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Centre for International Trade and Development School of International Studies Jawaharlal Nehru University India Do foreign banks in India indulge in cream skimming?

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Abstract

Foreign banks in developing countries are often found to indulge in cream skimming, a

lending strategy that targets only wealthy segments of the credit market and exclude

small and marginal borrowers from the general pool of borrowers. This paper

attempts to investigate whether lending pattern of foreign banks in urban regions of

Indian States is indicative of cream skimming. Using credit data on urban regions of

21 States of India for the period 1999-2011, this paper finds empirical evidence of

cream skimming by foreign banks in India.

Keywords: cream skimming, foreign banks, Indian banking.

JEL Classification: G14, G21, G28

1. INTRODUCTION

Liberalization of entry norms for foreign banks is an important component of

financial sector development strategies in developing economies. As participation of

foreign banks in developing countries increases, their lending strategies significantly

affect credit availability in these economies (Berger et al. 2001). The impact of

foreign banks' presence on credit allocation in host country has been analyzed from

different perspectives. One perception is that foreign banks do enhance credit

availability in host countries (Hauswald and Bruno, 2009; Giannetti and Ongena,

2012). Foreign banks can mitigate credit constraints in developing countries as they

employ efficient financing techniques and have better access to low cost international

capital than domestic banks (Detragiache and Gupta 2006). Also, foreign banks

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receive liquidity support from parent banks when in trouble conducting business in the host country (Tschoegl, 1983). On the other hand, in the context of developing countries, many studies have found that presence of foreign banks does not necessarily enhance overall credit availability and may actually aggravate the conditions of credit constraints rather than alleviating such constraints (Detriagache et al., 2008; Beck and Peria, 2010; Gormley, 2010). This is because foreign banks often indulge in *cream skimming*, a lending strategy that involves extending credit to only wealthy and transparent segments of the credit market and excluding segments that comprise the poor and marginal borrowers (Berger and Udell 1996).

Such cream skimming can induce serious distortion in the credit market and may adversely affect the supply of aggregate bank credit. In this context, Detragiache et al. (2008) establishes, both theoretically and empirically, a negative association between presence of foreign banks and credit availability. In particular, they found that in the context of developing countries, "countries with larger foreign bank presence have shallower credit markets" (Detragiache et al., 2008). Beck and Peria (2010), in an empirical study of foreign bank participation and banking sector outreach in Mexico, found that entry of foreign banks benefited only the rich and urban municipalities of Mexico. Firm level analysis by Gormely (2010) in case of India found that entry of foreign banks was associated with an increased competition in the local lending market, to which, domestic banks responded by cutting short their lending activities and thus led to an overall decline in firms' accessibility to bank credit. In the case of China, an empirical study by Lin (2011) found that opaque firms did not benefit from foreign bank entry. A cross country analysis by Claessens and Van Horen (2013) on the performance of foreign banks and domestic banks in 129 countries reported that foreign banks tend to cream skim their customers and only provide financial services to high-end clients in countries where institutions are weak and where foreign banks have a relatively small share in the credit market. Similarly, Giannetti and Ongena (2007), using data of 60,000 listed and unlisted firms in Eastern European economies, found foreign banks' lending behaviour stimulated growth in large firms only and adversely affected the credit accessibility of small firms. Another empirical investigation by Hauswald and Bruno (2009) on 22 advanced and 59 developing countries demonstrated that as foreign banks cream skim the best credit risks, the

quality of local borrower pool falls and domestic banks cut short lending activities, thus leading to decline in firms' access to credit and fall in growth of their business.

