School of Business and Management

The Impact of FDI into the South African banking sector: Spillover Effects and Efficiency

by

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The Impact of FDI into the South African banking sector: Spillover Effects and Efficiency.

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Declaration of Authorship

I, Alex PIETRUS, certify that the dissertation entitled "The Impact of FDI into the South African banking sector: Spillover Effects and Efficiency" for the Degree of PhD of the University of London (Queen Mary College) is the result of my own work and includes nothing, which is the outcome of work done in collaboration except where specifically indicated in the text. This dissertation contains approximatively 73800 words, 10 figures and 33 tables.

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Content

Abstract

This disssertation investigates spillover effects in the South African SA banking sector using a number of different perspectives and methods. First, I used an adapted model developed by Claessens et al., (2001) and extended by Uiboupin (2005) to identify the effect of the foreign banks' re-entry on the domestic banks' performance after the apartheid regime change. The results show that the foreign banks' entry has an effect on the before-tax profit of domestic banks and increases the competition in SA banking market.

Then I further the investigation from an efficiency perspective using a cost efficiency model for the same bank panel. The results show that on average foreign banks are 28% more efficient that domestic banks. But the results show that over the period 2000-10 both categories of banks increased their efficiency level by around 10% and that the origin of the banks as well as their size were the main factors responsible for the efficiency gap. Then results from the implemention of a survey I designed, using an adapted version of Kraft (2002) for the foreign banks and branches, confirm that the entry of foreign banks contributed to the modernisation of the SA banking sector and to the introduction of new products and best practices, leading to the conclusion that spillover effects were localised in the limited segment of the SA wholesale banking.

I analyse the impact of recent FDIs in SA banking sector, in terms of knowledge transfer and spillovers. The results show that the acquisition of ABSA (an SA big four) by Barclays (a British bank) generated increased efficiency. That was not the case for the Standard Bank (another of the SA big four), of which a 20% share was acquired by ICBC. The results show that these recent FDIs have no significant impact on competitiors' behaviour and strategy.

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List of acronyms

ABSA:	Amalgamated Banks of South Africa
AC:	Absorptive Capacity
BW:	Backwardness
CU:	Custom Union
CUSFTA:	Canadian United States Free Agreement
EU:	European Union
FBFDI:	Financial and Banking Foreign Direct Investment
FDI:	Foreign Direct Investment
GDP:	Growth Domestic Product
HMT_FDI:	Foreign Direct Investment from Hong-Kong, Macau, Taiwan
ICBC:	Industrial and Commercial Bank of China
IPR:	Intellectual Property
MMB:	Multinational Bank
MNE:	Multinational Enterprise
MNC	Multinational Corporations
NAFTA:	North American Free Trade Agreement
OLI:	Ownership-specific advantages, Location-specific advantages, Internalisation-specific advantages
RIA:	Regional Integration Agreement
RTA:	Regional Trade Agreement
SA:	South Africa
SACU:	Southern Africa Custom Union
SBSA:	Standard Bank South Africa
TFP:	Total Factor Productivity
Tralac:	Centre for trade and law for the Southern Africa
West_FDI:	Foreign Direct Investment from Western countries
VTT:	Vertical Technology transfer

General introduction

The primary subject matter of this thesis is spillover effects (also called foreign direct investment knowledge spillovers) in the South African (SA) banking sector during the post-apartheid regime and in particular the impacts of the presence of foreign banks on SA domestic banks performance. The dissertation explores the benefits in terms of strategy and knowledge transfer from both foreign direct investment (FDI) and "greenfield" investment (minority participation in domestic bank shareholding) made respectively by British and Chinese banks. In order to achieve this, the study uses a set of quantitative and qualitative models and methodologies such as general regressions (see model 3.1) to identify spillover and competition effects, efficiency regression (see model 3.5) to calculate efficiency scores of foreign and domestic banks, a survey of the foreign banks to determine channels of spillover diffusion (questionnaire in annex 3.10), and an interview guide (annex 5.1) that helps to analyse knowledge transfer.

Knowledge spillovers, are defined as knowledge created by one firm, which is used by a second firm, where the user does not fully compensate the creator for this use (Javorcik, 2004). In addition, it is defined as improved technology, financial returns, labour productivity or some other measure of productivity (Bosco, 2001). Furthermore, inward FDIs can act as catalyst to facilitate the creation of other benefits such as job increases and knowledge transfer. Although it can be considered as a form of knowledge spillover, knowledge transfer is distinct from knowledge spillover and is defined, as purposeful or intended diffusion of knowledge from one firm to the other and as such represents no externality (Smeets, 2008).

This study adopts a specific way to identify the existence of spillover effects in the SA banking sector, its key research question. To achieve this, the study explores the existing literature and sets an appropriate approach of analysis. This approach consists of, i) Analysing in-depth the SA banking sector and identifying segments where knowledge spillovers are likely to occur and provide the reason why, ii)

defining theoretically the relationship between aspects of competition and FDI and establishing the hypotheses for competition and spillovers effects, iii) defining theoretically the relationship between efficiency and FDI and establishing the hypotheses for efficiency as a vector of spillover effects, iv) and testing both hypotheses specifically in SA banking sector using survey and case study techniques and then generalising the findings using empirical models such as linear regressions and x-efficiency models.

In an attempt to answer the key research questions and formalise the above proprosed approach, this dissertation is decomposed into seven chapters, excluding the introduction and conclusion. Chapter 1 provides an extensive theoretical review of the aspects and shapes of knowledge spillovers in both the manufacturing and banking sectors. I semantically distinguish between FDI knowledge spillovers used in the manufacturing sector and spillover effects in the banking sector. In addition, I explain the economics of multinational banking from a theoretical perspective, which summarises the theory of Multinational Banks (MNBs).

Chapter 2 defines the context of knowledge spillovers in the SA banking sector. This chapter is inspired by the theoretical framework mentioned in chapter 1 and provides more theoretical aspects on direct, indirect effects as well as on the technological gap, demonstration effects, and addresses the growing importance of information communication technology (ICT) during these last years. It establishes how competition, which is an indirect effect, is a condition for spillover effects to occur. It also highlights the importance of the market segmentation when studying spillover effects. The main issue is that ignoring the segments in which foreign banks operate could minimise the relative effect of FDI spillovers. If the foreign banks are only interested in limited market segments then the effect on overall competition will be small, but inversely, it can be assumed that if they are interested in the broader market, their effect on competition may be large (Kraft, 2002). In addition to competition, the relationship beween efficiency and FDI is theoretically exposed and the implication of efficiency on competition and spillovers is examined. Further analysis is provided in chapter 5. Consequently, two sets of hypotheses are established. The first set is concerned with the effect of foreign banks' presence on

SA banks' performance and competition. Claessens et al (2001) find that in developing countries, foreign banks have higher profits than domestic banks and an increase in the number of foreign banks reduces the level of profitability and margins of domestic banks in a specific market. The second set is concerned with the efficiency level and FDI spillovers. For instance, Micco et al (2004) find that in developing countries, foreign ownership is positively correlated with banks' efficiency and performance, but this finding is not true in developed countries. The two sets of hypotheses are tested and results are presented respectively in chapters 4, 5, 6 and 7.

Chapter 3 presents data and methods used, the results of which are in chapters 4, 6 and 7. It presents and describes the two empirical models corresponding to the two set of hypotheses. The first model tests the effects of foreign banks' presence on SA banks performance and uses linear regression, and I ran thirty-six regressions equations. The second model uses x-efficiency estimates to calculate the score efficiency of both the foreign and the domestic banks. For both estimates I used Stata software version 11 for Mac. These two models use the same sources of data. These sources are identified and the definition of these data is provided. The timescale is identical for both models as the period of study spans from 2000 to 2010. Chapter 3 also presents the methods and procedures for the survey.

Chapter 4 provides a full analysis of the presence of foreign banks in SA from a survey methodoloy. It addresses directly the reasons for the foreign banks re-entry in 1994, the reasons why they are still operating in SA and their intentions beyond 2011-12, which could be a prelude to a new configuration of the SA banking sector. This section helps to identify specifically both the segment in which foreign banks operate and compete with SA banks, and the channels of spillovers.

Chapter 5 addresses specifically from a case study perspective the relationship between efficiency and FDI in the SA banking market. It defines aspects of voluntary and involuntary spillovers, highlights the importance of the country of origin in the process of technology transfer and evaluates whether knowledge transfer depends on the degree of ownership by analysing the efficiency before and after the British and

the Chinese FDIs of both ABSA, a SA-based British-owned institution and the Standard Bank, where ICBC has a minority but significant ownership. This chapter evaluates the impacts on the industrial structure in the SA banking market after entries by analysing the degree of efficiency of the competitors of these two banks to determine the presence of any knowledge spillovers. This chapter is important because it analyses directly the existence of knowledge and spillovers from foreign banks' presence, which operate in all segments (wholesale and retail) of banking.

Chapter 6 presents the findings from the first set of hypotheses about spillover and competition effects. The impacts of variables, measuring the presence of foreign banks including number of foreign banks (ForNum) and the foreign banks' share (ForShr) in the SA market, on five performance indicators including net interest income (NIIN) also called net interest margin, non interest income (NOINTIN), before tax profits (BTXP) and total expenses (TOEX) also called overhead costs, are analysed. The results confirm empirically the existence of a competition effect. The results also potentially show the existence of spillovers effects, but this depends on the segments in which foreign banks operate, as it is an important parameter necessary to capture any possible spillover effects.

Chapter 7 presents the findings from the second set of hypotheses on efficiency. The efficiency scores of both categories of banks (foreign and domestic) are calculated. The difference between the two is presented and explained, as well as the trend over the 10 year period (2000-10). These results confirm and magnify findings from chapters 4, 5 and 6. This chapter also deals with the factors that explain the efficiency gap between the two categories of banks. These factors include the level of equity (risks), and the size and the management of the banks.

This dissertation provides a unique and distinctive approach to the issue of the knowledge spillover theory. First, the literature on effects of FDI in the manufacturing sector is fairly well developed but this is not the case for the banking sector. And in banking, most empirical investigations of FDI have focused either on multinational banks (MNBs) operating in the US market or on US MNBs operating abroad, and a few studies have been carried out in Canada, Europe, Japan or

Australia. However there are no studies that examine fully the issue of FDI spillovers in the SA banking sector.

In addition, the previous empirical research in the banking sector concentrates essentially on the MNBs' performance (or profitability) in foreign markets. This dissertation tries to reconcile many aspects of empirical analysis available in both manufacturing and banking sectors. In order to achieve this, it starts by presenting a literature review that provides detailed aspects of the many shapes of the theory of FDI knowledge spillovers and their empirical evidence in the manufacturing sector. Then it presents the MNBs theory to analyse the internationalisation of foreign banks and links them to FDI spillovers. This creates a base that underpins the theory of FDI in the banking sector. This dissertation is the first document that examines theoretically and extensively a multisectoral review of FDI knowledge spillovers that combines a review of both banking and manufacturing.

It also goes further by identifying the relevant empirical models from both sectors and puts them together to create a specific empirical framework necessary to analyse the effects of the foreign banks and knowledge spillovers in the SA banking sector, a geographic location where studies are rather limited. Furthermore, while the literature in general uses either empirical models or case studies to address the issues of FDI, this dissertation innovates by using both methodologies. For this reason chapter 4 uses a survey to describe and evaluate the multiple strategies of foreign banks and branches into the SA banking and their influence in terms of inputs for new knowledge, competition and spillover effects, based on the idea that the presence of the foreign banks may demonstrate the availability of products and knowledge that the domestic banks may adopt. In return this may increase competition.

Equally, the case study in chapter 5 plays an important part in term of methodology and outcomes. While the existing literature hightlights the importance of two recent FDI in the SA banking sector, this study goes further by analysing specifically whether these two major FDI contributed to increase competition from an efficiency perspective.

Then, this aspect of competition and spillovers effects is tested and generalised though an empirical model, whose results are presented in chapter 6. The other stream of ideas, from an efficiency perspective, according to which foreign banks are more efficient than domestic banks, is tested through both the case study (from recent acquisition and foreign participation, as mentioned earlier) and empirical angles (from data of 14 banks operating in SA). By combining empirical analyses, a survey and a case study from a multisector approach, this dissertation provides a unique but nevertheless solid justification to examine FDI knowledge spillovers in the SA banking sector.

The outputs of this dissertation contribute to and participate in the ongoing debate about the theoretical aspects of knowledge spillovers FDI for different reasons. First, the former definition of knowledge spillovers is directly taken from the literature on FDI knowledge spillovers in the manufacturing sector, as the literature on FDI knowledge spillovers focuses primarily on the manufacturing sector and mainly in geographical areas such as the US, Europe and more recently Asia, Japan and Australia. The literature on banking is at a relatively embryonic stage (Herrero and Simon 2003) and more studies are needed in this sector at firm-level, especially as we are currently entering a new generation of internationalisation in the banking sector (Haddad and Harrison 1993; Barrios et al 2006; Okeahalam, 2008).

Second, the reason for limited empirical studies in the banking sector lies in the scarcity of available data that is even more acute in the case of Sub-Saharan African countries (SSA). Most of the foreign banks in Africa were established during the colonial period, and since have enjoyed monopoly-type behaviour. But the last decade has seen many African countries liberalising their financial systems, opening up their banking markets and have allowed competitors to establish operations. Despite efforts made in terms of efficiency and market stability, many African countries' banking sectors are still underdeveloped, lagging behind when compared with other developing countries. Therefore, by studying the spillover effects in the SA banking sector, this thesis contributes to fill this gap, given the importance of financial sector development for economic growth.

And finally, the literature on spillovers provides key elements of the impacts of internationalisation on the performance of firms, where the performance is measured in terms of efficiency. To explore spillovers and competition effects theoretically, and measure the effect of the presence of the foreign banks in SA, one established framework that is described takes its origin from the manufacturing sector. The internalisation theory provides a theoretical framework to explore the multinationalisation of banks (Williams, 1997). Given that the question addressed by the theory of MNBs is central to the theory of FDI in the manufacturing sector (Grubel, 1977), I assume that analysing the effects of the presence of foreign banks in developing countries, in particular in SA, is equivalent to looking at the effects of FDI in the manufacturing sector. This assumption explains why I base most of my empirical analysis on this theory, which when combined with aspects of technological gap and demonstration effects, establishes the effects of foreign banks' presence in developing countries. I describe and apply the technological gap theory as well as the demonstration effects concepts to the banking sector. The findings are in line with the existing literature. But although confirmed, the resulting spillover effects are more limited to the wholesale banking segment, while it seems more difficult for the retail sector to take full advantage of these benefits. With the dominance of the big four banks (ABSA, Standard Bank, FirstRand and Nedbank), in the retail banking sector, competition due to the presence of foreign banks does not seem to play an important role. Falkena et al. (2004) and Okeahalam (2001) have concluded that the SA banking sector is highly concentrated and this high level of concentration is the result of a few large banks dominating the market, which shows that the SA banking sector is suffering from a low level of competition (Greenberg and Simbanegavi, 2009). Does it mean that these big four behave as a cartel? The Enquiry Panel conclusion of the SA competition commission was negative (Jali et al., 2008).

This dissertation brings an original contribution at different levels and in different areas.

It contributes to the theoretical debate on the way FDI spillovers occur, which have previously focused on spillovers through manufacturing processes. This thesis

extends the nature of FDI spillovers to those related to the banking sector, an IT (information technology)-dominated service industry. Spillovers are shown to occur in a different way, through copying managerial practices and organizational processes, through tacit knowledge transfer more than through transfer of more physically capital intensive processes related to manufacturing. This introduces subtle distinctions into the consideration of the nature of those spillovers, making them more dependent on the integration of management practices by the acquiring bank into the company organizational structure. The thesis argues that these spillovers are not likely to occur automatically and depend on the segment of the banking sector that is being integrated.

Although focusing on economics and strategy aspects of FDI, the implications of its findings go beyond and stretch to the areas of globalisation and political economy. Reasons to study FDI in sub-Saharan Africa (SSA) are both the Chinese involvement in the region, as a recent new economic player, which started back in 2000, and the emergence of South-South economic relationships amongst countries that includes the BRICS (Brazil, Russia, India, China and South Africa). The example of minority shareholding (20%) of the Industrial and Commercial Bank of China (ICBC), a Chinese bank, into the Standard Bank, one of the SA big four, provides an illustration of the importance of both the SA banking market and the interest of China in Africa. And Chinese ownership in a South African bank is compared with British ownership into a similarly sized South African bank.

Another original contribution resides in the SA itself as a recipient of FDI. SA is a paradox. It is the largest SSA economy in terms of GDP (World Bank, 2012) and yet a developing country (World Bank Data, 2013; IMF, 2012). However, the SA banking sector is somehow unique in its kind. While many Sub-Saharan African countries are still lagging behind with respect to their financial sector development when compared with those in developed countries, the SA for a developing country has a well-developed and sophisticated financial sector (Schoombee, 2000). The SA commercial banks' assets represent about 87% of GDP compared to the 68% of GDP for 22 other middle-income countries in 1990 (Demirguc-Kunt and Ross, 1996;

SARB[1], 1995) and 93% of SA total deposits to GDP in 2007 (Greenberg and Simbanegavi, 2009). I checked the validity of this argument that SA for a developing country has a well-developed and sophisticated financial sector (Schoombee, 2000), by looking at private credit (defined by the IMF as claims on the private sector by deposit money banks and other financial institutions) to GDP (PCGDP) of SA compared to other 10 different countries of different sizes over the period 1993-2010. It appears that SA PCGDP is the third highest, larger than those of developed countries such as France, Greece and Italy (Figure 3.2).

Another attractive aspect of the SA banking sector for more FDI, that contributes to the originality of this thesis, is that it highlights the internationalisation strategies that these big four banks have chosen to sustain asset growth (see annex 4.1: Interview guide). This has been the case for Nedbank, ABSA and FirstRand back in mid-1990s, whose objective was to maintain the market-sustaining approach of the 1980s in order to support the trade and investment activities of South African corporate customers. Nedbank and ABSA, for instance, had offices in China to help trade between the two countries as well as the rest of Africa (we mentioned earlier the importance of the South African mining industry to China). As of 2010, Nedbank has four subsidiaries in Southern Africa, branches in London, Singapore and Hong Kong and representatives in China and Taiwan. It has a commercial partnership with Ecobank and some minority participation in 2013. In 2010 the HongKong Shanghai Banking Corporation (HSBC), a British bank, launched a bid for 70% of Nedbank but then withdrew from the bid. ABSA too is present in six countries and some parts of Southern Africa. Barclays took a 51% stake in ABSA in 2005 with a specific strategy of transferring Barclays' African operations to the bank, which allows Barclays to increase its shareholding in ABSA. This strategy in fact took place recently in 2013. So the international presence of ABSA currently covers eight countries in 2010 plus all African countries covered by Barclays activities. FirstRand Bank has been more modest in its strategy of internationalisation and has a strong regional presence, in particular in Botswana, Namibia and Swaziland, Nigeria, Angola and other African countries. FirstRand has branches in London, India and

[1] SARB: South African Reserve Bank

representation in the United Arab Emirates (UAE). The strategy of Standard Bank (SBSA) consists of both market-seeking, focusing on emerging markets, and a broader internationalisation. SBSA is not interested in Western markets like the US, which are overbanked and too competitive to buy into; instead they bought ANX Grindlays Bank in 1992 that had presence in eight African countries. SBSA has representative offices in Shanghai, in more than 15 Eastern European and Latin America countries, in 18 African countries and in 8 industrialised countries. In China they have activities in commodity trading and M&A advisory services and Latin America where it reduced its participation. As outlined earlier, ICBC, a Chinese bank, took a minority participation in the SBSA in 2007 and recently SBSA reduced its participation in some banking activities located in South America and East Europe to re-focus on African markets. Some believe that this new direction of strategy was dictated by ICBC and this issue was addressed with the SBSA representative in the case study in chapter 4.

In addition to its well-developed financial sector, and its relatively internationalised four big banks, SA has a favourable FDI policy that the post-apartheid government has implemented from 1995 by progressively liberalising the financial market. As a consequence, the SA economy experienced an increase in terms of capital inflows (Mohamed, 2010). The several bilateral agreements signed with countries from Europe, Asia / Middle East and Latin America, and its involvement in multinational agreements such as WTO and GATT (Tralac, 2004) and regional integration agreements such as SACU or SADEC, make SA a good location for FDI.

And finally, the last factor that makes SA banking sector so attractive and of interest is its banking infrastructure. The Johannesburg Stock Exchange (JSE) was created in 1887 to channel capital into the mining industry. The enormous amount of capital to finance the gold mining industry contributed to the emergence of the corporate sector after 1945, and in the 1990s JSE was in the top 20 stock exchanges globally by market capitalisation (Gelb, 2010). This is why FDI became so important in manufacturing development and in the 1970s South Africa was considered an important borrower. Even at that time after most of the foreign banks left South Africa because of the political regime, the skills and the capability accumulated

earlier were maintained, as well as its presence in international centres via participation in international banking supervision and monetary policy networks (Gelb, 2010). Domestic banking re-opened in 1995 to branches of foreign banks. As a consequence the presence of foreign banks in the market more than doubled (Figure 3.1), and this increased competition in the domestic wholesale banking market as the findings show in chapter 6. The benefit from this competition was the modernisation of capabilities in credit and risk management, and in investment and merchant banking and the domestic market was able to offer new products (currency derivatives, interest rate warrants) as the foreign banks survey shows in chapter 4.

Given this favourable political and economic context, it was not surprising to see many foreign banks returning soon after 1995 in SA to establish branches and representations, as just mentioned, although it is important to remember that some of the foreign banks never really left SA during the Apartheid period. But it was only in 2005, that Barclays, a British bank, returned to SA in the form of FDI (prior to 2005 it was already operating as a branch) by taking a majority share of Amalgamated Bank of South Africa (ABSA), one of the SA four big banks. The deal cost Barclays about $20 billion (compared to the $50 billion Merrill Lynch acquisition deal made by Bank of America in 2008) and that was the first major direct investment (FDI) since foreign banks' re-entry. Two years later, in 2007, it was ICBC that took a minority but significant 20% share in the Standard Bank shareholding for an amount of $20 billon. These examples illustrate both how important the SA banking sector is and its attractiveness as a financial and banking location. In 2010, the SA banking market comprised 15 locally controlled banks, 6 foreign controlled banks and branches of 13 foreign banks. With such a number of more than 30 banks, a number much higher than in any other African countries, a variety of ownership structures and an ability of the domestic banks to be internationalised, picking up the SA banking sector was an obvious choice of study. Therefore, after more than 15 years of presence, with a number of foreign banks that surpasses the number of domestic ones, it could legitimately be asked what type of benefits have been generated from the presence of foreign banks in SA and how should we measure them.

