks captured 45 percent share through greenfield FDI investment by 2010 that shows the increase in the competition after foreign banks' entry (Mulyaningsih et al. 2015).

There are ample empirical studies that analyzed the impact on the businesses of local banks due to foreign banks' entry. However, their results are not on the same line. Cheng (1986) found that foreign banks' entry leads to a diminishing of margins, profitability, and cost to domestic banks in 14 developed host countries. The similar results were found in the study by Claessens et al. (2001), the all-encompassing 7900 banks in 80 nations from various home countries from 1988 to 1995. The results are in line for Latin America (Peria and Mody 2003); in the case of Colombian banking sector (Barajas et al. 2000); in the case of Philippines (Unite and Sullivan 2003); in the case of Chinese banking sector (Wu et al. 2007; Seo et al. 2013); in the case of Turkey (Denizer 2000). However, the results of the studies on India is not in line with the above results such as Kalluru and Bhat (2009) and Ghosh (2012). One reason for the difference in the results could be, many of the studies did not control for the banking sector variables (Ghosh 2012).

Among studies on India, following Claessens et al. (2001) theory, Kalluru and Bhat (2009) studied on the Indian public sector banks from 1996 to 2007. The finding of the study shows that foreign banks in India improve profits of Indian public sector banks with the rise in their overhead costs. However, the study found a rise in the non-performing assets of public sector banks in India. The other study on India by Ghosh (2012) have considered all the Indian commercial banks that include public and private domestic banks from the period of 1996 to 2007. The results found an increase in the profits, reduction of net interest margins and non-performing assets. The only similarity in the results for both the studies were statistically insignificant results for the net interest margin. Thus, both the studies in Indian context Kalluru and Bhat (2009) and Ghosh (2012) have conflicting results with the other studies, and importantly, the results of these two studies are also conflicting each other to some extent.

The study by Hermes and Lensink (2004) appealed for the justification of difference in the results for the same objective. It found the impact of the presence of multinational banks depends upon the position of economic development of the recipient country. The study revealed that the entry of foreign banks in lesser developed economies, raises costs and margins of host local banks and vise-verse are true for economically developed nations. An extensive panel data study by Lee et al. (2012) used 795 banks entering 39 countries from 1999 to 2006 that supported the concept of economic development of the host countries as the base for the different effect of foreign banks' entry. The results of the study indicate that underdeveloped and developing countries can have a positive impact of foreign banks' entry with the rise in profits, income, and cost of local banks. Another extensive study by Classens and Horen (2014) covering 137 economies, claimed that the impact of foreign banks' entry depends upon the kind of relationship between source and destination country.

Hypothesis 7

H_0: The entry of foreign banks in India has no impact on the competition in the Indian banking sector

H_1: The entry of foreign banks in India increases competition in the Indian banking sector.

Hypothesis 8

H_0: The entry of foreign banks in India has no impact on the non-performing assets of Indian domestic banks.

H_1: The entry of foreign banks in India has an impact on the non-performing assets of Indian domestic banks.

Hypothesis 9

H_0: The entry of foreign banks in India has no impact on the overheads of Indian domestic banks.

H_1: The entry of foreign banks in India increases the overheads of Indian domestic banks.

Hypothesis 10

H_0: The entry of foreign banks in India has no impact on the net interest margin of Indian domestic banks.

H_1: The entry of foreign banks in India reduces the net interest margin of Indian domestic banks.

Hypothesis 11

H_0: The entry of foreign banks in India has no impact on the profitability of Indian domestic banks.

H_1: The entry of foreign banks in India has an impact on the profitability of Indian domestic banks.

There are cross countries studies on foreign investment in the banking sector that compare the performance of domestic commercial banks in the host nations. Using cross-national data for 511 banks from 73 countries, Lensink and Naaborg (2007) estimated how foreign ownership affect the performance of domestic banks in the period from 1998 to 2001. The results of the study show that the rise in foreign ownership has a negative impact on the net interest margin and profits of domestic banks. In the case of India, foreign direct investment has risen substantially especially in Indian private banks. Consequently, the present study examines the impact on the financial performance of local banks due to their foreign ownership.

The studies by Cho (1990), Stiglitz (1993), Buch (1997), Berger and Hannan (1998), Claessens et al. (2001), Lensink and Hermes (2004), Jeon et al. (2011) argue in favour of the positive impact on the local banks due to foreign banks' entry. They support foreign banks for bringing competition into the domestic markets that further leads to a reduction in cost, improvement in productivity, and profitability of domestic banks. To retain their market share, the quality of service was improved and the transaction time of service was minimized by local banks. Thus, local banks need to train their existing personnel efficiently and hire more experienced and qualified employees. The studies found that the foreign banks' entry has a spillover effect such as passing updated technology and access to financial service that improve the quality and delivery of service. For example, foreign banks started ATM services and also extended their services in rural areas ahead of local banks in the Czech Republic. Foreign banks initiate

many innovative products regarding technology in the host market and urge local banks to adopt them. The whole process improves the standard of banking in the country.

There are studies which narrate the adverse effect of entry of foreign banks in host nations. Soedarmono et al. (2013) investigated the impact of market power on the banking industry on the changing behavior of bank risk-taking during crisis period considering both 1997 Asian financial crisis and the 2008 global financial crisis. The study formed an unbalanced panel of an annual series from 1994 to 2009, adopted SUR and 2SLS models, and concluded that even though banks hold more capital in the least competitive markets, this does not prove to be enough to offset default risk. It specifies that the Asian financial crisis of 1997 had directly affected banks, whereas higher market power has an opposite effect. Clarke (2008) examined the foreign bank penetration through acquisition in 48 developed and developing countries considering 500 banks from 1995-2004 and concluded that foreign banks acquired domestic banks in the period of crisis due to the availability of cheap assets. After studying 360 subsidiaries of 69 foreign banks from 1994 to 2008, Jeon et al. (2013) found that foreign banks are responsible for transmitting financial shocks and a source of spreading financial crisis. Claessens and Van Horen (2012) also claimed that credit allocation by foreign banks compared to domestic banks was lower during the global financial crisis.

After analyzing the global development financial report by World Bank (2008), Mohan (2013) discussed the foreign banks' entry in India. The study believes that the spill-over effect of foreign banks brought innovative products, upgraded risk management techniques and improved the service quality in the local banks. However, the study was not convinced with the improved efficiency of Indian banks due to foreign banks' entry.

2.4 Impact of foreign banks' entry on credit access and credit allocation

Credit access and credit allocation refer to the availability of credit to businesses and the various sectors of the economy respectively for productive use. Availability of credit to business firms and various sectors is vital for an economy as a source of capital investment and working capital needs. Business firms across the sectors utilize the credit for the development of new technology and the establishment of advanced products and service that raise their output and profitability (Degryse et al. 2009). Thus,

Credit is essential for the economic growth of a country. So, access to credit by business firms and efficient allocation of credit by banks are crucial for developing countries.

Many countries have undergone reforms in their banking sector and have allowed foreign banks as it is believed to increase the credit needs of business firms and allocate credit more efficiently in the economy. Foreign banks have better access to the international market. Foreign banks are considered to have an efficient credit supply in developing countries (Gianetti and Ongena 2012). Hence, they can supply credit and meet the needs of industries that make the banking sector more efficient (Levine 1996; Hermes and Lensink 2004).

Foreign banks have a disadvantage with regards to information of borrowers in the host economies. Hence, they ignore firms with soft information and pick a few potential borrowers and lend them, which is considered as *cherry-picking* or *cream skimming* (Mian 2006; Sengupta 2007); this further affects the lending decisions of the domestic banks, and it reduces overall credit in the market (Detragiache et al. 2008; Gormley 2010). Moreover, foreign banks also affect the credit allocation to different sectors of the host economy (Kim 2010). Thus, foreign banks' lending behavior affect credit availability in developing countries (Berger et al. 2001).

Apart from information asymmetry, foreign banks also cut short lending on other instances. Foreign banks have an advanced credit rating and screening technology that foster to weed out opaque small business firms (Mian 2006; Beck and Peria 2010; Lin 2011) especially during a financial and economic crisis. However, Clark et al. (2002) argued that SMEs are less prone towards a financial crisis, hence foreign banks have changed their behavior for lending to SMEs.

2.4.1 Theoretical review

Information plays a vital role in credit lending. Based on communication, there are two types of information available, i.e., hard information and soft information. Hard information is based on records of the firm, its ownership, etc. It provides all the information related to the firm's financial well-being. The crucial part is, it can be verified by the third party. Thus, hard information is all about the audited balance sheet and income statement of the firm that helps a firm for borrowings. However, hard

information is quite costly for firms as they need to hire an accountant and undergo the necessary procedures[22]. Soft information is gained through the frequent interaction of the loan manager with the owner of the firm. In banking terminology, this process is called relationship lending. It is cheaper to acquire soft information but difficult to be verified by a third party (Cole 1998; Cole et al. 2004, Petersen 2004). Firms having hard information are more likely to be big firms whereas the firms could not afford for tangible information are more likely to be small firms.

Studies indicate that banks need to be specialized in acquiring any kind of information. However, studies also argue that foreign banks have no choice and have to stick with the hard information (Dell'Ariccia and Marquez 2004; Detragiache et al. 2008; Althammer and Haselmann 2011; Gormley 2011). The availability of loans to small businesses depends upon relationship lending. The credit officer is responsible for developing the repository of soft information (Berger and Udell 2015). Cole (1998) argued that banks need three years to acquire soft information once it starts engaging a client. Even if a foreign bank acquires soft information of firms, it is difficult for them to convince their head office (Sengupta 2007). Thus, foreign banks lend to big firms for hard information means that they indulge in cherry picking and cream skimming behavior in the host market.

To know about the lending patterns and the specialization about the type of information transmission to banks, researchers have found various reasons such as mode of entry, size of the bank, the distance between banks and borrowers, the distance between banks and their headquarters, Market competition, the socio-cultural relationship between home and host countries etc.

2.4.1.1 Mode of entry

Foreign banks' entry regarding de novo greenfield investment happens due to the cost advantage, but they are at disadvantage of information on local business firms than the domestic incumbents in the host credit markets (Rajan 1992; Peterson and Rajan 1995; Dell'Ariccia and Marquez 2004; Tassel and Vishwasrao 2007). De novo foreign banks

[22] Hard information also means getting listed on the stock exchange and following the norms and procedures of producing information as per the directions of regulatory bodies.

may amplify competition in the credit market, but they require time and cost to understand the local businesses (Claeys and Hainz 2004). Thus, foreign banks have a competitive disadvantage of information. However, if foreign banks trace information from domestic banks at cost, they can be at a higher competitive advantage than domestic banks (Tassel and Vishwasrao 2007). Moreover, foreign banks have advanced screening technology that provides an edge over domestic banks (Claeys and Hainz 2004). Hence, the better the positioning of foreign banks in the domestic credit market might influence the decision-making process of domestic banks (Clarke et al. 2006). Therefore, investigating the impact on credit access and credit allocation in the host country due to foreign banks' entry is necessary.

Foreign banks acquiring the domestic banks have an advantage of credit information (Gormley 2008). However, it is not clear that how much worth of credit information domestic banks hold due to heterogeneous domestic banks (Tassel and Vishwasrao 2007). Thus, foreign banks may shy away from acquiring a local bank. Foreign banks may not encourage to provide credit to financially opaque firms in the host country (Berger and Udell 1996; Detragiache et al. 2008). This may adversely affect the credit access and credit allocation in the host economy (Gormley 2010; Ghosh 2012).

2.4.1.2 Size of the bank

Large banks usually have a complex structure and many-layered decision-making systems that leads to diseconomy and fewer incentives for managers (Williamson 1967). In large banks, the ground level manager is responsible for collecting all the information from the borrower. Then, this information is to be verified by the senior or branch level manager. However, the final decision making takes place in the head-office by superior authority. Thus, managers in the branch may not have many incentives for passing or verifying the quality of information about the borrowers. If the superior authority in the head office is stricter and urges quality information, the branch level manager may have to render the information accordingly. Sometimes, hierarchical organizations do have good incentives for ground level managers (Rajan and Zingales 1998).

Small banks usually do not have much hierarchy in decision making for lending. Small banks rely upon the relationship lending through soft information. However,

hierarchical decision-making in the large banks has to rely upon the hard information of the borrowers. Foreign banks mostly have a hierarchical structure and have to rely on hard information. The decision making usually takes place from the headquarter and stringent monitoring of their branches. Thus, foreign banks may cherry pick the borrowers (Berger et al. 200; Viverita et al. 2015).

2.4.1.3 The distance between bank and borrowers

It is important to understand the credit need of the borrowers for credit allocation. For the same, there needs to be a frequent conversation between the client and the bank. If the distance between the bank and the borrower is less, then it is easy to gather soft information. Otherwise, the bank has to rely upon the hard information only (Mian 2006). Many times, banks charge higher interest rates to distant borrowers to compensate for the risk (Hauswald and Marquez 2006). The distant borrowers may also be rejected.

2.4.1.4 Market competition

The competition in the host market depends on the reaction of local banks upon the foreign banks' entry (Kim 2010). It is not the asset share but the entry of foreign banks that alerts the local banks (Claessens et al. 2001). Domestic banks experience pressure due to foreign banks' entry. Hence, domestic banks try to follow foreign banks for allocating credit to the firms and sectors by improving the monitoring and screening procedure. They also insist upon the hard information; this leads to a reduction in credit availability for the opaque firms. Thus, resulting in an overall reduction in credit access to the firms in the host country (Detragiache et al. 2008 and Gormley 2010). However, if domestic banks do not follow foreign banks regarding lending in the market then, they maintain the relationship lending with the opaque and small firms and continue to lend them. Foreign banks may opt for cherry picking or cream skimming lending strategy. This situation may not affect much on the overall credit availability for the firms and sectors in the host economy.

A foreign entrant could create more competition in the credit market. In the competitive market, there is a chance of arising of agency problems due to managers providing easy credit for their personal growth and meeting the targets. This would enhance more non-performing assets (NPA) in the overall banking industry (Petersen and Rajan 1995). To

evade such problems, banks standardize their procedure and insist on hard information. Thus, credit access for small and informationally opaque firms might be affected.

2.4.1.5 Socio-cultural factors

According to Mian (2006), if the differences between home and host countries regarding language, currency, culture, etc. are more, the information asymmetry of borrowers rises. It is quite obvious that if foreign banks enter into the countries having a similar language and culture, the cost and time for acquiring information would be less. Whereas, the different language and culture should be learned by foreign banks to understand and create trust among the people. This is also the reason for tapping home country clients to expand the business by foreign banks in the host country (Focarelli and Pozzolo 2000).

2.4.2 Empirical studies

The impacts of foreign banks' entry on credit allocation and credit accessibility differ from country to county due to various reasons such as the difference in the banking regulations, size, and structure of banking institutions, heterogeneous banking markets, the difference in the main sectors of economies, the economic and financial development, etc. Emerging and developing countries generally have a narrow credit market and vulnerable to crisis. Thus, it is essential to examine the impact of foreign banks' entry on their credit markets. The empirical studies have investigated this impact on credit accessibility and credit allocation in various countries. This section discusses the various empirical studies conducted across the countries for the impact of foreign banks' entry on credit access and credit allocation.

Berger and Udell (2000) studied the credit availability for small firms gets affected through the organization structure of a bank. The study argued that relationship lending is the best way for credit availability to SMEs. However, it is not possible for large foreign banks to have that relationship. Thus, small banks with less managerial steps for decision-making can resolve the problem of credit availability. However, many studies argue the other way. Entry of large foreign banks directly improves credit access to SMEs (Beck et al. 2010; De Haas and Naaborg 2006; de la Torre et al. 2010).

The other reasons found in the literature for the reduction in credit availability to the firms in different countries are highlighted here. In Italy, the credit accessibility to firms is reduced by foreign banks due to the distance between foreign banks' headquarter and the borrowers. (Dell' Ariccia and Marquez 2002; De Haas and Van Horen 2013). The study by Haas et al. 2010 was conducted for 220 banks in 20 transition countries. The study found that bank ownership, bank size, and laws for credit approval of a bank are strong determinants of the composition of banks' loan portfolios. The study further found that foreign banks are active in credit supply in an economy.

Considering foreign banks' advantage over technology as well as the cost of funds and domestic banks' advantage of lending information, Li and Yuan (2015) developed two-step model and found that foreign banks' entry enhances the credit access to SMEs in emerging economies. Thus, the study suggested that emerging economies should remove all the barriers to foreign banks' entry. However, the results of the studies on the emerging country such as China are not in line with Li and Yuan (2015). Banks in China follow the western foreign banks and allocate credit to the financial healthier firms by hard information (Firth et al. 2009). Lin (2011) examined the impact of the foreign lender on local firms' access to credit in China. The study found that access to bank credit increases for firms with hard information. Due to information asymmetry, the opaque firms have to suffer as collateral cannot be treated at par with the hard information.

Clark et al. (2005) pronounce that lending to firms in Argentina has improved after foreign banks' entry. All enterprises, including small and medium-sized ones, report facing lower financing obstacles in countries having higher levels of foreign bank presence (Clark et al. 2006). A study on the acquired domestic banks by foreign banks in Europe, Giannetti and Ongena (2012) finds that foreign banks benefit all the firms by indirectly enhancing credit access. Leon (2015) considered firm-level data of 69 developing economies and investigated for credit constraints due to competition among banks. They found that bank competition increases credit flow. Hence, credit access to firms can be enhanced. However, the studies in India have different outcomes based on their empirical results.

Liberalization and competition in the Indian banking sector made domestic banks more circumspect to lend to firms (Bhaumik and Piesse 2008). Ghosh (2012) claims that foreign banks' entry adversely affects the maturity of the credit portfolio of Indian domestic banks. The study further claimed that foreign banks charge a lower margin for lending than the domestic Indian banks. However, Degryse et al. (2012) claim that there are no differences in lending rates between domestic and foreign banks in India. The overall net interest margin has declined after foreign banks' entry in the post-reforms period (Kalluru and Bhat 2009).

One of the empirical studies on the Indian banking sector, Gormely (2010) investigated the entry of foreign banks in the Indian district and their impact on credit access to the Indian firms in those districts. The study used simple panel data regression and found that firms are less likely to access credit in the districts having foreign banks rather than the firms in the districts without having foreign banks. The study period was from 1991 to 2002 which is quite less because the actual entry began only after 1995. Moreover, many foreign banks entered into new districts only after 2002-2003. Hence, Gormley (2010) suggests that one has to extend the research after a few years to obtain more precise findings with more data in hand. The present study understands the essence of it and considers the data from 1996 to 2015[23]. However, the present study finds similar results of Gormley (2010) with few disagreements.

Hypothesis 12

H_0: The entry of foreign banks in India does not reduce credit accessibility to firms in India.

H_1: The entry of foreign banks in India reduces credit accessibility to firms in India.

2.4.2.1 Cherry picking behavior

According to the extensive literature on developed nations, there are two schools of thoughts regarding the impact of entry of foreign lender on credit access in the host market. The first pronounces that foreign banks lend to their home clients and cherry pick a few large domestic firms and serve them while ignoring the small local firms in

[23] The present study extends Gormley's work further by using firm level data that consist of Indian as well as foreign firms and use dynamic panel data model GMM to investigate the results.

the host economy. This leads to a reduction in credit access in the host economy (Sengupta 2007; Bhaumik and Piesse 2008; Detragiache et al. 2008; Gormley 2010, 2014). While the other strands of studies claim that foreign banks' entry improves credit access in the host economy as it enhances credit supply to all the firms including SMEs due to their sound connectivity with the international markets (Clark et al. 2005, 2006; De Haas and Naaborg 2006; Beck et al. 2010; de la Torre et al. 2010; Giannetti and Ongena 2012).

The credit to the private players may decrease due to the foreign banks' entry (Beck and Martinez Peria, 2008; Detragiache et al., 2008). Dell' Aricia and Marquez (2004) argued that foreign banks tap the potential clients in the host country that foster domestic banks to raise lending to opaque firms.

The studies found different results due to the difference in the mode of entry of foreign banks in the host countries. Giannetti and Ongena (2012) studied the behavior of acquired banks by foreign banks toward ten thousand domestic firms in thirteen Eastern European countries from 2000 to 2005. The study found that once foreign bank acquires domestic banks, they are less likely to reduce lending to the firms with which they have relationship lending in these emerging economies. However, the study claims that foreign banks do cherry pick and lend to foreign-owned firms. Viverita et al. (2015) investigated the foreign banks' entry impact on credit allocation to SMEs through a different mode of entry, considering panel data of 182 banks in five ASEAN countries such as Cambodia, Indonesia, Malaysia, Philippines, and Thailand from 2006 to 2011. The study found that foreign banks in branch mode have to cherry pick and lend to large firms while avoiding the opaque SMEs due to information asymmetry.

Sarma and Prashad (2016) found cherry picking behavior in foreign banks by considering the data on credit availability in the urban areas of the top twenty-one Indian states based on their per capita income. Moreover, the study claims that domestic banks shrink their lending in the presence of foreign banks. Thus, these factors foster the reduction of credit availability in the states where foreign banks are present.

Hypothesis 13

H_0: The foreign banks in India do not avail more credit to large firms than small firms in India.

H_1: The foreign banks in India avail more credit to large firms than small firms in India.

2.4.2.2 Credit allocation to major sectors of the economy

For any economy, the Agriculture, Industry, and Service sectors are major contributors to GDP. Thus, the development of all these sectors is essential for economic growth. Originally, the economic growth was led by agriculture that has been shifted to manufacturing-led growth and later, to service led to the growth of major countries in the world (World Bank). The amount of credit requirement from all these sectors has improved over the period which is essential for the growth of these sectors. However, the causation reverse effect is also possible here; the sectors may grow faster due to the easy availability of credit to them in any economy (King and Levine 1993; Levine 1999).

Foreign banks' entry can enhance the availability of credit to the various sectors of the host economy due to their connectivity with the international credit market (Levine 1996; Hermes and Lensink 2004). However, the major motive of foreign banks' entry is to gain more profits, and hence foreign banks would like to allocate more credit to the highly profitable sector of the economy. With the shift in the dependency of economic growth among various sectors, it is essential to examine how the credit allocation might have shifted from the former case to the latter.

The agriculture sector is diversified due to high usage of fertilizers, biocides, mechanization of activities, good quality of seeds, etc. (Iqbal et al. 2003) and its diverse activities such as horticulture, floriculture, dairying, sericulture, poultry, etc. (Mohan 2006). Hence, the amount of credit requirement has increased in the agriculture sector (Thrupp 1990). The development of technology brought tremendous change in the service sector and industrial production that led to a rise in credit demand by these sectors as well. Thus, all the sectors urge to have more banking and financial institutions to meet their credit demand.

The credit allocation by banks can be affected by many factors. The economic liberalization and banking reforms bring more competition in the banking sector through the entry of many domestic private and foreign banks. However, the empirical literature is divided for the availability of credit to small firms due to increased

competition and consolidation (Black and Strahan 2002). Small firms mainly exist in the agriculture sector, but they can happen in all the sectors of the economy. The other factors are the growth rate of the sector, NPA from the sector, the credit-deposit ratio of banks, economic and financial crisis, and intensity of labor in the bank. Moreover, the empirical studies on the impact of foreign banks' entry on credit availability and allocation are inconclusive (Clarke et al. 2006). Thus, the need of the hour is to investigate the impact of foreign banks' entry on the credit allocation in India, a developing county empirically.

2.4.2.2.1 Competition in the banking sector

The foreign banks' entry in the host credit market brings competition to domestic incumbents for credit allocation to the various sectors. The rise in the competition between the technologically advanced and cost-effective foreign banks with the informationally sound local banks leads to a reduction in the interest margin in the host banking sector (Claessens et al. 2001). Thus, banks choose those sectors with less NPAs and higher performances to maintain profitability (Detragiache et al. 2008). However, banks may prefer risky sectors to compete in the market (Petersen and Rajan 1995). Thus, competition in the banking sector can have positive and negative impacts in various sectors.

2.4.2.2.2 Labor intensity

It is argued that foreign banks consider hard information and ignore the firms with soft information when lending (Dell'Aricia 2004; Bhaumik and Piesse 2008; Gormley 2010, 2014). The main reason being, banks need to have relationship lending with the client to acquire soft information (Berger and Udell 2002; Sengupta 2007). Banks need to have a fairly good number of labors to have relationship lending. However, foreign banks invest in technology than in labor. Thus, a lower intensity of labor in a bank may lead to a reduction in the lending to sectors with soft information (Kim 2010). Though the firms having soft information exists across all the sectors, agriculture is the major sector having a high amount of soft information. Thus, it can be argued that foreign banks' entry may directly affect credit allocation to the agriculture sector.

2.4.2.2.3 Non-performing assets (NPA)

Banks recycle the deposits and convert them into credit. If this credit becomes NPA, then it affects the banks' credit cycle. Banks need to provide more provisions for bad loans with the rise in NPAs and its impact on banks' profitability also (Rajan and Dhal 2003; Rajeev and Mahesh 2010). Moreover, a study on determinants of credit risk in Indian banks, by Thiagarajan et al. (2011) found that lagged NPAs are strongly associated with the rise in NPAs. Thus, already having NPA in the particular sector is likely to create more NPAs. Hence, banks hesitate to provide credit to the sectors where high NPA does exist.

2.4.2.2.4 Crisis period

There are empirical studies that claimed that banks hesitate to disburse credit during the economic and financial crisis. Popov and Udell (2012) analyzed the effect of the financial crisis on credit access to firms in 16 emerging European countries. The study found that credit access to firms declines over the credit constraints of banks due to the financial crisis. Moreover, in the case of foreign banks, the credit constraints determined by their parent banks' balance sheet conditions lead to a decline in credit supply to firms.

Foreign banks also mitigate credit access to business firms during the economic downturn (Rodrik and Velasco 1999; Morgan and Strahan 2004)[24]. After studying 250 banks during 1993 to 2000 in Eastern and Central Europe, Haas and Lelyveld (2005) found that greenfield foreign banks do not contract their credit during crisis time whereas domestic banks do in the host country.

Hypothesis 14

H_0**:** The entry of foreign banks in India does not reduce credit allocation to the agriculture sector in India.

H_1: The entry of foreign banks in India reduces credit allocation to the agriculture sector in India.

[24] However, the results of studies by Dages et al. 2000 and Crystal et al. 2002 are not in consistent with this view.

Hypothesis 15

H_0: The entry of foreign banks in India does not reduce credit allocation to the industrial sector in India.

H_1: The entry of foreign banks in India reduces credit allocation to the industrial sector in India.

Hypothesis 16

H_0: The entry of foreign banks in India does not reduce credit allocation to the service sector in India.

H_1: The entry of foreign banks in India reduces credit allocation to the service sector in India.

CHAPTER 3

TRENDS IN THE ENTRY OF FOREIGN BANKS IN INDIA

3.0 Overview of the chapter

This section examines the history of foreign banks in India in general and also individual bank-wise history. It explains the trends of foreign banks' entry in India and the extent of penetration in the Indian economy. It also describes the reforms related to foreign banks in India.

3.1 Foreign banks' entry in the Indian banking market

To comprehend foreign banks' entry and its impact on the Indian economy, it is essential to apprehending the history of the Indian banking sector that encompasses the period and mode of entry of foreign banks in India. Further, it is crucial to study the various reforms that materialized in the Indian banking sector that has transformed foreign banks' entry and its impact on the Indian banking sector.

3.2 History of commercial banks in India

Bank of Hindustan was the first commercial bank established in India in the year 1770. Later in 1786, another commercial bank, General Bank of India was formed. It was the era of private banks when the East India Company ruled and established three presidency banks. i.e., Bank of Bengal in 1806 followed by Bank of Bombay and Bank of Madras around 1850. However, later in 1921, these three banks were consolidated as an Imperial Bank of India. It is named the State Bank of India after its takeover by Government of India. There were many private banks present during this period. However, most of them could not survive. In this colonial era, when trade relations were developing between India and other various countries, many foreign banks were keen to enter into India. British initiated the entry of foreign banks into India as per their charter. Hong Kong and Shanghai Bank (HSBC)[25] was the first bank to establish in 1853 in India followed by Standard Chartered bank[26] in 1858, BNP Paribas in 1860, and City Bank in 1902. Thus, foreign banks do have a continued long-term presence in India.

[25] Which was called the Mercantile Bank of India then.
[26] Which was called the Chartered Bank of India, Australia, and China then.

The era dominated by private banks changed during the 20th century after the nationalization of banks. Fourteen large size private banks with deposits of more than 20 crores were nationalized in 1969[27] and six more private banks having deposits worth 200 crores that were nationalized in 1980[28]. Thus, most of the assets in balance sheets, branches, deposits, and credits were acquired by public sector banks. However, private banks were licensed in 1993 and again in 2001[29].

3.3 Foreign banks' entry in the post-liberalization period

India adopted a restrictive policy towards the foreign banks' entry until the economic liberalization. The first foreign bank was found in India more than 150 years ago, the presence of foreign banks is sensed after the economic liberalization that resulted in 1991. The Narasimham committee appointed by Government of India (GOI) suggested liberalization of the Indian banking sector and further entry of foreign banks to increase competition and creating a level playing field along with full-scale financial sector reforms. However, the Government of India did not implement the report until 1995. The greater entry of foreign banks was considered after 1995 with the World trade organization (WTO) era.

3.3.1 Foreign banks' entry post-WTO agreement (1995 to 2005)

The number of foreign banks increased after India joined WTO as a founder member in 1995. Indian government further relaxed rules for existing and new foreign bank branches to honor the agreement; in the beginning, only five branches including Automated Teller Machines (ATMs) were allowed, then enhanced to eight in 1995, and twelve in 1998 were permitted. Hence, many foreign banks expanded geographically

[27] The banks nationalized in the first phase (1969) were the, Bank of Maharashtra, Dena bank, Central bank of India, Punjab national bank, Canara bank, Indian overseas bank, Indian bank, Bank of Baroda, Syndicate bank, Union bank of India, Allahabad bank, United bank of India, United Commercial bank and Bank of India.

[28] The banks that nationalized in the second phase (1980) were Andhra bank, Corporation bank, New bank of India, Punjab and Sind bank,Oriental bank of commerce, and Vijaya bank. Among them, the New bank of India was merged with the Punjab national bank in 1993.

[29] RBI has issued licenses to ten private entities based on 1993 guidelines and two more private banks based on 2001 guidelines. i.e. Axis bank (1994), Centurion bank ltd (1994), Development credit bank (1994), HDFC bank (1994), IndusInd bank (1994), ICICI bank (1996), Kotak Mahindra bank (2003) and Yes bank (2005). The other three private banks licensed in 1994 were merged, i.e. Times bank (Merged with HDFC bank ltd), Global trust bank (Merged with Oriental bank of commerce) and IDBI bank (reverse merged with IDBI in 2004 and now IDBI bank ltd.)

diverse regions, and hence various locations of Indian territory received their maiden foreign bank.

According to the discussion paper published by RBI (2005), *Roadmap for the presence of foreign banks in India*, the Indian banking sector was further relaxed for foreign banks in two phases. The first phase was initiated in March 2005 and the second phase was executed in November 2013 in place of March 2009, the primary reason was the global financial crisis.

3.3.2 Phase I reforms (2005 to 2013)

In this period, foreign banks were allowed to open more than twelve branches excluding ATMs in India in a single year. Foreign banks were asked to operate in India in any one mode. New foreign banks could enter either a branch or 100 percent wholly owned subsidiary (WOS) or through direct investment in Indian private sector banks. According to *Consolidated FDI policy 2016* published by the Department of industrial promotion and policy (DIPP) of GOI, the limit of investment into Indian private banks was raised to 74 percent from 49 percent. Moreover, the direct investment into public sector banks was retained at 20 percent by GOI. However, the investment by a single entity is restricted up to 10 percent in Indian banks[30]. The current foreign banks could also convert their branches into Wholly Owned Subsidiaries (WOS)[31]. However, no foreign bank has entered or turned its branches in the form of WOS during this period.

3.3.2.1 India's bilateral agreement during phase I reforms

During this phase, India had signed two bilateral agreements, one with Singapore, the comprehensive economic co-operation agreement (CECA), in which the Singaporean banks were allowed to open their fifteen branches within four years from 2006; second comprehensive economic partnership agreement (CEPA) with Korea, Korean banks were permitted to open up ten branches within four years from 2010. Moreover, the acquisition of selected private domestic banks was also allowed with the permission of RBI.

[30] According to RBI circular dated 6thJune 2004, banks/financial institution can invest upto five percent of investment in any Indian bank equity shares.

[31] The WOS have to maintain a minimum capital requirement of Rs. 300 crore and would need to ensure sound corporate governance. The WOS mode of presence is also treated at par with the foreign branches.

3.3.2.2 Raghuram Rajan committee report

In a report submitted by Prof. Rajan committee appointed by GOI in 2008 extensively supported the further entry of foreign banks in India. The committee believes that the way forward for Indian banking is to make institution "ownership neutral" which can be done by either privatizing the public sector banks or reducing the government majority stake from public sector banks or severe governance reforms. However, foreign banks' entry can be the single biggest factor in enhancing domestic competition and efficiency.