Berger and Udell (1996), Dell'Ariccia et al. (1999), Berger et al. (2001), Stein (2002) and Detragiache et al. (2008) provide explanation, based on asymmetry of information, as to what drives foreign banks in developing countries into cream As per this strand of literature, foreign banks with their advanced monitoring and credit rating technologies tend to target those clients who can provide hard information, mainly the large and wealthy segments of the credit market. The poor and small borrowers, who may not be able to provide hard information, are excluded by foreign banks as they face comparative disadvantage in obtaining soft information on these clients. The consequences of cream skimming on the host country's banking system have been well documented. Lending market segmentation is the immediate consequence of cream skimming in which, foreign banks target only the segments where information asymmetry is minimum while the segments where foreign banks face information disadvantage rely on domestic lending sources. Segmentation of credit market on the basis of client information creates imbalance in the flow of bank credit across different borrower categories, due to which, a particular segment receives steady flow of bank credit in normal as well as in tight economic conditions while others may be vulnerable to liquidity shortages. Also, if such segmentation leaves domestic banks with a pool of high-risk borrowers then domestic banks' may respond by restricting supply of credit leading to a fall in overall credit supply (Schmidt, 2008; Detragiache et al., 2008; Gormley, 2010).

In light of the above literature, this paper attempts to empirically examine whether foreign banks' lending behavior in India conforms to "cream skimming". We attempt this by carrying out a State level analysis of credit data on foreign and domestic banks in urban regions of India. We cover only urban regions because foreign banks have negligible presence in rural India. Unlike many studies that analyze firm level data on bank lending to investigate cream skimming behavior, in this paper, we attempt to investigate this at an aggregate level of urban regions of Indian states. The basic question that we address is whether foreign banks in India target urban regions in rich states; and if so, whether such targeting has led to a negative impact on overall supply of credit in urban India. The empirical methodology involves estimating a set of panel regressions to investigate how

average credit availability in Indian states is impacted by presence of foreign banks. The panel regressions are carried out using relevant data for 21 Indian states during the years 1999-2011.

Our empirical results do seem to indicate evidence of cream skimming behaviour by foreign banks in India. After accounting for per capita income levels, foreign banks' presence is found to be negatively associated with overall credit availability of urban regions of Indian states, while their presence in higher income states is positively associated with credit availability. Further, domestic banks' contribution to total urban credit in states where foreign banks are present is found to be negative. Thus, while foreign banks' presence seems to contribute negatively towards overall urban credit availability, their presence in rich states improves credit availability, indicating that they target urban regions of rich states. The domestic banks seem to respond to this cream skimming by squeezing their urban credit in States where the foreign banks are present. These results substantiate an earlier study by Gormley (2010) in the Indian context. Gormley (2010), using firm level data for the period 1991-2002, found that foreign banks benefitted only a small set of very profitable firms while an average firm's likelihood of receiving credit dropped by 8 percentage points upon entry of foreign banks in India. In our state level study of urban India, we find evidence of foreign banks benefitting only the rich states while the overall impact of foreign banks on the credit availability of all states is negative.

The remainder of the paper is as follows. Section 2 presents some data on foreign banks' lending pattern in India. Section 3 discusses the empirical model employed for investigation of our research question. Results and implications are discussed in Section 4, followed by conclusions in Section 5.

2. Participation of foreign banks in India: some descriptive analysis

As part of its phased liberalization of the banking sector, the Indian government undertook WTO (GATS) agreement in 1994 to issue 5 branch licenses to existing and new foreign banks every year. This limit was later increased to 12 branch licenses a year with the signing of another WTO agreement in 1997. Thereafter in 2005, the Reserve Bank of India (RBI) released a "Road Map" for further liberalizing the entry of foreign banks in Indian banking system. However, this road map was put on hold

on account of the unprecedented global financial crisis that took place in 2007. In RBI (2010), the RBI laid out a detailed framework for foreign banks' entry in India. In a more recent discussion paper, RBI has finalized a framework for wholly owned subsidiary (WOS) mode of entry (RBI, 2013). Thus, while all foreign banks in India currently have their presence in the branch mode, RBI has recently displayed clear preference for the WOS mode.²

As of March 2012, India is host to 41 foreign banks with 332 branches around the country and majority of them are suppliers of full range of retail banking services.³ Foreign banks accounted for about 7 per cent of the total banking sector assets in India in 2012. Foreign banks' share in total bank credit was 5 per cent and their share in total deposits was 4.6 per cent as of March 2012. Thus, foreign banks' participation in India, going by their share in total banking sector asset, total credit and total deposit is quite limited. However, as the literature suggests, mere presence of foreign banks can induce distortions in host countries' domestic credit markets (Dell'Arricia et al, 2004; Sengupta, 2007; Gormley, 2010) and that is what motivates us to analyse this issue for India.