During these years of research the main challenge I had to overcome was that of data collection and analysis. I have mentioned the scarcity of studies in the area of banking of sub-Saharan African countries and argued that the main reason for this is the limited availability of data. In SA, the domestic banks, which are under private ownership, have the obligation to publish their annual reports in compliance with SA regulation, and the keenness of these banks to provide archived documents back from 2000 is to be noted. The study has collected data from balance sheet profit and loss accounts from the SA domestic banks in order to compare some key indicators on performance and costs. And by putting together bank-specific data (firm-level) with data on foreign bank presence as well as data on SA macro-economics for the years 2000-10, this study to my knowledge, is the first to analyse empirically the extent of spillovers and competition effects of the foreign banks in SA. Many studies highlight the importance of the deals between ABSA and Barclays and between the Standard Bank and ICBC. But this study is the first that compares the direct transfer of knowledge of both foreign banks to the domestic ones and the presence of spillover effects that may be generated to the entire SA banking system.

Logistically, collecting information about the domestic and the foreign banks that are operating in SA was a very important task of this PhD programme. This task of data collection required travelling several times to SA for the following reasons. Realising that it was not possible to gather most of banks information needed from the SARB, and in particular the data from the foreign branches, I approached all banks of the study panel (Annex 3.1) and asked them to provide me with their archive annual reports for the period 1993 to 2010. After explaining carefully the purpose of this study, the domestic banks as well as the foreign-owned banks that are listed in JSE, enthusiastically sent me back copies they possessed. Unfortunately, many annual reports were missing for the sub-period 1994-2000. This is the reason why I decided to consider only the period 2000-10 for the study. This period and these data were used to feed the empirical models investigating the effects of the foreign banks on SA domestic banks as well as the efficiency gap between foreign and domestic banks and its determinants. Furthermore, it was not possible to get the same kind of bank-specific data from the foreign bank branches for legal reasons. The foreign banks directed me to their global annual report made by their mother banks that are located

in home countries. After consulting these annual reports, it became clear that information was aggregated and there was no possible way to extract results specific to the SA market. To overcome this situation, I broadened the study by designing a survey that was implemented for the foreign banks and branches that are operating in SA. The survey contributed to identify not only the spillover effects but also helped to capture key elements needed in the formulation of the banks' strategy in the SA market (design and implementation processes are described in chapter 3). My presence in SA helped me to have direct contacts (including organising meetings, conference calls and email exchanges) not only with representatives of ABSA and the Standard Banks but also with the representatives of banks' competitors and other actors of the banking sector such as the SARB, the Competition Commission, the SA Treasury, strategy consultants, lawyers and representatives of banking consumers. This helped deepen the understanding of the SA market especially when specific mechanisms of spillover and factors that trigger competition were identified. For instance, I found that the currency crisis in 2001 had an impact on the domestic banks performance from the results of the first empirical model (3.1). Furthermore, I discovered that one of the main factors responsible for competitive pressure was not so much the presence of the foreign banks but in fact the emergence of a new domestic competitor in the retail banks that created serious challenges for the big four in terms of strategy.

During my staying in SA I was based at the Tralac (Centre for trade and law for the Southern Africa) as a visiting researcher, where and I could benefit from the Tralac expertise and logistics. I partnered with the Graduate Business School of the University of Cape Town (GSB-UCT) for the preparation and the implementation of the survey.

Chapter 1

1. A multi-sector review of the theory of FDI

There are relatively few studies on multinationals in Africa. The history of multinational operations in Africa has to be found in the strong relationships inherited from the late colonial period. However, since the mid 1990s, and particularly at the beginning of the 2000s, a wave of new entries has been observed in the African continent. This phenomenon has not yet been fully scrutinised and the banking sector in Sub-Saharan Africa remains particularly understudied.

In the 1990s many studies focused their attention on FDI in the manufacturing sector and real production activity, called general FDI. These studies have analysed the impacts of FDI on technological transfers, productivity and wages. The implications and effects of FDI are important, as for many developing countries in the 1990s, FDI remained the main source of external finance. Goldberg (2004), who studied FDIs in both manufacturing and financial sectors, argues that financial FDIs (FFDIs) share many of the features of general FDIs. For instance, before setting up an operation in a host country, the manufacturer would assess first whether it is important to service this specific market and second, whether the market should be serviced via export or the establishment of a local production. By analogy, the bank would decide whether it is important to provide lending, deposit-taking and other services to this market when assessing the market. Then if the bank decides to service this market, it would assess whether it is via cross-border activities or FDI. FDI inevitably would take the form of either opening branches or subsidiaries. The reasons for entry into a new market may lie in the opportunity to acquire local market share and take advantage of sales or production networks. And both manufacturing and financial sectors share these different features.

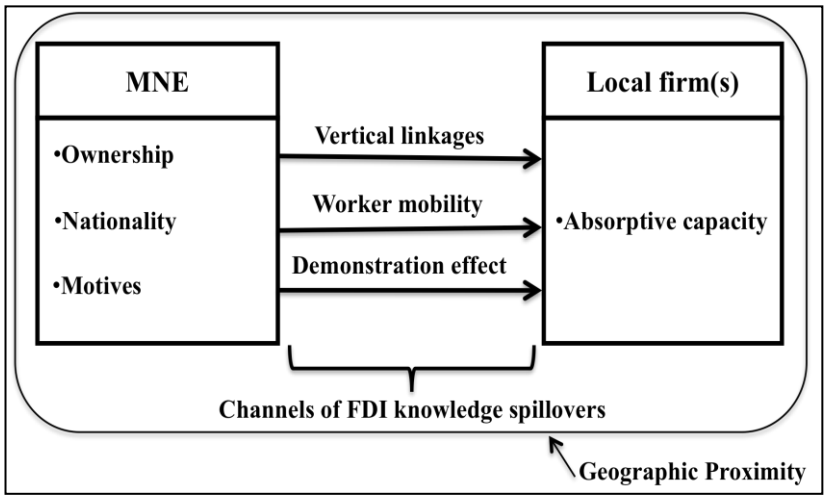
The aim of this chapter is to review the early theoretical contributions that have been developed. I first review the literature on FDI in manufacturing, based on the FDI

knowledge spillover framework as illustrated in figure 1.1. Then I present a review of the literature on spillover effects in the banking sector.

1.1 The theory of FDI in the manufacturing sector

In the discussion on FDI in the manufacturing sector I assume the following definition of knowledge spillover, which consists of the creation of knowledge by a multinational enterprise (MNE), used by a local host country firm and where the local firm does not fully compensate for the use of this knowledge (Javorcik, 2004b). This definition has to be distinguished from knowledge transfer, which is purposeful or intended diffusion of knowledge from one firm to the other (Smeet, 2008). The process of knowledge spillover is illustrated in Figure 1.1. This process identifies three areas where it is necessary to allow for the existence of spillovers or as preconditions for spillovers: aspects of MNEs, channels of FDI knowledge spillovers and aspects of local firms.

Figure 1.1: General FDI knowledge spillover process



Source: Smeet (2008) figure adapted by the author

1.1.1 Channels of FDI knowledge spillovers

It is important to note that in the sector of financial (banking) and services this term can be called channels of spillover effects. In the manufacturing sector (figure 1.1) there are three main channels, from which knowledge can spill over (Saggi, 2006). The first is vertical linkages, when the MNE spills over knowledge to its suppliers and customers. The second channel, workers mobility from MNE to local firms,

allows employees who received training from the MNE to apply their knowledge in the local firm. Finally the demonstration effect is when the local firms imitate or reverse engineer MNEs' products and/or practices.

1.1.1.1 Vertical linkages

Studies of FDI have examined the vertical linkages of spillovers (Hoekman and Javorcik, 2006; Lin and Saggi, 2005; and Saggi, 2006). Knowledge spillovers through backward linkages consist of both knowledge transfer from the MNE to its suppliers or customers, and knowledge spillover. The knowledge spillover is therefore a consequence of the knowledge transfer because the domestic supplier or customer firm exploits the knowledge received from the MNE in its (vertical) relationship with other firms.

Early contributions in this field were made by Rodriguez-Clare (1996) and Markusen and Venables (1999). Rodriguez-Clare studies the input demand-effects of MNEs. Rodriguez-Clare builds a model with monopolistic competition in the intermediate sector, which national firms and MNEs use as inputs in their final goods production. Later he realises that final goods of MNEs are more complex and all firms have love-of-variety for inputs. When a MNE enters a market, it generates an increased demand for intermediate inputs. This constitutes the backward linkage. The monopolistic competition in this sector means that the variety of available inputs produced increases and then producers of final goods benefit due to the love-of-variety for inputs. This constitutes the forward linkage effect. Although similar in many aspects, the difference with the Markusen and Venables model resides in the fact that Markusen and Venables explicitly considers the intra-industry competition effect that a MNE induces upon entry. Finally, the Markusen and Venables studies as well as Rodriguez-Clare studies do not fully address the knowledge spillover effect but focus rather on early spillovers and competition effects.

Lin and Saggi (2007) study vertical technology transfer (VTT) through backward linkages from an MNE to their local suppliers. Lin and Saggi's idea is that only after an MNE has negotiated an exclusivity contract with some local suppliers – assuming that the local suppliers are not allowed to supply to any other local firms – the VTT

takes place. But this definition of knowledge spillovers has not yet reached a complete consensus.

Some authors find vertical linkages in their studies. Javorcik (2004a) finds evidence of positive backward linkage spillovers but not forward linkage spillovers. Javorcik and Spatareanu (2008) too find similar results by identifying positive backward linkage spillovers only for MNEs that share ownership with local firms. Similarly to Javorcik and Spatareanu, Kugler (2006) finds evidence of backward linkages but none for forward linkages when he analyses FDI for eight Colombian sectors. Bwalya (2006) as well as Schoors and van der Tol (2002) find similar evidence when assessing FDI for a sample of, respectively, Zambian manufacturing firms and Hungarian firms.

1.1.1.2 Worker Mobility

Another way knowledge can spill over from MNEs to domestic host country firms is from labour turnover (also referred to as labour turnover in banking and services sector). The idea is that the MNE provides its workforce with a higher degree of training, education and valuable working experience than the domestic firm can provide. Consequently, whether the workforce decides to work in the domestic firm or set up their own local company, they can use knowledge acquired in the MNE's subsidiary. Since the MNE does not receive any compensation, this therefore constitutes a knowledge spillover.

Motta and Ronde (2001) pioneered this channel for knowledge spillovers. In their model, a firm has to make a choice between FDI and exports to service the foreign market with the workers to be trained if exports are selected. When training is completed, both the local firm and the MNE make a bid to acquire the trained worker. Knowledge spills over in the case that the local firm makes a higher bid. It is likely that such a spillover would happen if market competition were low and knowledge easy to transfer.

Another way to measure knowledge spillovers from worker mobility is to consider the wages that are paid by firms that employ experts from MNEs. This is exactly what Markusen and Trofimenko (2009) provide in a model where spillovers are in a general equilibrium setting. The Markusen and Trofimenko (2009) study supports this hypothesis showing that hiring foreign experts increases the real wages of the hiring plant. Their model shows that the effect is instantaneous and persistent. This means that it lasts not only during the period of hiring but also after the foreign expert has left the plant.

Gorg and Strobl (2005) find that an owner of a local firm who has previously worked in a MNE increases the productivity of his local firm on condition that the worker operates in the same sector. However, the fact that an owner has received specific training does not guarantee significant productivity to the firm. But a question is to what extent this result reflects the more general situation in which any foreign employee, not just the owner hired by the local firm, can create knowledge spillovers. The answer can be found in Poole (2008) who finds that increase in foreign workers' presence increases wages. This result indicates that knowledge spills over from former MNE employees to domestic firms. Similar findings were suggested in Hale and Long's work (2006).

1.1.1.3 Demonstration effects

The literature provides some definition of demonstration effects (Cheung and Lin, 2004; Moran, Graham and Blomstrom, 2005), and according to Saggi (2002), demonstration effects occur though the imitation and reverse engineering of MNEs' products and practices by local firms. Other studies (Gorg and Strobl, 2001; Holger, G. and Greenaway, 2004) look essentially for horizontal (intra industry) spillovers but implicitly deal with demonstration effects because they occur mainly though these horizontal spillovers (Saggi, 2002). But studies of empirical demonstration effects can lead to mixed and conflicting results. Unfortunately not much can be said about demonstration effects because studies in this field are less developed.

Table 1.1: Summary of study on FDI knowledge spillovers

Channels of spillovers	Study	Results
Vertical linkage	Javorcik (2004a)	Positive backward linkage effect and no forward linkage effect
	Javorcik and Spatareanu (2008)	Positive backward linkage effect
	Kugler (2006)	Positive backward linkage effect
	Bwalya (2006)	Positive backward linkage effect
	School and Van der Tol (2001)	Positive backward linkage effect and negative forward linkage effect
Worker mobility	Markusen and Trofimenko (2009)	Positive
	Gorg and Strob (2005)	Positive
	Poole (2006)	Positive
	Hale and Long (2006)	Positive
	Cheung and Lin (2004)	Positive
	Hale and Long (2006)	Positive
Demonstration effects	Cheung and Lin (2004)	
	Hale and Long (2006)	

Source: Smeets (2008) table simplified by the author

1.1.2 Transmission factors of spillovers

The literature has identified some factors that are necessary for an effective transmission of knowledge spillovers. This is a result of conclusions from observations in which countries and firms within countries differ in their ability to benefit from the presence of foreign-owned firms and their superior technology (Lipseyand Sjoholm, 2005). In the financial and service sectors, this transmission factor is referred to as a determinant of spillover effects. The transmission factors are the concepts of absorptive capacity and geographic proximity (also called spatial proximity or geographic localisation). Other factors are discussed such as intellectual property rights and competition.

1.1.2.1 Absorptive capacity (AC) and backwardness

The literature presents some relationship that links AC and backwardness: Findlay (1978) and Wang and Blomstrom (1992) argue enhancing spillovers depends on increased technological backwardness. At the same time, other authors such as Cohen and Levinthal (1990) and Glass and Saggi (1998) would claim that firms need some minimum amount of absorptive capacity to allow them to capture spillovers. AC therefore is created by (or defined as a consequence of) investments in R&D or human capital that provide a favourable platform of fundamental knowledge and technology essential in the assimilation and the exploitation of external knowledge (Smeet, 2008).

1.1.2.2 Geographic localisation

Some components of FDI mentioned earlier such as mobility of workers and vertical linkage can intuitively suggest how being close to the MNE can become an important condition in capturing knowledge (Girma and Wakelin, 2007). But other authors made early contributions in the location and FDI field, such as Martin and Ottaviano (1999), Baldwin and Martin (1999) and Martin and Ottaviano (2001). Using and combining their models, to investigate the influence of special bounded knowledge

spillovers on growth rates in two regions, Krugman (1981) and Romer (1990) find that firm location is important for growth only if spillovers are spatially bounded. It was added that the two regions could grow at similar rates in the long-run equilibrium when spillovers are global. Others like Jaffe et al. (1993) and Jaffe and Trajtenberg (2002) contributed by investigating how innovation activities could be localised. For this purpose they used evidence from patent citations and show that spillovers are localised at different geographic levels (country, states and metropolitan statistical areas). However, Audretsch and Feldman (1996) demonstrated how innovation activities are more pronounced in knowledge-intensive industries.

By analysing spillovers in R&D from nine European countries, Keller (2002) finds that the distance it takes for half of total spillovers to be eroded, in other terms called the half-life of spillovers, was 1,200 km. In the case of Bottazi and Peri (2003) who analyze spillover across 15 countries of the EU, the effect of regional R&D (inputs) on the number of patents (outputs) vanishes beyond 300km. Barrios, Bertinelli and Strobl (2006) find that in countries having a strong degree of co-agglomeration, productivity effects of FDI are positive and significant. Studies carried out by Girma and Wakelin (2007) also suggest productivity of domestic plans is positively affected by FDI.

1.1.2.3 Intellectual property rights (IPRs)

IPR is another component that can play a role in FDI spillovers. Where there is a strong IPR policy in the host country, MNEs will transfer more and higher quality knowledge to their subsidiaries. This will contribute to enhancing potential knowledge spillovers. However, the relationship between IPR and the extent of spillovers from FDI can be offsetting and effects are still unclear. Markusen (2001) analyses the impacts of changes in intellectual property rights protection in a host developing country and concludes that increased IPR protection makes spillovers less likely if the multinational can not write an enforceable contract with a local agent. Glass and Saggi (2002) reach a similar conclusion for their study in developing countries and find that FDI does not become relatively more attractive.

Most research studies analyse only the effects of IPR on the volume or composition of FDI or on the incentives for intra-firm technology transfer. For instance, Javorcik (2004a) looks at the effect of IPR on the composition of inward FDI in the Russian Federation and five other countries in Central and Eastern Europe. Branstetter, Fishman and Foley (2006) analyse the impacts of IPR protection on technology transfer. The results from their studies on spillovers are inconclusive. Feinberg and Majumdar (2001) investigate the spillover implications of FDI in India in a period where IPR were reportedly considered to be not strong (1980s – 1990s). Their findings conclude that there is no evidence of spillovers. However, Allred and Park (2007) conclude that there exists an optimal and positive degree of intellectual property rights protection that triggers diffusion of knowledge from MNEs.

1.1.2.4 Competition

Competition in the host country can be considered as a favourable factor for spillovers and knowledge diffusion. Blomstrom, Globerman and Kokko (2001) argue greater competition may encourage MNEs to transfer more high quality technology to their subsidiaries, increasing the potential for knowledge spillovers. Glass and Saggi (1998), Wang and Blomstrom (1992) confirm Blomstrom, Globerman and Kokko's conclusion. Kathuria (2002), who studies the impacts of liberalization of Indian industry on spillovers from FDI, finds that the effects on spillovers occur mainly through higher FDI.

Table 1.2: Summary of study on transmission factors of spillovers

Transmission factors	Study	Results
Absorptive capacity (AC) / Backwardness	Griffith, Redding and Van Reenen (2002)	Positive backwardness
	Castellani and Zanfei (2003)	Positive backwardness and no AC effect
	Girma (2005)	Positive AC (U-shape effect)
	Peri and Urban	Positive backwardness
	Girma and Gorg (2007)	Positive AC (U-shaped effect)
Geographic proximity	Barrios, Bertinelli and Strobl (2006)	Positive
	Girma and Wakelin (2007)	Positive
	Nicolini and Resmini (2007)	Positive

Source: Smeets (2008) table simplified by the author

1.1.3 Effects of the multinational enterprises foreign activities

The theory of multinational enterprises and more specifically multinational banks will be discussed further in section 1.2. Here, will be examined how aspects of MNEs ownership and nationality of parent affect FDI knowledge spillovers and the relationship between motives of FDI and knowledge spillover.

1.1.3.1 Ownership

Another important aspect of FDI is the ownership of the MNE, where empirical research distinguishes between minority FDI, which indicates that the MNE holds a minority share in the foreign affiliate, and majority FDI where the MNE holds a majority share in the foreign affiliate. The empirical studies discriminate between wholly owned subsidiaries and shared subsidiaries. In examining the relationship between spillovers and MNE ownership, Muller and Schnitzer (2006) find a trade-off in which a larger ownership share induces the MNE to transfer more technology to its subsidiary. Blomstrom and Sjoholm (1999) were pioneers in investigating the relationship between FDI and ownership and their study shows both minority and majority FDI lead to spillovers, with no statistical differences between the estimated effects. In their findings, Demelis and Louri (2002) show that only majority-owned foreign affiliates experience labour productivity improvements as a result of knowledge transfer, and minority FDI is more likely than majority FDI to produce knowledge spillovers, confirming the Muller and Schnitzer (2006) prediction. And more recently, a study from Javorcik and Spartareaunu (2008) shows that shared foreign and domestic ownership produces positive vertical spillovers and negative horizontal spillovers. Adverse competition effects explain the negative spillover effect. Abraham, Konings and Slootmaekers (2010) find that that minority FDI has a negative (competition) effect on locally-owned firms' productivity but majority FDI has no effect. They notice that the effect of minority FDI on foreign-owned firms is positive and larger than that of majority FDI. And finally, Liu et al. (2000) find that the presence of FDI has a positive spillover effect on productivity.

1.1.3.2 Nationality of parents

The nationality of the parent company seems to play a significant role in FDI spillovers in the light of some recent studies, many of which compare the Chinese FDI from Hong-Kong, Macau and Taiwan (HMT_FDI) with Western countries (WEST_FDI). Buckley, Clegg and Wang (2007b) find that HMT_FDI is less technologically advanced than FDI from outside China, and the negative competition effect takes over beyond some threshold level. One of the consequences of this, as they predicted, is a non-linear spillover effect of increased FDI from these countries. However, they acknowledge that the increase of this FDI produces positive spillovers. On the other hand WEST_FDI generates a positive linear effect and the spillover effect dominates because it carries more advanced technology.

Buckley, Clegg and Wang (2007a) investigate the relationship among HMT_FDI, WEST_FDI and productivity in an analysis of 158 Chinese industries. The results show that HMT_FDI provides more spillovers in labour-intensive industries and WEST_FDI generates more spillovers in technology-intensive industries.

Abraham, Konings and Slootmaekers (2010) find in their study of locally owned firms in Hong Kong, Macau and Taiwan that spillover effects of both minority and majority FDI are larger than those in Western countries. Their results confirm the opposite was true for spillovers to foreign-owned firms.

Girma and Wakelin (2007) compare three different sources of inward FDI into the UK. These inward FDI flows are from Japan with a majority of R&D-intensive international companies that operate essentially in the electronics industry; the United States, which has a long history of investing in British manufacturing industry; and the rest of the world. They find that Japanese and other international firms generate significant and positive spillover effects whereas US companies have no significant spillover effects. They infer that the high R&D-intensity of Japanese FDI explains their finding.

Javorcik, Saggi and Spatareanu (2004) study upstream spillover effects of FDI from Asian, European and American firms in a panel of Romanian companies. They find that Asian and American FDI has positive vertical spillover effects on Romanian enterprises whereas European FDI has a negative spillover effect. They interpret their results by increased competition in the downstream sector, in which the multinational enterprises are operating. There are three major reasons that explain why European FDI is weaker: first, Romania is closer to the European Union (EU); second, at the time of the study Romania had a preferential trade agreement with the EU; and third, inputs sourced from home-country suppliers by EU subsidiaries comply with Romania's rules of origin, which is not the case for Asian or American subsidiaries. These authors conclude that all these mechanisms make spillovers through vertical linkages less likely for EU subsidiaries due to increased imports of intermediate inputs from the EU.