3.3.3 Phase-II reforms (2013 till date)

After learning the lessons from phase-I reforms and the global financial crisis, RBI Governor in the policy statement 2010-11 has pronounced a discussion paper, *Mode of the presence of foreign banks in India*. According to this study, after learning the lesson from financial crisis, wholly owned subsidiary (WOS) mode was preferred over the branch mode of foreign banks presence with the consideration of financial stability to the Indian economy[32]. Moreover, the reforms for further entry of foreign banks were materialized based on a) reciprocity and b) single mode of presence. During this Phase, RBI has published (2013) a discussion paper *Banking Structure in India - The Way Forward*, and, *The framework for setting up Wholly Owned Subsidiary (WOS) by foreign banks* in India.

3.3.3.1 Banking structure in India - The way forward

The recent discussion paper *Banking Structure in India - The Way Forward*, published by RBI in 2013, discusses in detail various issues in the structure, ownership, and presence of cross-border banking in India. It further set a reminder tone to consider foreign banks' entry in enhancing domestic competition and efficiency. It highlights the drivers of foreign banks' entry in host countries as a) follow-your-client behavior, b) high-profit earnings in local market c) elimination of entry barriers for them, and, d) a proper mechanism to alleviate the cost of information for banking in host market.

[32] RBI Governor Dr. Raguram Rajan further clarified the need for choosing WOS mode of entry for foreign banks as financial stability while answering to the author in a teleconference organized for researchers during monitory policy review on 18.12.2013. For details regarding opting WOS mode over branch mode of entry, please read discussion paper*Presence of Foreign Banks in India* published by RBI in 2011.

Learning the lessons from the recent global financial crisis, it also points out that the compound structures, too connected to fail (TCTF), and too big to fail (TBTF) structures in the banking sector could worsen and extend the crisis in the home country. Thus, this study recommended a WOS presence for foreign banks in India.

3.3.3.2 WOS mode of entry

RBI incentivized foreign banks to be present as WOS by providing them near national treatment to level the playing field for them. RBI set certain guidelines for accepting the WOS mode of foreign banks' entry. Foreign banks entering in India as WOS mode should be under the prudential supervision by the home regulator that should permit it to establish in India. WOS has to regard the Basel norms that prevail from time to time. The other factors required to be fulfilled for WOS mode of entry are the political and economic relationship between India and the home country, the financial soundness of the foreign banks, a ranking of a foreign bank in global and home country, the international rating given by various rating agencies, and international foreign banks' presence.

Based on the experiences in Eastern Europe and Latin America, WOS mode of presence is preferred over a branch structure by multinational banks to extend their operations in the retail sector and to maintain financial stability in the home country by the respective regulators. However, India abides by its commitment to WTO, India cannot mandate all the foreign banks to convert their branches into WOS. Thus, the WOS mode of entry and presence are kept as voluntary decision and has been incentivized. However, RBI has decided to mandate the entry of foreign banks in a WOS form for a few new entries. In cases of a) banks incorporated in a jurisdiction that has legislation which gives preferential claim for deposits-credits in that jurisdiction during winding up, b) Foreign banks not giving adequate disclosure in the home jurisdiction, c) foreign banks with complex structure, d) foreign banks that have not much presence outside their countries of origin.

Nayak committee (2014) report discussed various issues related to the structure and ownership of the public as well as private banks. The study argues that larger individual block investors can foster better governance. Thus, the study urges RBI to raise the

limit of five percent of shareholdings to 10 percent in equity investment in any Indian private bank with RBI approval[33].

3.4 Banking sector reforms in India

The Indian banking sector has been reformed dramatically after Independence[34]. In independent India, the Indian banking industry was considered fragile and less regulated during the 1950s. Most of the credit was allocated for trade purposes or to urban areas. Rural masses were dejected from credit disbursement, and they had to depend upon chit funds and local merchants. The first move from Government of India to serve the rural population was the establishment of SBI in 1955 and its subsidiaries in 1960. Later on, the nationalization of private banks was a big move to serve the rural masses in 1969 and 1980. This kind of intervention brought a change in the number of people served per branch, from around 65,000 per branch to 12,000 per branch. However, till 1991, the various banking programs of Government of India like directed lending, regulated interest rates, controlled branch expansion policy, the controlled business environment to alleviate poverty could not bring much change in the lifestyle of people in rural areas. Moreover, the presence of private and foreign banks could not modify the decision and the style of working in public sector banks.

After 1991, The Government of India and RBI have played a substantial role in the financial sector and banking industry reforms. These reforms include introduction of prudential norms, Capital adequacy requirements, income recognition and asset classification (IRAC- NPAs), reduction of bank rate in a phased manner from 10 percent to 6 percent, Cash reserve ratio (CRR) from 15 percent to 4 percent, Statutory liquidity ratio (SLR) from 39 percent to 20.50 percent, deregulation of interest rates, indicating prime lending rate (PLR) and base rate, transparency of balance sheet and provision for non-performing assets (NPA), corporate governance, creation of debt recovery tribunals and board for industry and financial reconstruction, Asset liability management, risk management, implementation of Basel norms, computerization of total branches, management information system (MIS), voluntary retirement of scheme

[33]RBI has adopted a strategy of diversified ownership in the shareholding of private banks from 2004. Thus, no individual shareholder is allowed to hold more than five percent of equity shares of Indian private banks.

[34] India got freedom in 1947 from British colonials

(VRS) for staff, closing down or shifting or merging of loss-making branches etc. Indian banking was re-engineered to compete with the global banks and especially to foreign banks present in India. Along with the amendments to the various laws in banking, many innovative financial products were introduced, i.e., credit cards, bankassurance, ATMs, electronic fund transfer (EFT), Internet banking, mobile banking. There were various other financial services added to the banking facilities, such as insurance[35], dematerialization, mutual fund, housing finance, factoring, forfeiting, venture capital financing, securitization, asset reconstruction companies, and asset management companies[36].

Many new concepts emerge in the Indian banking sector like universal banking, payment banks, and specialized banks, etc. There have been many mergers and consolidations in the Indian banking sector and formation of new institutions and agencies, i.e., EXIM Bank, NABARD, SIDBI, National Housing bank, etc. for various regulations and meeting customers' needs more efficiently. With the changing structure and adaptation of new technology by private and foreign banks, public sector banks have also transformed themselves to follow suit.

3.5 Trends of foreign banks' entry in India

India has received forty-four foreign banks having around three hundred and forty-nine branches from twenty-five home nations by 2015 (See Table 3.1 and Table 3.2). These foreign banks are examples of foreign capital invested in the Indian banking sector. Moreover, foreign capital is allowed in the shares of Indian banks up to 74 percent in private sector banks and up to 20 percent in public sector banks respectively (see Figure 3.1 and Figure 3.2).

Table 3.1: Number of offices of foreign banks in India

Year	1991	1995	2000	2005	2010	2015
Number of foreign banks	24	27	42	31	34	44
Number of foreign banks' offices	139	157	189	234	307	349

[35] Foreign companies willing to establish insurance business are allowed to have joint-venture with Indian banks for the expansion in India, e.g. Canara HSBC Oriental Bank of Commerce Life Insurance.

[36] Foreign companies willing to initiate mutual fund or portfolio management business are allowed to tie up with Indian banks to establish their shops in India. e.g. Canara Robeco Asset Management Company.

Source: calculation done by Author based on the data from *Statistical Tables relating to banks in India* published by RBI.

Table 3.2: Parent county-wise number of offices of foreign banks in India

S.I.	Parent County	1991	2015
1	USA	13	61
2	UK	26	110
3	HONG KONG	20	55
4	UAE	2	3
5	AUSTRALIA[37]	56	4
6	JAPAN	4	10
7	FRANCE	8	17
8	BANGLADESH	1	3
9	NETHERLAND	3	25
10	INDONESIA	-	1
11	KUWAIT	1	4
12	SRI LANKA	-	1
13	CANADA	-	3
14	TAIWAN	-	2
15	SINGAPORE	-	13
16	GERMANY	2	18
17	RUSSIA	-	2
18	SULTANATE OF OMAN	1	2
19	SOUTH KOREA	-	5
20	MAURITIUS	-	4
21	SWITZERLAND	-	2
22	SOUTH AFRICA	-	1
23	CHINA	-	1
24	THAILAND	-	1
25	BELGIUM	-	1

Source: Calculation done by Author based on the data from *Statistical Tables relating to banks in India* published by RBI.

By numbers, foreign banks have captured around 50 percent of bank-share (Total number of scheduled commercial banks in India is 88). However, they have captured around 1 percent of the share in the number of branches (see Figure 3.4) and on an average 7 percent asset share of total bank assets with less than 1 percent branch share

[37] ANZ Grindlays Bank (Australia) had 56 branches since 1984. Later, Standard Chartered Bank (UK) took over in 2000. Hence, the number of branches fell for Australia in 2000.However, Australia and New Zealand Banking Group Ltd. (ANZ) reentered in India in 2011.

in India (see Figure 3.3) that suggests that foreign banks have penetrated in the Indian banking market, and the presence of foreign banks do matter in terms of competition.

After learning a lesson from the global financial crisis, the RBI is keen on the WOS mode of entry of foreign banks in India[38]. Hence, RBI incentivized foreign banks to choose WOS mode of presence by lifting the limit in the number of subsidiaries and providing them the National Treatment that permits them to establish their subsidies throughout India in any city from tier I to tier VI. Thus, a level playing field is generated for greater foreign banks' entry.

Table 3.3: Name and number of offices of foreign banks in India

S.I.	Foreign banks presence in Post-Liberalization	1991	2015
1	American Express Banking Corporation (the USA)	3	2
2	Bank of America (the USA)	4	5
3	Citibank N.A. (the USA)	6	53
4	J.P. Morgan Chase Bank N.A.(the USA) [The Chase Manhattan Bank]	-	1
5	Barclays Bank Plc. (the UK)	1	9
6	Standard Chartered Bank (the UK)	24	101
7	Abu Dhabi Commercial Bank Ltd. (UAE)	1	3
8	Mashreq Bank PSC (UAE)	1	1
9	HSBC Ltd (Hong Kong)	20	50
10	Commonwealth Bank of Australia (Australia)	-	1
11	National Australia Bank (Australia)	-	1
12	Westpac Banking Corporation (Australia)	-	1
13	Australia and New Zealand Banking Group Ltd. (ANZ) (Australia)	56[39]	1
14	Mizuho Corporate Bank Ltd. (Japan) [The Fuji Bank Ltd]	-	4
15	The Bank of Tokyo- Mitsubishi UFJ Ltd. (Japan)	3	5
16	Sumitomo Mitsui Banking Corporation (Japan) [Sakura bank]	1	1
17	BNP Paribas (France)	-	9
18	Societe Generale (France)	1	3
19	Credit Agricole Corporate & Investment Bank [caylone bank] (France)	1	5

[38] RBI has released *Framework for setting up of Wholly Owned Subsidiaries by Foreign banks in India* in its second Quarter review of Monitory Policy 2013-14.

[39] ANZ Grindlays Bank (Australia) had 56 branches since 1984. Later, Standard Chartered Bank (UK) took over it in 2000. Hence, the number of branches fell for Australia in 2000.However, Australia and New Zealand Banking Group Ltd. (ANZ) reentered in India in 2011.

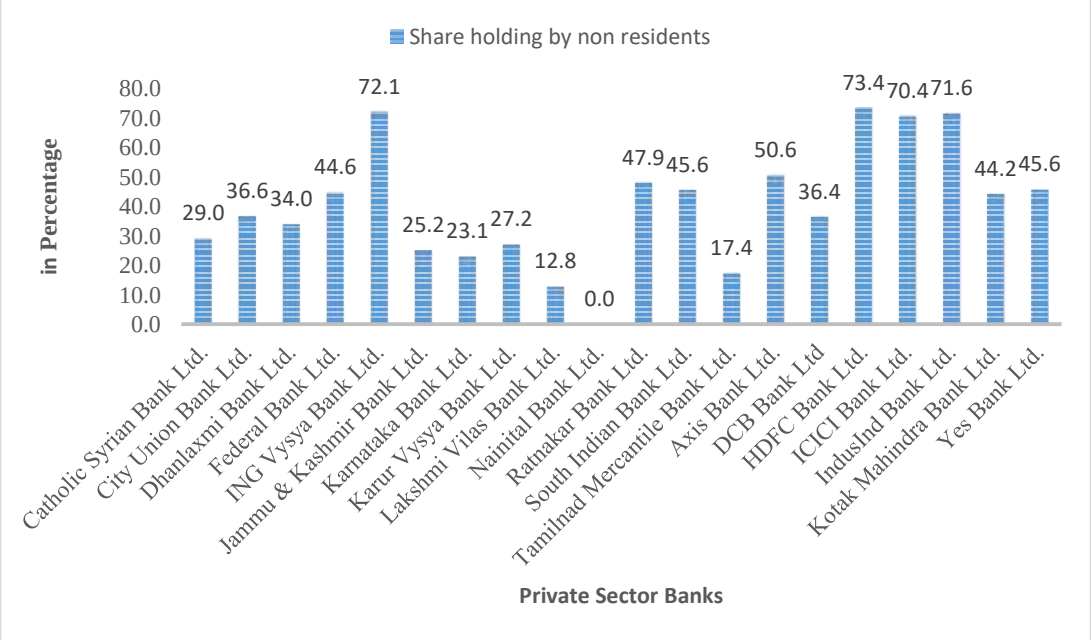
20	AB Bank Ltd. (Bangladesh)	-	1
21	Sonali Bank Ltd. (Bangladesh)	1	2
22	The Royal Bank of Scotland N.V. [ABN Amro] (the Netherland)	3	25
23	Rabobank International (the Netherland)	-	1
24	Antwerp Diamond Bank N.V. (BELGIUM)	-	4
25	Bank International Indonesia (INDONESIA)	-	1
26	Bank of Bahrain & Kuwait BSC (KUWAIT)	1	4
27	Bank of Ceylon (SRI LANKA)	-	1
28	Bank of Nova Scotia (CANADA)	1	3
29	Chinatrust Commercial Bank (TAIWAN)	-	2
30	DBS Bank Ltd. (SINGAPORE)	-	13
31	United Overseas Bank Ltd (SINGAPORE)	-	1
32	Deutsche Bank (GERMANY)	2	18
33	JSC VTB Bank (RUSSIA)	-	1
34	Sberbank (RUSSIA)	-	1
35	Krung Thai Bank Public Co. Ltd. (THAILAND)	-	1
36	Oman International Bank SAOG (SULTANATE OF OMAN)	1	
37	HSBC Bank Oman S.A.O.G	-	2
38	Shinhan Bank(Cho Hung) (SOUTH KOREA)	-	4
39	Woori Bank (SOUTH KOREA)	-	1
40	State Bank of Mauritius (MAURITIUS)	-	4
41	UBS AG (SWITZERLAND)	-	1
42	Credit Suisse A.G (SWITZERLAND)	-	1
43	FirstRand Bank Ltd (SOUTH AFRICA)	-	1
44	Industrial & Commercial Bank of China Ltd. (CHINA)	-	1

Source: Calculation done by Author based on the data from *Statistical Tables relating to banks in India* published by RBI.

Figure 3.1 Foreign investment in Indian public sector banks (March 2016)

Source: *Statistical Tables relating to banks in India* published by RBI

Figure 3.2 Foreign investment in Indian private sector banks (March 2016)



Source: *Statistical Tables relating to banks in India* published by RBI

CHAPTER 4

DATA AND METHODS

4.0 Overview of the chapter

This chapter justifies the need for the present study by highlighting various research gaps. It explains various research questions and summarizes the hypotheses related to each research question, data used, the estimation method adopted, and the dependent and independent variables for various models.

4.1 Research gaps and justification for the study

4.1.1 Research gaps

1) There is limited literature on the determinants of FDI in the Indian banking Sector (Kim 2010).

2) There is a handful of studies related to impact analysis of foreign banks on domestic banks in the Indian context, and their results are conflicting with most of the studies with similar objectives (Kalluru and Bhat 2009 and Ghosh 2012).

3) The findings of the major studies on the impact of foreign banks' entry on domestic banks regarding efficiency could not be generalized due to their short study period (Panandikar 2013).

4) The findings of limited existing literature about the impact of entry or the presence of foreign banks in India differ in their opinion (e.g., Kalluru and Bhat 2009 vs. Ghosh 2012).

5) A little is known about the channels by which foreign banks can improve the efficiency of domestic banks and access to financial service to enhance development and economic growth in host countries (Claessens and Horen 2012).

6) Foreign banks were believed to be good friends in tranquil times, but they could become foes in crisis times (Jeon et al. 2013). Lee et al. (2011) has suggested

taking into consideration the effect of the financial crisis of 2007, especially for credit allocation by foreign banks.

7) Gormley (2010) suggests to apply direct data of credit supply by foreign banks in particular districts to measure the direct impact of foreign banks' entry on credit accessibility to firms.

The detailed literature reviewed in chapter 2 indicates that the reasons for foreign banks' entry and the impact they have on the host economy can differ from country to country. Moreover, the determinants of foreign banks' entry have changed from time to time. Hence, the literature is divided into their findings and inconclusive for various home countries. Moreover, there are a few studies that have attempted to examine these objectives in the case of developing countries such as India. The need of the hour is to understand systematically and empirically the determinants and the impact of foreign banks' entry into India.

Extensive studies have been done on the determinants of foreign banks' entry and their impact on the host economy. However, there is a lack of literature on developing countries such as India. The studies determining the factors of foreign banks' entry in the literature argues that the determinants have changed along with the time and with the increased entry of some foreign banks (Nolle and Seth 1996). The mixed findings from the studies on the locational determinants of foreign banks' entry urge to confine the results in the Indian context. Moreover, the studies in the Indian context have not used the data of bank FDI. Even a study on determining the factors influencing bank FDI inflow in India, Kim (2010) also used a proxy for bank FDI as an asset share of foreign banks and a number of foreign banks.

There is a strand of literature studying the impact on the performance of domestic banks due to foreign banks' entry. However, the empirical studies differ in their results especially the studies in the Indian context. The studies on India, Ghosh (2012) and Kalluru and Bhat (2009) have different findings for the same objective, impact on the businesses of Indian banks due to foreign banks' entry. Moreover, the results of these two studies are completely opposite to the cross-national studies (Claessens et al. 2001) and other studies on Individual countries (Wu et al. (2007) on Chinese banking sector;

Unite and Sullivan (2003) on Philippines; Barajas et al. (2000) on the Colombian banking sector). Thus, there is a need to fill this gap by a comprehensive study in the Indian context.

Firms proceeding from more competitive countries will be better able to compete abroad, empirical evidence in the banking sector is lacking (Blandon 2001). Thus, with the foreign banks' entry, how the competitive credit market would react in the developing country is still a mystery. The studies are divided on the impact of foreign banks' entry on credit accessibility by business firms and credit allocation in the host county. With the rise in the number of foreign banks and foreign ownership, how the credit allocation in the developing country such as India would be affected, positively or negatively. These are the questions unanswered.

The findings of the major studies on the impact on domestic banks due to foreign banks regarding efficiency which could not be generalized due to their short study period (Panandikar 2013). The scope for future research by using more bank-specific features like non-performing assets, rural and urban banking, bank mergers, bureaucratic sloth, etc. to analyze the effect of reforms on performance and efficiency of Indian banks (Bhattacharya and Pal 2013). A little is known about the channels by which foreign banks can improve the efficiency of domestic banks and access to financial service to enhance development and economic growth in host countries (Claessens and Horen, 2012). Thus, there is a need to study the impact of foreign banks' entry on the host economy with more period, using bank-specific variables.

Foreign banks were believed to be good friends in tranquil times, but they could become foes in crisis times (Nam, 2013). Lee et al. (2011) have suggested taking into consideration the effect of the financial crisis of 2007, especially for credit allocation by foreign banks. There are indicative studies that indicate that foreign banks reduce credit supply during an economic and financial crisis. Hence, it is worth studying the behavior of foreign banks during the crisis period.

4.2 Research questions

The following research questions have been developed for an in-depth analysis of the matter of foreign banks' entry and their impact on the Indian economy.

4.2.1 What are the determinants of foreign banks' entry in India?

The research question attempts to find out why foreign banks enter into India. As the detailed empirical and theoretical support shows that foreign banks seek some locational advantages in the host country. The present study answers what are those locational advantages in India that pool foreign banks in the country. Studies further argue that determinants have changed from time to time. However, the present study considers post-reforms data to analyze the recent determinants of foreign banks' entry into India. These determinants are important to assess the strategies of foreign investment in the banking sector that further help to derive various implications for policymaking in the future.

4.2.2 Does the foreign banks' entry impact upon the performance of Indian domestic banks?

The detailed discussion in chapter 2 reveals that the studies in India find different results than most of the studies on the objective, impact foreign banks have on the business performance of local banks. Thus, it is essential to answer, do the results differ in the case of India? Moreover, if so, then what are the reasons behind it? Why the impact of foreign banks' entry differ in India? The literature clarifies that foreign banks' entry does have an impact on the performance of domestic banks. Thus, the implications of the finding of this objective would have profound value.

4.2.3 Does the foreign banks' entry impact upon the credit access to business firms in India?

The review of the literature finds that foreign banks' entry increases credit access to firms in developing countries. However, there are recent studies including the Indian context have found the opposite results. Moreover, the researcher has argued that considering the larger period in the case of India would clarify the situation (Gormley 2010). Thus, it is essential to investigate further with a larger period and considering bank-specific variables. The findings would have important implications for the policymaker.

4.2.4 Does the foreign banks' entry impact upon the credit allocation to various sectors of the Indian economy?

It is said that the contribution of some sectors to GDP such as agriculture, has reduced substantially in most of the economies, and the Industrial sector or service sector has taken a driver seat to lead the economic growth. In the Indian economy, the service sectors' contribution is the highest. It is vital to examine the credit allocation to these sectors especially the agriculture sector in India. Whether foreign banks' entry has changed the credit allocation pattern in India? How the foreign banks have directly and indirectly affected the credit allocation to the various sectors despite the priority sector norms in India. Thus, it is vital to note the implications of this study, whether regulators should liberalize further for foreign banks or make stringent norms of the priority sector for foreign banks.

Hence, the present study answers the following research objectives.

4.3 Research objectives

1. To identify the determinants of foreign banks entry in the Indian banking sector.
2. To analyze the impact of foreign banks entry on the performance of Indian commercial banks.
3. To investigate the impact of foreign banks entry on credit access to the firms in India.
4. To investigate the impact of foreign banks entry on credit allocation to the different sectors in India.

4.4 Data and research methods

The below table presents various hypotheses developed in chapter 2 with the research objectives. The panel data is used for different objectives and estimation methods. It also highlights the dependent and independent variables.

Table 4.1 Summary of research questions and hypothesis testing				
Research Questions	**Hypotheses developed**	**Data**	**Estimation Method**	**DVs and IVs**
1. What are the determinants of foreign banks' entry in India?	Hypothesis 1 H_0: The entry of foreign banks in India is not related to its home country clients FDI activity in India. H_1: The entry of foreign banks in India is positively related to its home country clients FDI activity in India.	Panel data 480 observations 24 host country as a cross-section, period 1996 to 2015, yearly data	Panel Generalized Method of Moment (GMM) estimator	DV: AF-Asset share of foreign banks, OF-offices share of foreign banks BF- bank FDI inflow in India IV-Country wise FDI
	Hypothesis 2 H_0: The entry of foreign banks in India is not related to the bilateral-			DV: AF-Asset share of foreign banks, OF-offices share of foreign banks

	trade-relationship of its home country and India. H_1: The entry of foreign banks in India is positively related to the bilateral-trade-relationship of its home country and India.			BF- bank FDI inflow in India IV: BT-Bilateral trade between India and the home country
	Hypothesis 3 H_0: The entry of foreign banks in India is not related to the economic growth in India. H_1: The entry of foreign banks in India is positively related to the economic growth in India.			DV: AF-Asset share of foreign banks, OF-offices share of foreign banks BF- bank FDI inflow in India IV: DS-Domestic savings PG-per capita GDP MC-Market capitalization of BSE Sensex

	Hypothesis 4 H_0: The entry of foreign banks in India is not related to the net interest margin of the Indian banking sector. H_1: The entry of foreign banks in India is positively related to the net interest margin of the Indian banking sector.			DV: AF-Asset share of foreign banks, OF-offices share of foreign banks BF- bank FDI inflow in India IV: NIM-Net interest margin
	Hypothesis 5 H_0: The entry of foreign banks in India is not related to the interest rate differential between the home country and India. H_1: The entry of foreign banks in India is positively related to the interest rate			DV: AF-Asset share of foreign banks, OF-offices share of foreign banks BF- bank FDI inflow in India IV: RI- Real interest rate of India minus real interest rate of the home country

	differential between the home country and India.			
	Hypothesis 6 H_0: The entry of foreign banks in India does not change during the economic or financial crisis period in India. H_1: The entry of foreign banks in India increases during the economic or financial crisis period in India.			DV: AF-Asset share of foreign banks, OF-offices share of foreign banks BF- bank FDI inflow in India IV: M_2R-Broad money components (M_2) divided by exchange rate reserve
2 Does the foreign banks' entry impact upon the performance of	Hypothesis 7 H_0: The entry of foreign banks in India has no impact on the competition	Panel data 660 observations, 44 domestic banks as cross-section and period from 2001 to 2015, yearly data	Panel Generalized Method of Moment (GMM) estimator	DV: HHI- Herfindahl-Hirschman index NIM-Net interest margin, IV: AF-Asset share of foreign banks,

Indian domestic banks?	in the Indian banking sector. H_1: The entry of foreign banks in India increases competition in the Indian banking sector.			OF-Offices share of foreign banks BF- Bank FDI inflow in India
	Hypothesis 8 H_0: The entry of foreign banks in India has no impact on the non-performing assets of Indian domestic banks. H_1: The entry of foreign banks in India has an impact on the non-performing assets of Indian domestic banks.			DV: NPA-Non-Performing Assets of Indian banks, IV: AF-Asset share of Foreign banks, OF-offices share of Foreign banks BF- bank FDI inflow in India

	Hypothesis 9 H_0: The entry of foreign banks in India has no impact on the overheads of Indian domestic banks. H_1: The entry of foreign banks in India increases the overheads of Indian domestic banks.			DV: OVHD-Overhead expenses of Indian banks IV: AF-Asset share of foreign banks, OF-offices share of foreign banks BF- Bank FDI inflow in India
	Hypothesis 10 H_0: The entry of foreign banks in India has no impact on the net interest margin of Indian domestic banks. H_1: The entry of foreign banks in India reduces the net interest margin of Indian domestic banks.			DV: NIM-Net interest margin, IV: AF-Asset share of foreign banks, OF-offices share of foreign banks BF- Bank FDI inflow in India

	Hypothesis 11 H_0: The entry of foreign banks in India does not have an impact on the profitability of Indian domestic banks. H_1: The entry of foreign banks in India has an impact on the profitability of Indian domestic banks.			DV: ROA-Return on assets, ROE- Return on equity of Indian banks, IV: AF-Asset share of foreign banks, OF-offices share of foreign banks BF- Bank FDI inflow in India
3 Does the foreign banks' entry impact upon the credit access to business firms in India?	Hypothesis 12 H_0: The entry of foreign banks in India does not reduce credit accessibility to firms in India. H_1: The entry of foreign banks in India reduces credit accessibility to firms in India.	Panel data 5454 business firms as cross section and the period from 2001 to 2015, yearly data	Panel Generalized Method of Moment (GMM) estimator	DV: Borrowings by firms from the bank, Borrowings by firms from financial institutes IV: Credit supply by foreign banks (Direct) Foreign bank entry in an Indian district (Dummy for Indirect Impact)

	Hypothesis 13 H_0: The foreign banks in India do not avail more credit to large firms than small firms in India. H_1: The foreign banks in India avail more credit to large firms than small firms in India.			DV: Borrowings from the foreign bank by large Indian companies in India, IV: Credit supply by foreign banks (Direct) Foreign bank entry in an Indian district (Dummy for Indirect Impact)
4 Does the foreign banks' entry impact upon the credit allocation to various sectors of the Indian economy?	Hypothesis 14 H_0: The entry of foreign banks in India does not reduce credit allocation to the agriculture sector in India. H_1: The entry of foreign banks in India reduces credit allocation to the agriculture sector in India.	Panel data 80 observations Four bank-group wise cross-section data and 20 years from 1996 to 2015	Generalized linear model (GLM) and Autoregressive distributive lag (ARDL) estimator	DV: Credit to the agriculture sector IV: A_GDP- Agriculture components of GDP IV: NIM-Net interest margin of all commercial banks in India, IV: NPA-Non-performing assets of the agriculture sector

				IV: DUM-Foreign bank dummy CRI- Dummy for the economic crisis
	Hypothesis 15 H_0: The entry of foreign banks in India does not reduce credit allocation to the industrial sector in India. H_1: The entry of foreign banks in India reduces credit allocation to the industrial sector in India.			DV: Credit to the industrial sector IV: I_GDP- Industrial components of GDP IV: NIM-Net interest margin of all commercial banks in India, IV: NPA-Non-performing assets of the industrial sector IV: DUM-Foreign bank dummy CRI- Dummy for the economic crisis

	Hypothesis 16 H_0: The entry of foreign banks in India does not reduce credit allocation to the service sector in India. H_1: The entry of foreign banks in India reduces credit allocation to the service sector in India			DV: Credit to the service sector IV: S_GDP- Service components of GDP IV: NIM-Net interest margin of all commercial banks in India, IV: NPA-Non-performing assets of the service sector IV: DUM-Foreign bank dummy CRI- Dummy for the economic crisis

CHAPTER 5

DETERMINANTS OF FOREIGN BANKS' ENTRY IN INDIA

5.0 Overview of the chapter

This chapter empirically answers why foreign banks entered into India in the post-reform period. First, it briefly describes the extent of foreign banks' entry in India and attempts to answer various reasons for foreign banks' entry in India after liberalization. Thus, this chapter investigates the first objective of the study, i.e., to determine the influencing factors of foreign banks' entry in India as their locational preference. Following Dunning's OLI paradigm (1993), various hypotheses have been developed and tested to achieve the objective. The study uses country-wise panel data for the period 1996 to 2015 and uses the panel generalized method of moment (GMM) estimator. The results of the study have found that foreign banks' entry into India is due to locational advantages of India such as huge FDI from the home country, high interest-rate differentials, and low net interest margins.

5.1 Introduction

Integration of global economies has increased cross-border banking activities, mergers, and acquisition across boundaries, and bank internationalization. With globalization, most of the developing economies have opened up their banking sector to FDI, which made it easy for multinational banks to enter in the host economies. Apart from the liberalization of economies, the entry of foreign banks into the developing countries has been rapid due to the formation of the world trade organization (WTO), and development of the technology and communication system that induce foreign home regulators to monitor their respective home banks in the host economies quite easily (Berger et al. 2003; Gormely 2010; Kim 2010). Thus, the significant penetration of multinational banks has been evident in developing countries in the last decade (IMF 2014). With the expansion of multinational banks, the questions raised by empirical studies about the motives of foreign banks' entry into the host economy especially, developing economy become relevant.

A good number of research studies tried to justify the pull factors of foreign banks' entry into the host economies. Many developing countries have attracted foreign banks due to their locational advantages like high economic growth, less competitive market,

huge population, untapped market, cheap and skilled labor, less risky and liberal regulatory requirements, etc. (Grubel 1977; Cho 1986). Moreover, a large trend of literature tested the *follow your home client* hypothesis (Fieleke 1977; Khoury 1979, 1980; Morphy 1981; Ball and Tschoegl 1982; Goldberg and Johnson 1990; Grosse and Goldberg 1991, Brealey and Kaplanis 1996; Nolle and Seth 1996; Yamori 1998; Moshirian 2001; Mutinelli and Piscitello 2001; Wezel 2004; Focarelli and Pozzolo 2005; Van Horen 2007; Mariscal et al. 2012; Molyneux et al 2013; Mulder and Westerhuis 2015) and most of the studies found it relevant for multinational banks that imply that the purpose of entry of foreign banks and bank FDI inflow is to follow and to serve their home county's clients in the host economies (Massand and Gopalakrishna 2016). After analyzing the determinants of foreign banks' entry, the opinion of literature is divided for different host countries. However, the findings of various studies indicate that the determinants have changed over the period (Noll and Seth 1996).

The main motive of the host nation is to attract and allow more foreign banks to raise foreign capital, increase competition in the banking sector and to induce efficiency in domestic banks (Moshirian 2001; Focarelli and Pozzolo 2005). However, if foreign banks' entry may capture high asset share that exceeds the domestic, this could surpass the objective of allowing foreign banks in the host economy. The acquisition of high asset share by foreign banks in the developing host economies is, in Mexico- 82 percentage, Argentina- 84 percentage, Hungary- 85 percentage, and in Croatia- 92 percentage (IMF 2013). However, if foreign banks' entry is to follow and serve their home clients, that also contributes to rising competition in the host banking market, the purpose of home regulators would be served.