In this section, we present some analysis of data on foreign banks' participation in urban regions of Indian States for the years 1999 – 2011. This analysis covers only urban and metropolitan regions (hereafter referred to as urban regions) of Indian States.⁴ This is because foreign banks have negligible presence in rural and semi-urban regions of India.⁵ We exclude the North Eastern States from our analysis, since foreign banks face a stricter set of guidelines to set up presence in these States

² For details, see RBI (2010) and RBI (2013).

³The branch authorization policy of India allows foreign banks to establish presence in Tier 1 and Tier 2 centres of India subject to prior approval from RBI and fulfillment of other regulatory guidelines specific to foreign banks. Tier 1 and Tier 2 centres are centres with population of 50,000 and above as per 2001 Census of India. For further details see, Master Circular DBOD.No. BL.BC.8/22.01.001/2010-11 dated July 1, 2010, RBI, Mumbai.

⁴ The Reserve Bank of India classifies regions of India as rural, semi-urban, urban and metropolitan regions, based on the criterion of population size of the region. In this study, urban and metropolitan centres are clubbed as urban region.

⁵ Foreign banks comprise only about 0.03 per cent of total bank branches in rural and semi-urban areas during 1999- 2012. The low presence of foreign banks in rural and semi-urban India is due to the branch authorization guidelines of RBI, 2010-11, according to which foreign banks require special permission to set up branches in rural and semi urban centres, while for urban and metropolitan centres, they are treated on par with the domestic banks. See Master Circular DBOD.No. BL.BC.8/22.01.001/2010-11 dated July 1, 2010, RBI, Mumbai, for details on Indian branch authorization policy.

than domestic banks.⁶ In addition, the state of Himachal Pradesh is also excluded from the study due to lack of availability of credit data for some years.

Thus, our analysis covers urban regions of 21 States listed in Table 1.7 In terms of per capita Net State Domestic Product (NSDP), we categorize these States into three categories, viz., high income States (Delhi, Chandigarh, Haryana, Puducherry, Maharashtra, Gujarat and Tamil Nadu), middle income States (Andhra Pradesh, Karnataka, Kerala, Punjab, Rajasthan, Uttarakhand and West Bengal) and low-income States (Bihar, Chhattisgarh, Jammu and Kashmir, Jharkhand, Madhya Pradesh, Orissa and Uttar Pradesh). In terms of economic structure, the high/middle income states have a smaller share of informal (unorganized) sector than the all India level while the share of informal (unorganized) sector in poor states is above the all India level.⁸ This distinction in the level of formalness in the economic structure can be used as an indirect proxy for information asymmetry. Thus, while it is not possible to measure information asymmetry at a regional level, we assume that the urban regions of high/middle income states have less information asymmetry than in the low income states.

The data used in this paper are from the following sources: (i) Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks quarterly published by RBI is used to collect data on total bank credit, total bank deposit and number of bank branches. (ii) Data on State incomes are retrieved from the Central Statistical Organization data base and (iii) Basic Statistical Returns of Scheduled Commercial Banks annually published by RBI is used to assemble data on total number of credit accounts per states in India.

Figure 1 presents the trend of various indicators of foreign bank's participation in urban regions of the 21 States during 1999–2012. The various indicators depicted in this figure are – foreign banks share in total bank branches, total asset, total volume

⁶ North-Eastern states are: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.

⁷ Although some of the listed States are actually Union Territorries (UTs), we refer to them as States in this paper.

⁸ See, e.g., Table 2 of Ghani et al. (2013) that reports share of unorganized sector employment (manufacturing as well as services sector) for various states of India for different years. The high/middle income states have a lower share of unorganized sector employment than all India level while the share of unorganized employment in low income states are much above the all India level.

of credit and deposit. As seen from this figure, share of foreign bank branches during this period continues to be just about 1 percent of total bank branches in urban regions in these states. Over this period of 13 years, foreign banks' share in total commercial bank assets remained around 7-8 per cent with a slight increase to 9 percent in 2008 and 2009. Foreign banks' share in total deposits and credit of commercial banks was 10 percent in 1999. Thereafter, these shares declined to 4 percent in 2008 and rose to 6 percent in 2012 (Figure 1). Thus, Figure 1 indicates that the share of foreign banks in urban regions in different aspects of banking activities is not very high and it is the domestic banks that are much more dominant in the Indian banking system.