1.1.3.2 Motives for FDI: Technology or market seeking

The literature relating to the impact of FDI on firm performance in the manufacturing sector is abundant, and as reviewed earlier, most of the firms favour FDI as a way of exploiting ownership advantages or to take full advantage of technological advance. This type of FDI is usually called technology-exploiting FDI (Kuemmerle, 1999; Le Bas and Sierra, 2002) and many authors refer to it (Hymer, 1960; Dunning, 1977; Markusen, 2002). But there is the reverse of the technology-exploiting FDI called technology-seeking which consists of sourcing or seeking external foreign knowledge (Dunning and Narula, 1995; Kuemmerle, 1999; Fosfuri and Motta, 1999; Siotis, 1999; Le Bas and Sierra, 2002) where enterprises would try to capture spillovers from the firms in the host countries they are investing in. In this case, the spillovers will flow from the domestic firms to the MNE. Studies that investigate these two types of FDI spillovers use variables Min_FDI and Max_FDI to identify technology-exploiting and technology-seeking FDI. Driffield and Love (2007) use a similar approach to analyse a panel of 11 manufacturing sectors in the UK and find that technology-seeking (or sourcing) FDI did not produce spillovers; but technology-exploiting did generate spillovers; Girma's (2005) studies produced similar evidence.

Other types of FDI include horizontal FDI (Markusen, 1984) motivated by market-seeking incentives, vertical FDI (Helpman, 1985) that looks for efficiency- or resource-seeking FDI; and export platforms for FDI (Ekholm, Forslid and Markusen, 2007), which searches for more efficient locations where exports can be more profitable. The degree of positive spillovers from these types of FDI can vary (Javorcik and Spatareanu, 2005; Driffield and Love, 2007). As Protsenko (2003) analyses the spillover effects of horizontal and vertical German FDI in the Czech Republic, his results show that vertical FDI produces positive spillovers but horizontal FDI has effects largely through increased competition. This example is given to highlight the importance of these three different types of FDI in examining the degree or extent of spillovers.

Table 1.3: Summary of study on FDI and knowledge spillovers

Factor	Study	Results
MNE ownership	Blomstrom and Sjoholm (1999)	Minority and majority FDI shares have equal spillover effects
	Dimelis and Louri (2002)	Minority FDI shares have greater spillover effect than majority FDI shares
	Jarvorcik (2004b)	Shared foreign and domestic ownership has positive spillover effect
	Jarvorcik and Spatareanu (2008)	Shared foreign and domestic ownership has positive vertical spillover effect and negative horizontal spillover effect
	Abraham, Konings and Slootmaekers (2010)	Minority FDI shares have greater spillover effect than majority FDI shareholders
Nationality of parent company	Buckley, Clegg and Wang (2007b)	No effect for FDI from Hong Kong, Macau and Taiwan but positive effect for FDI from other countries in high-technology sectors
	Buckley, Clegg and Wang (2007a)	Positive effect for FDI from Hong Kong, Macao and Taiwan in labour intensive industries, and positive effect from FDI from other countries in technology-intensive industries
	Abraham, Konings and Slootmaekers (2010)	Larger effect for FDI from Hong Kong, Macau and Taiwan on locally owned enterprises and the opposite for foreign-owned enterprises
	Javorcik, Saggi and Spartareanu (2004)	FDI from Asia and America has positive upstream spillover effects and FDI from the EU has negative spillover effects
	Girma and Wakelin (2007)	FDI from Japan and other countries has positive spillover effects and FDI from the US has no spillover effects
Motive for FDI	Girma	Exploiting FDI has positive spillovers effects but sourcing FDI has no spillover effects
	Driffield and Love (2007)	Exploiting FDI has positive spillovers effects but sourcing FDI has no spillover effects
	Protsenko (2003)	Vertical FDI has positive effects but Horizontal FDI has no spillover effects

Source: Smeets (2008) table simplified by the author

1.1.4 ICT a General Purpose Technology and a source of spillovers

Informationa and communication technology (ICT) is classified as General Purpose Technology, similar to electrification and other great inventions of the past (Jovanovic and Rousseau, 2005). ICT brings important technological progress and it has the ability to complement innovation and helps genetates spillover effects (Bresnahan and Trajtenberg, 1995 Lipsey et al., 2005). ICT has produced positive productivity effects (Javanovic and Rousseau, 2005; O'Mahony and Vecchi, 2005; Venturini, 2009) and is recognised as a determinant of productivity growth specifically when combined with investments in R&D, organisatioanl and human capital (Brynjolfsson and Hitt, 2000 and 2003).

Although direct impact of ICT on productivity is clearly established it not clear however, that ICT generates positive spillovers as empirical evidence is conflicting. For instance, some studies show signinficant effects (van Leeuwen and van der Wiel, 2003; Severgnini, 2010; Venturini, 2011) others simply refute such spillovers existence (Stiroh, 2002; Acharya and Basu, 2010; Haskel and Wallis 2010; Van Reenen et al., 2010; Moshiri and Simpson, 2011). How can this contradiction possibly be explained?

Similar analytical frameworks used in the dicipline of knowledge spillovers (Jaffre, 1986; Griffith et al, 2004; O'Mahony and Vecchi, 2009) have been recently used to analyse spillovers effects from ICT (Stiroh, 2002; Mun and Nadiri, 2002; Acharya and Basu 2010) and it has been found that ICT helps reconcile many explanations of knowledge spillovers (Rinco, Vecchi, Venturini, 2012). ICT is a source of pecuniary spillover (Griliches, 1979) because combining competition and innovation in the ICT-producing sector allows computerised industries to benefit from lower costs (Jorgenson, 2001). This is identified as source of spillover from upstream to downstream sector, also called vertical externality (Bresnahan, 1986). Horizontal externality in other hands referes to the used of GPT amongst a large number of sectors. Another source of spillovers is the increased efficiency of transactions among firms that use ICT. Rowlatt (2001) and Criscuolo and Waldron suggest that using systems such as electronic data interchange, internet based-procurement and other

inter-organisational information systems generate administrative and search costs reduction and improved supply chain management. Similarly, translfer of payment and invoices, automatic inventory replenishment, on-line markets for placing and receiving orders have all contributed to improved efficiency.

Other studies reject the spillover effect from ICT. Stiroh (2002) finds no evidence of ICT capital spillovers when regressing TFP growth on ICT capital and other controls variables for the US manufacturing sector. Neither Haskel and Wallis (2010) nor Acharya and Basu (2010) find positive spillovers in their syudies. It is suggested that the lack of spillover may reside in the type of data used in their empirical analysis, with data at mico level being more supportive of spillover hypothesis than data at macro level. And this idea was supported by Brynjolfsson and Hitt (2000). Another possibility in identifying spillovers from ICT could be a consequence of the lagged impact of ICT on productivity. In addition, adoption of ICT imposes a relatively long periods of experimentation, during which firms put in place changes in their organisational structure, business practices and customer relation (Brynjolfsson and Hitt, 2003). Therefore, this implies a significant delay between initital investment and exploitations of performance improvements that could explain a lagged ICT spillover effect, as suggested in works of Morrison (2000), van Ark and Inkaar (2006).

1.2 FDI in the banking sector and theories of multinational banks

While the literature on effects of FDI in the manufacturing sector is extensive, as seen previously, this is not the case for the banking sector. Most empirical investigations of FDI in banking have focused either on multinational banks (MNBs) operating in the US market or on US MNBs operating abroad, and only a few studies have been carried out in Canada, Europe, Japan or Australia. The reason for this shortage of studies lies essentially in the lack of data. However, the available studies investigate general determinants of MNB performance. Among them, one part of the literature examines the determinants of MNB growth or presence; the other side focuses more on the profitability of MNBs in foreign markets. These key studies on MNB growth or presence, which usually support geographic factors in FDI theory, include works by Fieleke (1977), Terrell (1993), Golberg and Saunders (1980), Ball and Tschoegl (1982), Cho (1985), Sabi (1988), Nigh et al. (1986), Hultman and McGee (1989), William (1996) Yamori (1998) and William (1998). They support the argument that banks expand abroad for defensive reasons, and highlight the importance of local market opportunities (market seeking), the regulation and the ownership advantages, which comprise the MNBs' expertise in international operations and their knowledge in the host country.

The second side of the empirical research concentrates essentially on the MNBs' performance (or profitability) in foreign markets. Some studies, which include De Young and Nolle (1996), suggest that foreign-owned banks have a distinct disadvantage in terms of input efficiency. William (1996, 1998) shows that profits of Australian banks are positively correlated with Australian net interest margins and fees and Peek et al. (1999) suggest that the reason why foreign subsidiaries in the US performed poorly was provided by the change in business strategy or the pre-existing characteristics of the banks acquired by the foreign banks.

1.2.1 Internalisation theory

The origin of internalisation theory is the theory of the firm pioneered by Coase (1937). The internalisation theory highlights and analyses how important transaction

costs are when firms are created (Jones and Wren, 2006). Firms are expected to select an entry mode with the lowest transaction costs, given a particular degree of asset specificity, and considering the combined effect of asset specificity and external uncertainty, internal uncertainty, and the potential for free riding by partners (Anderson and Gatignon, 1986). The transaction-cost-based perspective on internationalisation, also called internationalisation theory was developed in the work of Buckley and Casson (1976; 1998). It suggests that MNE involvement in foreign markets is caused by market imperfections, and that MNEs organise internal markets to overcome failure in product and factor markets (Rugman, 1981) and to avoid transaction costs generated by external markets (Jones and Wen, 2006). In this way, the MNE is regarded as a set of resources and activities that can either be internalised and exploited or externalised. These two possibilities will depend on costs and benefits that the external markets generate. The issue here is how to define the borders of the MNE that depend on the costs and benefits of the choice between exploiting proprietary knowledge and controlling the firm's activities through firm-based activities, or exporting or licensing the firm's knowledge and activities to local partners.

Information or knowledge transfer therefore becomes a critical issue in internalisation theory (Rugman, 1981). The MNE is viewed as the superior vehicle to transfer tacit knowledge across borders (Kogut and Zander, 1993; Tallman, 2003). Foreign expansion can be explained by the competitive capability of a firm to successfully create, replicate and transfer knowledge abroad (Kogut and Zander, 1993). The development of new knowledge through research and development activities is time-consuming and risky that makes it difficult to license. This is why firms with a strong technological base and rich knowledge structure are more likely to expand through start-ups rather than through acquisition (Barkema and Vermeulen, 1998). And at the same time knowledge can more easily be distributed within a corporation and across borders. Therefore, the internalisation of the knowledge markets leads to a high degree of multinationalisation (Buckley and Casson, 1976) as it best preserves the management structure of the MNEs (or MNCs) (Rugman, 1981).

Communication costs lead to the internalisation of markets. The reason why is the need to control the high volume of information across fragmented markets. Consequently, this type of costs can be reduced to its lowest if countries are similar in terms of economic conditions and language (Buckley and Casson, 1976).

By applying internalisation theory to multinational banking, Rugman (1981) concludes that as MNEs overcome failed markets for products and factors through internalisation, MNBs overcome imperfections in the market for financial information. A bank-customer relationship is very information-intensive, and so the information is internalised (Rugman 1981; Cho, 1985). Keeping and protecting special customer information is one of the keys of internalisation-specific advantages of banks (Miller and Parkhe, 1998) and this provides incentives encouraging MNBs to invest in foreign markets (Sabi, 1988). A typical example of this is the banks following their clients abroad from the same country of origin to protect their bank-customer relationships against the competition of local banks, meaning that the banks adopt a defensive expansion strategy in foreign markets (Williams, 1997; Aliber 1984). This denotes the specific advantage of the MNBs in information that in turn allows them to offer new credits to their customers at lower marginal costs from the same home country (Williams, 1997). And to preserve their long-term customer relationships, MNBs use technologies to process information more efficiently. This ability gives them an information advantage and special knowledge in risk management (Claessens and Van Horen, 2008). But embarking on an FDI involves additional costs through doing business in unfamiliar economic and political environments and thus internal advantages may not be sufficient to compensate for these extra costs. As internalisation-specific advantages depend on institutional conditions such as the information and business environment of the host country, banks usually will invest in countries whose institutional conditions are similar to those in their home country (Claessens and Van Horen, 2008).

However, internalisation theory was seen first as unable to identify the sources of the ownership-specific advantages internalized by a bank and second, as not able to explain the selection of particular entry markets for MNBs (Cho, 1985). The presence of imperfection alone in financial markets may not provide incentives for banks to

become multinational; instead and in addition to their defensive expansion MNBs may follow market-oriented motives in foreign markets.

1.2.4 Spillover effects in the banking sector

While in manufacturing I concentrate the analysis on FDI knowledge spillovers, for the banking sector, the literature identifies the spillover effects and uses a similar framework to that of manufacturing as illustrated in figure 1.1, with just a few specific adaptations. The literature establishes that foreign banks may have some effects on the domestic banking sector of the host country: while foreign banks may have some effects on the domestic banking sector of developing countries they may have no effects on banking sectors in developed countries (Claessen, 2001). I will just mention here some effects that could be generated by the entry of foreign banks in a developing country banking sector, given that chapter two analyses fully theoretically and empirically the aspect of foreign banks' entry in SA banking sector. A brief definition of these effects will be stated here, considering the channels and the determinants of spillover effects similar to those in manufacturing.

1.2.4.1 Direct and indirect effects

The direct effects may consist of domestic banks being more efficient and operating at lower costs than domestic ones (Uiboupin, 2005) and may have higher profits in foreign markets (Berger et al, 2000). Foreign banks may operate with variable prices such as interest rates and fees, may have more experience at pricing the risks of projects. Foreign banks may be more capable at identifying profitable investment activities (Jansen and Vennes, 2006) and may directly increase quality and pricing of financial services (Levine, 1996; Hermes and Lensink, 2004).

Foreign banks may indirectly force the domestic banks to adopt modern practices and technologies used by foreign competitors. These can in turn help domestic banks to become more efficient. These two aspects contribute to the increase in efficiency of domestic banks (Lensink and Hermes, 2004).

Foreign banks may be more interested in larger and less risky customers, leaving the riskier customers and smaller borrowers for the domestic banks. Consequently, this may lead to more bankruptcies and credit constraints on the private sector (Hermes and Lensink, 2004; World Bank, 2002).

1.2.4.2 Channels of spillover effect

Channels of spillover effects are not significantly different from FDI knowledge spillovers channels seen in the manufacturing sector. In the banking sector, the two most important channels of spillover effects from ownership-advantages are demonstration and labour turnover (worker mobility in manufacturing sector). In the banking sector, unlike manufacturing, there are no vertical linkages due to the nature of banking activities, as banks rarely deal with suppliers.

When entering in a foreign developing country that is usually characterised by outdated management skills and poor processes and procedures, services and products (Bascom, 1997), the new foreign banks demonstrate the availability of new services and products, profitability and efficiency, new technology, modern skills, management practices and marketing. Consequently, the domestic bank may both imitate and adopt these new and modern skills (Lensink and Hermes, 2004).

As competition is closely linked to demonstration effects (Blomstrom and Kokko, 1997), it could be considered in the case of the banking sector as a channel of spillover effects. Competition may work as a catalyst, forcing domestic banks to adopt new practices and information technology faster.

Labour turnover, especially from foreign to domestic banks is the other most important channel, because it allows the transmission of management and technical skills (McKendrick, 1994). And from the training that MNBs invest in (Lehner and Schnitzer, 2008) and that is provided to the local force, local employees may get better access to international know-how (Hemmer, 2002). In return the MNBs will benefit as the local employees may have better knowledge about the local market.

1.2.4.3 Determinants of spillover effects

Similarly to the manufacturing sector, absorptive capacity (AC) is important and constitutes a condition to determine spillover effects in the banking sector. It is defined as the ability to use available knowledge, to adopt it according to specific applications, processes and routines, and to apply it to develop new knowledge and new competencies (Cohen and Levinthal, 1990). AC is a condition for spillover effects, as a difference between the level of economic development of home and host countries exists. This difference of economic development is called the technological gap, and is defined as disparities between the technologies and the human capital resources of home and host countries firms respectively (Jacob and Groizard, 2007). The relationship between the two concepts is somewhat complex, as there are different views about the interplay of the two. For Findlay (1978), a larger economic distance between home and host countries may provide more opportunities for spillover effects. On the other hand, spillover effects are negatively correlated to the size of the technology gap between home and host countries (Lapan and Bardhan, 1973). Finally, Dimelis (2005) and Kokko (1994) conclude that a larger technology gap reflects a lower AC of domestic companies and reduces the chance (likelihood) of spillover effects.

When applied in the banking sector, the technological gap will be called the knowledge gap (Hau and Evangelista, 2007) as the banking sector, unlike the manufacturing that uses machinery, equipment etc, uses soft technologies that refers to know-how or management competencies (UNCTC, 1989). Using a similar argument as above, a large knowledge gap may reduce the efficiency (as efficiency represents a measurement of spillover effects, see chapter 2) of domestic banks (Uiboupin, 2005).

We have identified intellectual property rights (IPR) as a transmission factor of spillovers in the manufacturing sector. I have just defined above the concept of soft technologies (UNCTC, 1989) used in the banking sector as equivalent to the concepts of technology used in the manufacturing sector. One of the major differences with manufacturing is that patents cannot protect soft technologies, which refer to know-

how and competencies in the banking sector, because they are embodied in individuals. And only internalisation can commit them to a bank (Grosse, 1996). Therefore, training and labour turnover, seen earlier, work as a transmission factor for soft technologies and produce spillover effects. Similarly to competition, training could be classified as either a determinant of spillover effects or a channel of spillover effects.

Competition too can be considered a determinant for spillover effects, as the extent of spillover effects may depend on the competitive pressure made by foreign banks' entry. If the domestic firms (or banks) are familiar with competition from foreign firms' presence, this may result in a positive reaction from domestic firms (Dunning, 1993). On the other hand, no spillover effects may occur if the foreign firms operate in isolated segments and if technologies and products are very different (Kokko, 1994), meaning that it is unlikely for competition to take place despite the presence of foreign banks.

Chapter 2

2. Theoretical framework for the analysis of spillovers into the SA banking sector

The aim of this chapter is to present the different theoretical models that are being used to anayse how knowledge spillovers occurred through the presence of foreign banks after the apartheid regime in SA. SA is the strongest African economy in terms of GDP (World Bank, 2012) but still it is a developing economy. Many authors such as Lensink and Hermes (2004), King and Levine (1993) conclude that foreign bank entry effects depend on how well-developed the host country economy and financial sector are, arguing that countries with well-developed financial institutions tend to experience more rapid rates of real GDP per capita growth (Levine, 1997; Levine and Zervos, 1998; Rajan and Zingales, 1998).

There are two main streams of analysis. The first one follows the hypothesis developed by Claessens et al. (1998), Micco et al. (2004), who find that in developing countries, foreign banks have higher profits than domestic banks and that an increase in the number of foreign banks reduces the level of profitability and margins of domestic banks. For Micco et al. (2004) however this finding does not hold in developed countries.

Furthermore, the effect on domestic banks depends on the scale of the segment of foreign banks operations. Assuming that most foreign banks operate in the small segment of investment and corporate banking, as is the case in SA, the effect will certainly be smaller. Therefore, in light of these findings and given the atypical nature of the SA economy, it makes the case of SA an interesting one in terms of outcome of the foreign banks' effect.

Therefore this chapter will provide a set of different hypotheses to identify the effects the foreign banks have had on domestic banks since the end of the apartheid regime in SA.

The second stream of analysis is based purely on efficiency measures of foreign and domestic banks. According to Eller et al. (2006), efficiency is a transmission channel for benefits from FDI in the financial sector to the whole economy. It follows a procees in which the change in ownership due to consolidation will increase efficency at the macroeconomic level due to improved managerial efficiency and the use of technology and know-how, resulting in significant economies of scale. Bonin et al. (2005) also share this argument and state that international investors are the source for better services and cost efficiency. Then efficiency may spill over onto the whole financial sector because of superiority in terms of efficency of foreign banks from developed economies. The reasons for that are that foreign banks use cheaper funding and have more diversified portfolios that generate lower risk premia on their interest income. Consequently competition may occur and banks may provide cheaper loans, which in turn facilitates investments (Eller et al., 2006). But there is also a relationship between the financial sector efficiency and economic growth that translates into an increase of GDP (Levine, 1993; Koivu, 2004; Rossi and Volpin, 2004; Cottarelli et al., 2005; and Eller et al, 2005).

Therefore the main hypothesis that this dissertation will test is whether or not the foreign banks are more efficient than domestic banks in SA and why.

This chapter first reviews the different mechanisms of spillovers from the two streams of analysis presented above that form the theoretical framework of this study. Section 2.1 presents the theory on competition and spillover effects, followed by a set of different hypotheses based on the existing literature, while section 2.2 presents the theory and its hypothesis on Efficiency as a measure of knowledge spillovers.

2.1 Competition and FDI spillovers: theory and hypotheses

This section presents the first part of the two-stage theoretical framework that is being developed to study spillovers in the SA banking sector. The effect, subsequent

to foreign banks' entry, can be direct, indirect or both and will depend on many different factors in the host country (size of FDI, market segment, and host country economic conditions). Direct effects will consist of providing improved quality and better pricing of financial products, better portfolio diversification and risk management or simply new products and services for businesses and individuals in the domestic market. Indirect effects may be on domestic banks' performance in terms of costs, profit margins and loan loss provision. It may be characterised by domestic banks becoming more efficient. New regulations can be regarded as an indirect effect. Alongside the indirect effects are spillovers created by the competition that increases the pressure on domestic banks to adopt new banking practices and procedures. Another spillover effect may be through higher turnover of personnel of foreign and domestic banks. The technological gap between foreign banks and domestic banks can create favourable conditions and allow knowledge to spill over but taken alone it may not be sufficient to achieve any knowledge spillover. Figure 2.1 summarises the different aspects of the effect of foreign banks entry that are discussed below.