The intention behind increasing the entry of foreign banks in India by the Government of India and Reserve Bank of India was to form a competitive banking market that encourages domestic banks to be more efficient (GOI 1991). It is essential to confirm the purpose of the entry of foreign banks in India, especially in the post-liberalization phase. The first two foreign banks were found in India, i.e., a mercantile bank of India, China, and Shanghai[40] was found in Mumbai, India in 1853 and the Chartered Bank[41] that was established in Mumbai, Kolkata, and Shanghai in 1858.

[40] Today it is known as Hong Kong and Shanghai Banking Corporation.
[41] Today it is known as the Standard and Chartered Bank

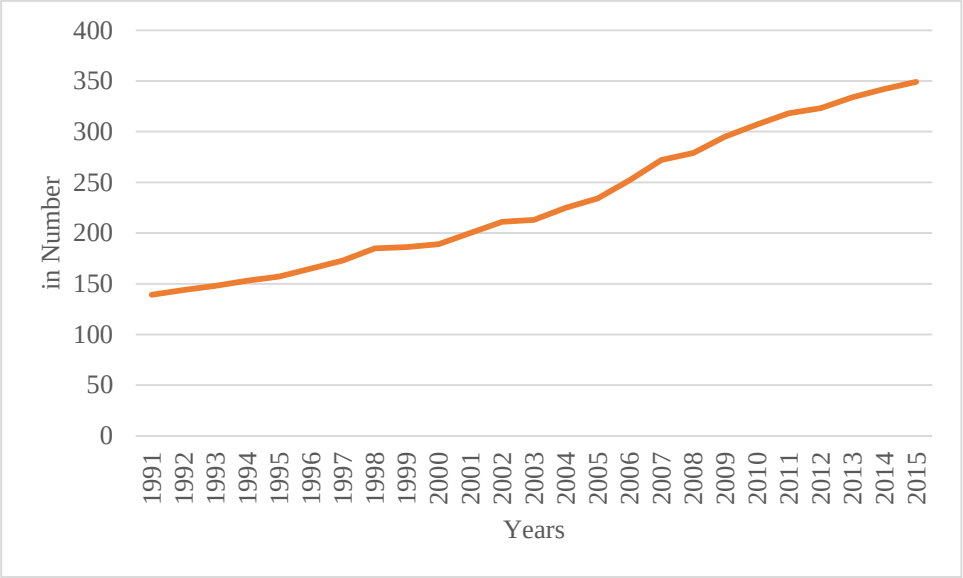
5.2 The penetration of foreign banks in India

Foreign banks' entry is the greenfield investment into the host banking sector. The direct investment through FDI has two different forms. A foreign bank beginning as a branch or subsidiary that is recognized as the green field investment whereas any investment made in domestic host banks is known as brownfield investment. Moreover, the acquisition of local banks by the different home bank is also a part of FDI in the banking sector. India allows 74 percent of FDI in private banks and 20 percent in public sector banks. However, in India, the acquisition of domestic banks by any foreign bank is not allowed[42].

The entry of foreign banks in India is restricted regarding the opening of a number of branches per year. RBI had allowed only five branches per year before liberalization that increased to eight in 1995 and twelve in 1998. RBI has allowed more than 12 branches of foreign banks from 2006 in a single year. Thus, foreign banks in a number of branches rise tremendously after 2006. There were 139 branches of foreign banks in 1991 that is raised to 349 by 2015 (see Figure 5.1). However, domestic bank branches are being established rapidly. Thus, the share of foreign branches of the total bank branches has been reduced gradually over the years. However, the proportion of foreign banks' assets have crossed to 8.5 percent (see Figure 5.2). It indicates that high asset share is captured by the per office of foreign banks or more business is done by per branch of foreign banks. Moreover, the share of bank FDI to GDP has an impressive number over the years (see Figure 5.3). Thus, despite having relatively less spread of foreign banks, the penetration in the Indian market is sensed.

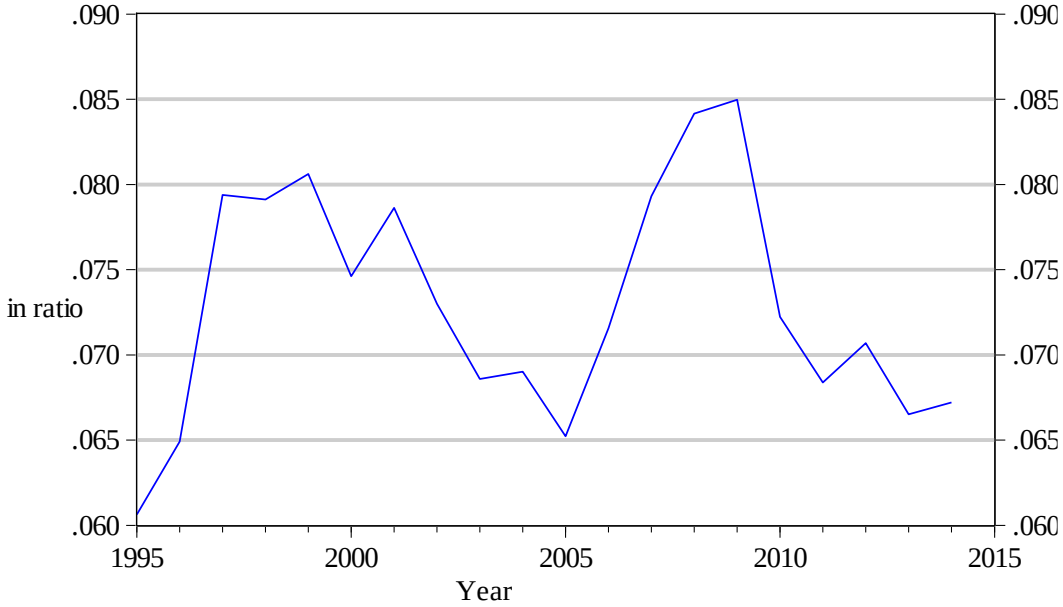
[42] In 2005, RBI has allowed foreign banks to acquire sick private sector banks with the prior permission. However, no private bank in India has been acquired till today.

Figure 5.1 Foreign banks' offices



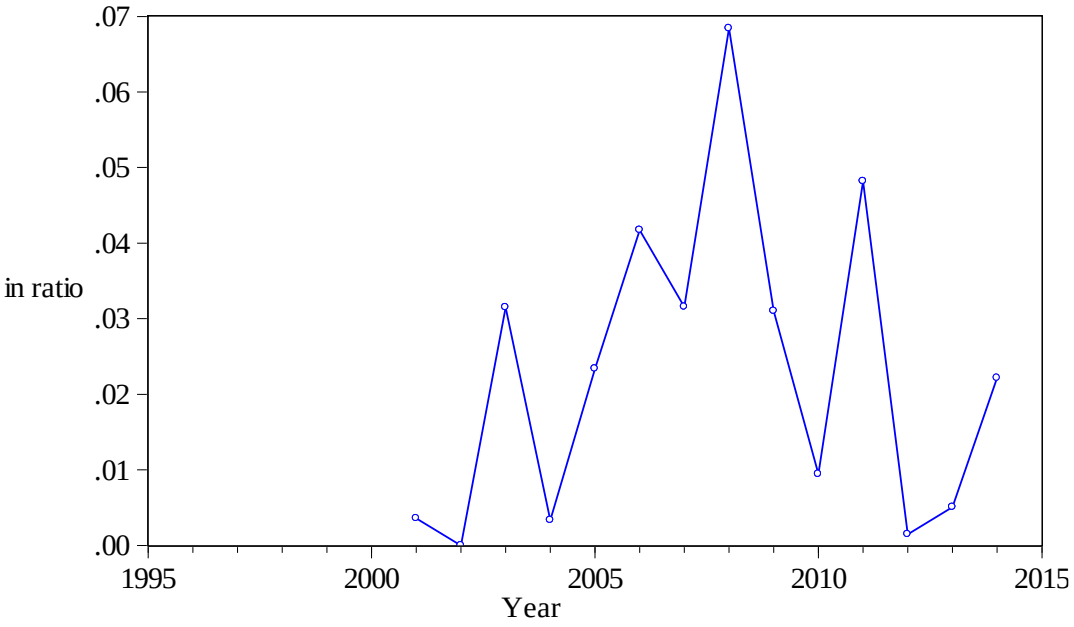
Source: *Statistical Tables relating to banks in India* published by RBI

Figure 5.2 Foreign banks' asset share



Source: *Statistical Tables relating to banks in India* published by RBI

Figure 5.3 Bank FDI inflows to Indian GDP



Source: *Statistical Tables relating to banks in India* published by RBI

5.3 Hypotheses testing

The hypotheses are developed in chapter 2 "Literature review and Hypothesis development." with a detailed review of the literature and theoretical support. The following hypotheses are tested in this chapter.

Hypothesis 1

H_0: The entry of foreign banks in India is not related to its home county clients FDI activity in India.

H_1: The entry of foreign banks in India is positively related to its home county clients FDI activity in India.

Hypothesis 2

H_0: The entry of foreign banks in India is not related to the bilateral trade relationship between its home county and India.

H_1: The entry of foreign banks in India is positively related to bilateral trade- the relationship between its home county and India.

Hypothesis 3

H_0: The entry of foreign banks in India is not related to the economic growth of India.

H_1: The entry of foreign banks in India is positively related to the economic growth of India.

Hypothesis 4

H_0: The entry of foreign banks in India is not related to the net interest margin of the Indian banking sector.

H_1: The entry of foreign banks in India is positively related to the net interest margin of the Indian banking sector.

Hypothesis 5

H_0: The entry of foreign banks in India is not related to the interest rate differential between the home country and India.

H_1: The entry of foreign banks in India is positively related to the interest rate differential between the home country and India.

Hypothesis 6

H_0: The entry of foreign banks in India does not change during the economic or financial crisis period in India.

H_1: The entry of foreign banks in India increases during the economic or financial crisis period in India.

5.4 Methodology and data description

Based on the discussion in the review of the literature and theoretical support, the following is the relationship proposed for the determinants of foreign banks' entry,

Foreign banks in the Indian banking sector

= f (Country-wise FDI, Bilateral trade, Market growth, Interest rate differential, Net interest margin, Net domestic savings, Banking crisis)

The description of the measure of the dependent variable and independent variables is provided below along with their expected signs.

5.4.1 Measure of foreign banks' entry

Foreign banks' entry can be measured through a variety of variables. The various studies have used different proxies for foreign banks' entry. Studies used bank FDI (Yamori 1998; Moshirian 2001; Wezel 2004; Mariscal et al. 2012; Molyneux et al. 2013); number of foreign banks (Goldberg and Johnson 1990; Brealey and Kaplanis

1996; Mutinelli and Piscitello 2001; Van Horen 2007); asset share of foreign banks (Morphy 1981; Goldberg and Johnson 1990; Focarelli and Pozzolo 2005; Van Horen 2007; Molyneux et al. 2013; Mulder and Westerhuis 2015).

The present study uses all these proxies for foreign banks' entry. Foreign banks asset share represents the penetration of foreign banks. Thus, the asset share of foreign banks in the total assets of commercial banks in India is considered as a measure of foreign banks' entry. The number of foreign banks' branches shows the extent of entry of foreign banks. Thus, it is taken as the number of foreign banks' branches to a total number of branches of commercial banks in India. Foreign banks are an effect of allowing bank FDI in the host nation. Thus, bank FDI is also a measure of foreign banks' entry.

5.4.2 Foreign direct investment (FDI)

The empirical studies used Foreign Direct Investment (FDI) to prove the follow-your-client relationship. However, different studies used different sectoral types of FDI to claim following client relationship e.g., bank FDI, Manufacturing FDI (used by Yamori (1998) to prove Japanese financial institutions follow manufacturing FDI; Molyneux et al. (2013) used FDI to prove foreign banks' entry into South East Asian Countries is to follow manufacturing FDI; Hellman (1994) used it to prove Finnish banks following manufacturing FDI), non-finance FDI (Moshirian (2001) used it to prove the bank FDI follows non-finance FDI in the US, UK, and Germany; Wezel (2004) used it to investigate bank FDI follows non-bank FDI in the case of German banks; Mariscal et al. (2012) used it to prove bank FDI follows non-financial FDI for seven Latin American countries), and overall FDI (Goldberg and Johnson (1990) used it to examine bank FDI follows overall FDI in the US; Brealey and Kaplanis, (1996) used it to prove foreign banks follow overall FDI, a cross nations study of 82 host countries; Mutinelli and Piscitello (2001) used overall FDI to prove it as the primary determinants for Italian banks entry). The present study uses overall FDI as the explanatory variable.

Foreign direct investment inflow (FDII) is adopted to prove hypothesis *follow your home client*, FDII is considered as a lagged variable for foreign direct investment inflow normalized by GDP. The results of Kim (2010) claimed that foreign banks in India follow their home clients. Hence the positive sign of FDI is expected.

5.4.3 Bilateral trade

Bilateral trade is measured by adding import and export and dividing by GDP. Clare et al. (2013) found that higher economic activities including imports and exports are real motives for bank Internationalization. Focarelli and Pozzolo (2005) found trade as a highly positive and statistically significant variable to attract both foreign branches and subsidiaries. Wezel (2004) did not discover trade as a strong pull factor for German banks to the host economies. Moshirian (2001) found bilateral trade as one of the major determinants of foreign investment in banking. Thus, the bilateral trade can have a positive relationship with the foreign banks' entry.

5.4.4 Net interest margin (NIM)

Net interest margin (NIM) is interest income minus interest expended divided by total assets. As the number of banks increases, the monopoly in the banking market decreases that leads to a substantial decline in the margins. Foreign banks would like to enter into such markets with high NIM to gain more profits (Focarelli and Pozzolo 2005). According to Das (2013), the average NIM for the developed countries is below 2 percent, but, in the case of India, Mohan et al. (2005) found very high NIM of 2.9 percent and Das (2013) found NIM of Indian banks was around 2.5 percent on an average. Thus, the reduction in NIM denotes scope for further bank competition. Thus, the expected sign for NIM is positive.

5.4.5 Interest rate differential

If a foreign bank yields more interest in the host economy than its economy, a foreign bank can earn more profits and likely to enter into the host nation. Molyneux et al. (2013) and Temesvary (2014) found net interest profit opportunities as major determinants of entry of foreign banks in South East Asian Countries. Interest rate differential represents the profit opportunity in the Indian banking sector. The relatively high real interest rates in India would lead to earning high profits from the Indian banking sector. Thus, the expected relationship between the real interest rate differentials and foreign banks' entry is positive.

5.4.6 Economic growth

Many macroeconomic variables are used to represent the big untapped market that allows profit opportunity. The macro level indicators used for market seeking profit

opportunity are, per capita GDP (Buch 2000; Focarelli and Pozzolo 2003; Wezel 2004; Focarelli and Pozzolo 2005; Haselmann 2006), per capita GNP (Goldberg and Johnson 1990; Yamori 1998), GDP (Brealey and Kaplani 1996; Voinea and Mihaescu 2006; Cerutti et al. 2007). Thus, higher economic growth is considered as the large market offering profit opportunity to foreign banks. Moreover, higher savings of the country represent more growth and less risk (Joshi 2017). The higher savings for people of the nation also represent the large market, and foreign banks would enter into the countries with a huge market opportunity (Dunning 1993).

Financial market development also represents growth in the economy. Brealey and Kaplanis (1996) and Focarelli and Pozzolo (2003) have emphasized that foreign banks attracted to the developed financial markets. The studies use stock market capitalization (Wezel 2005) and credit availability to private sectors (Fontagne 2007) to indicate the financial development of the country.

The present study considers three variables that measure the economic growth of India, i.e., net domestic savings, per capita GNP, and BSE's market capitalization. High net domestic savings represents a tremendous market opportunity that could fascinate foreign banks to locate in India. GNP per capita that represents a huge potential market and growth of the economy that would attract foreign banks. Goldberg and Johnson (1990) found a negative relationship in the case of US banks expanding abroad. Market capitalization is also considered as the barometer for economic growth. Thus, India's oldest stock market BSE's market capitalization is used as a measure of economic growth. Kim (2010) found financial development as a negative factor to attract foreign banks in India. However, the positive sign is expected for all the variables of economic growth. Moreover, these variables have a highly positive correlation among themselves, and therefore all three cannot be used in the same panel (See Table 5.3). Thus, three panels (panel A, B, and C) are developed to test three different variables of economic growth (see Table 5.5).

5.4.7 Economic and financial crisis

Most of the studies used a dummy variable for the economic/financial crisis. However, the actual crisis in the banking sector occurs when the broader money supply is measured against the exchange reserve (Focarelli and Pozzolo 2005). Thus, instead of

using a period dummy variable for the crisis, the proportion of M2 to exchange reserve is considered as the proxy for the banking crisis.

All the variables discussed above are standard from the literature and are collected from reliable sources. Data for all the variables except real interest rates are collected from *Database on the Indian Economy*, *Statistical Tables Relating to Banks in India*, *Basic Statistical Returns of Scheduled Commercial Banks in India*, and *Handbook of Statistics on Indian Economy* published by the RBI from year to year. The data on real interest rates are collected from the World Bank database. The operational definition of all the variables is provided in Table 5.1. Table 5.2 represents the summary statistics of all the variables and Table 5.3 shows the correlation matrix of all the variables that indicate no multicollinearity exists in the dataset.

In the present study, panel data have been employed that has more power and efficiency in testing hypotheses. The panel dataset consists of 480 observations; with 24 host country-wise cross-section data and yearly data for 20 years from 1996-2015. The generalized method of moment (GMM), a dynamic panel data estimator is used to test hypotheses.

Table 5.1 Operational definition of variables

Variables	Definition
AF	Ratio of country-wise assets of foreign banks in India divided by total assets of commercial banks in India
OF	Ratio of country-wise offices of foreign banks in India divided by total bank offices of commercial banks in India
BF	Ratio of country-wise bank FDI inflow into India divided by GDP of India
CF	Ratio of country wise FDI (Foreign Direct Investment) inflow in India divided by GDP of India

BT	Bilateral trade between the home country and India divided by the GDP of India
PG	Per capita gross national product
RI	Real interest rate of India minus Real interest rate of the home country
NIM	Interest income minus interest expended divided by total assets
DS	Net domestic savings of India divided by GDP of India
MC	Market Capitalization of BSE SENSEX (Bombay Stock Market-Sensitivity Index) divided by GDP of India
M_2R	Broad money components (M_2) divided by Exchange rate reserve

Source: Author's definition

The model is shown as follows:

$$(AF, OF, BF)_{ij} = f((AF, OF, BF(-1))_{ij}, CF_{ij}, BT_{ij}, (PG, MC, DS)_j, RI_{(I-H)j}, NIM_j, M2R_j)$$

Here, i represents the home country, j represents a period in years, *I* represent real interest rates in India, H represents real interest rates in the country of origin.

Foreign banks' entry is measured by three variables. AF represents the asset share of foreign banks; OF represents offices share of foreign banks and BF indicates foreign direct investment into the Indian banking sector, CF represents country-wise foreign direct investment inflow in India, BT represents bilateral trade between the home country and India. To measure market growth, three different variables are used, i.e., PG is per capita GDP of India; MC is the market capitalization of the Bombay Stock Exchange (BSE); DS is India's domestic savings, RI represents real interest rate differential between home country and India, NIM represents aggregate net interest margin of banks in India, M_2R accounts for a ratio of broad money M_2 and exchange reserve in India that is a measure of banking crisis.

5.5 Results and discussion

First of all, stationarity is checked for all the variables by using Im, Pesaran, and Shin W-stat test for panel data. Im, Pesaran, and Shin W-stat is a unit root test for individual variables in panel setup and tests the presence of unit root irrespective of the panel being balanced or unbalanced. Here, the panel is unbalanced as data for many variables are missing. Many of the variables are non-stationary at level (see Table 5.4). Thus, these variables are considered at the first difference and performed the mentioned test again. The results of the test indicate that all the variables are stationary at first difference. Hence flow data is considered to execute the model. Table 5.5 represents the result of the generalised method of moment (GMM), a dynamic panel data model.

The GMM estimator is optimal in the given set of data as it addresses the concern of an endogeneity problem[43]. Moreover, The GMM model is run considering the orthogonal deviation effect for cross-section data and the white period is used as the coefficient covariance method. Sargan's J-statistics is employed to check the reliability of the instrumental variable (see Table 5.5). The p-value of J-statistics indicates that instrumental variables are appropriate to use.

The results of GMM estimator (see Table 5.5), the coefficients for country wise FDI are 0.93, 0.35, and 0.013 for all the indicators of foreign banks' entry such as asset share of foreign banks, office share of foreign banks, and bank FDI respectively is positive and statistically significant. It means that foreign banks follow general FDI in India. Thus, the entry of foreign banks into India is positively related to its home county clients FDI activity in India. The results are consistent with the results of Kim (2010) in the Indian context, Song (2009) in the Chinese context, Blandon (2001) in the case of Spain and with the result of many other studies. However, Kim (2010) has used foreign bank asset share and number of foreign banks as the proxy for the entry of foreign banks in India and used a simple panel OLS estimator. Thus, hypothesis 1 cannot be rejected.

[43] The result of other dynamic panel data estimators like Fully Modified OLS cannot be used as some variables are stationary, and some are not. Though the Panel ARDL is highly recommended estimator as it can handle both stationary and non-stationary data. Panel ARDL considers the variable and its own lag values. In this case, the author could not apply it due to the existence of high correlation among the lag variables. Hence, the results obtained through GMM estimator fits appropriately.

Table 5.2 Summary statistics of variables (Common samples) (Objective 2)

	AF	OF	BF	CF	BT	PG	MC	DS	M_2R	RI	NIM
Mean	0.355	0.017	0.000	0.001	0.010	10.365	10.134	0.255	0.718	0.014	0.029
Median	0.023	0.004	0.000	0.000	0.007	10.358	10.337	0.276	0.669	0.006	0.029
Maximum	3.122	0.150	0.000	0.012	0.069	10.814	11.528	0.393	1.150	0.340	0.031
Minimum	0.000	0.000	0.000	0.000	0.000	10.035	8.651	0.121	0.558	-0.310	0.026
Std. Dev.	0.688	0.031	0.000	0.002	0.012	0.230	0.927	0.081	0.131	0.050	0.002
Observations	295	295	295	295	295	295	295	295	295	295	295

Source: Authors' calculation using E-View 9 software.

Table 5.3 Correlation matrix of variables used (Objective 2)

	AF	OF	BF	CF	BT	PG	MC	DS	M_2R	RI	NIM
AF*	1										
OF*	0.895	1.000									
BF*	0.060	0.021	1.000								
CF	0.076	0.087	0.608	1.000							
BT	0.288	0.174	0.002	-0.025	1.000						
PG	-0.020	0.017	0.059	0.176	0.386	1.000					
MC	0.004	0.034	0.073	0.180	0.347	0.942	1.000				
DS	-0.001	0.030	0.078	0.181	0.362	0.967	0.989	1.000			
M_2R	-0.069	-0.055	-0.107	0.007	0.063	0.096	-0.130	-0.092	1.000		
RI	0.046	0.054	-0.095	-0.183	-0.027	-0.171	-0.143	-0.138	-0.070	1.000	
NIM	0.006	-0.011	-0.046	-0.098	-0.160	-0.446	-0.345	-0.337	-0.096	0.173	1

*****represents a dependent variable — s**ource:** Authors' calculation using E-View 9 software.
Note- There is a high correlation between PG, MC, and DS Thus, they are considered in a different panel for analysis.

Table 5.4 Results of the panel unit root test

Im, Pesaran and Shin W-stat				
	At level	p-statistics	At first difference	p-statistics
AF	-2.568	0.005	-11.570	0.000
BF	-0.411*	0.341	-3.152	0.000
OF	2.159*	0.985	-3.308	0.001
CF	-8.633	0.000	-18.279	0.000
BT	-0.490*	0.312	-4.125	0.000
PG	-0.602*	0.274	-0.366	0.057
MC	1.453*	1.453	-1.559	0.060
DS	-0.070*	0.472	-7.550	0.000
RI	-1.407	0.080	-12.059	0.000
NIM	-4.146	0.000	-6.972	0.000
M_2R	9.484*	1.000	-11.225	0.000

*represents statistically insignificant (unit-root present) Source: Authors' calculation using E-View 9 software.

The negative sign for bank FDI with its lag indicates that bank FDI does not follow bank FDI itself, but the positive sign of OF and AF indicates that the foreign banks do follow their global competitors. The present study has formed country wise panel data so the competitors entering from the same country could not be captured. This could be a probable reason for the finding of the negative relation of bank FDI with its lag.

The coefficient of bilateral trade for all the measures of foreign banks' entry is negative and statistically significant that indicates foreign banks' entry has nothing to do with the bilateral trade relationship regarding import and export between the home country and India. Hypothesis 2 is rejected.

Table 5.5 Results of the determinants of the foreign banks-GMM estimator (Arellano and Bover 1995)

	Panel A			Panel B			Panel C		
Independent Variables	AF	OF	BF	AF	OF	BF	AF	OF	BF
(Dependent(-1))	0.69*** (0.00)	0.22*** (0.00)	-0.366*** (0.00)	0.69*** (0.00)	0.23*** (0.00)	-0.367*** (0.00)	0.69*** (0.00)	0.22*** (0.00)	-0.366*** (0.00)
D(CF)	0.93*** (0.00)	0.35*** (0.00)	0.013*** (0.00)	0.61*** (0.00)	0.36*** (0.00)	0.013*** (0.00)	0.62*** (0.00)	0.40*** (0.00)	0.013*** (0.00)
D(PG)	-0.01*** (0.00)	-0.01*** (0.00)	-0.000* (0.08)						
D(MC)				-0.000*** (0.00)	0.000*** (0.00)	-0.000*** (0.00)			
D(DS)							-0.01*** (0.00)	-0.01*** (0.00)	0.000 (0.12)
D(BT)	-0.23* (0.07)	-0.08*** (0.00)	-0.001*** (0.00)	-0.29*** (0.00)	-0.03*** (0.00)	-0.001*** (0.00)	-0.25*** (0.00)	-0.05*** (0.00)	-0.001*** (0.00)
D(RI)	0.68*** (0.00)	0.01*** (0.00)	0.001*** (0.00)	0.71*** (0.00)	0.01*** (0.00)	0.001*** (0.00)	0.64*** (0.00)	0.01*** (0.00)	0.001*** (0.00)
D(NIM)	-7.47*** (0.00)	-0.11*** (0.00)	-0.000 (0.56)	-7.49*** (0.00)	-0.17*** (0.00)	0.000** (0.05)	-7.79*** (0.00)	-0.14*** (0.00)	-0.000 (0.65)
D(M_2R)	-0.11*** (0.00)	-0.01*** (0.00)	0.000*** (0.00)	-0.11*** (0.00)	-0.01*** (0.00)	-0.000*** (0.00)	-0.11*** (0.00)	-0.01*** (0.00)	0.000*** (0.00)
J-statistic	16.737	17.529	17.038	16.261	19.189	16.780	16.457	17.668	16.999
Prob (J-statistic)	0.4722	0.4191	0.3831	0.505	0.318	0.400	0.492	0.410	0.386

***represents significant level at 1%, ** at 5%, * at 10%. p-values in parenthesis. Source: Authors' calculation using E-View 9 software. AF-Country-wise assets of foreign banks in India; OF- Country-wise offices of foreign banks in India; BF- Country-wise bank FDI inflow into India; CF-Country wise FDI (Foreign Direct Investment) inflow in India; BT- Bilateral trade between home country and India; PG- Per capita gross national product; Real interest rate of India minus Real interest rate of home country; M2R-Broad money components (M2) divided by Exchange rate reserve.

The negative coefficient of all the variables used for the economic growth of India to all three measures of foreign banks' entry indicates that foreign banks are not interested in the growing Indian economy. Mere growth in the GNP, high domestic savings, or developing an Indian stock market does not attract foreign banks. The negative result of net domestic savings to foreign banks' entry indicates that foreign banks do not admire huge savings among Indians. Moreover, Indians deposit their savings in local banks rather than foreign banks due to the better spread of domestic banks' branches and their faith in the regional banks that make foreign banks less attractive in India. Moreover, foreign banks are present mostly in metropolitan and urban areas due to restrictions on the entry of branches in Tier 5 and Tier 6 regions in India (Kim 2010). The growth in the economy as GNP per capita does not attract foreign banks in India, and this result is consistent with Song (2009) in the case of China. The sign for stock market capitalization is also negative for all the three measures of foreign banks' entry. Thus, hypothesis 3 is rejected.

In India, the net interest margin (NIM) is quite high comparatively. High NIM represents less competition, and profit opportunity in the banking markets and decline in NIM is the result of an increase in competition. Here, the results of the coefficient of NIM is negative that means that foreign banks enter due to high NIM that indicates profit opportunity and less competition in the Indian banking sector. Thus, the result elucidates that profit opportunity prevailing in the Indian banking sector that attracts foreign banks. Thus, hypothesis 4 cannot be rejected.

The results of the coefficient for real interest rate differential (RI) is positive and statistically significant for all the measures of foreign banks' entry- bank asset share of foreign banks (AF), offices share of foreign banks (OF), and bank FDI (BF). This indicates that foreign banks earn a high profit in India and bank FDI gains good returns on their investment in India. Hence, hypothesis 5 cannot be rejected.

The relationship between the banking crisis and all the measures of foreign banks' entry is found negative. It is not clear that foreign banks enter to buy Indian banking assets at reasonable rates during the crisis period. It is also noted that the period of the global financial crisis affected all the home nations that fostered contracted investment during the crisis period. There were examples when bank FDI entered during the period of

regional crisis, e.g., bank FDI has introduced in Thailand during the Asian financial crisis of 1997 (Clark 2008). The study also used a dummy for the global financial crisis from the period of 2007-2011 and Asian financial crisis for the period of 1997-1999 to check the robustness of variable used here. However, the results for the dummy variable for crisis also present the same results. Thus, hypothesis 6 is rejected.

CHAPTER 6

IMPACT OF FOREIGN BANKS' ENTRY ON THE INDIAN BANKING SECTOR

6.0 Overview of the chapter

The chapter empirically examines the impact on the businesses of Indian banks due to foreign banks' entry on various parameters. The objective adopts the banking model given by Claessens et al. (2001) to investigate the impact on the local Indian banks' profitability due to the foreign banks' entry. The GMM estimator is used to analyze the bank-wise panel data for 20 years from 1996 to 2015. The results show that foreign banks' entry reduces the profitability of domestic banks by raising overhead cost and competition.

6.1 Introduction

For investors, returns on their investment in the host nations are the primary objective. On the other hand, for host nations, the impact of foreign investment inflow on their economy is crucial, especially if the host nations are developing economies (Kim 2010). This is true for any sector receiving foreign investment in the economy. Foreign banks' entry is a direct foreign investment in the banking sector. Many economists attempted to analyze the impact foreign banks can have on the financial performance of local banks that had claimed that foreign banks' entry put some competitive pressure on domestic banks which raises its productivity (Claessens et al. 2001; Lensink and Hermes 2004). In the post-reform period, the entry of foreign banks has increased in India. Thus, it is important to measure the extent of the impact foreign banks can have on the business performance of the Indian banks.

The rise in competition induces an effective banking system (Claessens et al. 2001; Lehner and Schnitzer 2008; Unite and Sullivan 2003). One of the measure for an effective banking system is to enhance profitability and reduction in the overhead cost. The profits of local banks have improved in some emerging nations after the entry of foreign banks (Hermes and Lensink 2004; Kalluru and Bhat 2009; Ghosh 2012). However, the findings of many studies did not agree with these results. They found that more competition through foreign banks' entry reduces profits of domestic banks (Claessens et al. 2001; Unite and Sullivan 2003; Wu et al. 2007; Lee et al. 2012).

Moreover, remote banks keep the low-interest margin in the host nations than their local counterparts (Ghosh 2012) that lead them to generate more profits and achieve better through competition (Sabi 1996; Claessens and Horen 2012 and Chen and Liao 2011). The expansion of foreign banks, apart from bringing more investment, enhances competition in the market (Barajas et al. 2000; Jeon et al. 2011; Claessens et al. 2001; Lee et al. 2012; Mulyaningsih et al. 2015). However, if an economy restricts the entry of foreign banks or is not yet open for more foreign banks, it is a hindrance to competition. Restrictive policy on foreign banks' entry did not allow competition to rise in the Indian banking system (Sathye 2003). However, the studies on Indian context by Kalluru and Bhat (2009) and Ghosh (2012) find the rise in profitability of Indian domestic banks due to foreign banks' entry. There is a diverse response in the literature on the effect of foreign banks' entry on domestic banks' performance. Thus, India is a good case study to find this objective.

India liberalized its banking industry to attain great competition, productivity, and proficiency of local banks (Government of India, 1991). Despite the restriction in the multinational bank's entry, they have captured an impressive asset share. Hence, the degree of the control of foreign banks on the balance sheet of inland banks is profound (Kalluru and Bhat 2009; Gormely 2010; Ghosh 2012). In India, external foreign banks have nearly fifty percent of corporal existence based on the number of banks in the financial year 2015-16. Moreover, Claessens et al. (2001) claim that the mere entrance of foreign banks alarms domestic banks. Foreign banks' entry induces narrowing of the efficacy gap between the public and the private banks in India (Bhaumik and Dimova 2004). Hence, the probe on the impact of the entry of foreign banks on the businesses of Indian domestic banks on competition, productivity, and competence is crucial.