Foreign banks' business activities in India are found to be mostly concentrated in high income States. In Figure 2 we present, for the year 2011, foreign banks' share in total credit in urban areas vis-à-vis per capita Net State Domestic Product (NSDP) of the 21 States under consideration. As observed from Figure 2, about 85 per cent of foreign banks' total urban credit is allocated to urban regions of high income States, about 14 percent to middle income states and only 0.4 percent of their credit to low income states. In Figure 3, we present data for 2011, on state-wise distribution of foreign banks' urban branches against the NSDP of these states. According to Figure 3, 62 percent of foreign bank branches were located in urban regions of high income states, 30 percent in middle income states and 8 percent in low income states. Thus Figures 2 and 3 clearly indicate that foreign banks have chosen urban regions of rich states to establish presence in India and thus have channelized major proportion of their resources to high income and less transparent segments. This observation provides tentative evidence of foreign banks practicing cream skimming in India.

3. EMPRICAL METHODOLOGY

In this section, we turn to an empirical investigation of whether foreign banks in India indulge in cream skimming. Unlike many studies that carry out firm level analysis of bank relationship to investigate cream skimming behavior, we carry out a State level analysis using data on urban credit market.

The empirical methodology employed here involves estimating a set of panel regressions to investigate how average credit availability in Indian states is impacted

by presence of foreign banks. The panel regressions are carried out using relevant data for urban regions of 21 Indian States during the years 1999-2011(as described in the previous section). Our dependent variable here is average credit availability. We use two indicators of average credit availability – the average credit per loan account and the average credit per capita income. Thus, we run two regressions, one for each dependent variable.

The panel regression equations that we estimate are given below.

Regression I

Regression II

where,

C = total volume of bank credit, Acc = total number of loan accounts and SDP = Sate domestic product. Thus, the dependent variables in equations (1) and (2) are state level variables estimating average availability of bank credit per urban account for state i in time t, (C/Acc) it in regression I and ratio of total urban bank credit to state domestic product for state i in time t, (C/GDP) in regression II.

Explanatory variables are discussed below:

In(PC)_{1,t}: The logarithm of per capital income of State i at time t, and captures the level of economic activity in the ith State and thus indicates the demand for credit.

(PFB)_{1t}: It measures presence of foreign banks and is estimated as the ratio of foreign banks branches to total bank branches in the urban regions of State i at time t.

(PFB*In PCI)_{In}: It is an interaction term, where, PCI is per capita income of a State. Presence of foreign banks (PFB) in the interaction terms is a binary variable with value 1, if foreign banks have any urban office in the State in time t and zero otherwise. This interaction term examines whether foreign banks participation in urban regions of high income States leads to greater availability of bank credit in these regions. In other words, if foreign banks target only rich urban regions then β_3 should be positive. Thus a positive β_3 would indicate preference of foreign banks for urban regions of rich states, hence cream skimming.

(PFB*s. DB)₁₆: This is another interaction term where, s.DB is the share of domestic banks in total urban bank credit of a state. Again, presence of foreign banks (PFB) in this interaction is a binary variable with value 1, if foreign banks have any office in State i in time t and zero otherwise. This interaction term captures the impact of domestic banks on average credit availability in the presence of foreign banks. If due to cream skimming of foreign banks, domestic banks resort to cutting short on lending, then the coefficient ^β4 would have a negative sign.

4. Results and discussion

We estimate panel regressions given in equation (1) and (2) and present the empirical results and implications in this section. A Hausman specification test chooses a Fixed Effect model over Random Effect model for our State level panel regression analysis (Table 2). Fixed effect estimates of regression I and II are given in Table 3. In this table, regression I reports coefficients of the regression using credit per account, (C/Ace) as the dependent variable while regression II reports coefficients when dependent variable is credit to gross domestic product, (C/GDP).