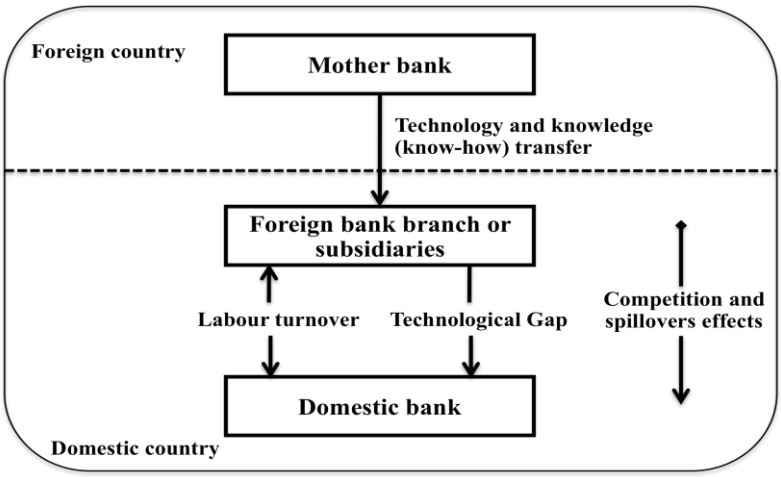
2.1.1 Effects of foreign banks entry on domestic banks performance

When entering a new country and especially a developing one, foreign banks may have to overcome difficulties such as language and cultural barriers, currency and regulation differences. They will have to understand and adapt quickly to changing market characteristics, as the business relations require local information and local strategies (Berger et al., 2000). Consequently, foreign banks may experience difficulties in building relationships not only within the retail sector but also with small and medium enterprises (SMEs). But on the other hand foreign banks that are used to operating in competitive markets may find it easier to adjust some component of prices such as interest rates and fees and identify profitable investment activities (Jansen and Vennes, 2006).

Better investment skills in providing products and services and superior management skills that create new opportunities to diversify risks, and better quality and pricing of financial products, or simply new products and services for businesses and

individuals in the domestic market (Levine, 1996) represent together characteristics of the presence of foreign banks and help the foreign banks' branches or subsidiaries to achieve higher profits in foreign markets (Berger et al., 2000). In addition, mother banks provide direct transfer of management skills and practices that ensure competitiveness of their subsidiaries (Uiboupin, 2005) as seen in figure 2.1. Foreign banks may have a stronger and less volatile lending growth than domestic banks (Dages et al., 2000). Studies from Claessens et al. (1998) conclude that foreign banks in developing countries have higher profits than domestic banks.

Figure 2.1: Effects of the foreign banks entry



Source: Uiboupin (2005) figure adapted by the author

Micco et al (2004), show that state-owned banks in developing countries are less profitable and have higher costs than private banks. Berger et al. (2005) find that Chinese state banks were less efficient than foreign banks. Consequently, according to the arguments provided above about foreign banks' presence and depending on their ownership-specific advantages (as seen in the previous chapter), foreign banks may have direct effects on the domestic country banking market and contribute to directly increase quality, pricing and availability of financial services for both domestic banks and individuals. (Levine, 1996; Hermes and Lensink, 2004). Furthermore, foreign banks may directly contribute to the improvement of institutional aspects of host developing countries such as banking regulation and supervision (Claessens, 2006; Goldberg, 2007; Lensink and Hermes, 2004).

The entry of foreign banks may have indirect effects not only on domestic banks' performance but also on the entire domestic banking system and the domestic economy. Claessens et al. (1998) was mentioned earlier suggesting better performance that foreign banks show when entered developing economies, but the authors also find that an increase in foreign banks reduces the level of profitability and margin of domestic banks. Furthermore, as illustrated in figure 2.1, foreign banks may contribute to the changing behaviour of domestic banks, first by benefitting from spillover effects in adopting better managerial practices and technologies from competitors. Second, foreign competitors may force domestic banks to become more efficient in the way they operate. As a consequence, both types of externalities can contribute to improve the level of efficiency of domestic banks through lower costs or lower interest margins (Lensink and Hermes, 2004). In analysing the relationship between financial liberalisation and banking efficiency, Levine (2001) finds that significant presence of foreign banks increases the efficiency of the domestic banking system by decreasing banks' overhead costs and profits. Other studies show a positive correlation between foreign bank ownership and stability of the banking system (Caprio and Honahan, 2000; Goldberg et al., 2000). In their study Dages et al. (2000) find that the variety of ownership contributes to greater credit stability during times of economic downturn or weakness of the financial system. Demirgue-Kunt et al. (1998) provide evidence that foreign entry was usually associated with a lower incidence of local banking crises.

2.1.2 The complex relationship between bank entry and the technological gap

As seen in the definitions offered in chapter 1 about the role of a firm's, a region's, an industry's or a country's own technology or productivity in capturing knowledge spillovers, the general literature provides two alternative views. First, some argue that increased technological backwardness should enhance knowledge spillovers as the potential for knowledge spillovers is sufficiently large in that case (Findlay, 1978; Wang and Blomstrom, 1992). Secondly, others claim that firms need a minimum amount of absorptive capacity to be able to capture knowledge spillovers (Cohen and Levinthal, 1990; Glass and Saggi, 1998). Such absorptive capacity is created from investments in research and development (R&D) or human capital and provides

elementary knowledge or technology that are necessary to assimilate and exploit external knowledge. Providing that the extent of spillovers depends on difference in economic development between home and host countries, this difference will determine the size of both the technological gap between each country's companies and the absorptive capacity of domestic firms. Thus, a technological gap can be defined as the disparities between the technologies and human capital resources of home and host countries' firms (Jacob and Groizard, 2007). Absorptive capacity, according to the definition above, will provide the ability to adopt available knowledge and to apply it in order to create new knowledge and new competencies (Cohen and Levinthal, 1990; Narula and Marin, 2003).

These definitions implicitly suggest a complementary relationship between backwardness and absorptive capacity. Findlay (1978) notes that the greater the backlog of available opportunities the greater the pressure for change within the backward region. In other words a larger economic distance between home and host countries will increase the chance for spillover effects. However, to increase the chance of spillover effects, a minimum level of absorptive capacity will be required. In other words, the technological distance between the two countries should not exceed a critical level. To conclude, the critical level of technological gap is essentially determined by the complexity of foreign technologies, as well as the extent of and the increase in market penetration by foreign companies (Perez, 1997).

In the banking sector this relationship is valid on condition that the terminology "technology" is adapted. In heavy industry, the term technology refers to machinery's hard technology that includes equipment and industrial processes. Soft technology largely available in the banking sector would refer to know-how and management competencies, technical, professional and other qualifications (UNCTC, 1989). This definition is confirmed by Romer (1993), who defines the idea of a gap that includes a technology gap as value-generating activities such as marketing, distribution, payment and information systems, business processes, quality controls and staff motivation. From this broader definition and by analogy it can be established that hard technology in the banking sector can be matched to information and communication technologies whereas soft technologies would include business

experience, management, financial and marketing competencies, and technical skills. Patents or intellectual property rights do not protect these competencies because they are mostly embodied in individuals (Grosse, 1996). Similarly, a technological gap in the banking sector will refer to the differences regarding applications of bank-specific information and communication technologies as well as a knowledge gap (Hau and Evangelista, 2007) that refers to gaps with regard to soft technologies (for example managerial gaps and skills gaps). Applying the above technological gap theory would mean that the condition to reduce the knowledge and technological gap between domestic and foreign banks resides in the diffusion of management methods, skills and technologies (information and communication technologies). And similar to the industry case, the extent to which spillovers take place will depend on the size of knowledge and technological gap. Furthermore, a smaller gap would indicate a higher absorptive capacity of domestic banks; however a bigger gap would reduce the ability to learn. In other words more absorptive capacity helps the domestic banks to catch up with foreign competitors, but too big a difference not only in terms of management practices and skills of staff but also in terms of ability to implement technologies could weaken absorptive capacity and reduce spillovers to the advantage of the foreign banks. A large knowledge gap may reduce the efficiency of domestic banks and would result in a crowding-out (Uiboupin, 2005). In addition (and this may apply directly in the case of this SA study) if foreign banks operate in segments that domestic banks are not present or specialised in, such as for instance export financing or export-oriented domestic companies, then the presence of the foreign banks will have a very limited effect.

In SA, the re-entry increased competition in the domestic banking market and contributed to the modernisation of banking capabilities. In 2010, the number of foreign bank branches and foreign owned-banks, which represent 63% of the total banks in SA, surpassed the number of domestic SA banks. The growing number of foreign bank branches and foreign ownership in the banking sector raises the question of the effective role played by foreign banks in the most important African economy. Therefore it is reasonable to analyse the effect of the foreign banks on the domestic banks in SA.

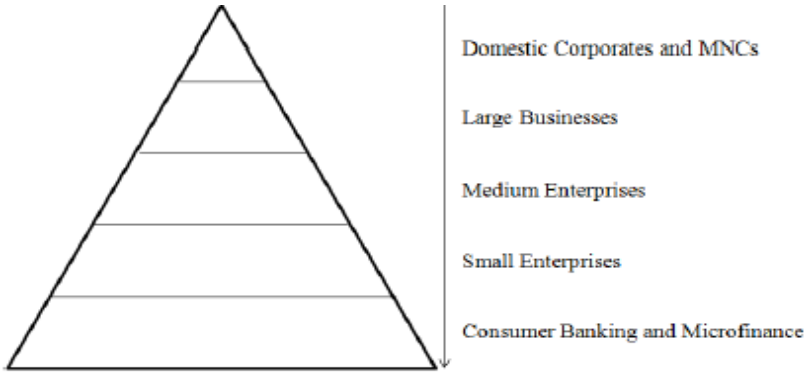
2.1.3 FDI Spillovers and competition due to foreign banks entry and domestic market segmentation

Blomstrom, Globerman and Kokko (2001) state that more competition may make MNEs transfer more high-quality technology to their subsidiaries, increasing the potential of spillovers. The theoretical models of Glass and Saggi (1998), Wang and Blomstrom (1992) tend to validate the findings on potential spillovers. In developing countries' banking sectors, domestic banks, which are less advanced and usually use obsolete banking practices, may be forced to adopt new practices under pressure from foreign banks. This competitive pressure in the short term may have negative impacts on domestic banks' costs, as new investments are required, but in the long run these new investments may help them become more efficient. As Lehner and Schnitzer (2008) argue in their theoretical model, they assume that spillover effects from foreign banks' entry arise if domestic banks get access to the imperfect screening technology of foreign banks. Domestic banks have to invest in order to adopt the foreign bank's technology. The incentives of domestic banks for investing decrease with spillover effects because of smaller returns on investment.

But the effect on competition could depend not only on the extent of FDI but also on the objectives of the foreign banks. For instance, if the objective of the foreign banks is to be involved in limited market segments, then the effect on competition could be limited. This means that spillovers are unlikely to occur because the foreign banks operate in isolated market segments and the technologies and products might be very different from those of domestic banks (Kokko, 1994). On the other hand, if the objective is to be involved in a larger share of the market then the effect on competition could be larger (see banking market segments in figure 2.2). Another effect on competition is the failure of some domestic banks or the consolidation of the domestic banking sector. Domestic banks may not be able to compete with foreign banks and consequently they may leave the market whether through acquisition or bankruptcy. But from an economic perspective this effect would mean that less efficient banks are replaced by more efficient banks; however, this would generate major disruptions in areas such as employment, with major political repercussions.

Competition is closely linked to demonstration effects (Blomstrom and Kokko, 1997) as defined by Saggi (2002); occurring through the imitation and reverse engineering of MNE's products and practices by the local (host country) firms. This definition fits the understanding of knowledge spillovers. In entering into a domestic market of developing countries, foreign banks demonstrate that new financial services and products exist; they also demonstrate the profitability and efficiency of information and communication technologies, and modern skills as well as marketing and management practices (Lensink and Hermes, 2004).

Figure 2.2: Market segments in the banking sector



Source: (IFC, 2008)

Thus, domestic banks may imitate and adopt these modern skills and competencies (Lensink and Hermes, 2004). However, the demonstration effect is hard to determine and studies yield very conflicting empirical results and none of them specifies in what way demonstration effects take place.

2.1.4 Hypotheses on competition and FDI spillovers

According to the theoretical framework established earlier, the presence of foreign banks in SA should increase competitive pressure on domestic banks. Claessens et al (2001) find that in developing countries, foreign banks have higher profits than domestic banks and an increase in the number of foreign banks reduces the level of profitability and margins of domestic banks. SA is a developing country (World Bank Data, 2013; IMF, 2012) and Claessens' findings should hold. Although Micco et al (2004) confirm Claessens' findings, they show that this finding does not hold in developed countries. However, given the scale of SA banking market development,

and the fact that the share of foreign banks is just below 30%, suggesting a concentration of SA total assets in the domestic banks (see figure 2.3), it would be fair to assume that foreign banks' entry has no effect on the SA domestic banks or if any effect, it should be either small, or localised to a particular market or segment, or unclear. To test this I establish the following hypotheses derived from Claessens (2001) and Uiboupin (2005) studies.

Studies about foreign banks entry and net interest margins establish that foreign banks entry is associated with higher interest margins in the short run (Hermes and Lensink, 2004). On the other hand, other studies find no statistical significance between net interest margin and foreign banks' share (Zajc, 2003). This could mean that the net interest margin is possibly related to other factors such as money market interest rates. In addition, the re-entry of foreign banks in SA started six years before the time period of this study. If there were a short-term rise in competition in the market when the foreign banks' share increases, it would be more difficult to capture this effect. Furthermore and perhaps more importantly, according to the theory above, foreign banks possess net superiority in terms of technologies and banking practices. And pressure from foreign banks should encourage domestic banks to operate more in other segments of the market where the presence of the foreign banks is relatively limited. Consequently, domestic banks should be able to increase their net interest margins.

Ch2/H1: The net interest margin of SA banks is either ambiguous or positively correlated with foreign banks' share in SA.

Increased competition can decrease incomes from lending activities and usually an increase in foreign banks' share in the market is associated with higher competition effects. Therefore, domestic banks could try to increase their non-interest incomes to offset their diminishing incomes from lending activities (interest income). However, increasing competition due to foreign banks' entry could decrease the non-interest incomes of the domestic banks that try to offer better loan conditions and prices to their customers. So the foreign banks' entry can have either positive or negative

effects on non-interest incomes of domestic banks in SA, which helps to set the following hypothesis:

Ch2/H2: The non-interest income of a domestic bank in SA is either positively or negatively correlated with the foreign banks' share in SA.

Claessens et al (2001) find that in the market a higher foreign banks' share is associated with lower overhead costs (all operating expenses except interest expenses) of banks. This means greater efficiency. However in developing economies this relationship could be opposite in the short run, as the domestic banks react to foreign banks entry by having higher overhead costs. The reason is that domestic banks want to keep their image and their technological base in order to remain competitive in the market. That reason too illustrates directly the demonstration and spillover effects. By entering into the market, foreign subsidiaries demonstrate new technologies and practices, new products and services they obtain through the ownership-specific advantages from their parent banks. The domestic banks may therefore learn and benefit from new training and investment programmes that can impact (increase) directly their overhead costs. This increase in overhead costs can be explained in the case when a foreign bank acquires a domestic bank as some adjustment costs are involved. Nevertheless, foreign banks tend to have a more highly developed technology base, which helps lower overhead costs in the long run, while in the short-run their overhead costs may well be higher (for example due to higher salaries paid to expatriates). This allows the following hypothesis:

Ch2/H3: The overheads of a domestic bank in SA are positively correlated to the foreign banks' share in SA.

The overall profitability of a bank is given by the ratio of the bank profit over its total assets. As the banks' entry usually increases market competition then a negative effect can be expected on domestic banks' profitability. Many studies find that foreign banks' entry decreases the profit of domestic banks (Claessens et al., 2001; Hermes and Lensik, 2003; Zajc, 2002; Unite and Sullivan 2003). I can therefore set the following hypothesis:

Ch2/H4: The ratio of pre-tax profit to the total assets of a domestic bank in SA is negatively correlated to the foreign banks' share in SA.

The financial development of a market influences the effect of foreign bank entry (Hermes and Lensink, 2004). The entry of foreign banks in a developed market would have little or no effect at all. This is because the potential for domestic banks to learn from foreign banks may not be high. This is especially interesting in the case of the SA market. As SA is a developing country (World Bank Data, 2013; IMF, 2012), it is assumed that in this case, the foreign banks are more developed than domestic ones. However as stated earlier, the SA financial sector is well developed and integrated. The literature shows that banking FDI from a developed country to another developed country has no effect. It could be suggested then that the way foreign banks' share in the market influences the performance of the domestic banks depends on the financial development of that market. It is likely that the development of the banking market is important, specifically, for overhead costs and non-interest activities. In more advanced markets, it is assumed that investment in banking technology has already been made. Consequently, overhead costs increase more in less developed markets than in more developed markets. The same argument can be used for non-interest income in developed markets where competition is already high, meaning that domestic banks have already moved to non-interest activities; therefore, foreign banks' entry may decrease non-interest incomes because the competition effect is stronger than the adjustment effect. This is strongly related to the technology gap hypothesis that was explained earlier in the theoretical framework.

Ch2/H5: The effect of foreign banks entry depends on banking market development in SA.

To test some or all aspects of these hypotheses this dissertation proposes and uses two different models. The first one, presented in chapter 3, uses survey methodology to analyse the different impacts of the re-entry of foreign banks in SA after the SA regime change, and the results of the survey are discussed in chapter 4. A second model, also explained in chapter 3 and whose results are presented in chapter 6, tests

empirically the four hypotheses and generalises the findings of the existence of competition effect on SA domestic banks due to the foreign banks re-entry.

The primary reasons why this dissertation uses two different models, is that it was impossible to obtain any data from the foreign branches that are operating in SA. Annual reports of foreign branches on SA activities only are not available. Therefore using survey methodology allows us to address the issues of spillovers and competition directly to the foreign banks and branches and increases the size of the panel for greater accuracy of the role of the foreign banks in SA. But providing that the majority of the foreign banks and branches in SA operate essentially in the lucrative segment of wholesale banking, any spillover and competion effects if they exist would signal that these effects are localised in that particular segment and may not necessarily imply a generalisation of these effects into the entire SA banking sector. However, the domestic banks, under the pressure that foreign banks may exert on investment banking activities, would want to make use of technology, know-how and management practices by adapting them to the retail banking activities and become more efficient and and profitable. But the outcome of this straightforward assumption is not guaranteed. And this is why using these two methodologies becomes very pertinent.

2.2. Efficiency as a measure of knowledge spillovers: theory and hypothesis

This section presents the second part of the two-stage theoretical framework that is being developed to study spillovers in the SA banking sector. It focuses on efficiency. Productivity and efficiency are used as measures of knowledge spillovers and spillover effects. The literature tends to use different measures of productivity such as total factor productivity or labour productivity, to identify the existence of knowledge spillovers in the manufacturing sector. This can make comparisons rather challenging. Holger, G. and Greenaway (2004) conducted the most recent comprehensive survey of empirical research on FDI spillovers and surveyed at least 40 econometric studies (as some studies contain more than one case) at the microeconomic level from which 20 cases find evidence of positive spillovers, 17

cases find no significant evidence of spillovers and 8 find evidence of negative spillovers. Aitken and Harrison (1999) find that foreign equity participation is positively correlated to productivity. Barrel and Pain (1999) find evidence of significant spillovers from inward investment on technical progress. Markusen and Venables (1999) find positive spillover effects on the development of domestic firms through linkages with domestic suppliers.

The literature indicates that efficiency is often used as a measure of the impact of FDI on the performance of firms. It would therefore not be surprising, as suggested by Meade (1968) that inefficient firms would be taken over. Such an argument would imply that firms with a low level of efficiency would change ownership more often than other firms. Unfortunately, this argument is not strong enough in the light of a significant number of empirical studies, such as Ravenscraft and Scherer (1989), which find no evidence of acquisitions improving efficiency.

However McGuckin and Nguyen (1995) support the argument in which acquisition and change of ownership are determined by the desire to acquire efficiency rather than to obtain efficiency through managerial discipline. According to this theory, firms with higher efficiency could experience change in ownership more frequently than other firms leading to an improvement in their overall efficiency. Unfortunately, as Okeahalam (2008) pointed out, very few studies have been carried out on the preference of foreign firms when they buy domestic firms, and even less research has been done on the impact which the industrial structure in the domestic market of the foreign (acquiring) firm might have on the efficiency level after foreign entry has taken place. This is interesting because the foreign firm coming from a competitive market may adopt different behaviours. Depending on its size and the structure of the market, it can be assumed that the firm may behave in a monopolistic way in order to accrue rent that it may not be able to accrue in its own market under similar conditions, where the level of efficiency is likely to be lower. Alternatively, the firm may decide to compete and then see the level of efficiency rising. Therefore, in the banking sector, a foreign bank, which is inefficient or used to operating in an oligopolistic environment, and which decides to enter a market, is unlikely to lead to

an improvement in the performance of firms in the domestic market. In this case the benefits of FDI (or internationalisation) are likely to be small.

2.2.1 Theory of efficiency to measure knowledge spillover

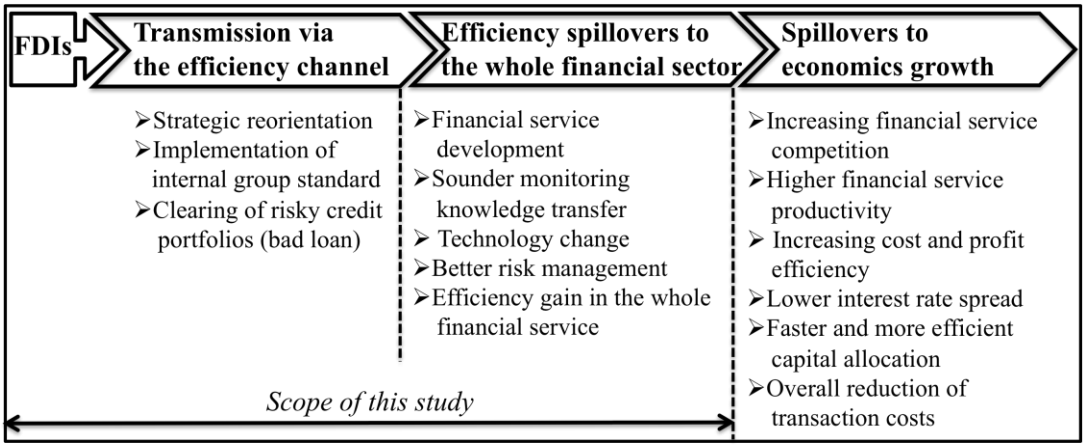
Eller et al. (2006), provides a three-step framework as seen in figure 2.3 that describes how efficiency is a transmission channel for benefits from FDIs in the financial sector to the whole economy.

The first element of the model is the transmission via the efficiency channel. For instance Kosak and Zack (2005) find that consolidation resulting from the change of control in ownership in banks in Central and Eastern European Countries (CEECs) increases banks efficiency. Banks realise efficiency gains at micro and macroeconomic levels. At microeconomic level, a bank efficiency gain will be obtained from improvement in managerial efficiency usually measured by x-efficiency (and called cost efficiency) and illustrated by input allocation and use of technology (defined in the methodology - chapter 3). As a result the bank will achieve some economies of scale and scope. But the presence of foreign ownership could increase managerial cost (also called profit efficiency) by transferring superior management skills, management systems and technology to the newly owned banks (Amel et al., 2004). This process was described in figure 2.1 when discussing technology and knowledge transfer in the previous section of this chapter.