6.2 Competition in the Indian banking sector

The Indian banking sector is considered to be fiercely competitive. There are 27 public sector banks (government ownership of more than 51 percentage), 20 Indian private sector banks and 44 foreign banks by 2016 in the commercial banking space in India. The competition is measured through the Herfindahl-Hirschman Index (HHI) that represents the concentration in the market. Herfindahl-Hirschman Index (HHI) based

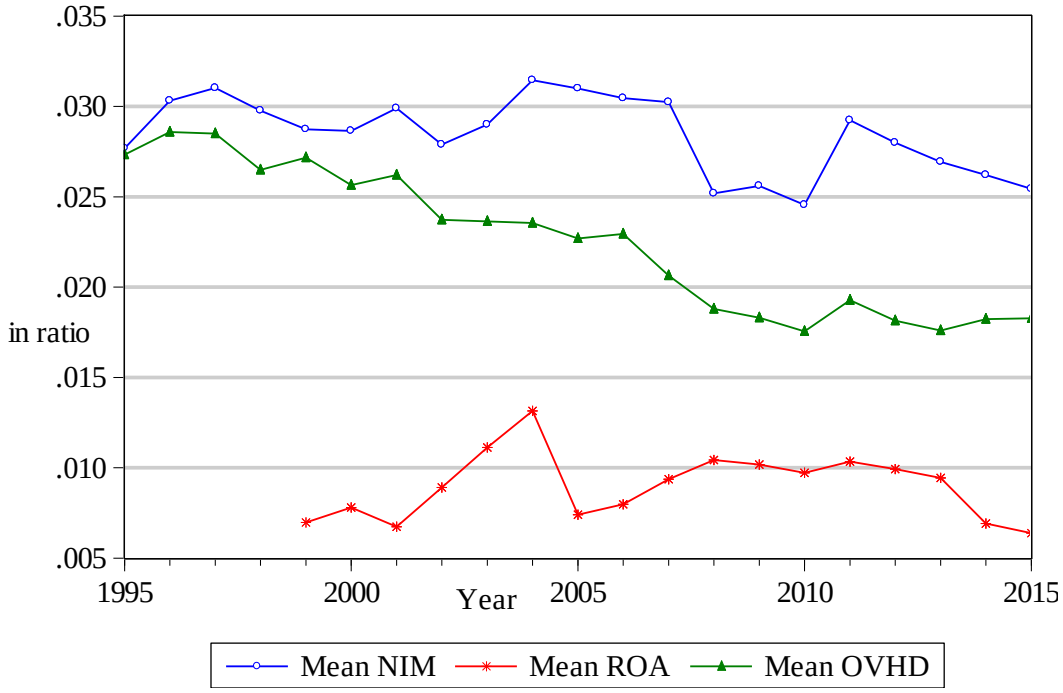
on banking advances that gradually declined over the study period. This is mainly due to the deregulation of banks and various reforms in the Indian banking sector.

It is considered that, with the rise in competition, the net interest margin (NIM) reduces due to a fall in the concentration of a few banks in the banking industry. It can be due to the foreign banks' entry (Focarelli and Pozzolo 2005). Thus, an increase in banking competition leads to a reduction in the net interest margin (NIM). Figure 6.1 shows the net interest margin (NIM), return on asset (ROA) and overhead expenses of Indian domestic banks.

The NIM of Indian banks has some fluctuations in it, with a small fall after 1997 and a huge fall after 2004. The average NIM of Indian domestic banks from 1995 to 2015 is 2.84. The trend of overhead expenses to a total asset for Indian banks is in declining order. However, from 2008 onwards, it became more or less stable. The trend of return on asset is rising in 2001, and there is a sharp fall in 2004 along with the net interest margin. During the study period from 1996 to 2015, plenty of reforms are undertaken in Indian banking sectors. The figures 6.1 show the fall in NIM, ROA, and Overhead expenses on assets in the Indian banking sector.

The objective of liberalization of the Indian banking sector in 1991 and a series of reforms especially after 1995, was to enhance competition, proficiency, and service in the Indian banking sector (GOI 1991). From the period of nationalization to the period of reforms, the market was concentrated towards Indian public sector banks, SBI & its associates and nationalized banks. They had a market share of advances, more than 90 percent that gradually reduced to 60 percent recently.

Figure 6.1 Net interest margin (NIM), Return on Asset (ROA), and Overhead cost of Indian domestic banks



6.3 Hypotheses testing

The hypotheses are developed in chapter 2 "Literature review and hypothesis development." with a detailed review of the literature and theoretical support. The following hypotheses are tested in this chapter.

Hypothesis 7

H_0: The entry of foreign banks in India has no impact on competition in the Indian banking sector.

H_1: The entry of foreign banks in India increases competition in the Indian banking sector.

Hypothesis 8

H_0: The entry of foreign banks in India has no impact on the non-performing assets of Indian domestic banks.

H_1: The entry of foreign banks in India has an impact on the non-performing assets of Indian domestic banks.

Hypothesis 9

H_0: The entry of foreign banks in India has no impact on the overheads of Indian domestic banks.

H_1: The entry of foreign banks in India increases the overheads of Indian domestic banks.

Hypothesis 10

H_0: The entry of foreign banks in India has no impact on the net interest margin of Indian domestic banks.

H_1: The entry of foreign banks in India reduces the net interest margin of Indian domestic banks.

Hypothesis 11

H_0: The entry of foreign banks in India has no impact on the profitability of Indian domestic banks.

H_1: The entry of foreign banks in India has an impact on the profitability of Indian domestic banks.

6.4 Data description

6.4.1 Dependent variables

The dependent variables used here indicate the performance of Indian domestic banks and competition in the Indian banking sector. The dependent variables used are HHI index based on advances, Net interest margin (NIM) of Indian domestic banks, Overhead expenses, Non-performing assets (NPA), Return on asset (ROA) and Return on equity (ROE).

6.4.1.1 Competition

The Herfindahl-Hirschman index (HHI) is a measure of market power and firm concentration. It is widely used to measure competition in the banking industry (Sathey 2002). The present study uses the HHI of advances, calculated as the sum of squares of advance market share in the Indian banking sector. Sapienza (2004) and Ghosh (2012) have used HHI based on loans. As the concentration by a few banks reduces, the competition in the banking sector increases. Thus, a negative sign is projected for this variable.

6.4.1.2 Efficiency

Net interest margin (NIM) is a measure of efficiency in the banking sector (Das 2013) that is calculated as interest expense deducted from interest income normalized by total assets. NIM represents how efficiently a bank utilizes its credit and investment. Though high NIM represents more profitability of a bank, low NIM represents more efficiency of the banking sector (Das 2013). With the increase in competition, banks tend to contract their margins. Therefore, NIM reduces with the upsurge in the number of companies in the sector. Hence, if local banks compete with foreign banks, the NIM should be contracted. The negative sign for NIM is predicted. The results of Barajas et al. (2000) and Seo et al. (2013) testified deteriorating margins of local banks. In the case of less developed countries, Hermes and Lensink (2004) reported a negative association between foreign banks presence and net interest margin but a positive correlation was found for developed countries. In the case of India, Ghosh (2012) and Kalluru and Bhat (2009) also found diminishing of margins for national banks. However, the relationship was statistically insignificant.

6.4.1.3 Asset quality

Non-performing asset (NPA) means any asset or advances that do not contribute to yield any profit to the bank. It is also known as bad loans adjusted for total advances. NPA is more precise in measuring the true status of the return from banks' credit supply than provisioning in their balance sheet. If indigenous banks replicate effective credit risk management practices of foreign banks and develop their abilities for credit valuation or follow foreign banks' strategy by allocating credit only to hard information businesses (Gormley 2010) that can improve quality of the asset of local banks. On the other hand, if native banks enhance advancing to compete with foreign banks, they may end up with greater bad loans. Thus, the exact sign for NPA cannot be anticipated. Barajas et al. (2000) reported deterioration in the NPAs of national banks due to foreign banks' entry. However, the findings of Indian studies are different in this case. Ghosh (2012) found declining of NPAs after post entry of foreign banks whereas Kalluru and Bhat (2009) reported a rise in NPAs of Nationalized banks.

6.4.1.4 Overhead cost

Overhead cost is calculated as operating overhead incurred by local banks normalized by overall assets. If local banks strive for their asset share in the market and spend more money to compete with foreign banks, their expenditures may increase. Thus, the positive sign is anticipated for overhead cost. Barajas et al. (2000) and Ghosh (2012) reported an upsurge in costs with the surge in remote banks' share. Moreover, a study by Herms and Lensink (2004) found a positive relation between overhead cost and foreign banks' entry for emerging nations whereas, the negative correlation in the case of advanced nations.

6.4.1.5 Profitability

The productivity of any bank can be measured by Return on asset (ROA) and Return on equity (ROE). ROA is measured by profit before tax normalized by overall assets that represent overall profitability of banks and ROE is calculated by net profit normalized by capital plus reserves and surplus that signifies the banks' competence to make profits for its stockholders. Local banks may replicate technology of external banks and may enable their employees for handling higher technology or hire trained personnel to compete with foreign banks that elevates the total productivity and yields a great profit for their stockholders. Thus, inland banks intensify their ability and get promoted by the spillover effects of foreign banks. In another case, domestic banks may not be able to compete with foreign banks and incur high loses in training their staff and adopting high tech. Hence, the relationship is uncertain. Scholarly work by Claessens et al. (2001) and Unite and Sullivan (2003) reported a negative correlation. However, the work carried out by Ghosh (2012) and Kalluru and Bhat (2009) reported a positive relationship.

6.4.2. Independent variables

The important independent variable is the measures of foreign banks' entry that is measured here through three different variables, bank foreign direct investment (BF), asset share of foreign banks (AF), and offices share of foreign banks (OF) in India. The other independent variables are control variables such as capital to risk-weighted asset

ratio (CRAR) and liquidity (LIQDT), banking concentration (CONC), real service GDP (SG), the real rate of interest (RIR) and broad money to exchange reserve ratio (M_2R).

6.4.2.1 Foreign banks' entry

The entry of foreign banks is measured by three variables, i.e., bank foreign direct investment to total FDI in India (BF), asset captured by foreign banks to total banking asset (AF), offices share of foreign banks to total branches of banks in India (OF). There is a fourth measure, the number of foreign banks used in Herms and Lensink (2004), Kalluru and Bhat (2010), and Claessens et al. (2001). However, this variable has been avoided due to its reverse trend in the present study. This is due to an increase in the number of foreign banks over the years whereas the number of local Indian banks have declined due to consolidation and merger. According to Goyal and Joshi (2011), the Indian banking sector has undergone more than twenty mergers and consolidation in the last two decades. Hence, the proportion of foreign banks has risen against the proportion of branches of foreign banks that may mislead findings. Moreover, the trend for consolidation and merger is common in other emerging countries as well. One more interesting observation is, in a similar study Claessens et al. (2001) did not find an asset share of foreign banks as significant. Subsequently, studies that followed Claessens also did not consider the asset share of foreign banks in their studies. However, Ghosh (2012) has utilized all the variables of foreign banks' entry, i.e., asset share, number share, and branch share of foreign banks in India. The present study uses these variables along with the direct bank investment that is a long-term capital investment in Indian banks. There are studies considering BF as the proxy measure of foreign banks' entry such as Nigh et al. (1986), Yamori (1998), and Moshirian (2001).

6.4.3 Control variables

The present work on the impact of foreign banks' entry on the balance sheet of local Indian banks have to consider control variables of individual bank specific, banking industry specific, and macroeconomic specific, as many internal and external factors do affect the financial performance of domestic banks apart from foreign banks' entry.

6.4.3.1 Bank specific variables

Capital to risk-weighted asset ratio (CRAR) and liquidity (LIQDT) measures the specific effect from individual banks. CRAR is the capital requirement by BASEL norms that has been adopted by RBI for all the commercial banks in India which specifies the capital requirement based on the risk-bearing assets in different tiers for the asked period. LIQDT is the liquidity situation maintained by an individual bank that comprises of cash with the bank, cash balance with RBI, cash balance with other banks, and call money[44].

6.4.3.2 Industry specific variables

Banking concentration (CONC) is considered a banking industry specific variable to capture the effect of industrial changes on the banks' balance sheet. CONC represents the dominance of the top five banks in drawing deposits in the banking space.

6.4.3.3 Macroeconomic variables

The macroeconomic environment can also influence the performance of banks. The growth in the service sector (i.e., real service GDP (SG)) and prevailing interest rates (real rate of interest (RIR)) are considered. Moreover, the study also uses broad money to exchange reserve ratio (M_2R) proxy for the banking crisis.

6.5 Source of dataset

The adopted variables are taken from the annual publications of RBI – *Statistical Tables related to Banks in India, Handbook of Statistics on the Indian Economy, and The Basic Statistical Return of Scheduled Commercial Banks*. Data on interest rate is taken from the World Bank database.

Panel data comprises a cross-section of 44 domestic banks for the period of 1996 to 2015. However, two recently established banks "Kotak Mahindra Bank" and "Yes Bank" have been excluded from the database[45]. Moreover, the availability of data of

[44] This liquidity position is also regulated by RBI and banks have to reserve their cash in RBI by abiding various norms relating to Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR).

[45] Kotak Mahindra Bank is licensed in the year 2003 and Yes bank is licensed in the year 2005. The data used in this study is from 1996 to 2015. Hence, these two banks are excluded from the research for the sack of consistency in the data.

bank FDI is limited. i.e., the data is available only from 2001 onwards. Therefore, the total common observations for the panel above data is 606.

Table 6.1 presents the summary statistics of the data and Table 6.2 presents the correlation matrix of all the variables. There is a positive correlation between the dependent variables. However, the correlation between variables is not high that indicates no multicollinearity problem in the dataset.

6.6 Empirical model

The present empirical research is supported by the theoretical evidence in the form of accounting equation (i) that denotes that profit of banks is determined by the summation of Interest income (IrI) and other income (OrI) that is subtracted from Overhead cost (OhC) and Non-performing asset (NPA). Change in any of the equation constituents results in a change in the profit. Furthermore, the theory support for the assumption that any change in the asset share of a foreign bank (AF) or offices share of foreign banks (OF) or bank FDI (BF) brings change in the local banks' profits. This change may derive from the change in the decision of local bank management to compete with foreign banks that change any of the explanatory variables of equation (i).

$$PB = IrI + OrI - OhC - NPA \qquad (i)$$

PB= profit of banks, IrI=interest income, OrI=other income, OhC=overhead cost, NPA= non-performing asset.

The present research study aims to analyze the extent of impact on the local banks' balance sheet due to the entry of foreign banks in the post-reform period in India. The present study considers Claessens et al.'s (2001) study as a base study and expands it in the Indian context. As mentioned earlier foreign banks' asset share, foreign banks' branch share, and bank FDI are used to measure foreign banks' entry. Moreover, there are six variables considered to measure the change in the balance sheet of domestic banks. HHI index measures competition in the local banking market, net interest margin (NIM) that measures efficiency of banks, non-performing assets (NPA) that measure the asset quality of local banks, return on assets (ROA) and return on equity (ROE) are the measures of profitability and productivity of local Indian banks, overhead cost

(OhD) is the measure used for expenditure of local Indian banks. All the variables are considered as flow variables. The model developed is as follows.

$$P_{it} = \beta_0 + \beta_1 S_t + \beta_2 I_t + \beta_3 B_t + \beta_4 M_t + \in_{it} \qquad \text{(ii)}$$

Where, P_{it} denotes the performance measure of Indian local bank *i* in the year *t*; $S_t$denotes share of foreign banks in the year *t* (i.e. fore,,ign banks' share in terms of assets/branches/ bank FDI); I_t denotes individual banking control variables at time *t*

Table 6.1 Summary statistics of variables

	BF	AF	OF	NIM	NPA	ROA	ROE	OVHD	CONC	CRAR	LIQDT	RIR	SG	M_2R	HHI
Mean	0.023	0.073	0.003	0.028	0.027	0.009	0.152	0.021	0.394	0.131	0.088	0.050	10.037	0.742	0.061
Median	0.023	0.072	0.003	0.028	0.015	0.010	0.163	0.020	0.395	0.127	0.080	0.049	10.003	0.671	0.056
Maximum	0.068	0.085	0.004	0.047	0.184	0.024	0.430	0.041	0.424	0.564	0.700	0.086	10.580	1.094	0.083
Minimum	0.000	0.065	0.003	0.002	0.000	-0.034	-0.638	0.006	0.371	0.017	0.028	-0.006	9.500	0.557	0.054
Std. Dev.	0.020	0.006	0.000	0.007	0.029	0.005	0.096	0.006	0.017	0.036	0.047	0.025	0.350	0.156	0.009
Observations	606	606	606	606	606	606	606	606	606	606	606	606	606	606	606

note: BF – bank foreign direct investment; AF – asset share of foreign banks; OF– offices share of foreign banks; NIM – net interest margin of Indian domestic banks; NPA – non-performing assets of Indian domestic banks; ROA – return of assets of Indian domestic banks; ROE- return on equity of Indian domestic banks; OVHD – overhead cost of Indian domestic banks; CONC- deposits of top five banks in India; CRAR – capital to risk-weighted asset ratio; LIQDT – liquidity of Indian domestic banks; RIR – real interest rate of India; SG – service growth of India; M_2R – broad money by exchange reserve; HHI- Herfindahl-Hirschman index.

Table 6.2 Correlation matrix of the variables

	BF	AF	OF	CRAR	LIQDT	CONC	SG	M2R	RIR	NIM	NPA	ROA	ROE	OVHD	HHI
BF	1.000														
AF	0.365	1.000													
OF	0.202	0.584	1.000												
CRAR	0.060	0.019	-0.039	1.000											
LIQDT	0.036	0.182	0.219	0.231	1.000										
CONC	-0.116	-0.129	0.155	-0.178	0.147	1.000									
SG	0.134	-0.130	-0.515	0.147	-0.258	-0.816	1.000								
M2R	-0.465	-0.325	-0.390	-0.095	-0.137	-0.082	0.269	1.000							
RIR	-0.108	0.204	0.195	-0.206	0.145	0.732	-0.647	0.181	1.000						
NIM	-0.044	-0.110	0.072	0.266	0.212	0.247	-0.200	-0.082	0.128	1.000					
NPA	-0.300	-0.090	0.125	-0.254	0.080	0.590	-0.639	0.146	0.499	0.007	1.000				
ROA	0.025	0.025	-0.064	0.315	0.089	-0.058	-0.004	-0.159	-0.107	0.409	-0.289	1.000			
ROE	-0.032	0.041	-0.013	0.053	0.044	0.055	-0.152	-0.145	-0.004	0.288	-0.149	0.780	1.000		
OVHD	-0.092	-0.029	0.192	-0.031	0.155	0.434	-0.453	-0.053	0.315	0.471	0.438	-0.209	-0.177	1.000	
HHI	-0.370	0.268	0.469	-0.137	0.154	0.411	-0.478	0.418	0.503	0.044	0.443	-0.176	-0.076	0.255	1.000

Note: BF – bank foreign direct investment; AF – asset share of foreign banks; OF– offices share of foreign banks; NIM– net interest margin of Indian domestic banks; NPA – non-performing assets of Indian domestic banks; ROA – return of assets of Indian domestic banks; ROE- return on equity of Indian domestic banks; OVHD – overhead cost of Indian domestic banks; CONC- deposits of top five banks in India; CRAR – capital to risk-weighted asset ratio; LIQDT – liquidity of Indian domestic banks; RIR – real interest rate of India; SG – service growth of India; M_2R – broad money by exchange reserve; HHI- herfindahl-hirschman index.

(i.e., CRAR or LIQDT); $B_t$denotes bank industry control variable at time *t* (i.e. CONC); M_t represents macroeconomic variables at time t (i.e. SG ,,and RIR). β_0 is intercept and $\beta_1, \beta_2, \beta_3, \beta_4$are the coefficients of explanatory variables. $\in_{it}$ is random error.

6.7 Results and discussion

First, the stationarity test Im, Pesaran and Shin W-stat is run on all the variables. A few variables are found non-stationary at level. Hence, these variables are considered at the first difference. Generalized Method of Moments (GMM) estimator for panel data is employed (see Table 6.3), that is, a dynamic panel data estimator used for avoiding endogeneity and heteroscedasticity problems.

The result of the panel data regression is presented in Table 6.4 (GMM results), where three different panels are formed, one for each explanatory variable computing foreign banks' entry, i.e., bank foreign direct investment (BF), asset share of foreign banks (AF), and offices share of foreign banks (OF). In all the panels, variables about individual bank, industry, and macroeconomics have been controlled. The results support that foreign banks' entry enhances competition in the market (hypothesis 7), reduces net interest margin (hypothesis 8), improves profitability (hypothesis 9), increase overhead cost (hypothesis 10), reduce non-performing assets (hypothesis 11). The results are consistent with the results of Claessens et al. (2001) and other studies supporting it. However, the findings of the study, the entry of foreign banks reduces the profitability of Indian banks with the reduction in the net interest margins that is different from the findings of Kalluru and Bhat (2009) and Ghosh (2012) in the case of India. The results of the present study are in line with the banking theories that proclaims that, with the fall in the net interest margin, there should be a decline in the profits.

The coefficient of bank FDI is -0.06 which is statistically significant that shows the rise in 1 percent of bank FDI leads to condense of concentration or increase of competition by 0.06 percent (see Figure 6.4-column A-1). Correspondingly, the surge in one percent in assets share of foreign banks and offices share of foreign banks leads to a drop in HHI index by 0.15 percent and 0.36 percent respectively (column A-2 and A-3). The negative sign of the HHI index represents an increase in competition. Thus,

foreign banks' entry brings competition in the Indian banking sector. Thus, hypothesis 7 cannot be rejected.

The coefficient of BF and AF are, -1.14, -9.89 respectively that indicate the negative relationship with the net interest margin (NIM) (See figure 6.4, column B-1 and B-2). This indicates that foreign banks' entry reduces the interest margins of Indian banks (hypothesis 8). However, the results of the offices share represent a positive relationship with NIM. This is due to the change in the foreign banks' offices is a minute every year due to India's restrictive policy on the entry of foreign banks offices per year. According to Ghosh (2012), foreign banks charge less interest comparatively in India. This would foster Indian banks to reduce their margins, and that induces the rise in competition. For a bank, a reduction in net interest margin indicates a fall in profitability, but for the banking industry, it indicates a rise in competition and efficiency (Das 2013). Thus, hypothesis 8 cannot be rejected.

The result of the impact on profitability, the coefficient of BF and OF are negative on ROA and ROE that indicates that the reduction in profits with the rise in the foreign banks' entry (hypothesis 7). These results are as per banking theories and in line with the results of Claessens et al. (2001) and others. Thus, with the reduction in net interest margins, the profits of Indian banks reduces. However, the result of a variable asset share shows a positive relationship with ROA and ROE (see column C-2 and D-2). These results are consistent with the previous Indian studies Kalluru and Bhat (2009) and Ghosh (2012). The reasons for increasing profitability found by these studies were, foreign banks compel domestic banks to improve their credit evaluation techniques and efficiency that help them to reduce NPAs which lead to a rise in profits. However, following the banking theories, with the reduction of NIM and a rise in competition, there should be a reduction in the profits. The present study cannot reject hypothesis 9 that with the increase in foreign banks' entry, there is a reduction in the profitability of Indian domestic banks. Thus, the contention that domestic banks spend more, to compete with new generation foreign players leading to a decline in their profits, holds good.

Table 6.3 Results of the panel unit root test

Im, Pesaran and Shin W-stat				
	At level	p-statistics	At first difference	p-statistics
BF	-4.99964	0	-18.8355	0
AF	-11.5887	0	-12.0424	0
OF	-7.51812	0	-8.84951	0
NIM	-1.6002	0.0548	-11.4397	0
NPA	-3.2082	0.0007	-13.6699	0
ROA	-2.79528	0.0026	-8.33559	0
ROE	-3.00603	0.0013	-8.85962	0
OVHD	1.05835	0.8551	-14.3953	0
CRAR	-6.45381	0	-13.5736	0
LIQDT	-4.50235	0	-14.505	0
CONC	1.98442	0.9764	-5.32272	0
SG	-3.42886	0	-7.1419	0
RIR	0.07236	0.5288	-6.31398	0
M2R	8.26404	1	-16.1861	0
HHI	1.00234	0.8419	-2.42984	0

Note: BF – bank foreign direct investment; AF – asset share of foreign banks; OF– offices share of foreign banks; NIM– net interest margin of Indian domestic banks; NPA – non-performing assets of Indian domestic banks; ROA – return of assets of Indian domestic banks; ROE- return on equity of Indian domestic banks; OVHD – overhead cost of Indian domestic banks; CONC- deposits of top five banks in India; CRAR – capital to risk-weighted asset ratio; LIQDT – liquidity of Indian domestic banks; RIR – real interest rate of India; SG – service growth of India; M_2R – broad money by exchange reserve; HHI- Herfindahl-Hirschman index.

Table 6.4 Results of the impact of foreign banks' entry on the domestic banks' performance (GMM results)

	Panel A			Panel B			Panel C		
Dep. Var. / Ind. Var.	HHI (A-1)	HHI (A-2)	HHI (A-3)	NIM (B-1)	NIM (B-2)	NIM (B-3)	ROA (C-1)	ROA (C-2)	ROA (C-3)
D(Dep var.(-1))	-1.01*** (0.00)	-0.37*** (0.00)	-0.37*** (0.00)	0.012 (0.74)	-0.02 (0.58)	-0.03	-0.18*** (0.00)	-0.17*** (0.00)	
D(BF)	-0.06*** (0.00)			-1.14** (0.03)			-0.00 (0.48)		
D(AF)		-0.15*** (0.00)			-9.89** (0.01)			0.04*** (0.00)	
D(OF)			-0.36 (0.22)			229.0*** (0.00)			-3.58*** (0.00)
D(CRAR)	-0.07*** (0.00)	-0.04*** (0.00)	-0.04*** (0.00)	6.17*** (0.00)	4.16*** (0.00)	4.4*** (0.00)	0.03*** (0.00)	0.03*** (0.00)	0.03*** (0.00)
D(LIQDT)	0.26** (0.02)	0.10*** (0.00)	0.06*** (0.00)	-0.57 (0.25)	0.21 (0.51)	-0.75 (0.10)	0.02*** (0.00)	0.02*** (0.00)	0.03*** (0.00)
D(CONC)	0.21*** (0.00)	0.04*** (0.00)	0.03*** (0.00)	3.085 (0.32)	2.86*** (0.00)	3.89*** (0.00)	-0.03*** (0.00)	-0.04*** (0.00)	-0.04*** (0.00)
D(SG)	0.12*** (0.00)	0.13*** (0.00)	0.12*** (0.00)	4.76** (0.04)	1.91*** (0.00)	0.09 (0.85)	-0.03*** (0.00)	-0.03*** (0.00)	-0.02*** (0.00)
D(M_2R)	0.02*** (0.00)	0.01*** (0.00)	0.01*** (0.00)	-0.52 (0.20)	-0.35*** (0.00)	-0.22*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)
D(RIR)	-0.05** (0.02)	0.03*** (0.00)	0.00** (0.02)	4.93* (0.08)	5.37*** (0.00)	1.66*** (0.02)	0.00 (0.59)	0.00 (0.20)	0.00 (0.85)
J-stat.	19.99	37.61	42.00	34.53	38.39	40.55	40.68	42.04	40.95
P	0.00	0.00	0.00	0.53	0.40	0.28	0.27	0.23	0.26

***represents significant level at 1%, ** at 5%, * at 10%. Note: BF – bank foreign direct investment; AF – asset share of foreign banks; OF– offices share of foreign banks; NIM– net interest margin of Indian domestic banks; NPA – non-performing assets of Indian domestic banks; ROA – return of assets of Indian domestic banks; ROE- return on equity of Indian domestic banks; OVHD – overhead cost of Indian domestic banks; CONC- deposits of top five banks in India; CRAR – capital to risk-weighted asset ratio; LIQDT – liquidity of Indian domestic banks; RIR – real interest rate of India; SG – service growth of India; M_2R – broad money by exchange reserve; HHI- Herfindahl-Hirschman index.

Cont. Table 6.4 Impact of foreign banks' entry on the domestic banks' performance (GMM results)

	Panel D			Panel E			Panel F		
Dep. Var./ Ind. Var.	ROE (D-1)	ROE (D-2)	ROE (D-3)	OVHD (E-1)	OVHD (E-2)	OVHD (E-3)	NPA (F-1)	NPA (F-2)	NPA (F-3)
D(Dep var.(-1))	-0.19*** (0.00)	-0.16*** (0.00)	-0.19*** (0.00)	-0.11*** (0.00)	-0.19*** (0.00)	-0.19*** (0.00)	0.10*** (0.00)	-0.24*** (0.00)	-0.25*** (0.00)
D(BF)	-0.11*** (0.02)			0.01** (0.03)			0.00 (0.97)		
D(AF)		0.80*** (0.00)			-0.06*** (0.00)			-0.45*** (0.00)	
D(OF)			-77.5*** (0.00)			0.80 (0.24)			-21.1*** (0.00)
D(CRAR)	0.72*** (0.00)	0.79*** (0.00)	0.76*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.00 (0.98)	-0.06*** (0.00)	-0.05*** (0.08)
D(LIQDT)	0.40*** (0.00)	0.36*** (0.00)	0.53*** (0.00)	-0.01*** (0.00)	0.00 (0.93)	0.00 (0.24)	0.05*** (0.00)	-0.04*** (0.00)	-0.05*** (0.01)
D(CONC)	-0.60*** (0.00)	-0.67*** (0.00)	-0.85*** (0.00)	0.06*** (0.00)	0.04*** (0.00)	0.03*** (0.00)	0.22*** (0.00)	-0.17*** (0.00)	-0.21*** (0.00)
D(SG)	-0.50*** (0.00)	-0.48*** (0.00)	-0.34*** (0.00)	0.00 (0.83)	0.01*** (0.00)	0.00 (0.12)	-0.11*** (0.00)	-0.03 (0.11)	-0.02 (0.55)
D(M_2R)	-0.15*** (0.00)	-0.14*** (0.00)	-0.10*** (0.00)	0.01*** (0.00)	0.00*** (0.00)	0.00 (0.10)	0.05*** (0.00)	0.02*** (0.00)	0.04*** (0.00)
D(RIR)	-0.03 (0.49)	-0.07 (0.15)	0.05 (0.56)	-0.01*** (0.00)	0.00 (0.88)	0.00 (0.26)	-0.15*** (0.00)	0.08** (0.02)	-0.04 (0.24)
J-stat.	40.15	40.66	39.93	41.56	39.41	40.76	36.93	40.38	37.83
P	0.29	0.27	0.30	0.24	0.32	0.27	0.43	0.28	0.39

***represents significant level at 1%, ** at 5%, * at 10%. Note: BF – bank foreign direct investment; AF – asset share of foreign banks; OF– offices share of foreign banks; NIM– net interest margin of Indian domestic banks; NPA – non-performing assets of Indian domestic banks; ROA – return of assets of Indian domestic banks; ROE- return on equity of Indian domestic banks; OVHD – overhead cost of Indian domestic banks; CONC- deposits of top five banks in India; CRAR – capital to risk-weighted asset ratio; LIQDT – liquidity of Indian domestic banks; RIR – real interest rate of India; SG – service growth of India; M_2R – broad money by exchange reserve; HHI- Herfindahl-Hirschman index.

Table 6.5 Comparative results of the empirical studies (Objective 3)

Author	NIM	NPA	OVHD	ROA	Other	Model
Barajas et al. (2000)	Negative	Negative	Negative			FE/RE
Claessens et al. (2001)	Negative		Negative	Negative		OLS
Unite and Sullivan (2003)	Negative		Negative	Negative		RE
Hermes and Lensink (2004)	Negative	Negative	Negative	Positive		OLS
Wu et al. (2007)				Negative		FE
Kalluru and Bhat (2009)	Negative*	Positive	Positive	Positive		OLS
Lee et al. (2011)	Negative	Positive*	Negative	Negative		GMM
Ghosh (2012)	Negative*	Negative	Negative	Positive	CIR	OLS
Seo et al. (2013)	Negative				OE=OC/TC Positive	GLS
Massand and Gopalakrishna (2016)	Negative	Negative	Negative	Negative	ROE Positive	GMM

Source: based on a literature review.

The findings from the columns E1 to E3, for overhead cost, are similar for all the measure of foreign banks' entry to the case of Profitability (Colum D1 to D3). However, the sign of the coefficient is opposite here. As overhead cost increases, profitability decreases. So the overhead cost of Indian banks increases with the foreign banks' entry. The similar results are found in Cleassesn et al. (2001) and all other studies (See Table 6.5). The only exception is the result of Kalluru and Bhat (2009) that found the opposite results. It is due to the usage of a different measure of foreign banks' entry. Hence, hypothesis 10 cannot be rejected.