As expected, per capita state domestic product is positively associated with availability of average urban credit in both the regressions. This results is hardly surprising, as high income regions do attract better resources (in this case bank credit). Due to higher level of economic activities, the urban regions of high income States may have higher demand for credit, indicating a positive association between income level and credit availability. After accounting for income level, it will be

interesting to look at the other explanatory variables to investigate the issue of cream skimming.

Our first variable of interest, presence of foreign banks (*PFB*) is found to be negative and significant at 5% level in regression I and strongly significant in regression II. Thus foreign banks' presence, in urban India, seems to have a negative association with overall credit availability. This result is in line with Detragiache et al. (2008), who, in their cross country study involving 89 developing countries found a negative association between foreign banks' presence (measured by asset share of foreign banks) and credit-to-GDP ratio, indicating an inverse relationship between penetration of foreign banks and credit availability.

The coefficient of the first interaction term (PFB*In PCI) is found to be significant and positive in both the regressions. This implies that urban regions of rich States in India benefit from foreign banks' presence in terms of credit availability. Thus, while foreign banks' presence, in general, deteriorates overall availability of credit for urban India (as given by the negative sign of the second explanatory variable), their presence benefits urban regions of rich states. This supports the premise that foreign banks capture the wealthy segments of urban credit market in India, indicating cream skimming behavior. The evidence of such cream skimming behavior is also observed elsewhere, e.g., in the case of Mexico by Beck and Peria (2010), who found that only rich and urban municipalities benefitted from foreign banks' in Mexico.

The second interaction term of our regressions attempts to capture how domestic banks react in the presence of foreign bank. We find a significant and negative coefficient to this explanatory variable in both the regressions. It indicates that wherever foreign banks are present, domestic banks seem to tighten their credit allocation, probably as a reaction to cream skimming by the foreign banks. Thus, domestic banks do not improve availability of urban credit in states where foreign banks are present. Also, this result supports the findings of Gormley (2010), that show a decline in firms' (less profitable, small and marginal) accessibility to bank credit after entry of foreign banks due to drop in credit allocated by domestic banks.

Thus, after accounting for income levels, we find that foreign banks' presence enhances urban credit availability of richer states, although the overall impact of foreign banks' presence in urban credit availability is negative. Further, in the presence of foreign banks, the domestic banks tend to cut short on their lending, leading to an adverse impact on overall credit availability of urban regions of India. These results do seem to indicate cream skimming behavior of foreign banks in India.

While it is beyond the scope of this paper to analyze the factors that might be responsible for such cream skimming, we attempt a tentative explanation as follows: most foreign banks in India belong to high-income OECD countries. As depicted in Figure 4, out of the 41 foreign banks (as of March 2012), 30 banks belong to 16 highincome countries, 7 banks are from 5 middle-income countries and 4 banks from 3 low-income countries. Foreign banks from high-income source countries together held 99 per cent share in total foreign banks' assets of India while foreign banks from middle and low-income countries contributed to only 1 per cent share in total foreign banks' assets in India as of 2012. As banks from high-income countries are more specialized in hard information based lending we therefore expect much of the foreign banks to target urban regions of richer Indian States. As mentioned earlier, high income states of India are also characterized by smaller share of unorganized sector economy than the low income states, and hence we expect the credit markets of the urban regions of the high income states to have less information asymmetry than in the low income states. A look at the data on small borrowers in urban India reveals that foreign banks do not cater to the credit needs of small borrowers.9 The data on share of credit outstanding and share of credit accounts of small borrowers of urban India for the years 1999-2011 are depicted in Figures 5a and 5b respectively. As shown by these figures, foreign banks' share in credit to the small borrowers is negligible, owing perhaps to the inability of these borrowers to provide hard information.