At the macroeconomic level, a bank will need to diversify risks and lower transaction costs. This will improve pooling and allocation of available financial resources to high-productivity projects (Fink et al., 2004). This will enhance investment activities and stimulate economic growth (Hollo and Nagy, 2006).

All components of the transmission via efficiency channels such as strategic reorientation, implementation of internal group standards and clearing of risky credit portfolios support the hypothesis in which foreign-owned banks provide efficiency gains. Bonin et al. (2005) share this argument as they conclude that international investors provide better services and are more cost-efficient.

Figure 2.3: Efficiency effects triggered by FDIs



Source: Eller et al., (2006) adapted by the author

But many others do not find similar results, as cost efficiency does not necessarily depend on ownership (Green et al., 2005) and especially in the short term after the operation of acquisition that necessitates expenses from the deal and the implementation of management techniques and technology to the acquired banks. To provide an explanation for these conflicting arguments, Papi and Revoltella (2003) argue that a threshold for foreign ownership is needed to change the efficiency level of the acquired bank.

In the case of efficiency spillovers onto the whole financial sector, the second component of the theoretical model figure 2.3, foreign banks from developed market economies that are usually more efficient and use cheaper funding as well as having more diversified portfolios, will aggregate lower risk premiums in their interest income. From this, competition may emerge and the foreign banks may contribute to the decrease in banks' interest rate margins, which in turn may contribute to a reduction of companies' cost of borrowing and facilitate investment (Eller et al., 2006).

Drakos (2003) finds that the new foreign entrants, via privatisation programmes that took place in many CEECs, exacerbated local and regional competition. This can be explained by the fact that when acquisition takes place, the new foreign owner introduces new market policies that trigger competition (Eller et al., 2006). However minority participation or greenfield investment might add new competitors with

perhaps no direct impact on competition. The fact that the domestic banks might be able to compete with the foreign-owned ones will contribute to improve the efficiency of the domestic banking system (Claessen et al., 2001). However, the domestic banks may develop other services that are more tailored to the needs of local customers thus avoiding competition on price with the foreign banks (as shown in previous section). As a consequence, the domestic banks may see their profit margin increase or at least not be affected as the revenues generated by these new and tailored activities services to local customers may offset some losses caused by competitors.

Efficiency spillovers may not occur and the impact of the foreign banks in fact may be negative. Assuming that competition increases, waves of cross-border mergers and acquisitions may take place, contributing to increasing concentration in the financial systems of emerging market economies (Bis, 2004). This can accentuate the formation of monopolistic competition[2] thus leading to negative aspects of market power from banks that negatively affect the possibility of more efficiency gains.

In short, these different aspects show that the establishment of foreign ownership in developing economies can have a direct impact on domestic banks' performance (as already mentioned in previous sections) but more precisely on efficiency gains. Consequently, greater efficiency gains can create conditions that put pressure on the entire financial system to become more efficient forcing in some cases lending rates and interest margins to decrease. But as observed, evidence is conflicting and is not always conclusive.

Finally, the last component (which is not part of the scope of this study), spillovers onto economic growth, consists of the relationship between the financial sector efficiency and economic development that translates to an increase in GDP. King and Levine (1993) find that efficiency, overall costs of financial services and depth and breadth of intermediations have an impact on economic growth. Eller et al (2005) show evidence of how privatisation and foreign ownership contribute to greater

[2] Mamatzakis et al. (2005) study the South Eastern Europe over the period 1998-2002 and find evidence of monopolistic competition.

efficiency in capital allocation. Levine (1997) shows that higher financial sector efficiency induced by higher financial sector competition should result in an overall reduction of transaction costs, which in turn allows the cost of capital to decrease as the interest margin declines. Koivu (2004) shows that increasing financial sector efficiency impacts on growth increases, because as available capital becomes cheaper, it encourages corporations to invest more and consequently increases economic development and growth (Rossi and Volpin, 2004). However, according to Cottarelli et al. (2005) an increase of competition may involve systemic risk, such as credit bubbles.

2.2.2 Hypothesis on efficiency as measure of knowledge spillover

The first question is whether or not foreign-owned banks in South Africa are more efficient than domestic-owned banks. The results could validate chapter 6's results based on hypothesis 4 stipulating that an increase in foreign banks' share decreases domestic banks' performance, in particular domestic banks' pre-tax profit. This may or may not translate into higher efficiency for foreign-owned banks. However, as already explained, better performance does not automatically mean greater efficiency and vice versa. Moreover higher efficiency of foreign banks could be the result of greater competition, which in turn could reveal the existence of possible knowledge spillovers as explained in the theoretical framework fig 2.1. It is important to note that it is the bank business model that determines the level of efficiency. For instance a bank that puts more effort and resources into customer services may see its efficiency deteriorate but may report better performance measures. I can therefore set the following main hypothesis:

Ch2/H6 on efficiency: foreign-owned banks in South Africa are more efficient than domestic-owned banks.

To test this hypothesis on efficiency this study designs and uses a two-step approach, which is described in chapter 3 and whose results are presented and discussed in chapter 7. This two-step approach provides:

1. a measurement of an efficiency score for both categories of banks SA domestic and foreign-owned banks using x-efficiency;
2. an assessment of the main factors that explain any efficiency gap using the efficiency scores as the independent variable in a Tobit regression;

From this efficiency measure that will be provided from (1), foreign-owned banks should be expected to perform better for the following reasons:

- First, a strong link between foreign and private ownership is usually observed, especially in the context of developing economies. Foreign-owned banks may benefit from better control from private shareholders who provide better incentives for managers. In the case of the SA banking sector this argument could be refuted. Contrary to many developing economies where most banks are state-owned, all SA banks have been privately owned. However, this argument should not be entirely rejected, as for the last ten years four big banks have been dominating the market. They might have adopted a monopolistic behaviour similar to state-owned banks.
- Secondly, foreign shareholders, in general foreign-banks, may contribute to spread their know-how and risk analysis methods to other organisations (as already discussed earlier). The literature produces two types of empirical studies supporting the view that foreign-owned banks perform better. First, and as already described, foreign-owned banks have a performance advantage in developing countries (Berger et al., 2000). Second, many studies have compared performance of public and private companies (Konnings, 1997; Estrin and Rosevear, 1999) and produced no conclusive evidence that privately-owned companies in developing economies perform better. In summary the empirical literature seems to provide conflicting evidence for the general assumption that foreign-owned banks perform better than domestic-owned banks in developing economies.

Ownership is not the only factor identified as responsible for differences in efficiency. Other factors such as banks managers' behaviour and the characteristics of banks account also explain differences in efficiency scores, and this will be evaluated in (2). First, as Mester (1996) pointed out, differences in risk preferences might

explain discrepancies in efficiency and such differences between foreign-owned and domestic banks may find their origin from discrepancies in size or structure. However, adjusting size and structure of activities takes time due to the significant adjustment costs involved, that in turn influences the level of capital invested. In the case of SA, the argument of time adjustments is very limited, as the foreign bank branches have been operating since their re-entry in the SA market around 1994-95 and many foreign branches such as the Athens Bank have been operating even longer as they never left SA. It can be argued that they have had time to adjust their size and structure. But the same argument of time adjustment is valid in the case of ABSA, whose new owner became Barclays in 2005 and ABSA accounts for around 20% of the total SA market. This is the reason why ABSA, in this chapter is treated as a domestic bank, but is subject to a specific case study in the next chapter.

Finally, some changes have occurred in the SA banking market in the last 10 years. It may be legitimate to assume that recent waves of FDI may have increased competition. Interest rates have fallen on average from 8.73% in 1995 to 4.09% in 2010. And equally important, the range of financial products has significantly increased during this period, with derivative products (futures, options and forwards) or other financial products such as forfeiting, revolving credit cards and asset management. Banks, especially the four big ones have formed financial groups to provide these and other services bringing a new level of services and sophisticated operations to the SA market.

2.3. Discussion and conclusion

This chapter defines the theoretical framework in which this dissertation analyses knowledge spillovers into the SA banking sector. It establishes the fundamental hypothesis on how the presence of foreign banks in a developed country induces knowledge spillovers and presents the case of SA through a survey, which is to my knowledge the first that has been undertaken.

The framework states that the entry of foreign banks into a developing country has direct and indirect effects on the performance of the domestic banks. Direct effects will consist of providing improved quality and better pricing of financial products, better portfolio diversification and risk management and new products and services in the domestic market. Indirect effects may be on the domestic banks performance in terms of cost, profit margin and loan loss provision and efficiency.

In addition to direct and indirect effects, the entry of foreign banks into a developing country banking market induced knowledge spillovers by creating competition. The competition increases pressure on the domestic banks to adopt new banking practices and procedures. But in order to adopt these new practices and procedures a minimum technological gap between foreign and domestic banks is needed. This constitutes some favorables conditions to create knowledge to spill over.

However, it was identified that taken alone, the technological gap is not sufficient to create conditions for competition and therefore knowledge spillover. This depends very much on the market segment in which the foreign and domestic banks operate. As stated earlier, the effect of competition could depend not only on the extent of FDI but also on the objectives of foreign banks. If the objective of the foreign banks is to be involved in a limited market such as the wholesale market, as is the case in SA and confirmed by the survey, then the effect on compettion could be limited. Consequently spillovers are unlikely to occur because foreign banks operate in isolated market segments and the technologies and products might be very different from those of domestic banks (Kokko, 1994). On the other hand if the objective is to

be involved in a larger share of the market then the effect on competition might be larger. Another factor that can also influence knowledge to spill over is labour turnover of domestic and foreign banks and this theoretical aspect is developed further and tested in chapter 4.

This chapter sets the hypotheses for an empirical model testing the impacts of the re-entry of foreign banks in SA on the performance of SA domestic banks. The empirical model is explained in chapter 3, the results of which are analysed in chapter 6, which also picks up on the existence of some aspects of competition effects already suggested from the survey.

This chapter also identifies a model from Eller et al., (2006) which establishes a direct relationship between efficiency and FDI spillovers and describes how efficiency is in fact a transmission channel for benefits from FDI in the financial sector to the whole economy. The model's first component, the transmission via the efficiency channel, provides an explanation of how a threshold for foreign owership is needed to change the efficiency level of an acquired bank. The second component, efficiency spillovers to the whole financial sector, shows how competition created by the presence of more efficient banks (using cheaper funding and having more diversified portfolios and lower risks premium in their interest income) in a less developed economy, may force domestic banks to decrease their interest margin and reduce cost of borrowing and facilitate investments. Therefore, this dissertation uses an x-efficieny model to calculate the efficiency of both categories of banks, foreign and domestic, that operate in SA. The x-efficiency model is described in chapter 3 and the results are presented and discussed in chapter 7. The results generalise the existence of FDI spillovers into the entire SA banking system.

Chapter 3

3. Data and methodology of all empirical models

This chapter presents the methodologies for the empirical work whose results are analysed in chapters 4, 6 and 7. Chapter 4 presents the results of a survey, chapter 6 of a model of competition and chapter 7 of a model of efficiency. This chapter therefore presents the data and methods issues for each of these subsequent chapters, starting with the survey.

It then goes on to present both the methodologies and the data of two empirical models, that show the existence of both competition and spillover effects in the entire SA banking sector. They help generalise the results from the findings from the survey in chapter 4 and the case study in chapter 5.

The first model is derived from Claessens (2001) and Uiboupin (2005) and established the four hypotheses (developed in chapter 2) from which the re-entry of foreign banks in SA has direct and indirect impacts on the performance of SA domestic banks. Direct impacts could be an increase or decresase of the SA banks net interest margin, an increase or decrease of the non-interest income, a increase of total costs and a decrease of pre-tax profits. All these direct impacts are a consequence of competition due to the re-entry of foreign banks in SA. Chapter 2 postulated the existence of knowledge spillovers into the higher segment of SA corporate banking, and these impacts, if they are statistically significant, could lead to a general conclusion of competition and spillover effects into the entire SA banking sector.

The second model helps address the direct relationship between efficiency and FDI as explained in chapter 2 and tests the hypothesis on whether or not foreign-owned banks in SA are more efficient than domestic-owned banks. The reason for this is that

better performance does not automatically mean higher efficiency and vice versa. Because it is the bank business model that determines the level of efficiency, therefore, if a bank puts more effort and resources into customer services, it may see its efficency deteriorate but may report better performance measures. This implies that if the first model concludes that there has been better performance by the foreign banks this does not automatically signify better efficiency. However, greater efficiency of the foreign banks could be the results of greater competition. Consequently, showing a competition effect from model one, confirmed by a greater efficiency of foreign banks from this second model, leads us to argue for the generalisation of competition effects and knowledge spillovers into the entire SA banking system.

3.1. Survey Methodology for Analysis on foreign banks and branches operating in SA

This section is dealing with the survey methods used to analyse various aspects of the strategy of foreign banks.

3.1.1 Survey methodology

The choice of survey as a methodology to search for the existence of knowledge spillovers was guided by the fact that the results from the empirical models used in chapter 6 do not show precisely the way the foreign banks contributed to diffuse their knowledge and subsequently how spillover effect occured. Surveys are usually used not only to gather information from a group of people (Pinsonneault and Kraemer, 1993) but also to evaluate demand and to examine impacts (Salant and Dillman, 1994). Survey methodology can elicit information about attitudes that would be difficult to evaluate using observational techniques (McIntyre, 1999). There are different types of survey but the one used here is a written survey based on a questionnaire. A survey process includes the survey design that involves two steps (Levy and Lemeshow, 1999):

1. The first step consists of developing a sampling that describes the procedure. The procedure is used to select the sample and its size, and the choice of channel through which the survey will be administrated: telephone, interview, postal mail, email, etc (Salant and Dillman, 1994),

2. The second step consists of the model for obtaining the population estimate from the sample data.

This survey uses only two types of question: questions that describe and evaluate people, place and events (QPPE) and questions that measure knowledge (QK). QPPE asks the respondents to make self-assessments and each question should be carefully examined to ensure that it is not subject to different interpretations (Fowler, 1995). QPPE can be divided into three categories: evaluative continua, agreement continua and rating scale. This survey uses numerical evaluative continua, which consists of multiple-choice questions with four response options. I was aware that numerical scales could be misinterpreted. Manipulation may occur for instance when a respondent begins at one end of the numerical scale and works up or down from there to end up with their response. The same manipulation can occur when the respondent starts at midpoint of the numerical scale and formulates their response from that point. However, in this case each choice was independent from one another, reducing consequently the risk for manipulation. QK is used to assess respondents' familiarity with a subject or their ability to provide informed responses. The rating scales used for this particular question are usually the true-false or yes-no. In this survey yes-no is used. One particular risk resides in the ability of the respondent to provide accurate answers. To reduce this risk some plausible but incorrect answers can be included intentionally in order to distinguish those who know from those who do not (Fowler, 1995). In this survey, the respondents were carefully chosen. They are usually top managers who have been working long enough in the organisation or in many cases who were the architect of the banks' strategy and helped in implementing it. In selecting this particular population, the risk of an unknowledgeable population that might provide wrong answers is reduced.

In a survey there are multiple sources of measurement error. In this case the most common are that respondents' responses may not reflect the true beliefs, attitudes or behaviours of the respondents; they may provide intentionally false responses to invalidate the survey's results or choose not to reveal their true insight for personal reasons, reasons that may not be rational or even understood by the respondent (Browne and Keeley, 1998). This is the reason why other guarantees to the

respondents were given: the questionnaire results are completely confidential (no disclosure of name or identification), the respondents were given the choice not to take part in the survey and they were given the choice to answer all or part of the questions. Finally a consent form was sign by the respondents and the research investigator to seal the guarantee of confidentiality.

In terms of the execution of a survey there are many aspects to take into consideration. Salant and Dillman (1994) stress the importance of maintaining the confidentiality of individual responses and reporting survey results only in the aggregate. This is exactly what this study has produced. The survey was completely confidential as explained above and average weight (see later in survey process) was used to aggregate and report the respondents' answers. There are some ethical issues that were addressed (see below in survey process). Levy and Lemeshow (1999) suggest that a pilot survey must be confirmed first in order to test the survey procedures before the actual survey is conducted, and Fowler (1995) provides a way to evaluate survey questions by using a focus group discussion to determine how well respondents understand the questions and how they formulate their responses. This is what happened with a panel of several researchers from Tralac (Trade Law Centre for Southern Africa). Each question was tested: formulation, wording, understanding and expected answers. And finally, Isaac and Michael (1997) suggest the use of automated data collection tools to facilitate data tabulation and manipulation. Lucas and Henry (1991) insist on the use of nonparametric statistics where small samples sizes are involved. This aspect of computing the data of the survey is explained and described in the process below.

3.1.2 Survey process

Kraft (2002) assesses the presence of the foreign banks in Croatia using a survey methodology and this study has used an adapted version of his work. This survey was designed and conducted from 2011 to early 2012 in the SA banking sector in order to understand the channel of spillovers and the foreign banks' strategy. This survey received full clearance from the QMUL Ethical committee (Ref: QMREC 2011/58, a copy is in annex 3.9). The survey was totally confidential and the participants were

given the choice to take part or not in the survey and to answer all or part of the questionnaire.

The method described below provides the different phases of the survey:

1. Design

a) The questionnaire comprised eight questions (See questionnaire template in Annex 3.10). Question 1 (Ch3/H1) identifies the reasons for entry. It helps to clarify whether or not these motives are valid today. Questions 2 and 3 (Ch3/H2) provide answers on foreign banks' strategy in the SA market and help understand their comparative advantage at the time of entry. Questions 4 to 6 (Ch3/H3 and Ch4/H4) relate to products, innovation and technology transfer identifying the presence of potential spillovers in the SA banking sector. Questions 7 and 8 (Ch3/H5 and Ch3/H6) contribute to the understanding of the future shape of the SA banking sector.

b) An information letter (Annex 3.11) was designed. It provides all necessary instructions on how to complete and return the questionnaire,

c) A consent form (Annex 3.12) was designed and required for this study. Both the bank participants and the research investigator must sign it. The consent form reminded the participants of the confidentiality aspects and the voluntary status of the survey.

d) I was advised that the lack of familiarity with Queen Mary University of London (QMUL) in Africa wouldn't help increase the number of participants. The participants needed an academic name or brand that they could recognise as local. Therefore, I decided to create a collaborative partnership between the two Schools of Business: QMUL – School of Business and Management (SBM) and University of Cape Town – Graduate School of Business (UCT - GSB). One direct advantage was that I was able to use and incorporate the logo of the UCT-GSB into all survey documents. TRALAC (Trade Law Centre for Southern Africa), an NGO, whose objective is to promote regional integration amongst Southern African countries, sponsored this survey and provided assistance in terms of methodology, review and logistics.

2. Sample

The 16 foreign-owned banks and branches that are currently operating in SA (100% of the population) were targeted, and 8 of them returned the questionnaire: in fact 50% of the foreign banks population returned the questionnaire and therefore constituted the sample of study. I did not include in the panel foreign bank representations whose activities are very limited in the SA market. I decided to exclude ABSA and Barclays banks from the study for the following reasons: first Barclays recently acquired (2005) ABSA and the two banks are still in the process of integration. Second, most of the foreign banks have had a presence in SA since 1995. And finally, ABSA is one of the two case studies presented in the next chapter.

3. Procedure

The questionnaire was addressed to the participants through the following procedure:

I. Firstly, contacts were made with each bank to identify the relevant person to complete the questionnaire. The relevant interlocutor could be the Secretary of the Company, the head of the Quality Control Department or a team member or the head of the Marketing Department. The purpose and the conditions in which the survey operates were explained to the relevant interlocutor and the bank was asked if it could take part.

II. The pack that includes the questionnaire, the information letter and the consent form was sent to the banks' contact,

III. Sometime it was necessary to re-contact the bank interlocutors to remind them to send on time the completed questionnaire and consent form back,

IV. Once collected, the consent form was signed by the research investigator and sent back to the interlocutor. Then both completed documents were saved on a file accessible only by the research investigator and his supervisors. 50% of the foreign banks returned the completed questionnaire and the consent form,

V. The software Stata was used to compute the data from the questionnaire,

4. Scale and model of estimation

Seven questions were multi-choice with four different scales: 0 - not important, 1 - less important, 2 - important and 3 - very important and one question required a yes or no answer. The model estimates the average score

of each response of the questionnaire, weighted by bank assets. Assets, as a weight, were chosen to reflect the importance of the banks.

The results for this survey are presented in the chapter 4.

3.2 The main source of bank data for models on competition and efficiency

To study the relationship between foreign banks entry and domestic banks on one hand, and the level of efficiency between foreign-owned and domestic-owned banks on the other, data at bank-level and data at macro-level are used. At bank-level, data for 15 SA banks were compiled and used (Annex 3.1), and amongst these banks five are foreign-owned. In the panel of foreign banks are included the banks that are operating in SA and that are at least 50% foreign owned. The foreign banks' branches as defined by the South African Reserve Bank (SARB) are not included. The study covers the period from 2000 to 2010. Annual data are used for all groups of data: bank-level accounting data, foreign banks' entry data, banking market development data and SA macro-economic variables.

As many studies do, the first option was to investigate the possibility of using Bankscope, but it was not possible to exploit this source as only data from 2006 were available and not for all banks. It would have been possible to collect banks data from annual reports further back from 1994 from the SARB as they are kept in their archive. But the SARB denied access even when the domestic banks directed me to get access to their own data. Fortunately, some balance sheets for many banks are available on their website. With the unreserved cooperation of the main domestic banks I succeeded in collecting most of their annual reports for the period 2000-10, and for those that were not available on websites, hard copies were post-mailed to me. Therefore, all data are collected from each bank annual reports. However, to guarantee consistency, I used definitions of data contained in Bankscope (Annex 3.2) to construct the dataset. Software Stata 11 (for Mac) is used in this study.

3.3 Data and methodology for the effect of foreign bank entry on SA domestic banks

3.3.1 Data

The selected domestic banks (Annex 3.1) represent a share of more than 95% of the total domestic banking sector in terms of total assets. First, two variables to measure the income of banks are selected: net interest margin defined as net interest income over total assets (NIIN) in Claessens et al., (2000) and Uiboupin (2005) studies; and non-interest income to total assets (NOINTIN). Second, a bank's profitability is characterised by the ratio of its before-tax profits to total assets (BTXP). Finally, a bank's costs are measured by the overhead costs to total assets, which I also called total operation expense (TOEX) and loan loss provision to total assets (LLP) that will not be used in this study. It is important to remember that these variables are the results of calculations made from banks' income statements and balance sheets that usually follow the international standard relationship (3.0), therefore some strong correlations amongst these variables could be present.

$$BTXP = NIIN + NOINTIN - TOEX - LLP \qquad (3.0)$$

The banks-specific exogenous variables are determined by: the short-term and long-term deposits and other funding over total assets (SLTDPA), equity ratio to total assets (EQTY) and non-earning assets over total assets (NINEA).