The negative sign of the coefficient of NPA in Column F-1, F-2, and F-3 suggests that NPA declines with foreign banks outreach. The results are consistent with the results of other studies including a study on India by Ghosh (2012). However, an Indian study, Kalluru, and Bhat (2009) found the opposite results, and this is because of usage of the wrong measure of foreign banks' entry, i.e., the number of foreign banks to the total banks in India. Thus, it is clear that foreign banks' entry helps to reduce the NPAs of Indian banks. Hypothesis 11 cannot be rejected.

On the one hand, Column C-1, C-3, D-1, and D-3 suggest declining profitability due to foreign banks' entry, on the other hand, column C-2 and D-2 indicate a rise in profitability with the surge in asset share of foreign banks. According to Table 6.5, many studies find a negative relation between ROA and foreign banks' entry. However, both Indian studies find a positive relationship. The finding of the present study fosters the inverse relationship between foreign banks' entry and the profitability of domestic banks. Thus, the belief that domestic banks spend more to compete with new generation foreign players leads to a decline in their profits.

The results for the remaining explanatory control variables are on the expected lines. The rise in CRAR supports the rise in the margin, overhead cost, and profitability but the decline in the NPAs and concentration of local banks (See Table 6.4). The results of liquidity indicate that it has nothing to do with the interest margins of the bank. Liquidity may increase or decrease NPAs. The results show a direct relationship with profitability and an inverse relationship with the overhead cost. However, it is not in line with general expectation.

The result of the control variable for banking concentration supports that the rise in bank monopoly leads to an upsurge in the interest margin. Banking concentration also fosters a decline in NPAs but also decline in profitability, and rise in the cost of Indian banks.

The results of macroeconomic variables reveal that incline in service's growth leads to an escalation in interest margin with the rise in expenditure. This leads to a decline in the profits with the diminishing NPAs. The rise in the real interest rates fosters upsurge in the interest margin with the reduction in the NPAs. Moreover, the crisis in the banking sector may induce a downturn in the bank margins and profitability with the mounting in NPAs and overheads.

The major impact of foreign banks' entry on the Indian commercial banks is the adaptation of sophisticated technology, i.e., computerization of banking system, the introduction of innovative financial products like plastic cards, ATMs, and skilled employees that resulted in overall improved service to their customers. The first ATM in India was opened up by Honk Kong and Shanghai Banking Corporation (HSBC) in 1987; the credit cards and credit cards with photo were introduced by Citi bank and Standard and Charter Banks respectively in India. The experts believe that the concept of a house mortgage and car loan are derived from foreign banks in India. India has more than 1.9 lacs card machines for withdrawals both on and off the site together and 214 lacs outstanding credit cards in India.

6.8 Conclusion

In the period of post-reforms, the Indian banking sector has grown significantly. There are many reasons for the changes in the performance of Indian banks. However, the spillover effect of foreign banks was a major contributing factor. The results show that foreign banks' entry enhances competition, reduces net interest margin, improves profitability, increases overhead costs, and reduces non-performing assets in the Indian banking sector. Foreign banks have fostered Indian banks to be more competitive and efficient. Though foreign banks are the reasons for high expenditure and reduction in the profits with the decline in the margins, by using more advanced technology of foreign banks, local Indian banks could serve their clients better in the recent years.

Moreover, the give and take policy in the global market has enriched Indian banks to open their branches overseas. However, the aim of the Indian government to increase competition can only be achieved by allowing more branches of foreign banks in the Indian economy.

CHAPTER 7
IMPACT OF FOREIGN BANKS' ENTRY ON CREDIT ACCESS AND CREDIT ALLOCATION TO THE INDIAN ECONOMY

7.0 Overview of the chapter

This chapter analyses the impact of foreign banks' entry on the credit supply in the Indian economy from 1996 to 2015. The analysis on credit supply is further divided into two parts, i.e., the impact of foreign banks' entry on credit access to business firms, in particular, and impact of foreign banks' entry on credit allocation on other sectors of the Indian economy. First part investigates how the foreign banks' entry affects the credit access to the firms in the Indian districts by forming firm, wise panel data in the various districts of India for 20 years. Second part answers whether the entry of foreign banks affects the credit allocation to various sectors of the Indian economy by forming banking sector-wise panel data for 20 years. The conclusion of both cases indicates that there is an adverse impact of foreign banks' entry on the credit supply in the Indian economy.

7.1 Impact of foreign banks' entry on credit access to firms in India

Foreign banks are invited to meet the credit requirement of industries in emerging and developing economies (Levine 2005). Foreign banks are more efficient and well connected with international markets (Levine 1996) that can enhance credit supply in emerging economies (Giannetti and Ongena 2012) and meet the needs of Industries that make the banking sector more efficient (Hermes and Lensink 2004). On the flip side, foreign banks have the disadvantage of information of borrowers in the host economies (Gormley 2010; Ghosh 2012). The empirical results of Detragiache et al. (2008) and Gormley (2010) found that the entry of foreign banks reduces credit access to firms due to the information asymmetry. This fosters domestic banks to change their lending decision (Gormley 2007; Sengupta 2007) which reduces the overall credit supply in the market (Detragiache et al. 2008; Gormley 2010). Thus, the impact of foreign banks on the credit supply in the host economy is inconclusive.

The entry of foreign lender induces high competition in the host credit market that also affects the net output of the firms (Gormley 2014). However, the rise in competition reduces credit supply to an economy (Petersen and Rajan 1995) due to hesitation to

supply credit to sectors with high NPAs and fewer profits (Detragiache et al. 2008). Foreign banks adopt cream skimming approach to capture the potentially profitable firms and lend them while ignoring the small and non-profitable firms (Dell'Ariccia and Marquez 2004; Mian 2006; Sengupta 2007, Detragiache, et al. 2008). Li and Yuan (2015) argued that a continued decline in the growth of emerging economies is the result of the credit gap for SMEs that are responsible for the majority of job-creation and development. Due to informational asymmetry, foreign lenders cannot lend to financially opaque firms which result in declining credit supply in the market. Moreover, this approach by foreign lenders affects the lending decision of incumbent lenders to invest in high screening technology (Gormley 2010). Initially, the incumbent lender may not invest in high screening technology and lend to soft information firms at higher rates to protect their market share. However, at a later stage, they may change their lending strategy and reduce lending to non-profitable firms. SMEs suffer the most in the process. Hence, the overall credit supply reduces in the host economy. This discussion raises the central question of the study, does foreign banks' entry reduce credit access to firms in the host country? Does lending to SMEs decline following foreign banks' entry?

It is very much essential for an economy to provide credit to business firms to achieve its socio-economic goals. The rapid entry of foreign banks after the WTO period has raised concerns to the Indian economy regarding credit access to firms. The study in the Indian context, by Gormley (2010) found that foreign banks' entry has reduced the credit accessibility to firms in India. This is argued to happen because of two reasons. First, the foreign banks in India follow their home clients and provide more credit than to domestic firms (Massand and Gopalakrishna 2016); second, foreign banks cherry pick a few potential clients and avoid SMEs due to information asymmetry (Sarma and Prashad 2016). Moreover, the technological spillover of foreign banks in India is visible (Kim 2010). This would have made Indian banks also to specialize in the hard information that led to a decline in the credit accessibility to small firms in India. Consequently, it is crucial to investigate the impact of foreign banks on credit accessibility to firms in India.

Table 7.1 represents the district-wise data of foreign banks' entry and the number of branches present in a district in a particular year. It shows that by 2014, foreign banks have entered into 63 districts in India.

Table 7.1: District and state wise entry of foreign bank in India

SI	District Name	State Name	Number of branches in a district	Year of entry
1	MUMBAI	MAHARASHTRA	15	1853
2	CHENNAI	TAMIL NADU	14	1854
3	KOLKATA	WEST BENGAL	5	1854
4	NEW DELHI	NCT OF DELHI	26	1889
5	COIMBATORE	TAMIL NADU	3	1892
6	HAORA	WEST BENGAL	1	1909
7	BANGALORE URBAN	KARNATAKA	16	1951
8	ERNAKULAM	KERALA	4	1951
9	HYDERABAD	TELANGANA	10	1962
10	KAMRUP METROPOLITAN	ASSAM	1	1962
11	MUMBAI SUBURBAN	MAHARASHTRA	19	1962
12	PUNE	MAHARASHTRA	12	1995
13	AHMEDABAD	GUJARAT	6	1996
14	GURGAON	HARYANA	7	1998
15	THIRUVANANTHAPURAM	KERALA	1	1999
16	VADODARA	GUJARAT	4	1999
17	JAIPUR	RAJASTHAN	3	2000
18	CHANDIGARH	CHANDIGARH	3	2001
19	DARJILING	WEST BENGAL	2	2001
20	LUDHIANA	PUNJAB	4	2001
21	GAUTAM BUDDHA NAGAR	UTTAR PRADESH	5	2002
22	BHOPAL	MADHYA PRADESH	2	2003
23	JALANDHAR	PUNJAB	3	2003
24	LUCKNOW	UTTAR PRADESH	3	2003
25	SURAT	GUJARAT	3	2003
26	THANE	MAHARASHTRA	3	2003
27	AURANGABAD	MAHARASHTRA	2	2004
28	FARIDABAD	HARYANA	1	2004

SI	District Name	State Name	Number of branches in a district	Year of entry
29	INDORE	MADHYA PRADESH	2	2004
30	KHURDA	ODISHA	2	2004
31	NAGPUR	MAHARASHTRA	3	2004
32	PATNA	BIHAR	1	2004
33	RAJKOT	GUJARAT	1	2004
34	ALLAHABAD	UTTAR PRADESH	1	2005
35	NASHIK	MAHARASHTRA	3	2005
36	PUDUCHERRY	PUDUCHERRY	1	2005
37	JODHPUR	RAJASTHAN	2	2006
38	MYSORE	KARNATAKA	1	2006
39	RAIPUR	CHHATTISGARH	1	2006
40	BANGALORE RURAL	KARNATAKA	2	2007
41	JALGAON	MAHARASHTRA	1	2007
42	KANCHEEPURAM	TAMIL NADU	3	2007
43	KOLHAPUR	MAHARASHTRA	2	2007
44	AKOLA	MAHARASHTRA	1	2008
45	JUNAGADH	GUJARAT	1	2008
46	MORADABAD	UTTAR PRADESH	2	2008
47	SALEM	TAMIL NADU	1	2008
48	VELLORE	TAMIL NADU	2	2008
49	AHMADNAGAR	MAHARASHTRA	1	2009
50	DEHRA DUN	UTTAR PRADESH	1	2009
51	KURNOOL	ANDHRA PRADESH	1	2009
52	MATHURA	UTTAR PRADESH	1	2009
53	NANDED	MAHARASHTRA	1	2009
54	SAHARANPUR	UTTAR PRADESH	1	2009
55	Y.S.R. (Cuddapa)	ANDHRA PRADESH	1	2009
56	CUDDALORE	TAMIL NADU	1	2010
57	EAST GODAVARI	ANDHRA PRADESH	1	2010
58	UDAIPUR	RAJASTHAN	1	2012
59	AGRA	UTTAR PRADESH	1	2013

SI	District Name	State Name	Number of branches in a district	Year of entry
60	CHHINDWARA	MADHYA PRADESH	1	2013
61	MEDAK	TELANGANA	1	2013
62	BAREILLY	UTTAR PRADESH	1	2014
63	RANGAREDDI	TELANGANA	1	2014

Source: *Directory of Commercial bank offices in India published by RBI*

7.1.1 Hypotheses testing

The hypotheses are developed in chapter 2 "Literature review and hypothesis development." with a detailed review of the literature and theoretical support. The following hypotheses are tested in this chapter.

Hypothesis 12

H_0: The entry of foreign banks in India does not reduce credit accessibility to firms in India.

H_1: The entry of foreign banks in India reduces credit accessibility to firms in India.

Hypothesis 13

H_0: The foreign banks in India do not avail more credit to large firms than small firms in India.

H_1: The foreign banks in India avail more credit to large firms than small firms in India.

7.1.2 Empirical model and data description

The dynamic panel data model Generalised method of moments (GMM) is used as it helps in overcoming many real-time problems like endogeneity. The model is given below.

$$L_{ijt} = \alpha L_{ijt-1} + \beta F_{jt} + \eta_{ij} + \phi_{jt} + \varepsilon_{ijt} \qquad (1)$$

L_{ijt} represents loan received by a firm (i) in the Indian district (j) from the bank/financial institution in the year t, F_{jt} represents foreign banks' entry in the district (j) in the year t (Indirect effect) or credit supply by foreign banks in the district (j) in the year t (direct effect), η_{ij} is an unobserved effect of firms (i) clustered at districts (j)

like different managerial decision or firm level structural changes, ϕ_{jt} is an unobserved period effect clustered at district like changing government policies or various reforms and ε_{ijt} is an error term clustered at district level for various years. In the above equation, β describes the main effect of foreign banks' entry.

The orthogonal deviation transformation method is adopted. The instrumental variables (IV) used in the estimation are tested through Sargan's J statistics, a test for instrumental variables (IV) (see Table 7.3, 7.4, 7.5, and 7.6). The model also controls the unobserved effect of a firm's strategy of borrowing and unobserved period effect of any government policy and business cycle effect from time to time. Thus, the model controls for any effect across firms and over the period.

Table 7.2: Summary statistics of observed variables

	Borrowing from banks	Borrowing from Financial Inst.	Borrowing from both banks and financial Inst.	Credit from foreign banks	Sales over total assets
Mean	0.4737	0.0790	0.5528	0.04477	0.9684
Median	0.4778	0	0.6504	0	0.5429
Maximum	1	1	1.0000	71	3483.7
Minimum	0	0	0	0	0
Std. dev.	0.3781	0.1850	0.3805	1.0671	16.0977
Observation	40897	40897	40897	54540	49145

Source: Author's calculation using E-View 9 software

The firm-level data is collected from Centre for monitoring Indian economy (CMIE) prowess database that provides data related to firm's address, ownership, their financial and accounting status including loan received from a bank and a financial institution from 1996. In order to understand the effect of foreign banks' entry on credit access to firms located in the various districts of India, all firms located in different districts in India are identified from 1996 to 2015 and harmonized these data with the data of foreign banks' entry in the respective districts of India. Thus, a panel of firms as cross-section units and years as time units are constructed. The assumption holds that all the firms borrow from their respective registered districts. However, the firms located in

the districts where foreign banks were already present before 1996 have been eliminated to capture the effect of entry of new foreign branches and to avoid the multiplier effect of already present foreign branches into the highly populated metro cities before 1996[46]. There were 14 districts where foreign banks already had their presence before 1996. These districts are Kolkata, Chennai, New Delhi, Mumbai, Coimbatore, Haora, Ernakulum, Kamrup Metropolitan, Mumbai Suburban, Bangalore Urban, Hyderabad, Ahmedabad, Pune, and Gurgaon. The main interest is in deriving the effect of foreign banks' entry on private (Indian or foreign) firms and SMEs. Thus, all the government-owned firms and financial firms have been discarded from the data set.

The study contemplates on both direct and indirect effects of foreign banks' entry on credit access to firms in India. To measure the indirect impact of foreign banks' entry, dummy 1 is used as foreign banks' entry into a particular district and 0 as districts without receiving any foreign bank. The data of credit supply by foreign banks is used to capture the direct impact on firms' access to credit. However, this data is available only from 2005 and is collected from RBI's publication *Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks* which is transformed into yearly data[47]. All the variables are in ratio form and summary statistics of variables is delivered in Table 7.2.

Initially, the model (1) is estimated by observing foreign banks' entry using dummy variables that capture the indirect effect of foreign banks. Later, the data of credit supply by foreign banks is employed to capture the direct impact of foreign banks' entry. In both cases, the panel GMM technique is used for estimation. In order to measure the altered effect on the various ownership categories of firms, the data is divided into three ownership categories i.e. Indian private firms, Indian group firms (group-owned firms are the firms established by large business groups in India. e.g., Reliance, TATA, or Birla, etc), and foreign firms, primarily to test the hypothesis, whether foreign banks

[46] See Gormley (2010) study. In the present study, the main objective is to investigate the impact of foreign banks entry post 1996. As suggested by Gormley (2010), in this analysis also, the districts where foreign banks had entered prior to 1996 cannot be considered as the measure of foreign banks entry is used as dummy 1 and 0 for the non-entry in the particular district. For example, considering Mumbai suburban in the analysis where foreign banks entry occurred in 1853 will not serve the purpose of the study, finding the impact of foreign banks entry after 1996.

[47] The quarterly data consists of district-wise cumulative credit extended by foreign banks from 2005.

lend to large firms than the small firms in India (*cream skimming* or *cherry picking* behavior of foreign banks) which probably can be a large group owned firms or large size firms in any of the ownership categories. Furthermore, it can also help to find whether foreign banks lend to their home clients more, over domestic Indian clients. The sales variable is used to measure the size of the firm. If the firm-size is big, it would be more profitable and would likely receive higher credit. Furthermore, apart from panel GMM, the different dynamic panel data models are also employed to check the robustness of the results[48].

This study is different from the studies of others in many aspects with regards to the period that is very crucial and that of methodology. The study uses a dynamic panel data model GMM, simultaneously controlling for firm-level effect and time effect. The period of the study is imperative. The actual entries of foreign banks were felt after 1996 when 12 branches of foreign banks were allowed entry in a single year. Hence, the study is topical and timely. Moreover, the study could measure the direct impact of credit supply by foreign banks that was suggested by Gormely (2010). The main comparison is between the credit access to the firms having a foreign bank in districts and the credit access to the firms in districts without having a foreign bank.

7.1.3 Results and discussion

The results of the dynamic panel data analysis GMM is provided in Table 7.3 and Table 7.4. There are three dependent variables to measure a firm's credit accessibility, i.e., borrowing from banks, borrowings from financial institutions, and borrowings from both banks and financial institutions. The first row shows the coefficient of lag of dependent variables, the second row shows the coefficient of foreign banks' entry, and the third row shows the coefficient of size (See Table 7.3 and Table 7.4). The fourth rows onwards, it shows the coefficient of time-control variables. The last row shows the J-statistics that represent the test of instrumental variables. The statistically insignificant p-value for J-statistics indicates that the instruments used are adequate for the analysis. The same sequence is followed in all the result tables (Table 7.3, Table 7.4, Table 7.5 and Table 7.6).

[48] The results of other dynamic panel data models are not presented here.

Table 7.3: Results of indirect impact of foreign banks' entry on credit access to firms in India

Dependent Explanatory	Borrowing from bank L_1	Borrowing from FI L_2	Borrowing from (bank + FI) L_3
$L_i(-1)$ (lag of dependent variable)	0.54*** (0.00)	0.67*** (0.00)	0.62*** (0.00)
F (Foreign banks' entry)	-0.20*** (0.00)	-0.11*** (0.00)	-0.23*** (0.00)
S (Sales/Total Asset)	0.001 (0.95)	-0.03*** (0.00)	-0.024 (0.30)
2001	-0.056*** (0.00)	0.010 (0.14)	-0.019* (0.09)
2002	-0.052*** (0.00)	0.015** (0.01)	-0.018* (0.06)
2003	-0.045*** (0.00)	-0.008 (0.17)	-0.034*** (0.00)
2004	-0.037*** (0.00)	-0.002 (0.75)	-0.019** (0.03)
2005	-0.028*** (0.00)	0.002 (0.55)	-0.014* (0.02)
2006	-0.008 (0.10)	-0.018*** (0.00)	-0.017*** (0.00)
2007	-0.005 (0.21)	-0.001 (0.49)	0.004 (0.34)
2008	-0.001 (0.82)	0.003 (0.25)	0.007 (0.13)
2009	-0.004 (0.23)	-0.001 (0.50)	0.003 (0.40)
2010	0.003 (0.39)	0.000 (0.85)	0.006* (0.08)

2011	0.003 (0.32)	0.001 (0.34)	0.004 (0.25)
2012	-0.002 (0.54)	-0.008*** (0.00)	-0.009** (0.04)
2013	-0.010*** (0.00)	-0.003*** (0.00)	-0.014*** (0.00)
2014	-0.004 (0.14)	0.000 (0.52)	-0.002 (0.49)
Number of Observation	29700	29700	29700
J Statistics	103.76 (0.43)	104.35 (0.42)	97.68 (0.60)

Results of panel GMM. The sample got adjusted for 14 years period from 2001 to 2014. The orthogonal deviation is used for transformation. Standard errors are white noise. Parenthesis represents p-value. ***significant at 1%, **significant at 5%, *significant at 10%.

The results suggest that credit access to firms has reduced very significantly following foreign banks' entry in India. These results are consistent with the results of Gormley (2010) study in the Indian context. Furthermore, the empirical results indicate that foreign banks in India lend more to foreign firms probably to their home clients so that their overall borrowing increases.

The results in Table 7.3 show that a firm can borrow more if it has borrowed in the previous year. The negative sign of the coefficient for foreign banks' entry indicates that firms' borrowing reduces following the foreign banks' entry. It further indicates that the credit supply to firms from both banks and financial institutions (FI) reduces in the districts with foreign bank presence over the firms in the districts without having a foreign bank. The overall borrowing from the bank and financial institutions reduce by 23 percent following the foreign banks' entry. The negative sign in the case of firms' size indicates that small firms tend to borrow more than the large firms or banks lend more to small firms (SMEs) in the districts having foreign banks.

Table 7.4 Results of the direct impact of foreign banks' entry on credit access to firms

Dependent Explanatory	Borrowing from bank L_1	Borrowing from FI L_2	Borrowing from bank + FI L_3
$L_i(-1)$	0.53*** (0.00)	0.73*** (0.00)	0.61*** (0.00)
F (Credit supply by foreign banks)	-0.04 (0.22)	-0.02 (0.15)	-0.09** (0.02)
S (Sales/Total asset)	0.006 (0.98)	-0.02 (0.14)	-0.03 (0.30)
2006	0.003 (0.53)	-0.014*** (0.00)	-0.004 (0.31)
2007	0.005 (0.18)	0.002 (0.26)	0.016*** (0.00)
2008	0.005 (0.28)	0.010*** (0.00)	0.023*** (0.00)
2009	0.005 (0.34)	0.006** (0.01)	0.019*** (0.00)
2010	0.007** (0.03)	0.004* (0.01)	0.014*** (0.00)
2011	0.007* (0.07)	0.003 (0.10)	0.008** (0.04)
2012	0.004 (0.33)	-0.006*** (0.00)	-0.002 (0.70)
2013	-0.009** (0.01)	-0.002* (0.09)	-0.010** (0.01)
2014	-0.004 (0.12)	0.001 (0.42)	-0.005 (0.10)
Number of observation	20526	20526	20526
J Statistics	92.83 (0.31)	85.47 (0.52)	77.31 (0.76)

Results of panel GMM. The sample got adjusted for 14 years period from 2001 to 2014. The

orthogonal deviation is used for transformation. Standard errors are white noise. Parenthesis represents p-value. *significant at 1%, **significant at 5%,*significant at 1%.

The results of Table 7.4 display the direct impact of foreign banks' entry on credit access to firms in districts having foreign banks, and it is similar to the results of Table 7.3. The firms that borrowed credit in the previous year are likely to receive more credit. The results of Table 7.4 are interpreted as – the total borrowings of firms reduces in those districts where foreign banks directly lend to firms. This could be the result of high screening technology adopted by foreign banks, and Indian domestic banks might have followed foreign banks' lending strategy (Ghosh 2012). Thus, foreign banks are found to reduce credit accessibility to firms in India so, the hypothesis 12 cannot be rejected. However, the statistically insignificant results for the sales variable indicate that the size does not matter while lending. So, the cherry picking behavior is not seen in terms of size for lending by foreign banks. Though these results contradict the results of Sarma and Prashad (2016) in the Indian context, they are consistent with the results of Beck et al. (2010), De Haas and Naaborg (2006) and De la Torre et al. (2010) that foreign banks' entry increases the lending to SMEs. Thus, foreign banks are not found to lend more to larger firms than the small firms so, hypothesis 13 can be rejected.
These results are similar to that of Gormley (2010) for India. However, Gormley (2010) found that borrowing of firms reduces from FIs only, and not from banks in districts having foreign banks. The result of the present study contradicts Gormley (2010) results in a manner that the actual borrowing of firms reduces from both banks and FIs separately in districts after the entry of foreign banks. However, the main results remain the same that foreign banks' entry had a negative impact on credit access to firms in India.

Table 7.5 Results of indirect impact of foreign banks' entry on segmented firms (private Indian, Indian group, and private foreign firms)

Dependent	Borrowing from bank (Prv Ind) [A]	Borrowing from FI (Prv Ind) [B]	Borrowing from (bank+FI) (Prv Ind) [C]	Borrowing from the bank (Ind Grp) [D]	Borrowing from FI (Ind Grp) [E]	Borrowing from (bank+FI) (Ind Grp) [F]	Borrowing from the bank (Foreign) [G]	Borrowing from FI (Foreign) [H]	Borrowing from (bank+FI) (Foreign) [I]
Explanatory	L_1	L_2	L_3	L_1	L_2	L_3	L_1	L_2	L_3
$L_i(-1)$	0.45*** (0.00)	0.67*** (0.00)	0.66*** (0.00)	0.35*** (0.00)	0.79*** (0.00)	0.58*** (0.00)	0.55*** (0.00)	0.48*** (0.00)	0.52*** (0.00)
F (Foreign bank entry)	-0.35*** (0.00)	0.10*** (0.00)	-0.13*** (0.00)	-0.07** (0.00)	-0.15*** (0.00)	-0.21*** (0.00)	0.12*** (0.00)	-0.02*** (0.00)	0.11*** (0.00)
S (Sales/Total Asset)	-0.01 (0.37)	-0.01** (0.08)	-0.02* (0.03)	-0.02 (0.44)	-0.01 (0.28)	-0.01 (0.77)	-0.03*** (0.00)	0.01*** (0.00)	-0.02*** (0.00)
2001	-0.088*** (0.00)	0.054*** (0.00)	0.004 (0.64)	-0.056*** (0.00)	-0.008 (0.31)	-0.021* (0.07)	0.016*** (0.00)	0.076*** (0.00)	0.068*** (0.00)
2002	-0.081*** (0.00)	0.044*** (0.00)	-0.003 (0.64)	-0.052*** (0.00)	0.009 (0.16)	-0.010 (0.31)	0.030*** (0.00)	0.080*** (0.00)	0.058*** (0.00)
2003	-0.074*** (0.00)	0.027*** (0.00)	-0.013* (0.08)	-0.046*** (0.00)	-0.018*** (0.00)	-0.030*** (0.00)	0.028*** (0.00)	0.066*** (0.00)	0.046*** (0.00)

2004	-0.060*** (0.00)	0.031*** (0.00)	-0.004 (0.45)	-0.035*** (0.00)	-0.013** (0.01)	-0.009 (0.25)	0.033*** (0.00)	0.074*** (0.00)	0.046*** (0.00)
2005	-0.046*** (0.00)	0.020*** (0.00)	-0.007 (0.10)	-0.027*** (0.00)	-0.006 (0.16)	-0.005 (0.41)	0.004*** (0.00)	0.035*** (0.00)	0.036*** (0.00)
2006	-0.008 (0.11)	-0.003 (0.19)	-0.003 (0.51)	-0.022*** (0.00)	-0.023*** (0.00)	-0.024*** (0.00)	-0.052*** (0.00)	-0.045*** (0.00)	0.011*** (0.00)
2007	-0.007 (0.12)	0.011*** (0.00)	0.011*** (0.00)	-0.009 (0.10)	-0.008*** (0.00)	-0.001 (0.82)	0.011*** (0.00)	0.005*** (0.00)	-0.004*** (0.00)
2008	-0.001 (0.82)	0.009*** (0.00)	0.010*** (0.00)	0.001 (0.82)	-0.001 (0.74)	0.008 (0.11)	0.102*** (0.00)	0.085*** (0.00)	-0.014*** (0.00)
2009	-0.005 (0.10)	0.007*** (0.00)	0.007** (0.01)	0.001 (0.86)	-0.004** (0.03)	0.005 (0.36)	0.075*** (0.00)	0.071*** (0.00)	-0.003*** (0.00)
2010	0.001 (0.74)	0.004*** (0.00)	0.004 (0.20)	0.010* (0.06)	0.000 (1.00)	0.014*** (0.00)	0.022*** (0.00)	0.020*** (0.00)	-0.003*** (0.00)
2011	-0.001** (0.78)	0.009* (0.00)	0.010 (0.01)	0.008* (0.14)	0.000 (0.63)	0.009* (0.08)	-0.012*** (0.00)	-0.018*** (0.00)	-0.007*** (0.00)

2012	0.001 (0.84)	-0.002** (0.04)	-0.006 (0.10)	-0.001 (0.85)	-0.008*** (0.00)	-0.009 (0.10)	0.033*** (0.00)	0.039*** (0.00)	0.006*** (0.00)
2013	-0.011*** (0.00)	0.000 (0.31)	-0.011*** (0.00)	-0.005 (0.20)	-0.004*** (0.00)	-0.012** (0.01)	0.027*** (0.00)	0.016*** (0.00)	-0.011*** (0.00)
2014	-0.004* (0.06)	0.000 (0.83)	-0.006** (0.02)	-0.003 (0.30)	0.001 (0.17)	-0.001 (0.85)	0.014*** (0.00)	0.017*** (0.00)	0.003*** (0.00)
Number of Observation	19681.00	19681.00	19681.00	9319.00	9319.00	9319.00	700.00	700.00	700.00
J Statistics (P-value)	94.61 (0.69)	108.35 (0.31)	100.36 (0.77)	95.54 (0.66)	114.27 (0.19)	88.85 (0.82)	82.74 (0.28)	87.23 (0.18)	80.74 (0.36)

Results of panel GMM. The orthogonal deviation is used for transformation. Standard errors are white noise. Parenthesis represents p-value. ***significant at 1%, **significant at 5%, *significant at 10%.

Table 7.6 Direct impact of foreign banks' entry on segmented firms (private Indian, an Indian group, and private foreign firms) in India

Dependent	Borrowing from bank (Prv Ind) [J]	Borrowing from FI (Prv Ind) [K]	Borrowing from (bank+FI) (Prv Ind) [L]	Borrowing from the bank (Ind Grp) [M]	Borrowing from FI (Ind Grp) [N]	Borrowing from (bank+FI) (Ind Grp) [O]	Borrowing from the bank (Foreign) [P]	Borrowing from FI (Foreign) [Q]	Borrowing from (bank+FI) (Foreign) [R]
Explanatory	L_1	L_2	L_3	L_1	L_2	L_3	L_1	L_2	L_3
$L_i(-1)$	0.42*** (0.00)	0.70*** (0.00)	0.51*** (0.00)	0.48*** (0.00)	0.73*** (0.00)	0.63*** (0.00)	0.39*** (0.00)	0.33*** (0.00)	0.36*** (0.00)
CR_FB (Foreign bank credit)	0.063 (0.10)	0.01* (0.07)	0.07 (0.81)	0.03*** (0.00)	-0.04* (0.09)	-0.04*** (0.00)	0.02*** (0.00)	0.001*** (0.00)	0.02*** (0.00)
S (Sales/Total Asset)	-0.014 (0.35)	-0.03** (0.03)	-0.04*** (0.00)	-0.02 (0.47)	-0.03 (0.88)	0.004** (0.02)	-0.06*** (0.00)	0.01*** (0.00)	-0.06*** (0.00)
2006	0.012*** (0.00)	-0.013*** (0.00)	0.010** (0.02)	-0.012* (0.05)	-0.012*** (0.00)	-0.015** (0.01)	-0.070*** (0.00)	0.013*** (0.00)	-0.058*** (0.00)
2007	0.013*** (0.00)	0.003** (0.03)	0.018*** (0.00)	-0.005 (0.39)	0.000 (0.92)	0.012** (0.01)	-0.008*** (0.00)	0.002*** (0.00)	-0.009*** (0.00)
2008	0.004 (0.28)	0.008*** (0.00)	0.016*** (0.00)	0.004 (0.40)	0.006** (0.03)	0.019*** (0.00)	0.063*** (0.00)	-0.007*** (0.00)	0.054*** (0.00)

2009	0.001 (0.89)	0.004** (0.04)	0.004 (0.30)	-0.003 (0.60)	0.004** (0.02)	0.011** (0.04)	0.048*** (0.00)	0.002*** (0.00)	0.049*** (0.00)
2010	0.010** (0.01)	0.001 (0.46)	0.010** (0.01)	0.008 (0.10)	0.005*** (0.00)	0.022*** (0.00)	0.012*** (0.00)	0.000*** (0.00)	0.012*** (0.00)
2011	0.004 (0.24)	0.007*** (0.00)	0.015*** (0.00)	0.002 (0.66)	0.001 (0.24)	0.008 (0.10)	-0.009*** (0.00)	-0.007*** (0.00)	-0.014*** (0.00)
2012	0.010*** (0.00)	-0.006*** (0.00)	0.002 (0.58)	-0.002 (0.74)	-0.006*** (0.00)	-0.007 (0.21)	0.025*** (0.00)	0.006*** (0.00)	0.031*** (0.00)
2013	-0.004 (0.13)	0.000 (0.90)	-0.009** (0.01)	-0.007* (0.07)	-0.002** (0.02)	-0.013** (0.01)	0.006*** (0.00)	-0.006*** (0.00)	-0.001*** (0.00)
2014	-0.004 (0.13)	0.000 (0.81)	-0.007** (0.02)	-0.005* (0.08)	0.002** (0.03)	-0.004 (0.25)	0.016*** (0.00)	0.002*** (0.00)	0.019*** (0.00)
Number of Observation	13919.00	13919.00	13919.00	6176.00	6176.00	6176.00	431.00	431.00	431.00
J Statistics (P-value)	77.90 (0.75)	107.62 (0.70)	74.76 (0.82)	82.12 (0.63)	87.14 (0.48)	79.67 (0.70)	72.90 (0.35)	76.70 (0.22)	71.05 (0.41)

Results of panel GMM. The orthogonal deviation is used for transformation. Standard errors are white noise. Parenthesis represents p-value. ***significant at 1%, **significant at 5%, *significant at 10%.