5. CONCLUSION

In this paper, using data on urban credit in 21 States of India for the period 1999-2011, we investigated the impact of foreign banks' presence on availability of bank credit in India. Our empirical results indicate evidence of cream skimming behaviour by foreign banks, despite their limited presence in India. While foreign banks'

⁹According to RBI definition, small borrowers are those with a credit limit upto Rs. 0.2 million.

presence is found to contribute negatively towards overall credit availability of urban regions, their presence in rich states is found to improve urban credit availability, indicating that they target urban regions of rich states. The domestic banks seem to respond to this cream skimming by squeezing their credit in states where the foreign banks are present. These findings provide interesting insights into foreign banks' lending behavior in India in particular and in developing economies in general.

REFRENCES

Beck, T. and Peria, M.S., (2010), "Foreign bank participation and outreach: Evidence from Mexico", Journal of Financial Intermediation, 19: 52-73.

Berger, A. N. and Udell, G.F., (1996), "Universal Banking and the Future of Small Business Lending," in A. Saunders and I. Walter, ed: Financial System Design: The Case for Universal Banking (Irwin Publishing, Burr Ridge, IL): 559-627. Burr Ridge, IL: Irwin Publishing.

Berger, A. N., Klapper L.F. and Udell., (2001), "The Ability of Banks to Lend to Informationally Opaque Small Businesses," Journal of Banking and Finance, 25: 2127-67.

Claessens, S. and Van Horen, N., (2013), "Impact of Foreign Banks", De Nederlandsche Bank NV Working Paper No. 370. Forthcoming: Journal of Financial Perspectives.

Dell'Ariccia, G., Friedman, E. and Marquez, R., (1999), "Adverse selection as a barrier to entry in the banking Industry", RAND Journal of Economics, 30(3): 515-534.

Dell'Ariccia, G., Friedman, E. and Marquez, R., (2004), "Information and bank credit allocation", Journal of Financial Economics, 72: 185-214.

Detragiache, E. and Gupta P., (2006), "How do foreign banks fare in crises? Evidence from Malaysia", Journal of Financial Stability, 2(3): 217-242.

Detragiache, E., Tressel, T. and Gupta, P., (2008), "Foreign banks in poor countries: Theory and Evidence", Journal of Finance, 33(5): 2123-2159.

Ghani, E., Kerr, W.R. and O'Connell, S.D., (2013), "The Exceptional Persistence of India's Unorganized Sector" World Bank Policy Research Working Paper 6454.

Giannetti, M. and Ongena, S., (2007), "Financial Integration and Firm Performance: Evidence from Foreign Bank Entry in Emerging Markets," Review of Finance, 13: 181–223.

Giannettia, M. and Ongena, S., (2012), "Lending by Example: Direct and Indirect Effects of Foreign Banks in Emerging Markets," Journal of International Economics, 86(1): 167-180.

Gomley, T.A. (2010), "The impact of foreign bank entry in emerging markets: Evidence from India", Journal of Financial Intermediation, 19(1): 21-51.

Hauswald, R. and Bruno, V. (2009), "The Real Effect of Foreign Banks", Paolo Baffi Centre Research Paper 50.

Lin, H. (2011), "Foreign bank entry and firms' access to bank credit: Evidence from China", Journal of Banking & Finance, 1000-1010.

Schmidt, N. (2008), "Foreign bank entry: a liquidity based theory of entry and credit market segmentation", Financial Markets Group, London School of Economics and Political Science, London, UK. Discussion paper: 622.

RBI (2011) "Presence of Foreign Banks in India", Reserve Bank of India Discussion Paper, January 2011

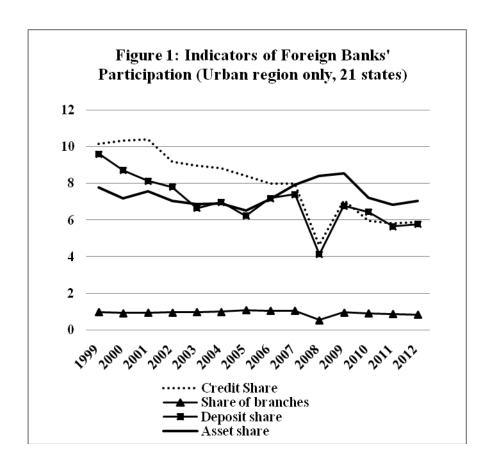
RBI (2013): Scheme of Setting up Wholly Owned Subsidiaries (WSO) by Foreign Banks in India, November 2013