Table 3.1: Descriptive statistics and pairwise correlation (N<=126)

	1.	2.	3.	4.
1. Net Interest Income (NIIN)	1.00			
2. Before Tax Profit (BTXP)	0.66	1.00		
3. Non Interest Income (NOINTIN)	-0.04	0.57	1.00	
4. Total Operating Expense (TOEX)	0.74	0.81	0.45	1.00
Mean	0.097	0.045	0.048	0.093
Standard deviation	0.165	0.047	0.055	0.133

Source: Banks annual reports. Author calculation

Table 3.1 shows some summary statistics and pairwise correlations of dependent variables. There are some high correlations between NIIN and BTXP (0.66), between NIIN and TOEX (0.74) and finally between BTXP and TOEX (0.81). The high correlations are the direct results of the relationship (3.0) described earlier. However, the variables are not used all together at the same time in the empirical equation, which means that collinearity is not a concern.

Table 3.2 shows the trend of bank-specific variables of both the domestic and the 50% foreign-owned banks; some specific aspects of the SA banking market can be observed. For instance the before tax profits to total assets (BTXP) decreased slightly in 2001 and after 2008 for all banks. These decreases coincided with the currency crisis in 2001 and the global economy downturn in 2008.

Table 3.2: Average value of variables of panel SA banks (%)

Variables	Ownership	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
BTXP	D	3.7	2.8	3.7	3.3	5.4	5.7	6.2	5.9	4.6	4.3	3.2
	F	1.1	0.8	14.4	1.5	1.1	1.7	1.8	2.7	2.9	2.2	1.6
NIIN	D	5.3	4.9	13.4	14.4	14.1	13.1	12.0	9.6	6.3	6.0	4.9
	F	14.9	9.0	7.6	6.0	3.2	3.9	3.6	4.3	4.7	4.1	3.6
TOEX	D	4.4	3.6	8.1	10.5	15.2	13.9	11.5	9.5	7.9	7.3	6.2
	F	5.0	3.3	10.6	6.8	5.6	4.6	3.5	3.8	3.5	3.5	3.6
NOINTIN	D	2.7	2.5	2.2	3.0	5.9	5.2	4.9	5.9	6.9	6.7	5.6
	F	4.1	2.1	3.6	3.1	2.7	2.2	2.2	2.3	1.9	2.0	1.8
EQTY	D	12.5	11.6	21.7	20.2	22.8	21.1	21.3	21.3	17.0	15.9	16.5
	F	7.8	6.9	8.6	7.2	13.1	11.8	10.7	11.3	12.1	11.1	10.7
SLTDPA	D	78.3	78.1	66.8	63.3	62.6	65.6	63.0	65.9	70.9	70.5	68.0
	F	86.4	87.0	86.8	87.5	84.2	85.2	80.8	79.2	77.8	77.9	78.6

Notes: D for domestic, F for foreign.
Source: Banks' annual reports and Author calculation

The important increase in 2002 (from 0.8% to 14.4%) should not be considered, as this figure corresponds to the year when a new foreign-owned bank started to operate in SA. But when considering the trend of BTXP in the period it shows that foreign-owned banks tend to be less profitable than the domestic ones. The Net interest margin (NIIN) increased significantly after 2001 until 2006 and slowed after 2006.

After the currency crisis in 2001, there was a reconfiguration of the banking market and many smaller banks disappeared. They either went bankrupt or were bought not by the foreign banks but by domestic ones, suggesting that the domestic banks took advantage of some lucrative assets. However, the decrease in 2006 coincided with the biggest FDI ever in the banking sector, when Barclays, a British bank, took over ABSA one of the three biggest domestic banks in 2005. This could suggest an increase in competition as the trend continued until 2010. For the foreign-owned banks, the impact of the currency crisis is confirmed, as NIIN started to decrease in 2001 but picked up again after 2006 from 3.6% to 4.3%, coinciding with the Barclays' direct investment in ABSA bank. The foreign-owned banks operated with a lower interest margin, enhancing the competition.

TOEX, the total operating expense, is the indicator that could signal the presence of spillover effects as explained in hypothesis 3. From the period 2000-04, this indicator increased sharply for the domestic banks and it can be noted that the level of TOEX in 2004 is almost 4 times that of 2000. In that period, the SA banking sector took advantage to upgrade their systems and norms in compliance with the international standards. It was at that time that the currency crisis occurred, making any association between some of these expenses and the presence of foreign banks difficult to detect. What could re-enforce the difficulty to signal any spillovers is the constant decrease of TOEX after 2005 for domestic banks. On the other hand, TOEX for foreign banks was relatively stable except for the period 2002-04 that saw an increase of TOEX, suggesting that the foreign banks may have suffered from this currency crisis in terms of foreign currency exchange.

Foreign-owned banks have a lower equity ratio (EQTY). This could indicate that foreign-owned banks can exploit the reputation of their mother banks and have higher risk and profitability than the domestic banks. But this statement could be misleading, as most of the foreign-owned banks of my panel cannot be classified as top worldwide financial institutions.

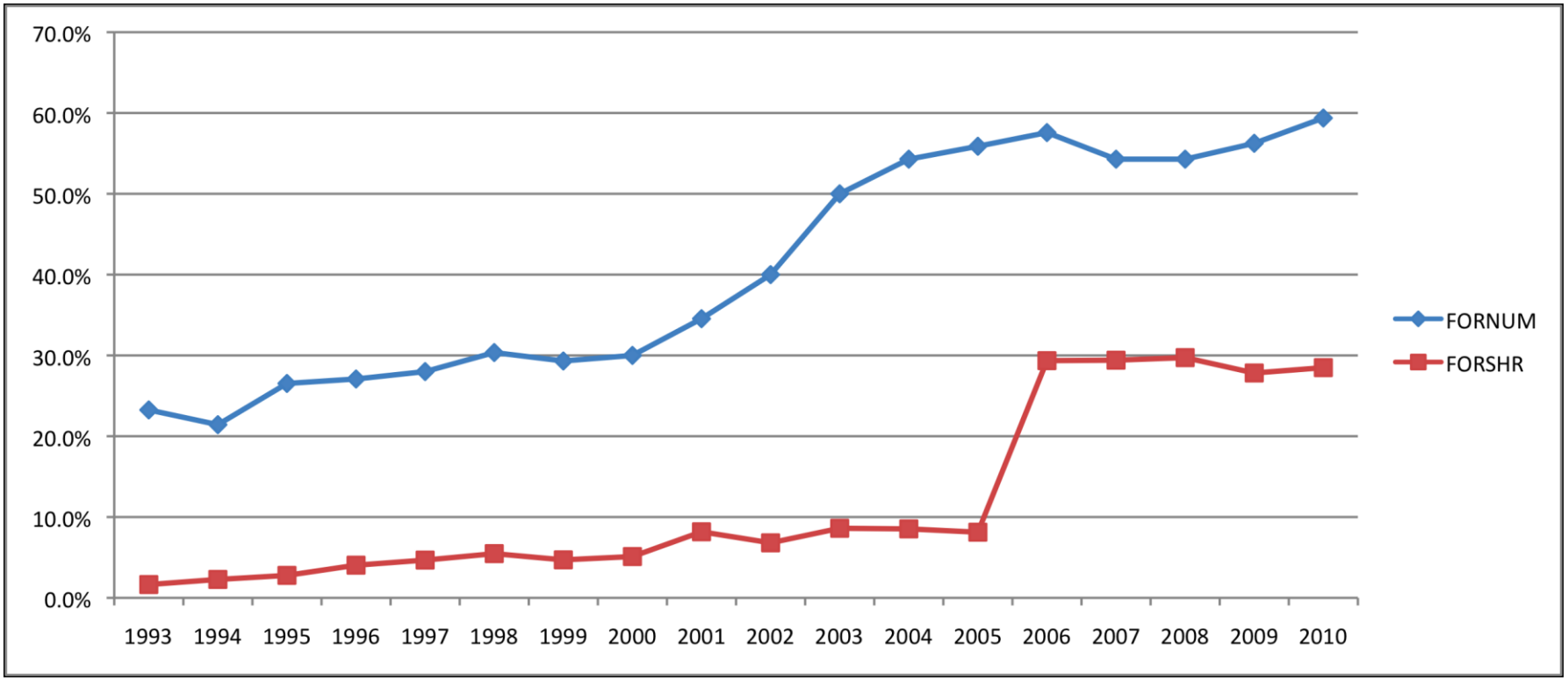
Foreign participations have three different forms. They are present in the SA banking market either through their local representations, or branches or they have shares in

some domestic banks. For this study, the SA banks with majority (50% or more) foreign banks ownership only, were included in the panel. Fortunately, there are no missing banks for the foreign variables and for the period under consideration.

Following Claessen (2001) and Uiboupin (2005), I use two variables for foreign banks' entry: the share of foreign banks' assets in the total banking market assets (FORSHR) and the ratio of number of foreign banks to total number of banks (FORNUM). The SARB, in reports available on their websites, provides an exhaustive list of banks and classifies them by category. There is no national bank in SA. All SA financial institutions are in private ownership but there is a pyramidal ownership system between some of the SA big four banks and other mutual institutions, which means that some of these banks have multiple private ownerships. Nevertheless, the domestic banks can be distinguished from mutual institutions, which have been discarded from the study panel.

Figure 3.1 shows a significant increase in number of foreign banks in SA. In this case foreign banks include the foreign-owned banks as well as the foreign banks' branches. This number has almost tripled from 1993 to 2010. The average share in total assets has increased with a big jump in 2006 after Barclays bought ABSA banks. However the share of foreign banks is just below 30%, suggesting a concentration of SA total assets into the domestic banks. This is important because such a percentage share may not be enough to show any significant effect of the presence of foreign banks in the SA banking sector. This result may suggest that foreign banks are present only in particular segments or niches of the market, which might limit foreign banks overall influence in the market by showing no significant effects on domestic banks. Foreign banks may operate in segments in which, domestic banks are not specialised (Clarke et al., 2000).

Figure 3.1: Average foreign banks' share in SA (%)



Notes: FORNUM for number of foreign bank, FORSHR for share of foreign bank
Source: SARB and Author calculation

The ratio of domestic private credit (by deposit money banks and other financial institutions) to GDP (PCGDP) is the variable chosen, and used by Claessens et al., (2000), Hermes and Lensink (2004) and Uiboupin (2005) as a proxy for the development of the banking sector.

The PCGDP I use are from two different sources: Sana Hussain and IMF:

- The PCGDP data used in figure 3.2 are aggregated and produced by Sana Hussain from the School of Business and Management of Queen Mary University of London. Their advantage is that they were collected for several countries over a long period of time (more than thirty years) and allows the comparison between SA PCGDP and the PCGDP of ten other countries'.
- The PCGDP data used in the different regressions' estimation presented in the chapter 5 originate from the International Monetary Fund (IMF) (see annex 3.3). Other macro-economic data used in the regressions are also from the IMF (Chapter 6).

Thus using PCGDP from the IMF allows having consistency amongst the different macro-economic data and their sources. The PCGDP data from the IMF (Annex 3.3) present the same trend as those of Hussain, with some minor differences between 2008 and 2010 only. While the IMF shows an increase during that period, Hussain shows a quasi stagnation. The other difference is the amplitude, which is more important in the IMF data.

Figure 3.2 shows the PCGDP of ten countries compared to SA (SA line is bigger and coloured in red). These countries include Ghana, defined as a lower-middle-income economy, Brazil, China and Russia as upper-middle-income economies and Canada, France, Greece, Italy, Switzerland and UK, as High-income OECD countries. The first general observation is the increase of PCGDP for all countries during the period considered. This trend is the result of global deregulation and the liberalisation of the financial market of many countries worldwide. However, for the period of 1993-2001, only Switzerland has a higher PCGDP than SA. For the period 2001-06, Canada, Switzerland and UK, three developed countries have a higher PCGDP. And

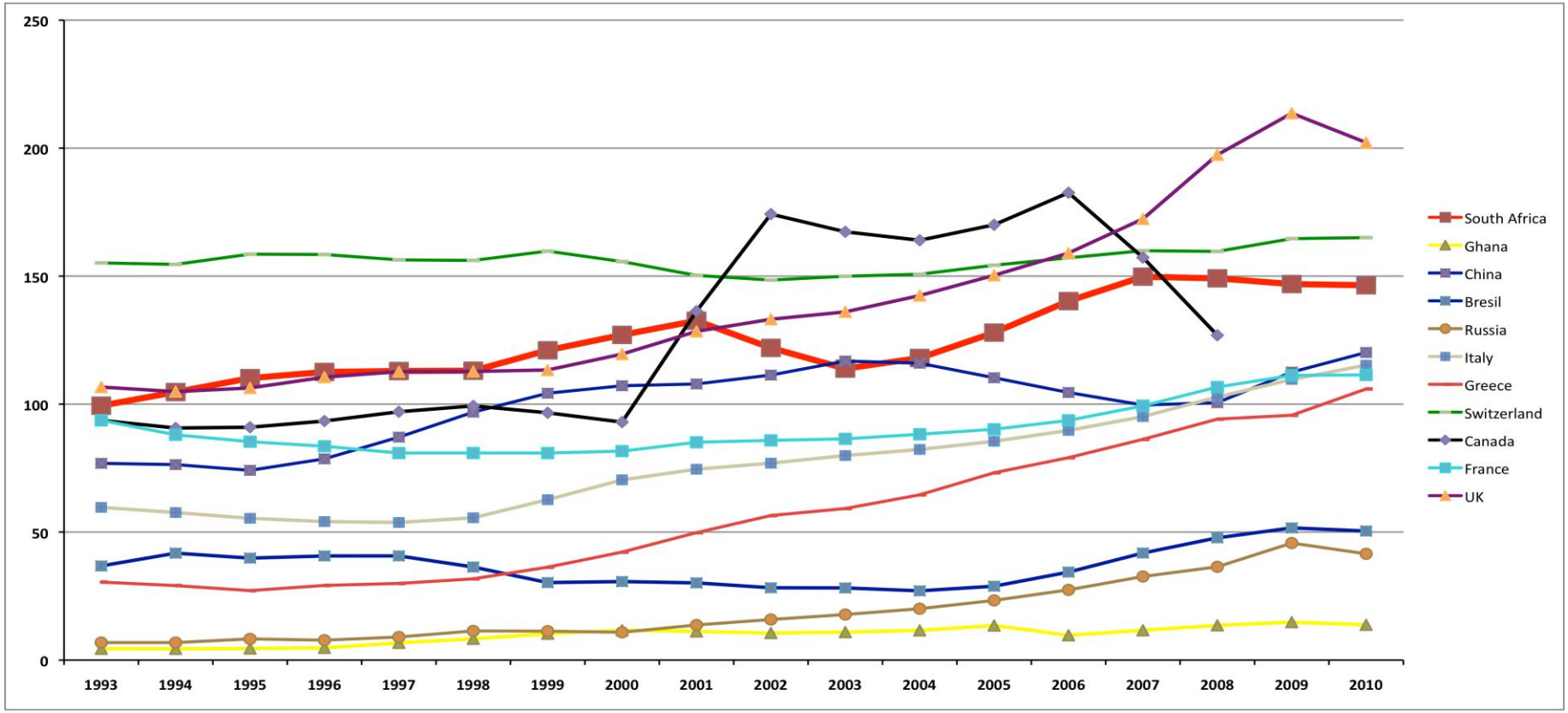
after 2006, only two developed countries out of six, Switzerland and UK have a higher PCGDP. And finally, for the whole period, SA, an upper-middle-income economy, has a higher PCGDP than high-income economies that include France, Greece and Italy.

Taking SA alone, there is a constant increase of PCGDP over the last eighteen years with some brutal and small decreases that occurred in 2001 and 2008, which corresponds respectively to the SA currency crisis and the global slowdown. But the trend of constant increase in SA PCGDP is explained by the introduction of a policy of gradual liberalisation for the financial market, undergone by the post-apartheid government in 1995. The objective of the liberalisation policy is to attract a large share of foreign capital that allows more domestic investment, creation of jobs and development of the economy. It is important to remember that SA has a tradition of attracting FDI well before 1995 (before the end of the apartheid regime) as the economy is based on mining that always requires important financial investments. Figure 3.2 confirms this by showing that SA PCGDP is still higher than 9 countries in the panel between 1993 and 1995. But this surge of capital inflows really started to kick off from 1992 during the period of power change negotiation and took off after the democratic election in 1994.

We can now conclude that the SA banking market is well developed and this development has been significant over the last eighteen years.

Indicators of macro-economic development are represented by real GDP growth (GGDP), log of GDP per capita (INCOME) and inflation rates (CPI); Claessens et al (2001), Hermes and Lensink (2004) as well as Zajc (2002) and Uiboupin (2005) use these three country-specific variables in their studies.

Figure 3.2: SA private credit to GDP compared to ten countries



Notes: PCGDP for Private Credit to GDP
Source: Hussain (2013)

3.3.2 Method

To explore the impact of foreign banks' presence on domestic banks' performances and, following Claessens et al (2001) model, the following panel model is estimated:

$$y_{i\ t} = \beta_0 + \beta_1 FS_{i\ t} + \beta_2 B_{i\ t} + \beta_3 X_{i\ t} + \varepsilon_i \qquad (3.1)$$

where y_{it} is a matrix of dependent variables for the bank *i* in SA, expressed in percentage, FS_{it} a measure of foreign bank penetration in the SA banking market at time *t*, B_{it} is a set of bank-specific indicators and represents a set of control variables. Finally, X_{it} is a matrix containing SA macro-economic variables at time *t*.

Then a set of dummy variables that captures the short time effects of the financial crisis in 2001 is added to this initial empirical model (4.1). The crisis triggered a reconfiguration of the banking market and several domestic banks disappeared or were absorbed by the domestic banks. The dummy variables should capture the short-term effect on the performance of domestic banks, if any, after 2006 when Barclays bank decided to increase its shares in the market by buying the ABSA bank. Therefore the model (2.1) with the dummy variables becomes:

$$y_{i\ t} = \beta_0 + \beta_1 FS_{i\ t} + \beta_3 B_{i\ t} + \beta_4 X_{i\ t} + \phi D_t + \varepsilon_{i\ t} \qquad (3.2)$$

Furthermore, the interaction between the foreign banks entry and the SA banking market development needs to be tested. PCGDP is a proxy for SA banking market development at time *t*. Thus the variable $FS * PCGDP$ that represents the interaction between the SA banking market development and the foreign banks entry as used in Uiboupin (2005) and Hermes and Lensink (2004) works is created. The model (3.2) now becomes:

$$y_{i\ t} = \beta_0 + \beta_1 FS_{i\ t} + \beta_2 (FS_{i\ t} * PCGDP_{\ t}) + \beta_3 B_{i\ t} + \beta_4 X_{i\ t} + \phi D_t + \varepsilon_t \qquad (3.3)$$

The introduction of this interaction variable used in Uiboupin (2005) study is very relevant as he tests whether foreign entry effects in a particular country depend on the level of development of that country's banking market. This interaction can be considered as relevant to this particular study, because SA is both a developing country (World Bank Data, 2013; IMF, 2012) and a market with a very competitive and well-developed banking sector. Consequently, what can be expected is that the foreign banks' entry would have a bigger impact in the early stage of entry for instance from 2000 to 2006, as the number of banks doubled as shown in Figure 3.1 (data just after 1994 being not available). Then the impact reduces as the banking market becomes more developed. A banking market development variable should have a negative effect on banks' costs and income.

Finally, another interactive term for foreign banks' entry and market is put into the equation (3.3) as banks having different market shares could react differently to foreign banks' entry. So it might be that smaller domestic banks may react more rapidly than bigger ones because they are more agile to changes in market conditions and have to adjust quickly to remain competitive. However, the SA banking market is highly concentrated with the SA four biggest banks having about 80% of the market share. Adding this new variable gives the following model (3.4):

$$y_{i\ t} = \beta_0 + \beta_1 FS_{i\ t} + \beta_2 (FS_{i\ t} * BKMKSHR_{i\ t}) + \beta_3 B_{i\ t} + \beta_4 X_{i\ t} + \phi D_t + \varepsilon_i \quad (3.4)$$

The number of explanatory variables may seem limited or there may be other determinants of bank performance that cannot be controlled for, so the effects could be captured in the error term. If these were correlated with one or several of the other explanatory variables, then the estimated coefficient would be biased. One option is to assume that all such unobservable are time invariant. That means $\varepsilon_{it} = \mu_{it} + \nu_{it}$ where μ represents the time invariant unobservable and ν a standard independent and identically distributed (i.i.d) error term. In other words, this means that there may be significant differences among the banks but the intercept in cross-section may not differ over time. Under this assumption, a panel data fixed effects estimator may be useful to purge these time invariant unobservable factors, where all variables are

transformed into deviations from their mean. This removes cross-bank variation, leaving only the variation of variables over time within banks. The variation to be explained will essentially come over time within rather than across banks. This is exactly the purpose of panel data with fixed effects that is used here in this study. Chapter 6 presents and discusses all results and findings from these regressions. To estimate the linear regression models mentioned above I use Stata general procedure and command given in annex 3.4 and command for robustness check regressions is given in annex 3.5. All results are reported and discussed in chapter 6.

3.4. Efficiency analysis of foreign and domestic banks in SA

The objective of this section is to present a model allowing the ranking of banks by attributing them a score in order to compare the domestic-owned banks with the foreign-owned ones. The expectation is that foreign-owned banks would be more efficient than the domestic-owned banks. Opiela (2000) for instance finds that foreign-owned banks perform better than domestic banks.

The stochastic frontier is used here, as many scholars use a stochastic frontier approach to estimate cost and profit efficiency.

The literature on bank efficiency is based on two main approaches that compute efficiency scores. One approach, measuring efficiency in terms of economies of scale and scope, uses non-parametric models applying linear programming techniques such as Data Envelopment Analysis (DEA) and Free Disposal Hull Analysis (FDHA). The second approach, or parametric approach, uses the frontier efficiency model, also called X-efficiency, using techniques such as the Stochastic Frontier Approach, Thick Frontier Approach and Distribution Free Approach. The differences that characterise the two approaches could contribute to producing different results in measuring efficiency scores, as concluded by Bauer et al. (1998).