According to CMIE Prowess, the firms in India can be segmented into three ownership categories. Thus, the firms are divided into three different categories as Indian private firms, Indian group firms, and foreign firms. Foreign firms are considered in the data set mainly to test the follow and serve their client assumption. The results in Table 7.5 represent the indirect impact of foreign banks' entry on the segmented firms in India, i.e., Private Indian, an Indian group, and private foreign firms. For all the columns from A to I, borrowings by any firm in the preceding year have a positive relationship with the current year borrowings. The foreign banks' entry has mixed results for private Indian firms. Results show that the borrowings by private firms from banks have reduced (column A), but borrowings of private firms from FIs have improved (column B). The effects of foreign banks' entry on the total borrowings from banks and FIs of private Indian firms have deteriorated (column C). This indicates that credit access to private Indian firms has reduced after foreign banks' entry. In the case of Indian group firms, the entry of foreign lender does have a negative impact on credit access from both banks (column D) and FIs (column E). Hence, the total borrowings by firms in the districts having foreign banks have reduced (column F). In the case of foreign firms, lending from banks has enhanced despite a reduction in borrowings from FIs (column G and H). Foreign firms are the only firms whose borrowings have increased following the foreign banks' entry. Moreover, the negative sign in most of the cases for sales represents there is no difference in credit access for the varied size of the firms in all the categories or fact SMEs access more credit across the groups, i.e., Indian private, an Indian group, or foreign firms (Table 7.5, columns A to I).

The results in Table 7.6 show the direct impact of foreign banks' entry on segmented firms' credit access in India, i.e., private Indian, an Indian group, and private foreign firms. The firms in India can avail credit due to their previous year borrowings' relationship (Table 7.6, columns J to R). Again the results of Table 7.6 suggest that borrowings of foreign firms in India improve with the hike in lending by foreign banks (columns P, Q, and R). This suggests that foreign banks in India follow their clients and lend them more than Indian firms. In the case of private Indian firms, the results are statistically not significant. For Indian group companies, the negative results of total borrowings from banks and FIs indicate that the credit access to these firms has reduced

with the increase in the lending by foreign banks (column N). Thus, except for foreign firms, all other Indian domestic firms have less access to credit in the districts having foreign banks than in the districts without foreign banks.

The empirical study investigates the direct and indirect impact of foreign banks' entry in India. The study further analyzes the impact of entry of foreign banks into India in terms of reduction in credit accessibility to firms and differentiating large firms and small firms for availing credit, by estimating the credit access to firms according to their size, type, and location in India. By using firm-level data, the study constructs panel data and analyze it through a dynamic panel GMM estimator. The empirical results of the study found that the entry of foreign banks had an adverse impact on credit access in the Indian markets. Foreign banks do follow their home clients and lend them while ignoring Indian domestic firms. However, there is no finding on any *cherry picking* or *cream skimming* behavior in terms of lending only to a few large firms by foreign banks. Moreover, foreign banks' entry raises funds to small firms[49] , but it affects the credit decision of Indian domestic banks that reduce overall credit supply to the firms in various districts in India. Thus, the entry of foreign banks resulted in shrinkage of credit supply to the Indian districts that were believed to be the results of their strategy to lend to firms with hard information. Moreover, an attempt is made to test the hypotheses after the financial crisis, but the results are statistically not significant[50]. The prevailing high cost of lending information in India is one of the reasons for this. It signals policymakers to take steps to avail lending information at a lower cost or to allow foreign banks to enter through merger and acquisition. Otherwise, the entry of foreign banks in new Indian districts would be fatal for the Indian economy.

7.2 Impact of foreign banks' entry on credit allocation to different sectors of the Indian economy

Efficient credit allocation is important for developing countries since they do not have enough capital to support their economic growth (Levine 2005). Economic growth can be achieved by the efficient allocation of credit to Agriculture, Industry, and Service

[49] Foreign banks in India such as HSBC has also opened separate centres for SME credit (Srivats 2010).
[50] There is also an attempt to measure the credit access to firms in India to check the impact after global financial crisis occurred in 2007. The data employed in the similar manner as explained earlier while considering time period as last five years. The co-efficient of foreign banks entry are not significant.

sectors. Credit is an important source for the development of these sectors. Moreover, all these sectors are diversified and gradually developing over the period in most of the emerging economies (Iqbal et al. 2003). India is not an exception (Mohan 2006). Thus, the credit requirement is also trending upwards across the sectors (Thrupp 1990). However, the foreign banks' entry can have an impact on the credit allocation to these sectors. Foreign banks indulge in cherry picking a few potential firms due to information asymmetry (Mian 2006), they may disregard social banking, especially in the agriculture sector. Foreign banks are also known for following and serving their home clients; they may avoid host firms that can have an impact on credit allocations to various sectors (Focarelli and Pozzolo 2000).

Previous studies have conflicting findings on the impact of foreign banks' entry on credit availability. On the one hand, it is argued that foreign banks from developed countries can improve credit availability in the host countries with an advanced funding system and international capital access (Detragiache and Gupta 2006); on another hand, it is argued that foreign banks reduce credit supply to the major sectors of the economy especially to SMEs and agriculture sector (Kim 2010). The present study empirically investigates the allocation of credit to various sectors of Indian economy such as agriculture, industry, and service.

Foreign banks are considered to raise competition in the developing economy with a reduction in the net interest margins (Claessens et al. 2001). The net interest margin of foreign banks in India is lower comparatively (Ghosh 2012). Low NIM represents the efficiency of the banking sector (Das 2013). Thus, banks need to improvise their credit-deposit ratio to compensate for the reduction in the NIM. So, NIM and credit-deposit ratio is essential for a bank while disbursing credit to a sector.

The change in NIM may affect the credit allocation of the banks. Moreover, with the reduction in NIM, the profitability of banks reduces. This foster banks to be cautious while lending. Therefore, banks choose to lend profitable sectors with a less likely chance of becoming a non-performing asset (Detragiache et al. 2008). So, the performance of the sector and present NPAs in the sectors are considered while disbursing credit to a sector.

It is argued that foreign banks consider hard information and ignore the firms with soft information when lending (Dell'Aricia 2004; Bhaumik and Piesse 2008; Gormley 2010, 2014). The main reason being, banks need to have relationship lending with the client to acquire soft information (Berger and Udell 2002; Sengupta 2007). Banks need to have a fairly good number of workers to have relationship lending. However, foreign banks invest in technology than in labor. Thus, a lower intensity of labor in a bank may lead to a reduction in the lending to sectors with soft information (Kim 2010).

Foreign banks are believed to reduce credit supply during the economic or financial crisis (Rodrik and Velasco 1999; Morgan and Strahan 2004; Popov and Udell 2012). Therefore, the economic crisis period is also considered an essential factor for affecting credit allocation to various sectors of the economy.

7.2.1 Credit allocation to the agriculture sector

In India, the agriculture sector is diversified over the period into horticulture, floriculture, dairying, sericulture, poultry, etc. (Mohan 2006). Though the GDP contribution of the agriculture sector has reduced and limited to 18 percent, it employs half of the labor force in India[51] (Madhusudhan 2015). Thus, an efficient credit supply to this sector is vital for the Indian economy. Figure 7.2 shows the credit supply to the agriculture sector by scheduled commercial banks in India. It indicates that the overall credit supply to the agriculture sector has increased from 1996 to 2015. However, it declined from 1996 to 2000, and again from 2006 to 2008. This increase in credit supply to the agriculture sector is mainly due to a steady rise in credit allocation by nationalized banks and by private Indian banks (Figure 7.1). Moreover, the agriculture sector falls under the priority sector lending (PSL)[52], the policy of the Reserve bank of India (RBI) that motivates commercial banks to lend to the agriculture sector in India. However,

[51] The contribution of Agriculture sector to Indian GDP has been reduced gradually (Figure 7.7).

[52] The RBI has implemented the priority sector lending policy in 1969 to protect socially weak industries that bounds scheduled commercial banks including both Indian domestic banks and foreign banks in India to disburse 40% and 32% of their adjusted net credit respectively to priority sectors. The priority sector refers agriculture sector, micro, small, and medium enterprises, export credit, education, housing, social infrastructure, renewable energy, and others etc. This priority sector lending is not mandatory, but banks not meeting the target are under the penalty rules. In the case of Indian commercial banks, they need to contribute the unmet target amount to Rural Infrastructure Development Fund, while in the case of foreign banks, they need to deposit with the Small Industries Development Bank of India. Moreover, foreign banks having less than 20 branches have some relaxation in the priority sector lending.

there is no specific percentage of net credit as sub-section of PSL for foreign banks in India[53].

7.2.2 Credit allocation to the industrial sector

Credit supply to Industry by commercial banks in India decreased from 1996 to 2006 and rose after 2006 (Figure 7.4). Various ownership of commercial banks has lent differently over the years to the Industrial sector in India (Figure 7.3). Some Industries are part of priority sector lending (PSL) scheme, but most of the industries are not a part of this adjustment. The contribution of Industrial growth to Indian GDP has been inconsistent (Figure 7.8) in India.

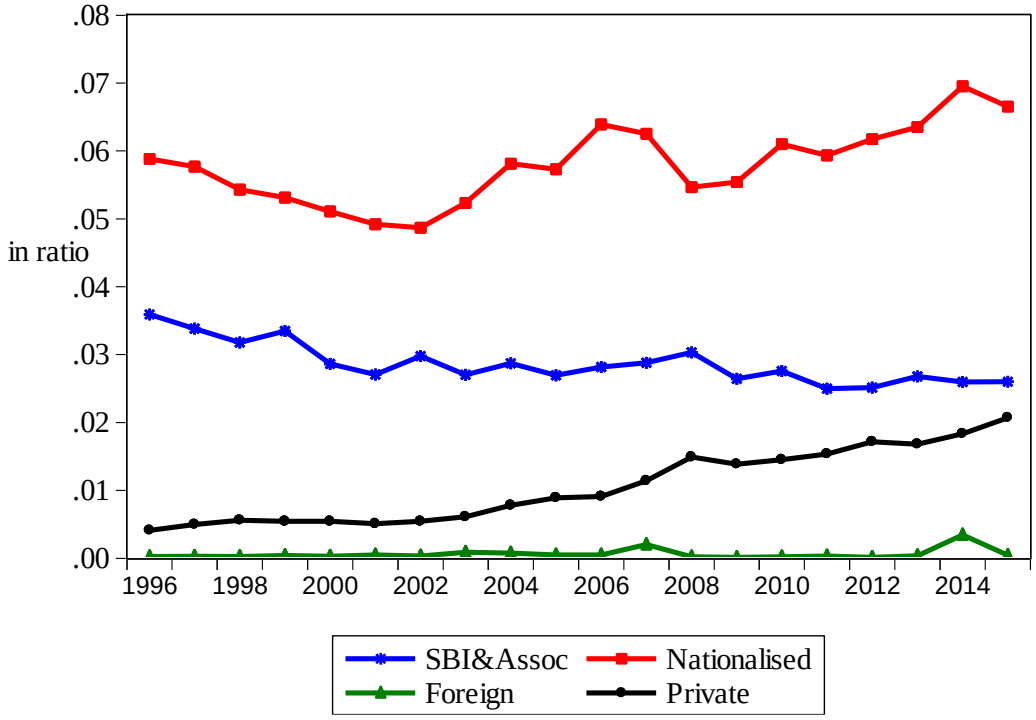
7.2.3 Credit allocation to the service sector

The credit allocation to the service sector by scheduled commercial banks increased from 1996 to 2006 and then gradually declined after 2006 up till 2014 (Figure 7.6). The bank group-wise credit allocation to the service sector is shown in Figure 7.5. The rise in the growth of the service sector has improved its contribution to the Indian GDP tremendously (Figure 7.9). However, the decline in the credit supply by banks in recent years raises concern to the Indian economy.

The reason for fluctuation in the credit supply to these three pillars of the economy, i.e., agriculture, industry, and service sector need to be examined. The present study investigates the impact of foreign banks' entry on the credit allocation to these three sectors of the Indian economy.

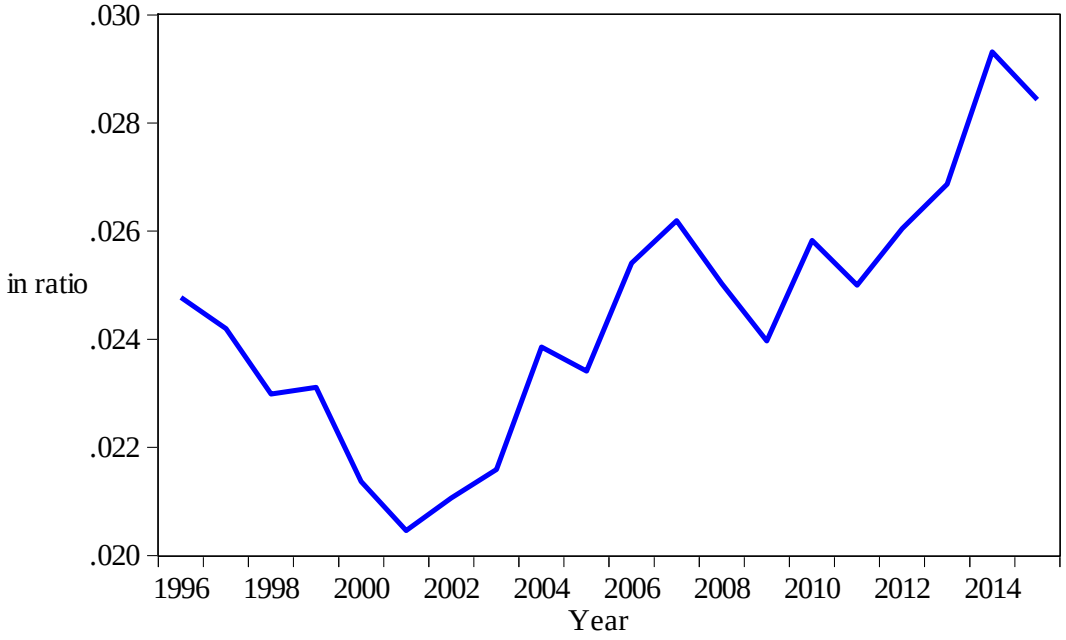
[53] Indian commercial banks and foreign banks having more than 20 branches should disburse 18 percent of their adjusted net credit to agriculture sector. However, foreign banks having less than 20 branches are exempted from this condition. In India, most of the foreign banks are having less than 20 branches.

Figure 7.1 Bank group wise credit allocation to the agriculture sector to total credit



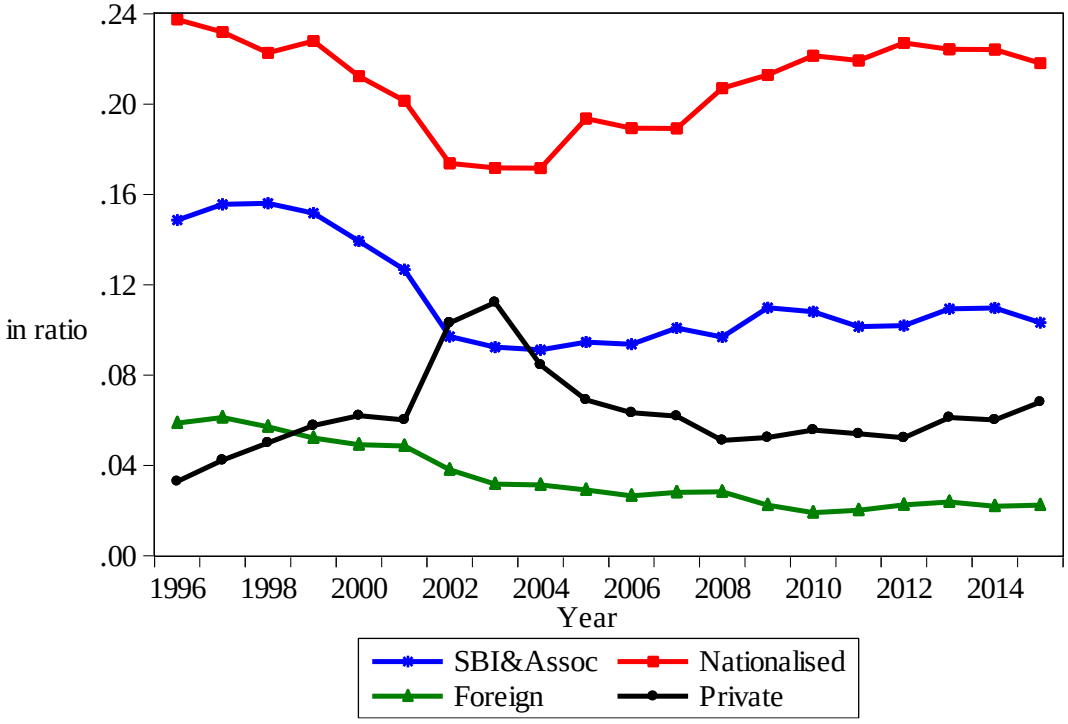
Source: *Statistical Tables related to banks in India* published by RBI

Figure 7.2 Credit supply to the agriculture sector by scheduled commercial banks



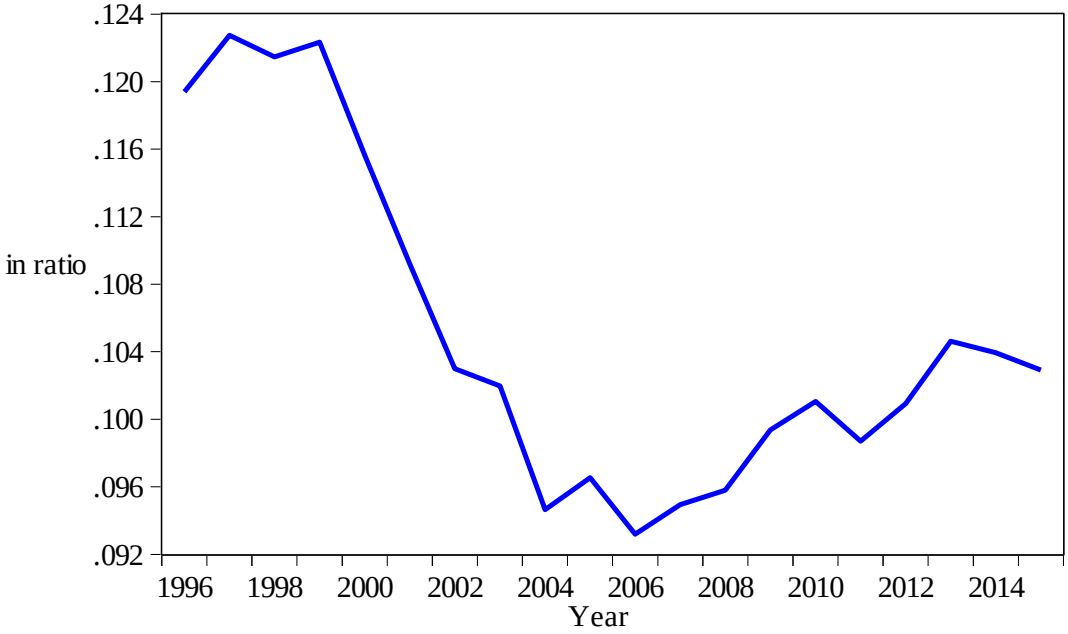
Source: *Statistical Tables related to banks in India* published by RBI

Figure 7.3 Bank group-wise credit allocation to industry to total credit



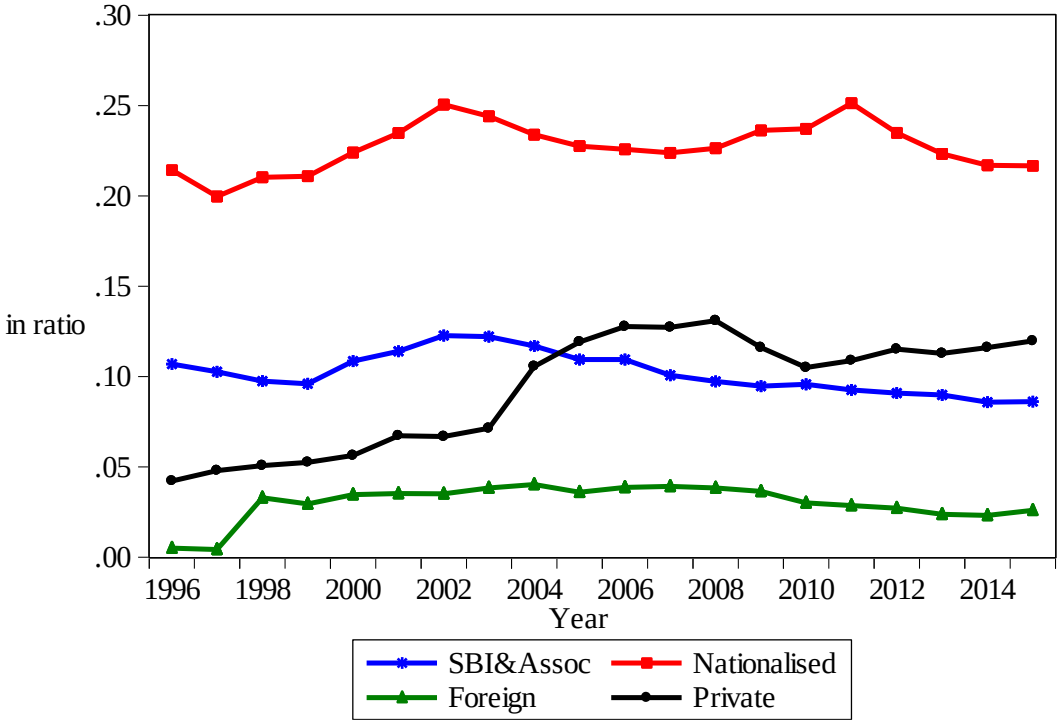
Source: *Statistical Tables related to banks in India* published by RBI

Figure 7.4 Credit supply to the industry by scheduled commercial banks



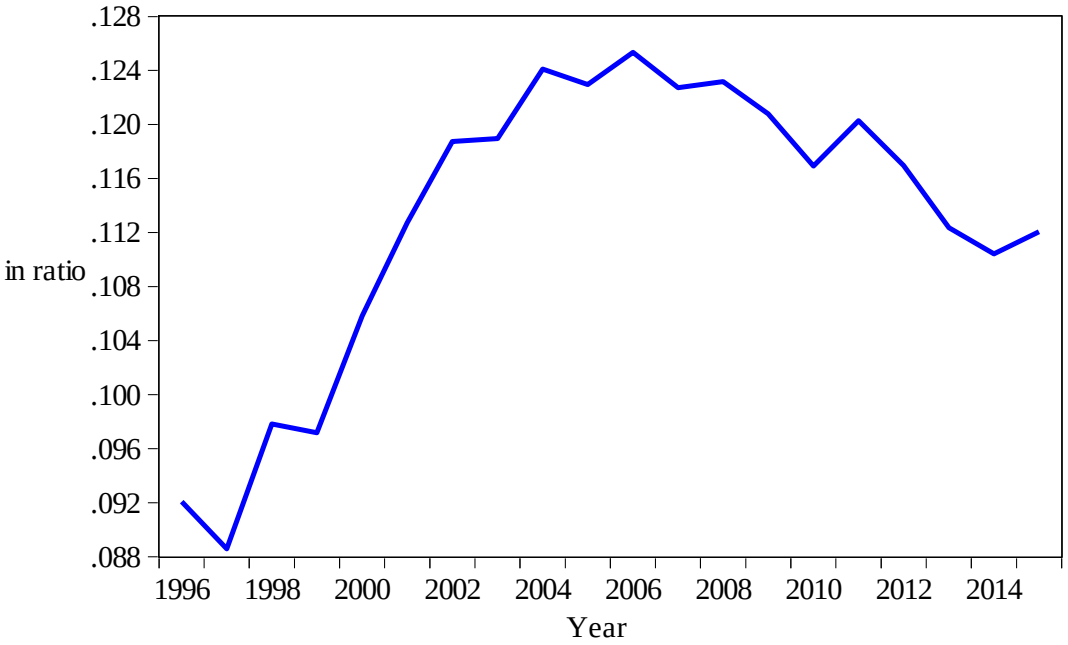
Source: *Statistical Tables related to banks in India* published by RBI

Figure 7.5 Bank group-wise credit allocation to the service sector to total credit



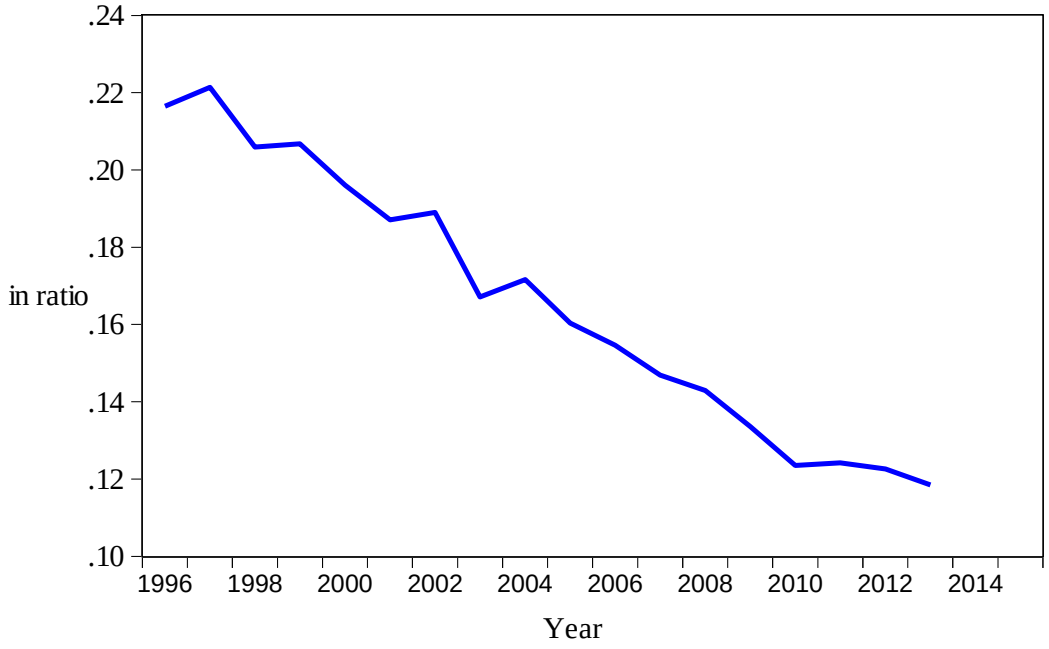
Source: *Statistical Tables related to banks in India* published by RBI

Figure 7.6 Credit supply to the service sector by scheduled commercial banks



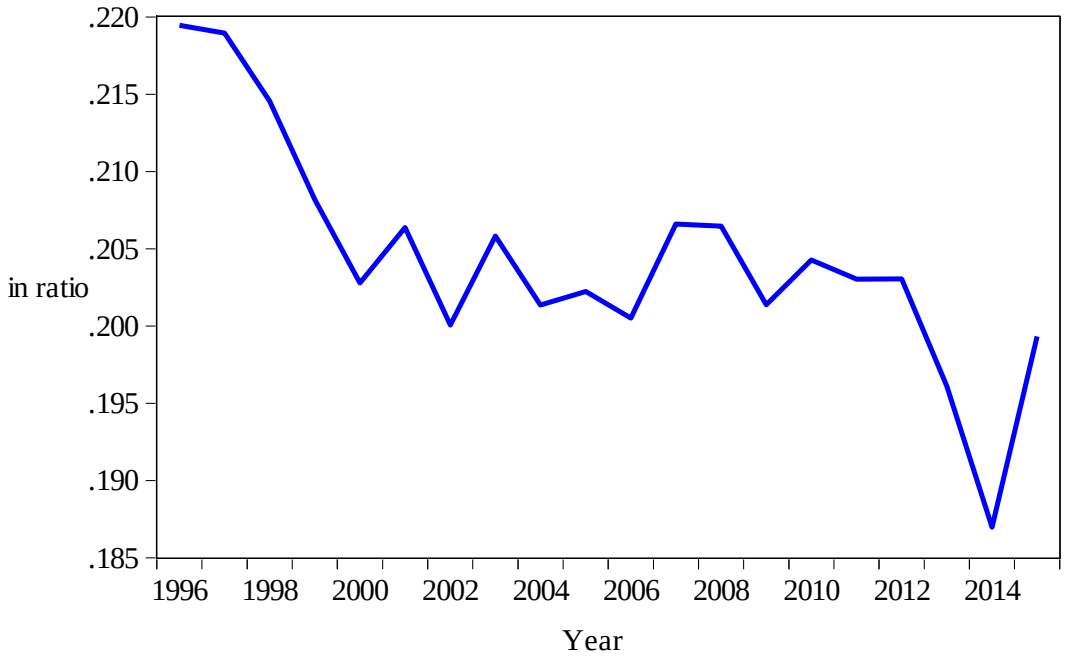
Source: *Statistical Tables related to banks in India* published by RBI

Figure 7.7 Growth of agriculture to GDP



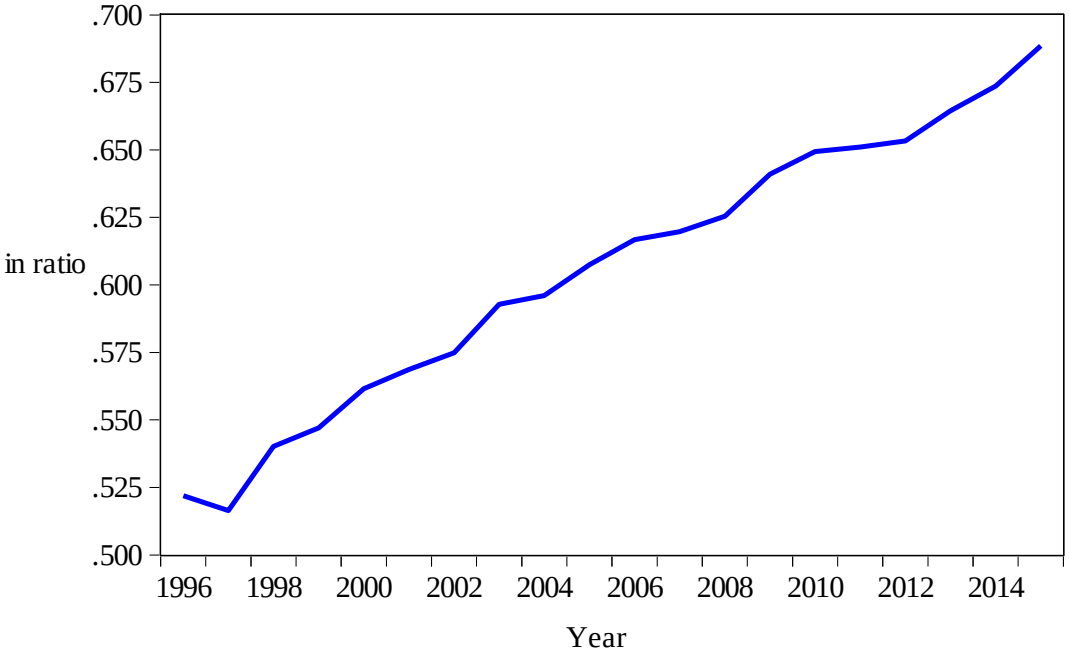
Source: *Handbook of Statistics on the Indian economy* published by RBI

Figure 7.8 Growth of industry to GDP



Source: *Handbook of Statistics on the Indian economy* published by RBI

Figure 7.9 Growth of the service sector to GDP



Source: *Handbook of Statistics on the Indian economy* published by RBI

7.2.4 Hypotheses testing

The hypotheses are developed in chapter 2 "Literature review and hypothesis development." with a detailed review of the literature and theoretical support. The following hypotheses are tested in this chapter.

Hypothesis 14

H_0**:** The entry of foreign banks in India does not reduce credit allocation to the agriculture sector in India.

H_1: The entry of foreign banks in India reduces credit allocation to the agriculture sector in India.

Hypothesis 15

H_0: The entry of foreign banks in India does not reduce credit allocation to the industrial sector in India.

H_1: The entry of foreign banks in India reduces credit allocation to the industrial sector in India.

Hypothesis 16

H_0: The entry of foreign banks in India does not reduce credit allocation to the service sector in India.