Sengupta, R. (2007), "Foreign Entry and Bank Competition", Journal of Financial Economics, 84:502-528

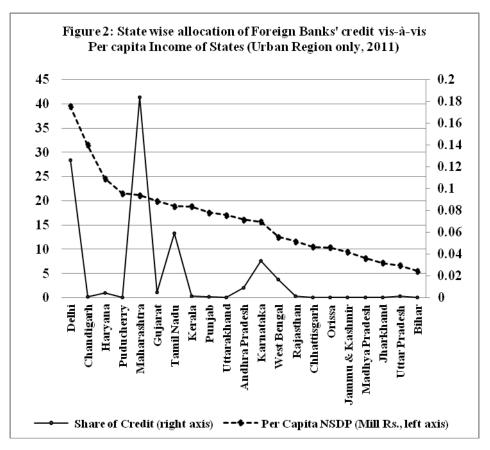
Stein, J.C. (2002) "Information Production and Capital Allocation: Decentralized vs. Hierarchical Firms," Journal of Finance, 7: 891-921.

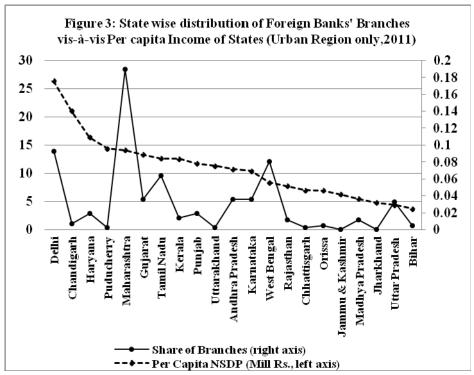
Stiglitz, J. and Weiss, A. (1981), "Credit rationing in markets with imperfect information", American Economic Review, 71: 393-410.

Tschoegl, A. (1983), "Size, Growth and Transnationality among the World's Largest Banks", Journal of Business, 204(3): 409-511.

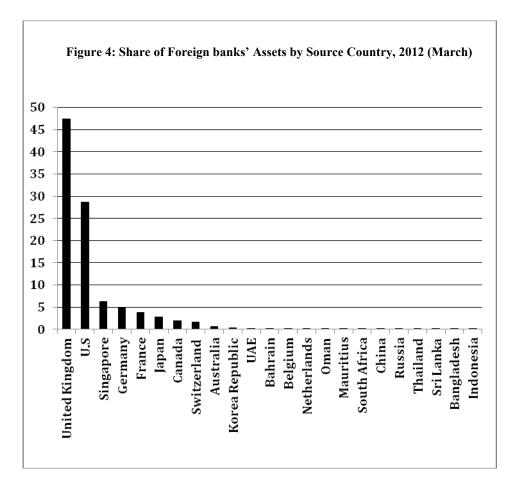


Source: Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks (RBI)



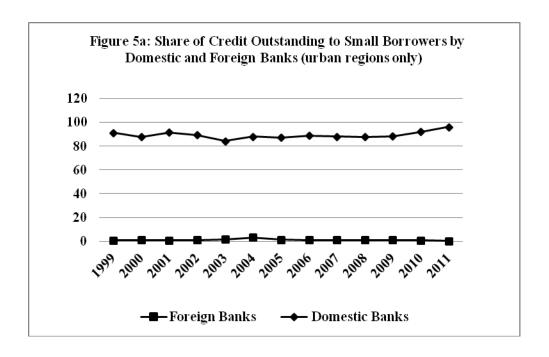


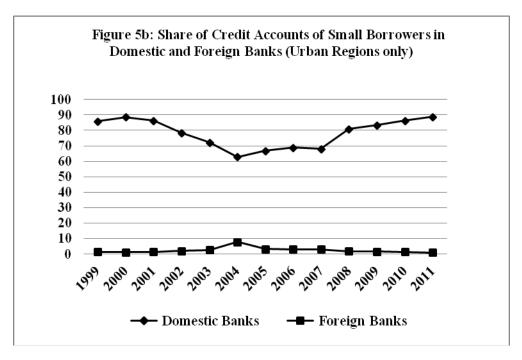
Source: Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks (RBI) and Central Statistical Organization