The non-parametric approach does not require assumptions about the functional form of the frontier that allows the frontier to envelop the data and the entire distance to the frontier is actually considered as inefficiency, meaning that exogenous variables are

considered to be part of the inefficiency term. The DEA may not be the most appropriate model when using a limited number of observations regarding inputs and outputs.

On the other hand, the parametric approach that estimates the frontier efficiency uses econometric tools, which impose more structure on the features of the frontier. This consists of specifying functional form for the cost function but it allows for random errors, meaning better estimated efficiency scores. But to separate random error from inefficiency becomes a challenge. While the error model of the stochastic frontier naturally follows an asymmetric distribution, random errors usually follow a symmetric distribution. The reason for this is that inefficiency cannot reduce costs so it must be asymmetrically distributed whereas random errors can add or subtract costs so it must be symmetrically distributed. Jondrow et al (1982) suggests computing efficiency by conditional means of inefficiency terms with a residual being an estimate of the composite error. So computing the stochastic frontier efficiency model may involve arbitrary assumptions with regard to the distributions of the inefficiency term and random error.

Some parametric models allow a separation of random error from inefficiency terms. This separation does not need assumptions on the distribution of the random error and inefficiency terms. The efficiency of foreign-owned banks needs to be compared with the efficiency of domestic-owned ones and as the thick frontier model provides average efficiency scores for the whole tested sample, this model therefore is not suitable for this study. A final advantage of a parametric approach over non-parametric techniques is that it permits easier control or influence over variables on the structure of the cost frontier; therefore the inclusion of some environmental variables such as risk differences and in this case the variable that measures levels of equity, is easily done by adding terms in the estimated cost frontier (Mester, 1996). This is a major advantage in applying this method when studying aspects of developing countries where uncertainty and measurement problems can be significant.

3.4.1 Method of frontier efficiency costs

Model (3.5) is based on a multiproduct translog cost function to calculate the scores of cost efficiency for the 14 banks in South Africa and is given by:

$$TC_i = f(Y,P) + v_i + u_i, \quad (3.5)$$

where TC represents the total operating cost, Y is a vector of outputs and P the vector of input prices. v corresponds to a random fluctuation (phenomenon beyond management control) and measurement error and is assumed to follow a symmetric normal distribution with mean of zero and variance σ^2. u accounts for the bank cost inefficiency representing factors that could be controlled by management (bad management performance). u follows a truncated normal distribution. It is assumed that in the stochastic frontier approach, the inefficiency component of the error term is positive, meaning that higher bank inefficiency is associated with higher cost. A translog specification rather than a Fourier-flexible functional form is also used, which requires additional truncations of data (Hasan and Marton, 2003). Thus the complete model is given by:

$$\ln TC_m = \beta_0 + \sum_m \alpha_m \ln y_m + \sum_n \beta_n \ln p_n + \frac{1}{2}\sum_m \sum_j \alpha_{mj} \ln y_m \ln y_J + \frac{1}{2}\sum_n \sum_k \beta_{nk} \ln p_n \ln p_k + \sum_n \sum_m \gamma_{nm} \ln p_n \ln y_m + \ln Equity + v_i + u_i \quad (3.6)$$

where all variables are expressed in natural logs; Equity is the total equity, $y_m m^{th}$ bank output (m=1,2) and $p_n n^{th}$ input price (n=1,2). The general procedure to estimate cost inefficiency from Equation 3.1 consists of estimating equation coefficients and the error terms $v_{it} + u_{it}$ and of calculating efficiency for each observation in the sample. The cost frontier can be approximated by maximum likelihood so that efficiency levels are estimated using the regression errors. Jondrow et al (1982) show that variability σ is used to measure a firm's mean efficiency, with $\sigma^2 = \sigma_u^2 + \sigma_v^2$. The bank-specific estimates of efficiency terms can be calculated by using the distribution of the inefficiency term conditional on the estimate of the composite error term. A

formal definition of bank-specific relative cost efficiency is derived from the following equation:

$$C-eff = \frac{\exp(f(P,Y))\exp(\ln u_{\min})}{\exp(f(P,Y))\exp(\ln u_i)} = \frac{u_{\min}}{u_i} \qquad (3.7)$$

where u_i represents the inefficiency of the ith bank and $u_{\min}$ is the inefficiency associated with the best practice bank that means each bank, is benchmarked against the best bank in the sample.

3.4.2. Data

For the definition of the inputs and outputs the intermediation approach proposed by Sealey and Lindley (1977) is used here, which assumed that banks collect funds by using labour and physical capital to transform them into loans and other earning assets, therefore deposits are considered as an input.

Similarly to the previous section for the first model general model (3.1) described in previous section, the data collected originate from the same annual reports of the SA banks for the period of 2000 – 2010. The sample used here in this section is the same as the previous one and includes 14 SA banks composed of nine domestic-owned and five foreign-owned banks (Annex 3.1) and all together they represent more than 80% of total assets. The definition of a foreign-owned bank, remains the same as in the previous section, and is that the majority of shares (more than 50%) is owned by a foreign bank or firm. In the case of ABSA whose ownership changed in 2005, this study keeps it as a domestic-owned bank since the effects of change in an organisation take time to appear after an acquisition in the banking sector.

Two outputs y_1= loans and y_2= investment assets are included. Investment assets are defined as all the earning assets other than loans according to the Bankscope definition, whose database is maintained by Fitch/IBCA. Annex 3.6 provides detail of

investment assets in the SA banks balances sheet. Both y_1 and y_2 are measured in SA Rand.

There is an ongoing discussion, regarding the level of lending between foreign and domestic banks in developing countries, linked to underperforming or risky loans. Firstly, in periods of economic downturn some studies show that funding shocks to parent banks can be transmitted to their foreign subsidiaries with negative consequences for their lending (Peek et al., 1999; Acharya and Schnabl, 2010; Chava and Purnandam, 2011; Cetorelli and Goldberg, 2011). After the financial crisis in 2008 many studies point out that foreign subsidiaries have reduced their lending more than the domestic banks (De Haas, Korniyenko, Loukoianova and Pivovarsk, 2011; Popov and Udell, 2010). And De Haas and Van Lelyveld (2011) comparing loan growth of foreign large banks that operate abroad find similar results. Second and more generally, Claessen and Van Horn (2011) show that in low-income countries foreign bank presence is associated with less credit extended, and although foreign banks generally have higher capital adequacy and better liquidity positions in terms of balance sheets, they tend to engage relatively less in the traditional lending business. Finally, one of the biggest reasons the foreign banks engage less in traditional lending when they operate in developing countries is because of underperforming loans, meaning that it would be more difficult for foreign banks to recover loans it may offer to some customers. Parker, Nellis and Figueira (2007) find that domestic-owned banks have a higher level of underperforming loans. This is highlighted by Kiyota (2011) showing that foreign banks in Sub-Saharan Africa have a less risky loan portfolio and domestic banks have a more serious problem with underperforming loans in their balance sheets compared to foreign banks. As a consequence and in light of this discussion, some may suggest that using y_1 could be biased. However, I introduced in this study a new variable y_0= net interest income and tested it with and without y_1 and y_2 but the results were not conclusive (I found the same coefficients for all observations). And for the sake of testing, when using y_1 and y_2, homogeneity conditions were imposed by normalizing total costs and the price of labour by the price of borrowed funds. The results were almost identical to those with no normalisation. It is useful to remember that the aim of calculating

efficiency scores is to help clarify the findings of the previous chapter and then determine the reason why foreign banks may be more efficient, which in turn may help explain some of the aspects of knowledge spillovers. Therefore this chapter uses the simplest form of cost efficiency explained in the previous section using y_1 and $y_2$only as output variables.

The inputs include labour, physical capital and borrowed funds and their prices (input prices) are used to estimate the cost frontier. Following Altunbas et al. (2000), the price of labour P1 is defined by the ratio of personnel expenses to total assets. P2 the price of physical capital is the ratio of other non-interest expenses to fixed assets. Finally, the price of borrowed funds P3, is defined as the ratio of interest paid (interest expenses) to all funding (sum of total equity and customer deposits). TC, the total cost is the sum of personnel expenses, interest paid and other non-interest expenses.

Equation (3.6) includes the level of equity, which denotes the capitalisation risk, to control for differences in risk preferences following Mester (1996) and Altunbas et al., (2000). If managers from some banks are more risk-averse than other banks this will result in a higher level of equity than the cost-minimising level. Therefore if the level of equity is omitted, then a bank, even if it behaves optimally, may be regarded as inefficient given the risk preferences of its managers (Berger and Mester, 1997). In other words, assuming, for instance, that bank managers of foreign-owned banks are more risk-averse than managers from domestic-owned banks, their performance would be underestimated if equity is not controlled for in the cost efficiency model.

Two other additional reasons to include the equity variable are provided by Berger and Mester (1997). First, bank insolvency risk depends on equity available to absorb losses. Therefore, insolvency risk could affect the bank's costs via the risk premium, which has to be paid by the bank in order to borrow funds. This issue has particular resonance in emerging economies because of the level of non-performing loans in loan portfolios. SA is a stable but developing country (World Bank Data, 2013; IMF, 2012), which may experience a similar situation. Secondly, it is assumed that equity

constitutes an alternative funding source to loans. Even, if deposits are considered as costs whereas equity is not, raising equity involves higher costs than raising deposits; therefore it is necessary to include it. Table 3.3 summarizes the statistics of the variables defined above.

Table 3.3: Descriptive statistics 2000-10 for banks' inputs and outputs in SA Rand

Variables	Domestic –owned banks		Foreign–owned banks	
	Mean	**Std Dev**	**Mean**	**Std Dev**
Outputs				
Loans	145,776.3	169,942.5	1,172.16	952.83
Investment Assets	51,699.58	66,810.09	658.60	686.80
Inputs				
Personnel Expenses	3,246.50	3,536.84	44.19	38.08
Other non-Interest Expenses	2,647.34	3,322.29	61.37	64.367
Interest paid	11,962,20	13,735.25	89.07	74.70
Input Prices				
Price of Labour (%)	3.93	5.19	2.56	1.41
Price of Physical Capital (%)	256.73	186.34	244.06	250.67
Price of Borrowed Funds (%)	7.35	3.56	5.14	1.41
Other variables				
Total costs	18,231.95	20,060.81	194.64	161.2
Total Assets	220,583.9	253,824.9	1,927.66	1,618.49
Equity	13,962.16	14,924.41	277.37	399.05
Customer Deposits (%)	60.00	25.57	84.92	5.02
Loan to Investment Assets (%)	334.94	352.02	349.80	284.90

Source: SA Banks' annual reports
Author calculation

The first observation is the difference between the two types of banks; for instance the size of domestic-owned banks is far larger than foreign-owned ones. In terms of the activities' structures, customer deposits and loans to investment assets show some differences. Foreign-owned banks rely more on deposits for their funding but the loan to investment assets shows that they focus their activities more on loans. It would be interesting to see how these observations influence their efficiency scores.

There are significant differences between both types of banks in terms of input prices. The mean prices of labour and borrowed funds are about 1.5 times higher for domestic-owned banks whereas the price of physical capital is almost the same for both types of banks. These observations on input prices tend to confirm that

domestic-owned banks favour labour over physical capital in contrast to foreign-owned banks.

To estimate the x-efficiency model (3.6) I use Stata general procedure and command given in annex 3.7. All results are reported and discussed in chapter 7.

3.4.3 Other factors that influence SA banks efficiency scores

The aim of this step is to confirm the observed difference (if any) in performance by looking at the origin of ownership as a determinant. Thus whether or not ownership has a positive influence on efficiency, as well as the implication of other sources that explain differences between foreign-owned banks and domestic-owned ones, need to be assessed.

One hypothesis that could explain the differences stems from discrepancies in size or in structure of activities (Weill, 2003) and not necessarily from management only, as mentioned in the section 2.4. There are possible adjustment costs associated with investments and the relatively short period of time in which banks have to adapt to a new environment by adjusting their size and activity. That was almost certainly the case in South Africa in the mid-1990s, when the Apartheid regime disappeared and where the banking sector experienced new investments and the return of major global banks. But the question is whether or not there is still a residual of this effect and how it influences the performance of domestic-owned banks.

The objective of this section is to test for the factors that are influenced by the management by introducing two explanatory variables for size and structure of activity. A model derived from (3.1) is used, where variable (*For*) measures the presence of foreign banks as shown in the following model:

$$Eff = \beta_0 + \beta_1 For + \beta_2 For * Assets + \beta_3 Assets + \beta_4 LINVA + \beta_5 CustomDep + \varepsilon \qquad (3.8)$$

Eff, the dependent variable is the percentage cost efficiency score found earlier. A dummy variable (For) that identifies the type of ownership is added to the regression

and it takes value 1 if foreign-owned or 0 if domestic-owned. As highlighted above, differences in efficiencies can originate from differences in size and activities; thus two additional variables, the ratio of loans to investment assets (LINVA) and the share of deposits in the total balance sheet (CustomDep) are included. The difference in magnitude in terms of operations may explain differences in efficiency. Therefore the size of operations measured by the total assets (Assets) is added onto the regression. And finally, an interaction term (For*Assets) linking the variables Foreign and Assets is introduced that helps explain any relationship between the bank size and its origin. And an error term ε is added.

Table 3.4 reports the correlation amongst the efficiency scores and the four independent variables.

Table 3.4: Pairwise correlation

	For	Assets	CustomDep	Linva
Eff Score	-0.6772	0.5234	-0.1217	0.0149
For		-0.224	0.4139	-0.0431
Assets			0.0480	-0.1483
CustomDep				0.3282

Source: SA Banks' annual reports
Author calculation

No serious correlation issue is observed amongst the explanatory variables except between ownership (*For*) and efficiency score (*Eff Score*), which has a value of -0.6772 confirming the earlier finding about the foreign-owned banks' outperformance. There is a significant correlation (-0.5234) between variables *For* and *Assets*, indicating that the efficiency gap between domestic and foreign-owned banks is likely to be affected by bank size. This should be confirmed by the regression results.

Most studies (Weill, 2003; Kiyota, 2011), which include efficiency scores, opt for the Tobit regression mainly because the cost efficiency score takes values in the interval between 0 and 1. This interval makes the independent variable very limited too, and using an OLS regression may provide biased results. Similarly to these studies, I use the Tobit model estimation and Stata general procedure and command for running

this model is given in annex 3.8. However, for robustness checks, panel data random-effects GLS estimator is used and both results are reported and discussed in chapter 7.

Chapter 4

4. Results from the survey model

The survey consists of a questionnaire that has eight questions sent to the foreign banks and branches that are operating in the SA market. (See questionnaire template in Annex 3.10). One question identifies the reasons for entry. Two more questions ask the banks to provide answers on both their strategy in the SA market and their comparative advantage at the time of entry. Two additional questions ask for products, innovation and technology the foreign banks contributed to bring into the SA market and help identify the presence of potential spillover effects in the SA banking sector. And finally, the last two questions help examine what shape the SA banking sector might take in the future. The results are presented in the following.

4.1 What are the reasons for entry of the foreign banks in SA market?

Although some banks never left SA such as Bank of Athens, after 1994 the number of foreign banks increased and in 2010 surpassed the number of domestic banks. But until 2005, the share of foreign banks in total assets was only about 10% of the share of total assets of the banking sector. This situation changed once Barclays took control of ABSA, one of the four big SA banks. The results of the survey described in the previous section provide information about the foreign banks' motivation for establishing operations in SA and other aspects of foreign banks' behaviour and their impact on the SA market.

When asked about their motivation (Table 4.1 below) for entering the SA market, "search for new clients" was the answer provided by the banks as their strongest reason for entry, followed by "geographical proximity". Motivations for entry such as "SA regulation" and "high interest margins" came next. Following clients from home countries and competition in the home country did not receive a high score. When asked the reason to stay in SA (now:2011) the results remained almost unchanged

with only one exception: “following clients from home countries” received the second highest score.

To explain these reasons for entry, a number of factors, as defined and developed by Sagari, (1992); Konopielko, (1999); Buch, (2000); and Focarelli and Pozzolo (2001), need to be discussed. Banks operate in other countries because of the push factors relating to the home market meaning that if profits at home are low due to high levels of competition, macro-economic weakness or regulatory burdens then the banks may expand to foreign markets in order to increase their profits. Other factors defined as pull (factors) make foreign markets particularly attractive such as access to a new client base, which is very important in countries where GDP growth is not only fast but also is expected to be fast in the future, as is the case in developing countries such as SA.

Table 4.1: Reasons for entry

Activity	At time of Entry			Now			In the future		
	Average score	Number of answers	Share in total foreign banking assets	Average score	Number of answers	Share in total foreign banking assets	Average score	Number of answers	Share in total foreign banking assets
Competition in the home Country	1.11	8	55.12%	1.15	8	55.12%	1.17	8	55.11%
SA regulation	1.73	8	55.12%	1.75	8	55.12%	2.10	8	55.11%
Search for new clients / new businesses	2.43	8	55.12%	2.50	8	55.12%	2.30	8	55.11%
Following clients from home countries	1.00	7	51.35%	2.10	7	51.35%	2.10	7	51.35%
Unused credit potential of the SA economy	1.14	7	51.35%	1.60	7	51.35%	2.00	7	51.35%
Unused credit potential of the SA households	0.61	7	51.35%	0.63	7	51.35%	0.63	7	51.35%
Geographical proximity	2.00	7	51.35%	2.00	7	51.35%	1.70	7	51.35%
Similar mentality or way of working	1.61	7	51.35%	1.60	7	51.35%	1.95	7	51.35%
High interest margins	1.61	7	51.35%	1.77	7	51.35%	1.43	7	51.35%

Scale: 0-Not important, 1-less important, 2-important, 3-very important.
Source: Questionnaire feedback (Annex 3.10).

Low competition in the foreign market constitutes also a pull factor, as well as the presence of home country clients in the foreign market (also defined as following the client).

In this SA case it seems that the push factors, especially "search for new clients and businesses", were the main reasons for entry and they remained the case when the banks decided to stay in SA in 2011. Foreign banks, at the time of entry, wanted to exploit the huge SA economic potential that suddenly became available after the regime change. This is not surprising as some specific aspects of the SA economy such as the mining sector requiring important investments were already very strong and were maintained during the Apartheid regime. At the time of entry no pull factors seemed to be the reason for foreign banks to expand their operations in SA. However, the high jump of following clients from home countries in 2011-12 became a significant pull factor and it demonstrates the results of the SA government efforts to encourage more foreign trade and FDIs in the last decade. To a lesser extent other pull factors such as SA regulation and high interest margins started to attract interest. Furthermore, from 1994 to 2012 SA has enjoyed economic growth and business expansion and subsequently unused credit potential in the SA economy slowly increased trend scores from the time of entry to 2012.

Looking at the future, "searching for new clients and businesses", a push factor, remains strong followed equally by "SA regulation" and "following clients from home countries", two pull factors and then "unused credit potential of the SA economy".

"Geographic proximity" requires specific attention as it got the second highest score at the time of entry and remains strong in the period 2011-12. Although pull and push factors may explain some aspects of the survey answers, it does not explain why geographic proximity received such a high score considering that geographically speaking SA in not that close to Europe, Asia or America. In addition to push and pull factors there are other factors that explain why banks decide to operate abroad. One pull factor, which is part of the ownership advantage theory (see chapter 1), is to "follow the clients from home countries", as the banks may be able to compete with

host countries (Miller and Parkhe, 1998). But, as previously seen, this is not the case for the period 1994-2012. Another factor would perhaps be to "follow the competitors" (this was not asked to the banks). Indeed, ownership advantages may trigger different types of strategic behaviour amongst foreign banks that includes following the leader. Foreign banks then mimic each other's investment behaviour that includes the location of their branches in host countries (Engwal and Wallenstal, 1998). This perhaps may provide some clarification to this ambiguous response, as it was not possible to interview every single bank about the survey.

4.2 In which type of clients foreign banks are interested, in SA market?

As described in chapter 1, foreign banks have some ownership advantages that contribute to help them compete with domestic banks in host countries. Ownership advantages could be in the form of tangible and intangible assets and these types of assets may range from the foreign banks' capabilities and capacity to offer superior banking products as well as unique banking services to their clients because they have better managerial skills or more advanced information technology (Aliber, 1984; Cho, 1985; Yannopoulos, 1983; William, 1997). The foreign banks therefore may concentrate their activities in areas where they have comparative advantages. Furthermore, a bank from a more advanced economy might possess better risk management techniques, products and technologies (Berger et al., 2000; Claessens and Van Horen, 2008). Foreign banks may exploit their comparative advantage in the area of retail banking where they might have already developed products, services and expertise that can be cheaply implemented in the new market (Kraft, 2002). Some foreign banks may have a comparative advantage in products such as derivatives, or activities of private and investment banking that require specific knowledge (Clarke, Cull, D'Amato and Molinari 1999) and this particular aspect of comparative advantage is what most of the foreign banks that are operating in SA possess. On the other hand, in activities that require in-depth local knowledge, foreign banks may be disadvantaged. For instance, activities such as lending to small companies may be dominated by domestic banks (Kraft, 2002).

At the time of entry, in table 4.2 below the foreign banks report that their main targets were “large domestic companies” and “domestic blue chips” that received the highest score respectively 2.41 and 2.40. Clearly, they were not interested in small businesses as predicted from the earlier discussion above; “domestic, small and medium enterprises” as well as “micro-enterprises and sole trader” score respectively 0.90 and 0.4. Foreign banks may find it more difficult to assess the creditworthiness of smaller businesses, which often have inadequate business plans and financial statements. The financing of small and medium enterprises involved higher administrative and transaction costs due to lending or investing smaller amounts (UNCTAD, 2005). In addition, when compared with larger corporations small and medium enterprises, in general, have smaller capitalisation and insufficient assets. They are more subject to market fluctuations that make them even more vulnerable. They may be regarded as high-risk borrowers as they may record higher rates of insolvency and as mentioned all these disadvantages may make their creditworthiness more complicated to assess by foreign banks. It may be assumed that foreign banks may have already developed products, services and expertise that could be cheaply implemented in the new SA market (Kraft, 2002) that possibly required standard but advanced skills for specific needs. It was mentioned in the previous section that foreign banks follow their clients abroad and this can be confirmed as “home country investors” received a high score of 2.29. This particular answer may well contradict the conclusion of the previous table 4.5, as “following client abroad” was not their main reason for entry. In fact, it seems that foreign banks were mostly interested first in the SA market potential but took full advantage of a situation in which foreign investors were gradually coming back to the SA market. This is clearly confirmed by the fact that “home country investors” is ranked third just after SA market: “large domestic companies” and “domestic blue chips”. In light of this new finding it can be concluded that the foreign banks that are operating in SA, at the time of entry, followed their clients that wished to invest in the SA economy.