H_1: The entry of foreign banks in India reduces credit allocation to the service sector in India.

7.2.5 Methodology and data description

The impact of foreign banks' entry is measured by developing a model based on different Industry-wise variable and bank group-wise variables to measure individual industry wise impact of foreign banks' entry. The model is as follows

Credit to the agricultural sector = f (The performance of the agricultural sector, intermediary Ratio, loan quality, loan to the priority sector, labor intensity, competition, dummy variables of each bank group)

Credit to service sector = f (The performance of the service sector, intermediary ratio, loan quality, loan to the priority sector, labor intensity, competition, dummy variables of each bank group)

Credit to industry = f (The performance of the industry, intermediary ratio, loan quality, loan to the priority sector, labor intensity, competition, dummy variables of each bank group)

Table 7.7 Operational definition of the variables

Variable	Description	Measures
CA	Credit to the agriculture sector/GDP	Credit allocation to the agriculture sector
CI	Credit to industry/GDP	Credit allocation to industry
CS	Credit to the service sector/GDP	Credit allocation to the service sector
A_GDP	Agriculture component of GDP	Agricultural growth
I_GDP	Industry component of GDP	Industry growth
S_GDP	The service component of GDP	Service growth
NIM	Net interest margin	Efficiency in the banking sector
CD	Credit-deposit ratio	Intermediary function
NPA	Non-performing assets	Loan quality

DUM	Dummy for bank groups	Identify bank group
CRI	Dummy for crisis	Economic crisis
WI	Wage bills to Intermediation cost	Operating expense on wages

Source: Author's definition

7.2.5.1 Dependent variable

The dependent variables represent the credit allocation to the various sectors of the Indian economy. The sectors considered are agriculture, industry, and service. All the dependent variables are credit to the respective sector by different banking groups to GDP.

7.2.5.2 Independent variable

In this objective, the independent variables represent the factors that affect the credit allocation of bank-groups to various sectors of the economy. These factors are the performance of the sectors, intermediary ratio (credit-deposit ratio), net interest margin (NIM), a non-performing asset (NPA), wages, crisis period. The dummy variable is formed to represent a foreign banking group.

7.2.5.2.1 Performance of the sectors

The growth rate of the sectors is used as a proxy for measuring the performance of agriculture, industry, and service sectors. It is plausible that banks allocate more credit to sectors which have a better performance. Therefore, the expected coefficient is positive.

7.2.5.2.2 Credit-deposit ratio (CD ratio)

The primary role of any bank as an intermediary is to disburse credit more effectively. Thus, when the credit to deposit ratio increases, the credit allocation to various sectors rises. The anticipated sign for this variable is positive.

7.2.5.2.3 Non-performing asset (NPA)

Non-performing asset represents the quality of loans in a bank. In the case of persistent high NPAs to the banks, they hesitate to disburse loans even in the case of priority sectors[54]. Thus, the expected sign for NPA is negative.

[54] Banks would like to pay the penalty over not obeying RBI guidelines rather than lending to sectors with huge NPAs (Kim, 2010).

7.2.5.2.4 Net interest margin (NIM)

It is believed that high competition led to reduced overall lending in the economy (Petersen and Rajan 1995) as banks may improve higher screening techniques and hesitate to disburse credit to less profitable firms (Detragiache et al. 2008). Thus, the anticipated sign for this variable is positive.

7.2.5.2.5 Wage bills to intermediation cost

It is believed that the computerization and adaptation of high technology like ATMs installation has reduced the labor intake in the banking sector. Moreover, the high screening techniques adopted by foreign banks have transferred to local banks that have further decreased the need for labor. However, the quality of labor has increased, and the expense of the training on labor has risen. Thus, keeping this in mind, the operating cost of wage has increased. All the factors further improve the chance of lending to eligible companies. Thus a positive sign for high wage cost is anticipated.

7.2.5.2.6 Crisis period

The dummy for the economic crisis period, i.e., the Asian financial crisis from 1997-1999 and the global financial crisis from 2008-2011 is considered here. Foreign banks reduce credit supply during the crisis period (Jeon et al. 2003; Popov and Udell 2012). Foreign banks are found to reduce credit disbursal during the global financial crisis in India (Das 2013). Thus, the anticipated sign for crisis period is negative for credit allocation to various sectors of the Indian economy.

Table 7.4 presents the operational definition of all the variables. Table 7.5 represents the summary statistics of all the variables, and Table 7.6 shows the correlation matrix among the variables adopted.

Table 7.8 Summary statistics of the variables

	CA	CI	CS	A_GDP	I_GDP	S_GDP	NPA	NIM	PL	WI	CD
Mean	0.024	0.101	0.119	0.153	0.203	0.616	3.126	3.049	29.232	52.548	69.941
Median	0.021	0.093	0.109	0.151	0.203	0.618	1.565	2.952	29.753	54.865	73.236
Maximum	0.064	0.227	0.251	0.196	0.207	0.664	10.505	4.357	36.280	76.041	91.510
Minimum	0.000	0.019	0.024	0.118	0.196	0.562	0.416	1.967	16.832	30.895	46.380
Std. Dev.	0.022	0.066	0.074	0.026	0.003	0.033	2.814	0.602	4.049	15.200	12.472
Observations	56	56	56	56	56	56	56	56	56	56	56

Source: Author's calculation using E-View 9 software

Table 7.9 Correlation matrix of the variables

	CA	CI	CS	A_GDP	I_GDP	S_GDP	IM	PL	CD	NPA	DUM	CRI
CA	1											
CI	0.953	1										
CS	0.944	0.920	1									
A_GDP	-0.083	0.038	-0.017	1								
I_GDP	-0.021	-0.003	0.008	0.168	1							
S_GDP	0.084	-0.039	0.017	-0.995	-0.262	1						
NIM	-0.468	-0.561	-0.510	-0.033	-0.024	0.036	1					
CD	-0.368	-0.419	-0.410	-0.722	-0.175	0.729	0.312	-0.137	1			
NPA	-0.179	-0.001	-0.134	0.836	0.074	-0.833	-0.022	-0.599	-0.522	1		
DUM	-0.626	-0.624	-0.662	0.000	0.000	0.000	0.831	-0.331	0.455	0.133	1	2E-17
CRI	0.023	-0.016	0.011	-0.394	0.215	0.366	-0.105	0.215	0.236	-0.351	2E-17	1

CA- Credit allocation to Agriculture sector, CI- Credit allocation to Industry, CS- Credit allocation to the Service sector.

Table 7.10 Results of bank-group-wise credit allocation to the agriculture sector, service sector, and industry of the Indian economy (GLM estimator used)

Variable	Credit to Agriculture	Credit to Service	Credit to Industry
Growth of the particular sector	0.067 (0.64)	0.625*** (0.00)	1.310*** (0.00)
Non-performing assets (NPA)	-0.001 (0.58)	-0.003 (0.36)	-0.0001 (0.97)
Credit deposit ratio (CD)	-0.0001 (0.66)	-0.003*** (0.00)	-0.001 (0.32)
DUMMY (for foreign bank)	-0.041*** (0.00)	-0.063** (0.05)	-0.052* (0.1)
Net interest margin (NIM)	0.010 (0.13)	-0.012 (0.54)	-0.033 (0.12)
Crisis	0.003 (0.62)	-0.001 (0.96)	-0.008 (0.69)

***represents significant level at 1%, ** at 5%, * at 10%. Source: Authors' calculation using E-View 9 software

Table 7.11 Results of bank-group-wise credit allocation to the agriculture sector

Long run	ARDL (1,1,1,1,1)	Credit to agriculture sector (CA)			
The growth of the agriculture (A_GDP)	0.0393** (0.02)				
Credit deposit ratio (CD)	-0.0001*** (0.00)				
Non-performing asset (NPA)	-0.0009*** (0.00)				
Net interest margin (NIM)	-0.0038*** (0.00)	Cross-section co-efficient			
Short-run	Main equation	SBI & associates	Nationalized banks	Foreign banks	Private banks
Co-integration factor	-0.801*** (0.00)	-0.536*** (0.00)	-0.637*** (0.00)	-1.228*** (-337.04)	-0.8055*** (0.00)
D(NPA)	0.000 (0.54)	0.0003*** (0.00)	-0.001*** (0.00)	0.001*** (0.00)	0.0012*** (0.00)
D(A_GDP)	0.007 (0.92)	0.143*** (0.00)	0.036 (0.00)	-0.1839*** (0.00)	0.0322*** (0.00)
D(NIM)	0.001 (0.39)	-0.003*** (0.00)	0.003*** (0.00)	0.002*** (0.00)	0.0032*** (0.00)
D(CD)	0.0001*** (0.00)	0.0001*** (0.00)	0.0002*** (0.00)	0.0002*** (0.00)	0.0000*** (0.00)
C	0.025*** (0.00)	0.023*** (0.00)	0.037*** (0.00)	0.029*** (0.00)	0.0103*** (0.00)
@TREND	0.0003 (0.35)	0.0001*** (0.00)	0.001*** (0.00)	-0.0004*** (0.00)	0.0009*** (0.00)

***represents significant level at 1%, ** at 5%, * at 10%. Source: Author's calculation using E-View 9

Table 7.12 Results of bank-group-wise credit allocation to the service sector of the Indian economy

Long run	ARDL (1,1,1,1,1)	Credit to the service sector (CS)			
Growth of the service (S_GDP)	-1.272 (0.23)				
Credit deposit ratio (CD)	0.000 (0.99)				
Non-performing asset (NPA)	0.0012 (0.73)				
Net interest margin (NIM)	-0.1086** (0.01)	Cross-section co-efficient			
Short-run	Main equation	SBI & Associates	Nationalized banks	Foreign banks	Private Banks
Co-integration factor	-0.155* (0.06)	-0.0201*** (0.00)	-0.3656*** (0.00)	-0.042*** (0.00)	-0.194*** (0.00)
D(NPA)	-0.001*** (0.10)	-0.0006*** (0.00)	-0.0014*** (0.00)	0.0001*** (0.00)	-0.004*** (0.00)
D(S_GDP)	-0.297 (0.17)	0.0559 (0.33)	-0.4485*** (0.00)	0.040* (0.06)	-0.834*** (0.00)
D(NIM)	0.021** (0.03)	0.0008*** (0.00)	0.0364*** (0.00)	0.008*** (0.00)	0.037*** (0.00)
D(CD)	0.000 (0.35)	-0.0003*** (0.00)	0.0017*** (0.00)	-0.0001*** (0.00)	0.0004*** (0.00)
C	0.184* (0.08)	0.0241*** (0.00)	0.4701*** (0.00)	0.049*** (0.00)	0.192*** (0.00)
@TREND	0.001 (0.15)	-0.0001*** (0.00)	0.0012*** (0.00)	0.0003*** (0.00)	0.004*** (0.00)

*represents significant level at 1%, ** at 5%, *** at 10%. Source: Author's calculation using E-View 9 software.

Table 7.13 Results of bank-group-wise credit allocation to industry

Long run	ARDL (1,1,1,1,1,1)	Credit to industry (CI)			
The growth of the Industry (I_GDP)	1.0785 (0.11)				
Credit deposit ratio (CD)	0.002* (0.06)				
Non-performing asset (NPA)	-0.007*** (0.00)				
Net interest margin (NIM)	-0.0296** (0.00)				
Wage intermediation	0.0057*** (0.00)	Cross-section co-efficient			
Short-run	Main equation	SBI & associate	Nationalized banks	Foreign banks	Private banks
COINTEQ01	-0.390** (0.01)	-0.478*** (0.00)	-0.935*** (0.00)	-0.0327*** (0.00)	-0.112*** (0.00)
D(NPA)	0.004 (0.19)	0.012*** (0.00)	0.007*** (0.00)	0.0009*** (0.00)	-0.0017*** (0.00)
D(I_GDP)	0.070 (0.41)	-0.150 (0.52)	0.420 (0.84)	0.2822*** (0.00)	-0.2731 (0.20)
D(NIM)	-0.021 (0.34)	-0.018*** (0.00)	-0.022*** (0.00)	0.0090*** (0.00)	-0.053*** (0.00)
D(CD)	0.0002 (0.77)	-0.001*** (0.00)	0.001*** (0.00)	0.0003*** (0.00)	0.0002*** (0.00)
D(WI)	0.000 (1.0)	0.0003*** (0.00)	0.001*** (0.00)	-0.0004*** (0.00)	-0.001*** (0.00)
C	-0.116** (0.02)	-0.165*** (0.00)	-0.267*** (0.00)	-0.0069***	-0.024*** (0.00)

				(0.00)	
@TREND	0.003 (0.68)	0.003*** (0.00)	0.008*** (0.00)	0.0001*** (0.00)	0.0008*** (0.00)

***represents significant level at 1%, ** at 5%, * at 10%.

7.6 Results and findings

Table 7.10 shows the results of the generalised linear model (GLM) estimator. The positive sign for the growth of the sectors indicates that hike in credit lending over the years due to the increase in the growth of agriculture, service, and industry. However, the coefficient for agriculture is statistically not significant. The negative sign of the coefficient of NPA represents that more stress on the assets leads to a decrease in the lending irrespective of the sector. All the coefficient of NPA for different sectors is statistically not significant. Moreover, the negative results of the coefficient of NIM indicate that low efficiency among banks also leads to falling in credit supply to any sector of the economy. However, the coefficients of NIMs are statistically not significant. The result for the CD ratio is negative that is opposite to the anticipation. However, the results are statistically not significant for most of the sectors. The significant result that is more relevant for the study is the coefficients of the dummy variable of foreign banks' entry. All the coefficients of foreign bank entry are negative that indicates the negative impact of foreign banks' credit allocation to the important sectors of the Indian economy. The statistically insignificant results for crisis variable are mixed that cannot determine any effect of the crisis on the credit allocation by banks in India.

Table 7.11, Table 7.12, and Table 7.13 show the results of bank-group wise credit allocation to agriculture, service, and industry by using autoregressive distributive lag (ARDL) estimator. The specialty of ARDL is that it can be used when the variables have unit roots or when they are stationary at level. Here, some variables are stationary, and some are having unit root at level one. Thus, ARDL is an appropriate estimator to use. Further, it is used to check the robustness of the results of GLM estimator determined in Table 7.10. In the result tables (Table 7.11, Table 7.12), ARDL (1,1,1,1,1) is used and in Table 7.13, ARDL (1,1,1,1,1,1) is used[55]. Moreover, the results for the long run and short run are given in these tables. The short-run

[55] It characterises that statistical software has automatically chosen a model with one lag for all the independent variables, and for Agriculture and Industry (Table 7.11 and Table 7.12), four independent variables are considered at the lag of 1 in the model whereas, for Service sector (Table 7.13), five independent variables are considered at the lag of 1.

results are particular to bank groups, and the long run results are interpreted for all scheduled commercial banks.

The co-integrating factor (C) in Table 7.11, Table 7.12, and Table 7.13 are negative and statistically significant that represents the best fit of the model. The statistically significant signs of constant and trend indicate the seriousness of time effect in the model. The results of the ARDL model (see Table 7.11) for credit allocation to the agriculture sector are on the expected lines. The growth in the agriculture sector does attract banks to disburse loans in the long run. However, bank-wise results for short-term from Table 7.11, indicate that except foreign banks, other ownership types of banks in India increase their lending to the agriculture sector. This induces that foreign banks' entry affects the credit supply to the agriculture sector despite the growth of the sector. However, the restriction on foreign banks to be present in rural India (Kim 2010) and willingness to follow their clients established in metro cities and tier I cities by foreign banks are convincing reasons to believe the reduction of credit to agriculture sector in India. Intermediation ratio (CD) shows the negative sign for credit allocation in the long run, however, in the short run, it is positive, and that indicates higher deposits induce higher credit supply. The negative sign for NPAs represents that banks are reluctant to disburse loans when NPAs are high. However, it is not true in the short-run. Moreover, the fall in efficiency in banks also induces less allocation of credit. It is not the case in short-run and for different bank groups.

The interpretation of time-trend indicates that banks are likely to increase credit supply to the agriculture sector with time. However, foreign banks are an exception here. Thus, foreign banks in India have less tendency to allocate credit to the agriculture sector.

The results in Table 7.12 represent the impact of foreign banks' entry on credit allocation to the service sector in India. The results for this sector are not as per anticipation. The growth in the service sector does not attract more credit allocation to the sector. Moreover, statistically insignificant results of credit-deposit ratio and NPAs also do not support any relationship in the long run. However, the rise in net interest margin induces less credit allocation to service sector in the long-run, whereas, in short run, the rise in NIM fosters banks to lend more credit to the service sector. This is mainly because of the high contribution of the service sector to the Indian GDP. The growth in the service sector is more sustainable than any other sector. Foreign banks are ready to allocate more credit to the service sector despite high NPAs, high

competition and mainly due to its high growth rate in the short-run. Here, time also supports an increase in lending to the service sector.

The results presented in Table 7.13 shows the impact of foreign banks' entry on the industrial sector in India. The results are as per expectations. However, foreign banks' credit allocation is quite different from the rest of the bank groups. The growth in the Industries in India fosters more credit allocation by banks. However, the results depict that foreign banks allocate more credit to Industry as the growth of the industry is positively significant with the foreign banks' credit supply to Industry. Moreover, with the rise in NIM, bank groups do not increase credit allocation to Industry both in the long and short run. However, foreign banks alone increase for credit supply to industry. The increase in NPAs would lead to a decline in the credit to the industry. However, it is not the case in a short period. Only Indian private sector banks are more cautious about the lending to the industry at the time of high NPAs. With the rise in wage cost, banks lend more to industry whereas this is not the case for foreign banks and Indian private banks in the short duration. Foreign banks adopt highly sophisticated technology for screening loan proposals and avoid high cost on employees. Thus, a hike in employee's compensation would not be the part of the hike in the credit allocation. Thus, the results for foreign and private banks are different from the other banking groups.

7.7 Conclusion

The impact of foreign banks' entry on the credit supply to the Indian economy is analyzed through access to credit for firms in India and credit allocation to various sectors of the Indian economy. The main aim of the study is to investigate the access to credit for firms in India in the post entry of the foreign banks. Panel data is constructed for 5454 firms across districts for 20 years period from 1996 to 2015 and analyzed through dynamic panel data estimator GMM. The results of the study depict that credit access to firms in India has depleted after foreign banks' entry. However, the situation has improved in recent times. The access to credit for firms has been improved in the districts where foreign banks have entered. There was no sign of cherry picking behavior, i.e., lending to large firms than small firms by foreign banks in terms of credit access to firms in India.

The impact of foreign banks on credit allocation to different sectors of the economy is analyzed by considering bank group-wise cross-section data from 1996 to 2015. The general findings are that the growth of the sector attracts more bank credit. All the bank groups reduce their lending during high NPAs in the sector. Foreign banks affect all the sectors negatively for

credit allocation. Foreign banks allocate less credit to the agriculture sector despite the growth of the sector. Foreign banks strangely increase credit supply to the industrial sector during high NPAs and NIM in the banking sector.

CHAPTER 8

CONCLUSION AND POLICY RECOMMENDATION

8.0 Overview of the chapter

This chapter comprises the key findings of the study. It is divided into two sections. Section one highlights the key findings from the investigation made on four objectives in this study. Section two discusses the broad implications of the work, its limitations and the future scope of the study.

8.1 Introduction

Foreign direct investment flows in the banking sector, and rapid bank internationalization is the result of globalization and the establishment of WTO. This resulted in the foreign banks' entry in the host nations and direct investment in the shares of the host banking sector. With the rise in foreign banks' entry, a drastic increase in the asset share of foreign banks is observed. Prior studies have found that the major objectives of allowing more foreign banks in the host nations, to receive foreign investment, to raise competition in the banking sector and to cater to the unbanked population of the host economy.

The entry of foreign banks in India is not of recent origin. India has a rich experience with foreign banks for over 150 years now. The licensing to foreign banks and entry of additional branches of foreign banks were minimal over the years. However, the liberalization of the Indian economy in 1991-92 and becoming part of the WTO agreement on trade in service in 1995 have reformed the banking sector for foreign banks. The additional branches of foreign banks and many new foreign banks were permitted in the post-liberalization period. There are ample empirical studies on cross nationals and a few on the developing home economies investigating the factors of foreign banks' entry. However, systematic empirical literature is scarce in the Indian context. The results of the available literature are also contradictory. Thus, the further entry of foreign banks into the post-reform India has been analyzed.

Foreign banks have been criticized and praised for many reasons based on their impact on the host economy. Foreign banks are believed to enhance competition in the host market. The present study finds that it is also applicable in the Indian context. Furthermore, it examines, how this competition affects the businesses of Indian domestic banks. The study also

demonstrates how the entry of foreign banks impact upon the credit market in the Indian economy by investigating the impact of foreign banks on the credit supply to the firms in India and credit allocation to major sectors of Indian economy. The present study also captures the behavior of foreign banks during the financial crisis period.

Most of the central banks of host nations are interested in knowing the kind of impact foreign banks have on their banking sector and the various other sectors and hence the effects of foreign banks on their economy. Similarly, India's central bank, RBI also has such concerns related to the entry of foreign banks in India and their cascading effects. Moreover, RBI has published many discussion papers on the entry and the form of entry of foreign banks in India. RBI has asked suggestions from countrymen on many occasions. RBI is very keen on the foreign banks' entry in the phased manner that has been implemented from 2006 to date. Thus, the issue of motives of foreign banks' entry and their effects on the Indian economy has a profound connotation in the empirical space.

8.2 What were the motives of foreign banks' entry in India in the post-reforms period?

An important question discussed in prior studies on most of the countries where foreign banks have entered and acquired a huge asset share. The major motivation for these studies was to examine the impact of banking liberalization on the host economies. This question is raised mainly in the studies on the developed nations (Ball and Tschoegl (1982) and Yamori (1998) in the case of Japan; Cho (1986) and Goldberg and Johnson (1990) in the case of US; Hellman (1994) in the case of France; Blandon (2001) in the case of Spain; Wezel (2004) in the case of Germany etc.) but it became the center of discussion in the studies on developing countries recently (Song (2009) in the case of China; Molyneux et al. (2013) in the case of South East Asian countries). The present study raises this question in the Indian context and empirically tests it in chapter 5. Moreover, there are theories responding to the raised question. However, the answer to this question is dynamic, and it differs from country to country.

Out of the many theories discussed in chapter 2 that have attempted to find various factors for foreign banks' entry in the host country, the eclectic paradigm (Dunning 1993) theory is most relevant. This theory explained various locational advantages that attract foreign banks in the host nation. The current research work is to examine what kind of locational advantages might have attracted foreign banks in India. The present study considered locational factors such as the presence of their home clients, profit opportunities in terms of higher margins, huge market to serve in terms of high savings, developing Indian stock market, and economic growth.

However, the empirical results could find only the initial two factors brings foreign banks in India. Thus, India has locational advantages to attract more foreign banks.

There are 44 foreign banks present in India. The history of these foreign banks has been studied. There are a few foreign banks that claim the reason for their entry in India[56]. Standard Chartered bank is the largest foreign bank in India and is present in 42 cities with 101 branches. The bank claims that the primary reason for the entry in India was trading activities, e.g., cotton trade from Mumbai, indigo and tea trade from Kolkata, rice trade from Burma, sugar trade from Java, tobacco trade from Sumatra, hemp trade from Manila and silk trade from Yokohama. Moreover, the other banks making similar claims are, Deutsche bank from Germany entered in 1874 and Abu Dhabi Commercial bank ltd. from UAE entered in 1980 in India. Woori Bank from South Korea entered in India in 2012 that had claimed of serving 170 home clients present in Chennai, India.

The findings of this research question answer the motives of foreign banks' entry in India. It highlights the locational advantages of India that attracts many foreign banks from different nations in the post-liberalized stage. The major motive of foreign banks' entry into India is *following your home clients*. This is based on the finding from various measures of foreign banks' entry that is positively related to FDI entering from their home country. It cannot reject the claims of Woori Bank, a South Korean bank that claims for its entry in India by following its home country clients which established its offices in Chennai. Thus, the findings confirm that most of the foreign banks entered into India after post-liberalization to follow their clients from their home country.

The next major motive is booking high profits. This shows that foreign investment in the Indian banking sector yields high returns. The study does not find locational factors relevant to the entry of foreign banks in India such as the growing Indian economy, developing Indian stock markets, high savings, bilateral relationship, and banking crisis.

8.3 Did foreign banks' entry impact upon the business performance of Indian domestic banks?

The main purpose of financial sector reforms including allowing foreign banks' entry for any economy is to enhance the efficiency of its banking sector (Mohan 2005). The aim of the Indian economy to liberalize further for foreign banks was also to improve the efficiency and productivity of the Indian banking sector through competition (GOI 1992). In order to test the

[56] The detailed history of foreign banks is provided in the Appendix.

relative efficiency and productivity of foreign banks, Berger et al. (2000) have developed two hypotheses. i.e., home field advantage hypothesis and global advantage theory. The former claims that domestic banks usually are more efficient than the foreign banks and the later claims the opposite. However, in both the cases foreign firms can improve their profits by reducing their margins and cutting cost due to their technological advantage[57] (Buckley and Casson 1976, Caves 1982, Hennart 1982). Based on these theories, Claessens et al. (2001) developed a model and claimed that foreign banks' entry raises competition in the banking sector. The rise in competition affects the performance of domestic banks in the host countries.

Following Claessens et al. (2001), there are many studies developed finding the change in the profitability and efficiency of host banks. However, there are a few studies finding the change in the efficiency of Indian banks due to foreign banks' entry. Surprisingly, the findings of both Indian studies Ghosh (2012) and Kalluru and Bhat (2009) are different from all other studies. Moreover, the results of both Indian studies are also contradictory to some extent.

There are ample studies finding the impact on the businesses of domestic banks due to foreign banks' entry in cross-national studies (Cheng 1986; Claessens et al. 2001) and in developed countries (Peria and Mody (2003) on Latin America; Barajas et al. (2000) in the case of Colombian banking sector; Unite and Sullivan (2003) in the case of Philippines; Wu et al. (2007) and Seo et al. (2013) in the case of Chinese banking sector; Denizer (2000) in the case of Turkey. All these studies claimed that the foreign banks' entry brings competition, reduces net interest margin, reduces profitability and enhance the operating cost of domestic banks. Kalluru and Bhat (2009) and Ghosh (2012) did not find a rise in competition but did find the reduction in the net interest margin with the rise in profitability. Moreover, both these studies found opposite results on the impact of NPA. The present study filled this gap and found similar results of Classens et al. (2001) in the Indian context.

The findings of the objective answers how the foreign banks' entry in India affects the business performance of Indian commercial banks. The major findings of this objective are, by raising competition, foreign banks adversely affect the profits of local banks with the decline in the net interest margin; enhancing the overhead cost of Indian banks. However, foreign banks improve the asset quality of Indian banks by reducing the non-performing assets of Indian banks.

[57] Following the Internalization theory (Williamson 1975) and eclectic paradigm (Dunning 1993), a foreign bank may enter into the other country when it has some monopolistic advantage than the local firms which can help them to cut cost.

The discussion in the literature reveals that foreign banks have spillover effects on the host Indian banks and as a result, Indian banks have adopted high technology introduced by foreign banks (e.g., ATMs, Credit and Debit cards, etc.). Thus, Indian banks need to spend a lot on technological advancement and also spend more on grooming their employees. This further leads to a rise in the cost to Indian banks. Indian banks also reduce their net interest margins to compete with foreign banks. Thus, the profits of Indian banks got affected. However, on the positive side, Indian banks can reduce their NPAs in competing with foreign banks. This could be due to adopting high screening technology of foreign banks for lending (Gormley 2010).

8.4 Did the foreign banks' entry impact upon the access to credit for business firms in India?

It is believed that the credit requirement of the firms in developing economies increases over the period. Thus, the credit availability to them should also increase. Foreign banks are considered as large banks connected with the international credit market that can fulfill the credit need of firms especially in the developing countries (Levine 1996; Hermes and Lensink 2004; Gianetti and Ongena 2012). In the host economies, foreign banks do not have sufficient information about the borrowers and the market[58]. This compels them to lend to those firms having hard information than the soft information. Thus, foreign banks have to cherry pick a few potential borrowers to lend and have to ignore the SMEs (Mian 2006; Sengupta 2007). This leads to a reduction in credit access to firms in the host economies (Detragiache et al. 2008; Gormley 2010).

A district-wise study in the Indian context Gormley (2010) found that credit access to firms in India reduces due to foreign banks' entry. However, Gormley (2010) urges to study it in the future with sufficient data in hand. The period considered in the study was from 1988 to 2004. By this time, foreign banks had entered only into eight new Indian districts after 1991. Thus, the present study is carried out with larger dataset. The data consists of 5454 firms in 59 districts where foreign banks entered after 1996. Considering Gormley (2010) suggestions for future research, the present study applies direct data of credit supply by foreign banks in those particular districts to measure the direct impact of foreign banks' entry. Improvising the model adopted in other studies, the present study applies a dynamic panel data model, generalized

[58] The empirical studies have stated various reasons for foreign banks having competitive disadvantage of information, such as Mode of entry, size of the bank, the distance between banks and borrowers, the distance between banks and their headquarters, Market competition, the socio-cultural relationship between home and host countries etc. All these factors are explained in detail in chapter 2 literature review and hypotheses development

method of moment (GMM) for panel data. This estimator has a high potential to overcome the complications faced by other estimators. The result of the present study further confirms the findings of Gormley (2010) that foreign banks' entry into Indian districts reduces credit access to firms. According to Ghosh (2012), Indian banks adopt foreign banks' lending strategy and lend to hard information firms ignoring the firms with soft information. Moreover, according to Gormley (2010), Indian banks adopt high screening technology for lending to compete with foreign banks. Therefore, Indian banks prefer profitable business firms that can produce hard information for lending. This further leads to difficulty to access credit for SMEs and firms from the unorganized sector in India. Hence, it is clear that foreign banks' entry reduces credit access to firms in India.

The credit access to the companies has reduced in various Indian districts after foreign banks' entry. However, the credit access to foreign firms in those districts where foreign banks have entered is upraised. This indicates that foreign banks have lent more to foreign firms while ignoring Indian firms. This further highlights that foreign banks entered not only to follow their home clients but also to serve them in India through credit lending. Foreign banks do not discriminate between SMEs and large firms while lending. So, unlike other host economies, the cherry picking behavior of foreign banks has not been determined in India.

The literature unanimously holds the view that the reason for reduced lending to host companies is information asymmetry. Foreign banks have high technology to screen the borrowers that result in lending only to hard information firms[59]. Moreover, local banks have also followed similar strategies of screening to lend. Thus, the credit supply to the firms have diminished and hence to the entire Indian economy.

8.5 Did the foreign banks' entry impact upon the credit allocation to various sectors of the Indian economy?

The foreign banks' entry is permitted with the objective of improving the efficiency of allocation of resources (Mohan 2005). All the major sectors of the economy such as agriculture, service, and industry are diversified and hence seek more credit availability (Iqbal et al. 2003). Indian banks have to compete with foreign bank lenders that resulted in the reduction in the net interest margin and non-performing assets. Therefore, Indian banks had to change their strategy

[59] The firms which have maintained proper accounting records and that have been audited by professionals or the firms who are listed on stock markets and have followed the guidelines of security exchange board of India (SEBI) – the regulator of Indian stock exchanges.

of lending to various sectors of the economy. Indian banks seek hard information for lending; they lend to sectors with better financial performance; they lend to sectors with less non-performing assets and high profitability etc. Thus, considering all these factors in the model, the present study finds that foreign banks' entry has an adverse impact on the credit allocation to various sectors of Indian economy, especially in the agriculture sector.

Credit to all the major sectors of the Indian economy such as agriculture, service, and industry sector declined due to foreign banks' entry. The decline in credit allocation to the agriculture sector is reconfirmed by using panel ARDL estimator. The rise in competition in the Indian banking sector and rise in NPAs further reduce credit allocation to agriculture, service, and industry in India. Even though the agriculture sector is a priority sector, the credit supply to it by foreign banks has not increased over the years. Moreover, in the short run, foreign banks reduced their lending to the agriculture sector. As per RBI guidelines, foreign banks have to lend 32 percent of the credit to the priority sector and should lend 18 percent of the net credit to the agriculture sector. However, it applies only to those foreign banks having more than 20 branches. There are four foreign banks in India having more than 20 branches in India.

Foreign banks' entry in India is restricted in numbers and certain areas of tier V and tier VI cities. Moreover, the purpose of foreign banks' entry is to follow and serve their clients having branches in metro cities and tier I cities in India. Thus, foreign banks do not have much reach to the agriculture sector in India. This would be the probable reason for minimal credit allocation to the agriculture sector by foreign banks. However, in the service and Industrial sectors, the extent of the adverse impact of foreign banks cannot be reconfirmed.