Source: RBI, Statistical Tables Related to Banks of India (Table B1)

Note: As on march 2012, India was host to 41 foreign banks affiliating from 16 high income countries, 5 middle income countries and 3 low income countries. Foreign banks from high income source countries held 99% share in total foreign banks' assets of India and foreign banks from middle and low income contributed to only 1% share in total foreign banks' assets of India in 2012. Source countries are categorized as high, middle and low income according to World Banks' classification of economies' July 2012. High income countries- United Kingdom, U.S, Hong Kong, Singapore, Germany, France, Japan, Canada, Switzerland, Australia, Korea Republic, UAE, Bahrain, Belgium, Netherlands and Oman. Middle income countries - Mauritius, South Africa, China, Russia and Thailand. Low income countries- Sri Lanka, Bangladesh and Indonesia.





Source: Basic Statistical Returns of Scheduled Commercial Banks in India

Table 1: List of States included in the study

	State/UTs	Location (Region)	Per capita Income (mill,2011)	Share in Total Income per capita of 21 States, 2011
Hig	gh Income States			
1	Delhi	NORTHERN	175812	11.5
2	Chandigarh	NORTHERN	140066	9.2
3	Haryana	NORTHERN	109227	7.1
4	Puducherry	SOUTHERN	95759	6.3
5	Maharashtra	WESTERN	94121	6.1
6	Gujarat	WESTERN	88787	6.0
Middle Income States				
7	Tamil Nadu	SOUTHERN	84058	5.5
8	Kerala	SOUTHERN	83725	5.5
9	Punjab	NORTHERN	78171	5.1
10	Uttarakhand	CENTRAL	75604	4.9
11	Andhra Pradesh	SOUTHERN	71540	4.7
12	Karnataka	SOUTHERN	69493	4.5
13	West Bengal	EASTERN	55864	4.0
Lov	w Income States			
14	Rajasthan	NORTHERN	51474	3.4
15	Chhattisgarh	CENTRAL	46573	3.0
16	Odisha	EASTERN	46150	3.0
17	Jammu & Kashmir	NORTHERN	41833	2.7
18	Madhya Pradesh	CENTRAL	36345	2.4
19	Jharkhand	EASTERN	31982	2.1
20	Uttar Pradesh	CENTRAL	29417	1.9
21	Bihar	EASTERN	24681	1.6

Table 2: Results of Hausman Specification Test

	Fixed	Random	Difference	S.E.
PFB	-19.3408	-17.1882	-2.15257	2.584132
ln(PCI)	0.801606	0.791961	0.009644	0.02282
PFB x				
ln(PCI)	0.19429	0.189635	0.004656	0.025785
PFB x				
s.DB	-1.71967	-1.68191	-0.03776	0.244785

Test: Ho: difference in coefficients not systematic

 $\chi^2 = 18.59$

Prob> $\chi^2 = 0.0009$

Table 3: Results of State level Regression

	Credit to Gross State
	Domestic Product, ln
Average Credit per Account, ln (C/Acc)	(C/GSDP)
Dependent	
variable	

	Regression I	Regression II
PFB	-19.34**	-25.58***
	(0.026)	(0.000)
Ln(PCI)	0.8016***	0.4065***
	(0.000)	(0.000)
PBF x Ln(PCI)	0.19429**	0.2672***
, ,	(0.032)	(0.000)
PFB x s.DB	-1.7196**	-2.3786***
	(0.049)	(0.001)
Observations	267	, ,
States/ UTs	21	

Table 3 reports the coefficients from regression I and II, using within state fixed effects and share of foreign bank offices in total bank offices as the presence variable (PFB). In the interaction terms, presence of foreign banks is a binary variable with value 1 for state i with foreign bank and zero otherwise. P-values are reported as parentheses. *= 10%, **=5% and ***=1% level of significance.