8.6 Conclusion

The liberalization has opened doors for many players in various sectors in India. The liberalization of the economy and WTO membership rewarded foreign banks to enter into India in more numbers. The post WTO period has seen the entry of many new foreign banks into India. However, foreign banks entered India due to its various locational advantages. The main reason is the opportunity to serve their home clients. These enriched foreign banks follow their clients in developed metro cities of Indian states. Apart from serving their home clients, foreign banks entered in India to earn profits which means high returns on their direct investment. Foreign banks do not enter India due to a huge market, GDP growth, developing stock markets nor due to bilateral trade relationship. There is no substantial change in the pattern of entry of

foreign banks during the financial crisis. This could be due to the restricted entry of foreign banks in some branches.

Foreign banks' entry has improved competition in the Indian banking sector to a certain extent. However, this competition has put much pressure on Indian banks that can be observed in their performance. Indian banks were required to reduce their interest margin and incur more cost to compete with foreign banks. This has further reduced their profitability. Indian banks reduce non-performing assets due to foreign banks' entry. This is due to the adoption of high screening technology or lending strategy through hard information or both. However, this further led to decline in the credit access to firms in those districts where foreign banks are present and reduction in credit allocation to major sectors of the Indian economy, especially to the agriculture sector. Thus, despite introducing innovative financial products and service through technological spill-over, the impact of foreign banks' entry has adversely affected credit access and credit allocation in the Indian economy.

8.7 Contribution to the body of knowledge

The present study provides a comprehensive investigation of the trends of foreign banks' entry after reforms and its impact on the Indian banking sector and the Indian credit market. The findings of the present study have a significant contribution to the FDI policy and licensing policy of foreign banks in India.

The major contributions are, first, the present comprehensive empirical study finds the determinants and impact of both brownfield FDI and greenfield FDI in the Indian banking sector. Second, it further contributes to the literature in confining the contradictory results of Indian studies to each other and with the rest of the studies abroad, about the impact of foreign banks on the business performance of Indian banks. Third, considering the suggestion of Gormley (2010), the present study finds the district-wise impact of foreign banks' entry on access to credit to firms by using the direct data of credit by foreign banks.

8.8 Policy recommendation

The present study has significant regulatory implications. India is a founder member of WTO and is abided to allow twelve foreign bank branches in a year. Moreover, India has liberalized its economy for more than 25 years ago. Indian economy is still in the progressive phase of liberalization. India cannot afford to stop liberalization of banking. Allowing foreign banks' entry is also a national strategy to reciprocate. However, India could be very cautious to prevent

the adverse impact of this liberalization. Furthermore, Indian regulators not only need to be vigilant while implementing various policies but also act upon the adverse effects of previous policies.

At present, foreign banks are allowed entry in any one form in the Indian economy, i.e., either through a branch or as a wholly owned subsidiary (WOS). WOS mode of entry is preferred over branch mode by RBI for financial stability[60]. Even though RBI has incentivized foreign banks to provide national treatment to WOS, there is no WOS entry by any foreign banks till date probably due to stringent norms of priority sector lending, capital gain tax, and stamp duty problems[61]. Moreover, the existing regulations of licensing foreign banks tend to restrict them from entering in a large number and foster them to enter in metro cities or tier I cities. Moreover, foreign banks are interested in entering into cities where their home clients are settled to serve them from a small distance. The regulator can improvise upon the licensing policy of foreign banks either by compelling them to maintain their presence in a certain ratio in rural and urban presence. This could be possible by allowing foreign banks more in number either through branches or subsidiaries.

The standard literature highlights that a reduction in the credit access after foreign banks' entry is due to information asymmetry of the creditors. Thus, foreign banks have to depend upon their screening technology that removes the soft information firms. To compete with foreign banks, local banks change their decisions and be reluctant to disburse credit. The overall process results in the decline in credit supply to the economy. Thus, RBI should avail the credit information to foreign banks at a lesser cost to boost lending in India. Moreover, the consolidation of Indian banks should be implemented earliest to have *too big to fail* banks in India that can compete with foreign banks without changing their lending strategy.

The present study suggests to liberalize further the entry of foreign banks in India and allow more branches or subsidiaries; to improve upon the credit information for foreign banks to prevent any adverse effect on credit access, compel foreign banks to open their offices in rural India and support more to agriculture loans.

[60] Response given by RBI Governor Dr. Raghuram Rajan when asked by author in a Monetary Policy Review during December, 2013.

[61] Author has learned that three foreign banks, DBS, State bank of Mauritius, and ABN Amro have applied to convert their present branches into WOS.

8.9 Suggestions for future research

The literature consists of the various studies on foreign banks' entry that includes various sets such as, cross-nation studies, one home country, and many host countries studies, one host country and many home countries, many homes and many host countries studies. However, there is a clear lack of a case study on a single foreign bank entering into multiple countries and its impact on the host country or the impact of reciprocity of banks entry among countries. Thus, one can fill this gap. Moreover, the major finding of this study, the reduction of credit access to firms after foreign banks' entry can be explored further after some years.

There can be some suggestions to extend this study in the future that could not be possible due to many limitations. One can form foreign bank wise panel data to study the influencing factors for the entry of foreign banks when the availability of data is not a constraint. Moreover, RBI has started publishing quarter wise data for many variables in recent times. In the future, one can check the impact of foreign banks' entry by using high-frequency data. A few studies on developed nations have also highlighted the size of foreign banks as the major factor. Thus, one can segregate foreign banks' entry based on size and investigates determinants of their entry into host nations and their impact on the host economy by the size of foreign banks.

There are many policy changes announced in November 2013 by RBI that lead foreign banks to enter as WOS mode. The extensive research on the various forms of entry is done in other developed countries, and this can be an opportunity to perform a comparative study of Indian experience with foreign banks by using different forms of entry. Here, the present study on the impact of foreign banks on the credit allocation to various sectors of the Indian economy is done by bank group wise. However, future studies can explore the impact considering individual bank-wise data if one can extract it from RBI.

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Appendix-I

Determinants of locational preferences of foreign banks in India

To explore the possible reasons for the foreign banks' entry into the particular states of India, the preferred locations of foreign banks have been analyzed. The preference of foreign banks for any given state due to *following your home client* can unearth the behavior of foreign banks in a precise way. Further, it may reconfirm or contradict the results of the determinants of foreign banks' entry studied nationwide. However, locational preferences of foreign banks in India carry more weight than the state-wise study.

Table I.1 State-wise and district-wise entry of foreign banks in India

S.I.	District	State	Number of foreign bank branches in a state	Entry of first foreign bank
1	MUMBAI	MAHARASHTRA	63	1853
2	CHENNAI	TAMIL NADU	24	1854
3	KOLKATA	WEST BENGAL	7	1854
4	NEW DELHI	NCT OF DELHI	26	1889
5	BANGALORE URBAN	KARNATAKA	19	1951
6	ERNAKULAM	KERALA	5	1951
7	KAMRUP METROPOLITAN	ASSAM	1	1962
8	HYDERABAD	TELANGANA	12	1962
9	AHMEDABAD	GUJARAT	15	1996
10	GURGAON	HARYANA	8	1998
11	JAIPUR	RAJASTHAN	6	2000
12	CHANDIGARH	CHANDIGARH	3	2001
13	LUDHIANA	PUNJAB	7	2001
14	GAUTAM BUDDHA NAGAR	UTTAR PRADESH	16	2002
15	BHOPAL	MADHYA PRADESH	5	2003
16	PATNA	BIHAR	1	2004
17	KHURDA	ODISHA	2	2004
18	PUDUCHERRY	PUDUCHERRY	1	2005
19	RAIPUR	CHHATTISGARH	1	2006
20	KURNOOL	ANDHRA PRADESH	3	2009

Source: Authors' calculation based on the *Directory of Bank Offices* by RBI

The first foreign bank in India was founded by British in 1853 at Mumbai, Maharashtra. Table I.1 highlights the state-wise and district-wise entry of foreign banks in India. Maharashtra was the first Indian state to have a foreign bank and Andhra Pradesh being the latest. However,

there are more than ten states without any foreign bank in India. There are twenty Indian states including union territory where foreign banks have already arrived as a full-fledged branch.

Methodology

The following is the model for the locational preference of foreign banks,

$$\boldsymbol{EF_{ij} = \beta_0 + \beta_1 FDI_{ij} + \beta_2 SD_{ij} + \beta_3 DP_{ij} + \beta_4 Crisis_{ij}}$$

Here i represents the Indian state where foreign bank has entered, j represents year in which foreign bank has entered, EF is the dummy variable used 1 for entry of foreign bank otherwise 0; FDI is overall foreign direct investment in a particular state; SD represents the state domestic product; DP represents state-wise total deposits of commercial banks; Crisis represents a crisis in the banking system. β_0 is intercept and $\beta_1, \beta_2, \beta_3, \beta_4$ are various parameters to determine.

Table I.1 shows the year of foreign banks' entry in a particular state with the number of branches of foreign banks in the particular Indian state. State-wise foreign direct investment data is collected based on RBI offices in those states; state-wise state domestic product data is collected along with the total deposits in the fifteen states respectively. Here, the crisis variable is also taken as money components (M_2) divided by the exchange reserve. There are 20 Indian states where foreign banks have entered, but the data could be collected for only 15 states as the state-wise FDI inflow is available based on the FDI inflow registered with RBI regional offices in particular states[62]. Thus, the panel data comprises of 15 states as cross-section observations and ten years from 2006 to 2015[63].

The logistic regression is used to analyze the state-wise determinants of foreign banks entry. As a foreign banks' entry in a particular state is measured based on the year of entry that has been taken as dummy 1 for the entry in a given year and 0 otherwise. The summary statistics are presented in Table I.3, correlation matrix in Table I.4 that shows no multicollinearity among variables and the results are shown in Table I.5. The logistic regression for panel data is used — the main reason being the dichotomous dependent variable.

62 There are 17 regional offices of RBI that records FDI inflow of that particular state. However, some regional offices do record FDI inflow of more than one state or union territory, e.g. Mumbai office handles Maharashtra, Dadra & Nagar Haveli and Daman & Diu; Chandigarh covers Chandigarh, Punjab, Haryana and Himachal Pradesh. The further details is provided in the appendix.

63 The reason for using only ten year's data is due to lack of availability of data of FDI in Indian states.

Table I.2 Operational definition of variables

Variables	Explanation
EF	Dummy variable 1 for entry of foreign banks in a particular state
FDI	State-wise foreign direct investment inflow (based on RBI regional office)
SD	Net state domestic product
DP	State-wise deposits in scheduled commercial banks
Crisis	Broad money components (M2) divided by exchange rate reserve

Source: Author's definition

Table I.3 Summary statistics of variables

	EF	FDI	SD	CR	DP
Mean	0.353	8.449	14.173	12.598	13.165
Median	0.000	9.899	14.294	12.519	13.479
Maximum	1.000	12.063	15.165	15.487	15.458
Minimum	0.000	1.792	13.138	9.300	10.150
Std. Dev.	0.485	2.779	0.604	1.835	1.664
Observations	34	34	34	34	34

Source: Authors' calculation using E-View 9 software

Table I.4 Correlation matrix of variables

	EF	FDI	SD	DP	CR
EF	1				
FDI	0.41	1			
SD	0.25	-0.076	1		
DP	0.17	0.408	0.164	1	
CR	0.22	0.445	0.153	0.984	1

Source: Authors' calculation using E-View 9 software

Table I.5 Results of locational preference of foreign banks in Indian states -Logistic regression

	Coefficient	odds	Z-Statistics	Coefficient	odds	Z-Statistics
FDI	664.01***	2.3819E+2	4.15	642.43***	9.7E+278	3.94
SD	40.27***	3.08609E+	4.05	39.60***	1.56E+17	3.96
DP	-2.96	0.052	-0.69	-1.54	0.215	-0.3
Crisis	0.28	1.328	0.57	-1.10	0.334	-0.73
_cons	-2.92***	0.054	-5.12	-2.00	0.136	-1.63
Wald chi^2	30.24***			30.57***		

Source: Authors' calculation using STATA software

Results and discussion

The major finding from the results is that foreign banks prefer the location for their branch near to their home clients that further indicate the *follow your client's* behavior of them. Moreover, foreign banks' entry is also positively related to the growth of that particular state.

Table I.5 shows the results of logistic regression for foreign banks' entry into a particular Indian state. The highly significant result of Wald Chi-Square indicates the acceptance of the results of estimation. Moreover, the odds ratio is also presented along with z-statistics to reconfirm the results that are considered as a strong indicator in logistic regression. The results of logistic regression show a positive sign for foreign direct investment and growth in the state. Thus, it indicates that foreign banks follow FDI in a particular state. This also supports the results of the objective determinants of foreign banks' entry in India. Thus, the hypothesis, *follow your home client* cannot be rejected. Moreover, foreign banks' entry in the last ten years also proves following the behavior of foreign banks in India. The results further claim that foreign banks' entry into a state is also due to the high economic growth of that state in India. However, the negative sign of deposits in a particular state is not significant that indicate that there is an inverse relationship between foreign banks' entry and deposits in a state. The positive and significant sign of variable crisis represents the entry of foreign banks during the crisis. Thus, foreign banks do enter to follow their clients and to seek growth in a particular state.

Conclusion

The finding of both the empirical work, country-wise entry of foreign banks in India and foreign banks' entry into Indian states supports that foreign banks' entry into India as a host country is mainly to follow their home clients. Though the Indian market does attract foreign banks for profit gain, they are neither interested in the growth of the Indian economy nor in the high domestic savings of Indians. Foreign banks would like to capture the opportunity of low competition in the Indian banking sector. Moreover, the bilateral trade relationship is not an attractive factor for foreign banks. Crisis period in the Indian banking sector does not provide more entry in numbers that may be due to India's restrictive policy towards foreign banks.

Appendix-II

History of foreign banks' entry into India

1. Standard Chartered bank

Standard Chartered bank is the result of a merger that occurred in1969 between two banks, the Charter bank that was established in Mumbai, Kolkata, and Shanghai in 1858 and the Standard bank of British South Africa that was founded in 1862 in London. The primary purpose of the establishment of Charter bank was trade among countries. This bank has capitalized in several trade activities, cotton trade from Mumbai; indigo and tea trade from Kolkata; rice trade from Burma; sugar trade from Java; tobacco trade from Sumatra; hemp trade from Manila and silk trade from Yokohama.

Standard Chartered bank is the largest foreign bank in India and is present in 42 cities with 101 branches. It has many subsidiaries in India. i.e., Standard Chartered Securities (India) Ltd Standard Chartered (India) Modeling and Analytics Centre Pvt. Ltd., Standard Chartered Private Equity Advisory Private Limited, the vehicle for the equities business, Standard Chartered Finance Limited and SCOPE International Standard Chartered Investments and Loans (India) Limited.

There are a few interesting notes about the Standard Chartered bank. Despite having a head-office in London with around 2100 employees from the UK, It has no branch in the UK. It has 1700 branches, outlets, and offices in 70 countries but primary target markets are Asia, Africa, and the Middle East.

2. City bank

City bank is a subsidiary of City Group that was set up in 1812 in New York. City bank entered into India in Kolkata in 1902. It has 53 branches and 700 ATMs in more than 30 cities in India. City bank is the largest foreign direct investment in banking and financial service with the capital investment of more than US$ 4 billion in India.

3. The Hong-Kong & Shanghai banking corporation (HSBC)

The Mercantile Bank of India, China, and London was founded in Bombay (now Mumbai) in 1853. It had opened its branches in London, Madras (Chennai), Calcutta (Kolkata), Kandy, Colombo, Shanghai and Canton (Guangzhou). In the year 1950, it had shifted to its new head office at Flora Fountain in Mumbai. In 1959, The HSBC Limited that was founded in 1865 in Hong Kong and Shanghai had bought The Mercantile Bank of India, China, and London in India. In India, HSBC has 50 branches and around 150 ATMs spread in all the major cities like

Ahmedabad, Bangalore, Chandigarh, Chennai, Coimbatore, Gurgaon, Hyderabad, Kolkata, Mumbai, New Delhi, Noida, Pune, Trivandrum, and Vishakhapattanam, etc. In fact, HSBC was the first bank to introduce ATM in India in the year 1987.

The HSBC bank has been an international bank from its foundation as it was established to serve the needs of the Chinese, European, and US merchants. The HSBC bank has 4000 offices around 70 countries across Asia, Africa, Europe, the Middle East, and North America and Latin America. The HSBC is the seventh largest bank in the world by total assets (US$ 2.374 trillion as of December 2016).

4. The Royal Bank of Scotland N.V. [RBS] (the Netherland)

The RBS Group has opened its first private bank in London in the year 1692. Its headquarter is located in Edinburgh, Scotland. The Royal Bank of Scotland entered in India in 1921. The bank claims that their client's base comprises of the main multinational corporates, blue-chip Indian corporates, leading financial institutions, high-net-worth individuals, and the Indian government, in India. The bank has 28 branches in India with more than 3000 staff and around 1.3 million customers. The branches are expanded across major Indian cities like Kolkata, Mumbai, New Delhi, Chennai, Pune, Baroda, Hyderabad, Bengaluru, Noida, Gurgaon, and Surat. RBS bank was looking after the business of ABN AMRO from 2007 in India. However, RBS exited the Indian market in 2015.

5. ABN AMRO N.V.

ABN AMRO was formed in the year 1824 at Amsterdam in the Netherlands. It is a leading multinational bank in the world having a presence in 76 countries over 3000 branches. The first branch of ABN AMRO was established in India in 1920 in Kolkata followed by Mumbai in 1921. The bank had its branches in Delhi, Chennai, Pune, Baroda, Noida, and Hyderabad. The parent of ABN AMRO bank was acquired by the consortium, and its business in India was taken care by The Royal Bank of Scotland since October 2007. The acquired bank has closed its business in India. Hence, ABN AMRO would like to re-enter the Indian market as WOS mainly to finance germs and jewelry businesses.

6. Deutsche bank (GERMANY)

Deutsche bank was established in Berlin, Germany in the year 1870. The primary aim of the bank was to establish trade relations between Germany and the international market. The relation of Deutsche bank with India was initiated in 1874 when there was a negotiation between the bank and the German government to issue a silver loan for India. Deutsche bank

had joined the Asiatische bank and formed Deutsche-Asiatische bank to serve Asian markets in 1889. This joined special bank had opened its first branch at Kolkata in India in 1896. However, it had to shut down in 1914 due to world war I. Later, Deutsche-Asiatische bank was merged with European Asian bank in 1972 and opened its first branch in Mumbai in India in 1980. In the year 1986, the Deutsche-Asiatische bank changed to Deutsche bank. Later in 1989, it has opened its branch in New Delhi. Deutsche Bank has extended to sixteen cities in India with over eleven thousand employees.

7. DBS bank ltd. (SINGAPORE)

The bank was founded by the government of Singapore in the year 1968. The bank has become the largest multinational bank in Asia by assets. Moreover, it is also considered as safest bank in Asia. DBS bank entered into the Indian market in Mumbai in 1995. It has thirteen branches in India by 2015 in Bangalore, Chennai, Cuddalore, Hyderabad, Kolhapur, Kolkata, Moradabad, Mumbai, Nashik, New Delhi, Pune, Salem, and Surat. This is the first bank that has applied to RBI to convert its branches into wholly owned subsidiaries.

8. Barclays bank PLC

Barclay's group has a history of 350 years of banking. It is a pioneer of automated teller machine (ATM) established in 1967 in the world. Barclays bank Plc. commenced its operation through a representative office in Mumbai in 1979 that got honored branch status in 1990. Moreover, in the same year, it has opened one more representative office in Delhi that was also converted in a full-fledged branch in 1994. Barclays Plc is the largest employer from the UK that employs 23,000 people in banking, technology, and another shared service. Barclays bank had nine branches in India by 2016.

9. BNP Paribas

Banque Nationale de Paris-Paribas is the merger of two French banks the Banque Nationale de Paris (BNP) and Paribas. Paribas was founded in 1872 and later in 1999 BNP took over it. BNP is formed by the merger of two nationalized banks in 1966 namely Comptoir National d'Escompte de Paris (CNEP) that was founded in 1860 and Banque Nationale pour le Commerce et l'Industrie (BNCI) that was established in 1932. The BNP was into commercial banking since its inception, and it was privatized in 1993 whereas Paribas was a premier investment banker. BNP Paribas has its presence in 75 countries, and it is a leading international bank.

BNP has opened its first branch in India in Kolkata in the year 1860 followed by Mumbai in 1862. BNP Paribas bank is present in major eight cities Mumbai, Delhi, Kolkata, Chennai, Hyderabad, Bangalore, Ahmedabad, and Pune. Apart from cash management, institutional, corporate banking, and retail banking, it offers financial service in fixed income and debt capital markets, trade, corporate finance and wealth management. Moreover, BNP Paribas has a joint venture with Sundaram group in home finance and security service; with state bank of India in life Insurance. It has an asset management company named as BNP Paribas mutual fund.

10. Bank of America

The Bank of America was founded in 1784. This bank was the pioneer for the advent of technology in banking as it had started first electronic recording machine-accounting (ERMA) system and had developed magnetic-ink character recognition (MICR). It had commenced its banking businesses in India in 1964 at Mumbai. Then expanded its branches in Kolkata-1966, Chennai-1968, New Delhi-1977, and Bangalore-2001. The bank was recognized as a best foreign bank in India in 1999 by Business Today.

11. The Bank of Tokyo- Mitsubishi UFJ Ltd. (Japan)

The Bank of Tokyo- Mitsubishi UFJ Ltd is a consolidation of four Japanese banks. The merger of the bank of Tokyo and The Mitsubishi bank occurred in 1996 that became the bank of Tokyo-Mitsubishi Ltd, and the merger of the Sanwa bank and the Tokai bank materialized in 2002 that was known as UFJ bank Ltd. The final consolidation of these two banks happened in 2006 that is known as the bank of Tokyo-Mitsubishi UFJ Ltd. It is considered the largest bank in Japan.

This bank is considered as the result of the peace treaty between India and Japan that occurred on 28th April 1952. In 1953, The bank of Tokyo entered in Mumbai to serve Japanese corporates. After that, the bank has established itself in New Delhi, Chennai, Neemrana, and Bangalore in 1963, 1996, 2012, and 2014 respectively.

12. **Credit Agricole Corporate & Investment Bank [caylone bank] (France)**

Credit Agricole corporate & investment bank (CACIB) was known as Credit Agricole indosuez that was rebranded as CACIB in 2010. CAI has acquired Caylone bank in that was founded in 1996. CACIB is a French bank which entered into India in the form of a branch in Mumbai in 1981. It has five branches in India at Mumbai, Ahmedabad, Baroda, Kolkata, and Hyderabad. Mainly the role of this bank is in corporate banking and investment banking.

13. Mizuho corporate bank ltd. (Japan) [The Fuji bank ltd]

The bank was established in the year 2000 with the merger of three banks the Dai-Ichi Kang-yo bank ltd. That was Japan's first national bank formed in 1873, The Fuji bank ltd and the Industrial bank of Japan ltd. The bank began its operations in India in 1996. It has five branches in India at Mumbai, Ahmedabad, Bangalore, New Delhi, and Chennai.

14. Antwerp diamond bank N.V. (the BELGIUM)

Société Belge de Banque formed the Comptoir Diamantaire Anversois in partnership with Banque Transatlantique in the year 1934 to venture into diamond business. Later in 1937, the Belgium government passed banking reforms where Comptoir Diamantaire Anversois got an opportunity to enter into the banking business. In 2002, the bank entered in Mumbai, the diamond city of India. It has opened four branches in India.

15. Bank of Bahrain & Kuwait BSC (KUWAIT)

Bank of Bahrain & Kuwait (BBK) was founded in Bahrain in 1971. It is the largest commercial bank in Bahrain. It has opened its first branch in India in Mumbai in the year 1986. The bank has four branches in India, after Mumbai, in Aluva, New Delhi, and Hyderabad.

16. Shinhan bank (Cho Hung) (SOUTH KOREA)

Shinhan bank was the first bank in South Korea, founded under the name Hanseong bank in 1897. Shinhan bank entered into India in the year 1996. Cho Hung bank merged with Shinhan bank on 1st April 2006. Shinhan bank has four branches in India.

17. State bank of Mauritius (MAURITIUS)

The State bank of Mauritius, the second largest bank in Mauritius founded in 1973, entered into India through a branch in Mumbai in 1994. It has expanded its banking business to Chennai, Hyderabad, and Ramachandrapuram. It serves in India through a variety of products like trade finance, SME funding, corporate finance, retail service, and treasury service. This is the second bank that is about to open a wholly owned subsidiary (WOS) in India.

18. Abu Dhabi commercial bank ltd. (ADCB)

ADC bank was known as "Emirates Commercial Bank" when it entered into India in 1980. The primary objective of the entry was to increase the trade relationship between India and the UAE and to fulfill the growing need of Indians to the remittance and savings. In 1985, three banks consolidated namely Federal commercial bank, the Khaleej commercial bank, and the Emirates commercial bank and hence the new name Abu Dhabi commercial bank was given.

It has two branches in India, i.e., in Mumbai and Bangalore.

19. Societe Generale (France)

Societe Generale (SG) is one of the experienced and largest banks from France in Europe. It has completed 150 years of banking, and it has spread its business into 76 countries. SG entered into India as a representative office in Delhi in 1978 and as a full-fledged branch in 1985 in Mumbai. In 1993, it converted its representative office into a branch.

20. Bank of Nova Scotia (CANADA)

Bank of Nova Scotia was started as the first public bank in Nova Scotia in the year 1832. It is considered as Canada's most international bank due to its internationalization and also considered as a gold bank of Canada due to its strong presence in the bullion market. Bank of Nova Scotia arrived in India as a representative office in Mumbai in 1982 that was converted into a branch in 1984. It is present in India as a branch in New Delhi, Mumbai, and Bangalore.

21. American express banking corporation (AmEx)

American express banking corporation was founded in 1850 in New York, the USA. It is known for its credit card, traveler's cheque, and charge card businesses. This bank has entered in India during 1921-22 and had branches in New-Delhi and Gurgaon.

22. **Sonali bank ltd. (Bangladesh)**

After the Independence of Bangladesh, Sonali bank is the result of Nationalization order 1972. Since then it is the largest state-owned bank in Bangladesh. It opened its first branch in Kolkata in 1974 and second branch in Siliguri.

23. China trust commercial bank (TAIWAN)

China trust commercial bank was established in 1966 as China securities and investment corporation, renamed in 1971, and then called China trust commercial bank (CTBC) in 1992. It is the only bank from Taiwan, started its operation in New Delhi, India in the year 1996. It opened its second branch in Chennai in 2012.

24. HSBC bank Oman S.A.O.G

The bank was founded in 1979 under the name of The Oman Arab bank SAO to acquire the business of the former Muttrah branch in Oman of Arab African international bank in the year 1984. Then the name of the bank was changed to Oman international bank SAOG. The bank entered into India as a branch at Mumbai in 1985. The operations of Oman international bank

were taken over by the Oman branch of HSBC in 2012. Hence, the bank is known as HSBC bank Oman SAOG.

25. J.P. Morgan chase bank

The parent company, J.P. Morgan & co. from New York, had its presence in India in 1922. However, the Chase Manhattan bank that is the international name of the J.P. Morgan chase had entered into India in 1945 as a representative office in Mumbai. In 1995, Chase bank opened its branch in Mumbai in India. Later in 2000, it was renamed as J.P. Morgan chase bank, and in 2007, and it initiated commercial banking in India. This bank is into various businesses in India such as asset management, investment banking, treasury, and security-related service, forex, commercial banking, and mutual funds.

26. Mashreq bank PSC

The Mashreq bank was established in the year 1967 as Bank of Oman in Dubai, UAE. This bank has entered into India in 1980 in Mumbai and opened its second branch in 1997 at Delhi in India.

27. **Commonwealth Bank of Australia**

This bank was established under the Commonwealth bank act, 1911 and commenced in 1912 in Australia. However, it entered into India by opening its branch in Mumbai recently in 2010. It provides all kind of commercial banking service including NRI remittances in India.

28. National Australia bank (NAB)

NAB is Australia's one of the largest bank having a history of over 150 years. This Australian bank entered into India as a representative office in Mumbai in 2006 that got upgraded to a branch in 2012.

29. Westpac banking corporation (Australia)

It was established in 1817 in Sydney, Australia. This bank has entered in India recently. However, it has 40 years of experience in Asia. It serves multinational corporates, Indian students going to Australia and New Zealand, Australian companies in India, NRIs, through its various products available at Mumbai branch.

30. Australia and New Zealand banking group ltd. (ANZ) (Australia)

This bank entered in India in Mumbai in 2011. It has further established its branches in Gurgaon, New Delhi, and Bengaluru. It provides institutional banking, foreign exchange service, transaction banking, advisory service, term financing, and working capital financing.

31. Sumitomo Mitsui banking corporation (Japan) [Sakura bank]

The history of this bank is complicated. To put it simply, the Mitsui bank was founded as a private bank in 1876 in Japan, and it was known as Sumitomo bank. After the consolidation between Sakura bank (established in 1990) and Sumitomo bank, it became Sumitomo Mitsui banking corporation in 2001. It has a branch in India.

32. AB bank ltd. (Bangladesh)

Arab Bangladesh bank is the first private sector bank of Bangladesh established in collaboration with Dubai bank ltd in 1981. Moreover, it was the pioneer bank to introduce computerized banking in Bangladesh. It initiated its Indian operation in Mumbai in 1996.

33. Rabobank International (the Netherland)

Rabobank was founded as a cooperative bank for agriculture and food business by farmers and horticulturists in 1895. Its main objective remained unchanged to serve agribusinesses and food processing businesses. Rabobank serves in the Indian market through a branch in Mumbai that was established in 1998.

34. Bank International Indonesia (Indonesia)

The Bank International Indonesia (BII) was incorporated in 1959 in Indonesia. The bank has started its operation in India since 1996. The bank was renamed as PT Maybank Indonesia to rebrand itself in 2015. It has one office in Mumbai in India.

35. Bank of Ceylon (Sri Lanka)

The Bank of Ceylon was founded as a private bank in Colombo in Sri Lanka. It was nationalized in 1961. It established its first international bank in London in 1949 and the second international bank was established in Chennai, India in the year 1995.

36. United overseas bank ltd (Singapore)

United overseas bank (UOB) was founded in 1935 as the United Chinese bank. The aim of this bank during its inception was to serve Fujji Community. Later the bank had spread over many countries especially in Asia. As of Today, the UOB has more than 500 offices in 19 nations in the world. It has a presence as a branch in Mumbai since 2009 in India.

37. JSC VTB bank (Russia)

Vnesh torg bank (VTB) was founded in 1990 to perform a foreign economic transaction by the Russian government. It is also known as the foreign trade bank. In 1997, most of the stock was

acquired by the Russian government and converted into an open joint stock bank. The bank has established its branch in New Delhi, India in the year 2008.

38. Sber bank (Russia)

Sber bank has a long history of its establishment. In 1841, two small institutions namely saint Petersburg and Moscow had merged and converted into savings offices by the emperor Nikolas I. These savings offices were transformed into the modern international bank as Sber bank. The bank claims to have elven million customers in 22 countries outside Russia. It has entered into India as a branch office in Delhi in the year 2010.

39. Krung Thai bank public co. ltd. (Thailand)

This bank is the result of the merger of two government-owned banks namely, Kaset bank and Monton bank in 1966. It is the largest government-owned Thai bank by some branches and second largest by assets. It has one branch in India.

40. Woori bank (South Korea)

Woori bank is the government-owned, second-largest bank by assets in South Korea. The bank was known as Hanvit bank and is the result of the merger between the bank of Korea and Hanil bank in 1998. The bank entered into the Indian market in the form of a branch in Chennai in 2012. The president and CEO have claimed of serving more than 170 Korean companies already present in Chennai through its branch.

41. UBS AG (Switzerland)

United bank of Switzerland (UBS) was founded in 1862. It has a strong presence as a multinational bank spread over 57 nations with over 60,000 employees. It has two branches in India, i.e., in Mumbai and Pune.

42. Credit Suisse A.G (Switzerland)

Credit Suisse commenced its business in 1856 in Switzerland. It has spread its business in over 50 countries with over 50,000 employees. The bank has opened its branch in 2008 in India.

43. First Rand bank ltd (South Africa)

First Rand bank was founded in 1838 in South Africa. It entered in India through a representative office in Mumbai in 2008. Later in 2009, the representative office was converted into a branch with the banking license from RBI. The bank also became the first bank from South Africa to open up in India in the branch form.

44. Industrial & commercial bank of China ltd. (China)

Industrial and commercial bank of China (ICBC) was founded in 1984 in China. It has established a branch in Mumbai, India in the year 2011. Moreover, the ICBC has become the first bank to enter into India as a branch.

The history of foreign banks is complicated mainly due to the change of ownership, the change of the name or due to M&A. The best example is Australia and New Zealand bank. In the year 1863, the National bank of India was established that took over Grindlays bank ltd. in 1948. Thus, it renamed it as National and Grindlays bank ltd. Furthermore, its name was changed to Grindlays bank in 1974. The name of the bank was further changed to ANZ Grindlays bank in the year 1984 after it was taken over by the Australian and New Zealand banking group. Thus, the bank had its presence in India since its inception. However, Standard Chartered bank took over it in 2000. Hence, all the (56) offices of ANZ Grindlays bank were owned by Standard Chartered bank. Moreover, ANZ bank re-entered in India in 2011.