In 2011-12 the same three groups of activities: “home country investors”, “domestic blue chips” and “large domestic companies”, still dominate as they score respectively 2.25, 2.40 and 2.43. However, two additional groups emerge: “foreign investors” and “other foreign or international companies”. These two groups represent any foreigners

(investors or companies) that do not originate from the same country as a foreign bank that operates in SA and that wish to invest in the SA economy. This implicitly translates the influx of foreign investments in SA that reflects the effort made by the SA government since 2000 to implement trade and FDI policies.

In their view of the future, foreign banks still focus on the five groups: "home country investors", "domestic blue chips", "large domestic companies", "foreign investors" and "other foreign or international companies" with almost equal scores. "High net worth individual group" records a significant progression from virtually not important at time of entry to become close to important in the future. This suggests that due to the increase in SA economic development, a strong middle class society is currently emerging. This also suggests a shift in the foreign banks' strategy to service this new type of customers in providing more private banking services.

Table 4.2: Type of clients

Activity	At time of Entry			Now			In the future		
	Average score	Number of answers	Share in total foreign banking assets	Average score	Number of answers	Share in total foreign banking assets	Average score	Number of answers	Share in total foreign banking assets
Foreign investors	1.92	7	51.35%	2.01	7	51.35%	2.44	7	51.35%
Home country investors	2.29	7	51.35%	2.25	7	51.35%	2.31	7	51.35%
Other foreign or international companies	1.80	8	55.12%	2.15	8	55.12%	2.21	8	55.12%
Domestic blue chips	2.40	8	55.12%	2.40	8	55.12%	2.43	8	55.12%
Large domestic companies	2.41	8	55.12%	2.43	8	55.12%	2.44	8	55.12%
Domestic small and medium enterprises	0.90	7	51.35%	0.89	7	51.35%	1.65	7	51.35%
Micro-enterprises and sole traders	0.47	7	51.35%	0.55	7	51.35%	0.05	7	51.35%
High net worth individuals	0.34	7	51.35%	1.50	7	51.35%	1.87	7	51.35%
Households	0.08	7	51.35%	0.05	7	51.35%	0.04	7	51.35%

Scale: 0-Not important, 1-less important, 2-important, 3-very important.
Source: Questionnaire feedback (Annex 2.2).

One conclusion that can be drawn here is that the foreign banks came to SA to enjoy the most profitable market niches. They did not seek to serve the whole spectrum of the market consisting of both retail (household) and corporate (business sector). Instead the focus was more on the SA business sector at the time of entry.

With household scores close to zero at the time of entry and even lower in the future, it seems that the foreign banks are not interested in this market.

Table 4.3 provides another source of information on foreign banks' strategies regarding the activities that are most important for them. At time of entry, foreign banks were mostly attracted to "portfolio investments" in SA. These activities cover exclusively production and investment. Foreign banks were less interested in foreign "direct investment" and "SA import/export activities". The focus on these activities validates the findings in table 4.2, as the foreign banks were more interested in SA big businesses.

Table 4.3: Type of activities

Activity	At time of Entry			Now			In the future		
	Average score	Number of answers	Share in total foreign banking assets	Average score	Number of answers	Share in total foreign banking assets	Average score	Number of answers	Share in total foreign banking assets
Foreign direct investment in SA	1.71	8	55.12%	2.50	8	55.12%	2.95	8	55.12%
Portfolio investments in SA	2.34	8	55.12%	2.36	8	55.12%	2.37	8	55.12%
SA exports	1.83	7	51.35%	1.86	7	51.35%	1.86	7	51.35%
SA imports	1.85	7	51.35%	1.87	7	51.35%	1.87	7	51.35%
Purchase of fixed capital/modernisation	1.24	7	51.35%	1.40	7	51.35%	1.81	7	51.35%
Purchase of working capital	1.38	7	51.35%	1.46	7	51.35%	1.46	7	51.35%
Enterprise restructuring and domestic M&A's	1.89	7	51.35%	2.38	7	51.35%	2.47	7	51.35%
Expansion of domestic companies abroad	1.81	7	51.35%	1.95	7	51.35%	2.74	7	51.35%
Household - consumption	0.78	7	51.35%	0.70	7	51.35%	0.70	7	51.35%
Household - transportation	0.77	7	51.35%	0.82	7	51.35%	0.70	7	51.35%
Household – real estate	0.65	7	51.35%	0.72	7	51.35%	0.57	7	51.35%
Foreign direct investments by SA firms abroad	1.95	7	51.35%	1.95	7	51.35%	2.31	7	51.35%
Portfolio investments by SA firms abroad	1.97	7	51.35%	1.97	7	51.35%	2.33	7	51.35%

Scale: 0-Not important, 1-less important, 2-important, 3-very important.
Source: Questionnaire feedback (Annex 3.10).

In 2011-12, foreign banks focus their attention more on "FDI in SA" with the higher score, followed by activities such as "enterprises restructuring and domestic merger and acquisition" and "portfolio investments in SA." that obtain almost similar scores, 2.38 and 2.36 respectively.

In the future, “FDI in SA” dominates, closely followed by “expansion of domestic companies abroad” scoring respectively 2.95 and 2.47. These may be the result of FDI policy and economic partnerships that the SA government has implemented, which suggests that SA firms are taking advantage of economic partnerships and regional integration agreements to expand abroad. This is confirmed by a high score of “FDI by SA firms abroad” that scores 2.31.

Table 4.3 confirms the fact that the foreign banks in SA are operating in the highly specialised segment of investment banking. At the time of entry their activities covered essentially “portfolio investments in SA” and extended gradually to investments in SA from foreign investors and activities of M&A (mergers and acquisitions). In the future they wish to consolidate their presence in this kind of segment. These types of activities are high value added and specialised activities that require specific skills and knowledge. This could partly contribute a limited and localised effects of spillovers and competition in SA banking sector, as the empirical results in chapter 7 may show. And that is explained by the fact that if foreign banks focus on segments where domestic banks are not present or specialised in then their presence will have few effects on domestic banks (Clarke et al, 2000). In the case of SA, domestic banks are still present in this segment but their main activities concentrate on retail banking.

Table 4.3 confirmed another lesson learned from table 4.2, that foreign banks in SA are not interested in taking part in household activities or activities involving micro-enterprises and sole traders. With the big four (excluding ABSA, which is now part of the Barclays group) that dominate the domestic market, they might think that it is worthier to concentrate their activities on corporate and investment banking where they possess significant comparative advantage. In fact, foreign banks’ entry is often limited to the wholesale segment (mortgage brokers, large corporate clients, mid-sized companies, real estate developers and investors, international trade finance businesses and institutional customers such as pension funds and government entities/agencies and services offered to other banks or other financial institutions). In the SA case they are exclusively limited to the investment banking segment, as doing business in other segments is usually not ideal for them as they involve higher risks,

and higher information and transactions costs (Lensink and Hermes, 2004; Claessens et al., 2001; Clarke et al., 2003). This on the other hand reveals a lack of competition in retail banking that the competition authorities and regulators may need to pay attention to in term of policy implications. But in SA, as chapter 4 shows, this is slowly starting to change with ownership changes in the four big SA banks, in particular in ABSA and the Standard Bank.

4.3 What products and service innovation do foreign banks contribute to bring into SA market?

At the time of entry, foreign banks rated "money-market trading" as their primary activity. "Foreign currency dealing" and "lending to financial institutions" were rated with equal scores as their second main lines of business (table 4.4).

In 2011-12, these three top activities: "money-market trading", "Foreign currency dealing" and "lending to financial institutions" still remain important. However, foreign currency dealing and lending to financial institutions are outperformed by security trading, equity trading and derivative trading, which obtain scores higher than 2.70. Activities such as "foreign payments" and "trading domestic riskless securities" are amongst the top activities. If "foreign payments" are a key activity for foreign banks in the SA market, activities such as "security trading", "equity trading", "derivative trading" and perhaps "trading domestic riskless security" represent major innovations.

In the future, foreign banks seem to be particularly interested in "lending to government and public enterprises" and "domestic payments" (with scores above 2). "Money-market trading" and "foreign currency" remain strong in the banks' intentions with the higher scores respectively 2.91 and 2.98.

The outcomes of table 4.4 are in line with those of the previous table 2.3 that shows the types of activities that foreign banks are involved in. The products listed in table 4.4 are in fact products provided by these activities. On the one hand, these results show the consistency of the respondents that validates the rigorousness of this survey. On the other hand, the consistency of results validates the strategy of the foreign

banks, which consists of concentrating their activities in the investment banking at the time of entry and gradually expanding their activities to the whole spectrum of the wholesale banking as defined previously.

Table 4.4: Banking products and services

Activity	At time of Entry			Now			In the future		
	Average score	Number of answers	Share in total foreign banking assets	Average score	Number of answers	Share in total foreign banking assets	Average score	Number of answers	Share in total foreign banking assets
Deposit and lending business with private non-financial sector	1.18	7	51.35%	1.60	7	51.35%	1.60	7	51.35%
Lending to government and public enterprises	0.88	7	51.35%	2.07	7	51.35%	2.43	7	51.35%
Lending to financial Institutions	2.00	7	51.35%	2.50	7	51.35%	2.56	7	51.35%
Domestic payments	0.71	7	51.35%	1.86	7	51.35%	2.22	7	51.35%
Foreign payments	1.60	8	55.12%	2.61	8	55.12%	2.61	8	55.12%
Foreign currency dealing	2.00	8	55.12%	2.32	8	55.12%	2.98	8	55.12%
Trading domestic riskless Securities	1.64	7	51.35%	2.46	7	51.35%	2.46	7	51.35%
Money market trading	2.50	8	55.12%	2.89	8	55.12%	2.91	8	55.12%
Business leasing	0.73	7	51.35%	0.34	7	51.35%	0.34	7	51.35%
Financial leasing	0.72	7	51.35%	0.38	7	51.35%	0.38	7	51.35%
Securities trading	1.50	7	51.35%	2.74	7	51.35%	2.75	7	51.35%
Equities trading	1.46	7	51.35%	2.70	7	51.35%	2.71	7	51.35%
Derivatives trading	1.54	7	51.35%	2.72	7	51.35%	2.73	7	51.35%
Asset Management	0.52	7	51.35%	0.60	7	51.35%	1.80	7	51.35%
Commission business	0.48	7	51.35%	0.90	7	51.35%	0.92	7	51.35%
Life and non-life insurance	0	7	51.35%	1.12	7	51.35%	0.21	7	51.35%
Pension funds	0.40	7	51.35%	0.40	7	51.35%	0.40	7	51.35%
Brokerage	0.40	7	51.35%	1.65	7	51.35%	1.67	7	51.35%

Scale: 0-Not important, 1-less important, 2-important, 3-very important.
Source: Questionnaire feedback (Annex 3.10).

It seems that activities such as leasing or insurance have never been and will never be a priority for them. Indeed, this line of business is entirely covered by the domestic and insurance banks that are successfully operating in SA.

Table 4.5 below summarises the most popular products used by the foreign banks. The number of banks that answered this question is more limited; they make up a maximum of 26% of total foreign banking assets and answers provided may suggest a trend. Futures, options and swaps are the most successful products, which obtain the

highest score 3 out of 3. These products are very specialised and bounded in the very specific area of investment banking. This result may suggest that currency risks in SA are actually very well managed, which is not a big surprise as these foreign banks have knowledge of how to support this line of business in SA.

Table 4.5: Success of new products and services

Product	Average score	Number of answers	Share in total foreign banking assets	Earliest introduced in SA market by any of the banks
Futures	3	1	18.20%	2009
Options	3	2	25.12%	2009
Swaps	2.96	3	26.11%	2000
Forfaiting	2	1	7%	2011
Domestic payments	2.77	3	8.35%	1992
Cash and asset management	2	1	18.20%	Unknown
Call deposit	1.70	2	1.43%	1992
Call loan	1.70	2	1.43%	1992
Open saving	1.70	2	1.43 %	1992

Scale: 0-Not important, 1-less important, 2-important, 3-very important.
Source: Questionnaire feedback (Annex 3.10).

Surprisingly domestic payments obtained a big score 2.77 out of 3 with a significant number of respondents. This is interesting because when analysing the answer in particular, the banks that use this product appear to be small in size. These respondents that use domestic payments account for only 8.35% of total foreign banking assets. This result suggests that only specific small foreign banks actually use this product.

This survey shows that the derivatives products including “Futures”, “Options” and “Swaps” are more used than other products and for this reason this constitutes a success. Most of these products are traded on the JSE (Johannesburg Stock Exchange) that provides the infrastructure for trading. With the expertise and the knowledge and the fact that the foreign banks are used to dealing with these products, the success of these products is not a surprise.

4.4 What knowledge diffusion do foreign banks contribute to bring into SA market?

This section identifies directly from table 4.6 the types of knowledge that have spilled over in the SA banking sector from the foreign banks. As in previous sections, not all banks answered this question but they made up a maximum of 44.16% of total foreign banking assets, which is representative and significant. At the time of entry, foreign banks adopted "new products and services", "management methods and skills" and "risks management processes".

Table 4.6: Skills and knowledge transfer

Knowledge / skills / systems	Before 2000		2000-10		2011 and +	
	% of yes	Share in total foreign banking assets	% of yes	Share in total foreign banking assets	% of yes	Share in total foreign banking assets
Information technology	66.67	44.16%	66.67	26.56%	66.67	41.00%
New products and services	83.33	44.76%	100	45.20%	66.67	41.00%
Project assessment methods	33.33	22.20%	66.67	23.23%	50.00	22.80%
Management methods and skills	83.33	44.76%	100	45.20%	66.67	41.00%
Marketing knowledge and techniques	16.67	21.21 %	50	22.64%	33.33	22.20%
Retail knowledge and techniques	16.67	0.60%%	50	2.03%	33.33	1.59%
Wholesale knowledge and techniques	33.33	39.41%	66.6	41.00%	66.67	41.00%
Risk management processes	83.33	44.76%	83.33	44.76%	83.33	44.76%
Internal control processes and systems	66.67	41.00%	66.67	41.00%	66.67	41.00%

Source: Questionnaire feedback (Annex 3.10).

These three received the highest score (83%) and from the majority of the panel respondents (44.76%). "Information technology" and "internal control processes and systems" received an above-average score (66.6%).

Moving to the period 2000-10, other areas seem to be affected by the transfer, such as "wholesale knowledge and techniques and project assessment method, which received a high score but only from a limited number of respondents.

In the future, the banks would accentuate the transfer in almost all activities except in project assessment methods, marketing knowledge and techniques and retail knowledge and techniques, whose scores dropped below average.

In light of the answers provided by the foreign banks, it seems that foreign banks have been playing a significant role in the process of introducing new knowledge, skills and modern risk management systems and this is not surprising as domestic banks in developing countries are generally characterised by outmoded, inefficient management skills. This is reflected by the fact that a bureaucracy culture makes them consider first aspects of bureaucracy such as procedures and recording, as more important than profitability, customer service, training and innovative products (Bascom, 1997). This table 4.6 shows that the foreign banks have demonstrated the availability of new communication technologies, modern skills and management practices (Lensink/Hermes, 2004) in the SA market. As a result, it could be considered that the domestic banks may have imitated and adopted these modern skills and competencies (Lensink and Hermes, 2004) and therefore they may have improved the efficiency of their operations (Lehner and Schnitzer, 2008). Secondly, the availability of modern risk management systems that allows better portfolio diversification can in fact contribute directly to improve the efficiency of financial intermediation by reducing the cost of searching for processing information about potential borrowers (Hermes and Lensink, 2004; Levine1996; Agenor, 2003), and as mentioned above, foreign banks from more advanced economies may have better available risk management techniques (Berger et al., 2000; Claessens and Van Horen, 2008). These aspects exemplify a straightforward possible direct spillover effect of foreign banks in the SA wholesale banking market.

These results from table 4.6 that show the availability of new knowledge, skills and modern risk management systems in the SA market imply the existence of a technology gap before and after 2000. As domestic banks are operating in this segment of investment banking where the foreign banks are active, it is fair to say that some absorptive capacity existed or exists. Then, if absorptive capacity exists, it is likely that domestic banks enhanced their technological level by imitating foreign technologies as suggested earlier. This is complex because if the survey informs about the availability of new skills, knowledge and technology in the SA market, it does not tell what is the level of absorptive capacity of domestic banks. Unfortunately I cannot conclude on how and/or if any spillover effects occur in the light of this survey

because a large technological gap reflects a lower absorptive capacity of domestic firms and reduces the likelihood of spillover effects (Dimelis, 2005; Kokko 1994). The critical level of the technological gap is essentially determined by the complexity of foreign technologies as well as the extent of, and the increase in market penetration by, foreign corporations (Perez, 1997). In addition, if foreign technologies are developed for the specific market conditions in a particular country or for the specific needs of a certain firm, domestic firms may not have the required skills to adopt them (Moosa 2002; Blomstrom and Kokko 1998; Perez, 1997). And spillover effects are unlikely to occur if foreign firms operate in isolated market segments (Kokko, 1994) as is the case here. This aspect of absorptive capacity (AC) is a transmission factor for spillovers or determinant for spillovers effects as analysed in chapter 1. From this angle I cannot conclude that spillover effects have occurred.

Furthermore, management know-how is mostly implicit and to be adopted, it requires sufficient personal contact between the sender and receiver of that know-how (Smeet and deVaal, 2005). One factor that can facilitate the diffusion of management know-how and the transfer of skills and implicit knowledge is labour turnover (McKendrick, 1994). This aspect of turnover is one of the components of spillover effects or channels of FDI knowledge spillovers. Unfortunately the survey does not provide information on that aspect of turnover.

However, in light of the outcomes of table 4.6 as mentioned earlier, it can be confirmed that the foreign banks have demonstrated the availability of new information technology, new products and services, new management methods and skills, new risk management processes and new internal control processes and systems. The next question would be whether or not the domestic banks have imitated and adopted these new skills and techniques (Lensink and Hermes, 2004). If the answer is yes then it could be concluded that there is a case for some demonstration effects. Although table 4.6 does not provide with this answer, however, competition is the condition for demonstration effect to take place. The existence of such competition effect in the segment of wholesale banking would clearly imply that demonstration effects occurred. And as demonstration effects are channel of spillover effects (as seen in chapter 1) I could conclude that the SA wholesale banking sector

has experienced some knowledge spillovers (or spillover effects). The next table may provide some more insight, as it deals with competition and as the survey assesses the banks over a relatively long period of time before 2000 and after 2011.

4.5 What is the impact of foreign banks on competition, quality and efficiency in SA market?

The results from table 4.7 below are complex but interesting and in many respects confirm the previous findings. It shows how the impact of the foreign banks has evolved over time. At the time of entry, it can be assumed that the foreign banks did not play any significant role in the SA market, as their total share in assets was very low (around 5% - see chapter 3).

However, according table 4.7, it seems that their relative impact was made in the area of fees only with a score of almost 2. However, from the period 2000-11 their effect can be seen more clearly, with an increase of all impacts. But these impacts need to be read very carefully. For instance the second biggest impact is on "bank profitability" with a score of 2.41. But the analysis of the components of profitability shows a more contrasting picture. Indeed, profitability indicators as established in chapter 3 could include lending interest, fees and interest margin and each component tells a different story.

Table 4.7: Importance of foreign banks entry for SA market

Trend / process	Before 2000			2000-10			2011-on		
	Average score	Number of answers	Share in total foreign banking assets	Average score	Number of answers	Share in total foreign banking assets	Average score	Number of answers	Share in total foreign banking assets
Lending interest rates	0.70	6	48.35%	1.11	6	48.35%	1.11	6	48.35%
Fees	1.97	7	52.11	2.40	7	52.11	2.40	7	55.12%
Interest margins	1.24	7	52.11	2.09	7	52.11	2.44	7	51.35%
Products and services	0.95	7	52.11	2.14	7	52.11	2.56	7	51.35%

Assortment									
Market competition	1.21	7	52.11	2.39	7	52.11	2.37	7	51.35%
Bank Profitability	1.58	7	52.11	2.41	7	52.11	2.41	7	51.35%
Bank efficiency	1.77	7	52.11	1.81	7	52.11	2.17	7	51.35%
Central bank regulation	1.74	7	52.11	2.10	7	52.11	2.09	7	51.35%
Involvement of banks in managing non-financial corporations in which they have equity holding	1.84	6	48.35%	0.18	6	48.35%	0.20	6	48.35%
Involvement of banks in managing non-financial companies that are major bank debtors	1.21	6	48.35%	1.23	6	48.35%	1.23	6	48.35%
Introduction of new banking products and services	1.12	7	52.11	1.90	7	52.11	2.34	7	52.11
Increasing the quality of existing products and services	1.77	7	52.11	2.55	7	52.11	2.57	7	52.11

Scale: 0-Not important, 1-less important, 2-important, 3-very important.
Source: Questionnaire feedback (Annex 3.10).

I stated earlier that as foreign banks generally have more experience in dealing in competitive environments than domestic banks, they may find it easier to operate with variable prices such as interest rates and fees (Jansen and Vennes, 2006). It was argued several times that those foreign banks in developing countries generate better profit margins than domestic banks. Here, table 4.7 shows that foreign banks had limited impact on "lending interest rates" (1.11), important impacts on "interest margins" with a score of 2.09 (although a much higher score could be expected) and a significantly higher score in "fees". How can these contradictions be explained? First, the scope of foreign banks activity is smaller and limited to investment banking. Second, a majority of these banks' revenue is generated through fees. Therefore, the results are not contradictory but rather reflect the complexity of foreign banks activity. It becomes clearer why foreign banks impact is limited in the area of "lending interest rates"; it seems that foreign banks in SA cannot compete with SA banks in offering much lower interest rates. As they perceived "fees" as their core activities, it is not surprising that impact on "bank profitability" is high.

There is an impact on "product and services", "introduction of new banking product and services" and "increasing the quality of existing products and services" for the period 2000-10 that received respectively a score of 2.09, 1.90 and 2.55. These results emphasise findings in the previous table 4.6 that show the biggest score for two activities that include "new products and services" and "Management method and

skills" and this allows to draw the same conclusion that all products, practices and know-how that are necessary for the process of knowledge spillovers to occur were present in SA market.

In light of the results that score high: "products and services" in general and "bank profitability", it is not surprising that "market competition" scores 2.40 out of 3. It shows that impact of the foreign banks in investment banking activity was important. But here, despite great competition, important impacts on products and services and profitability, the impact on "bank efficiency" is still limited as it scores 1.81 out 3, which means less than important. This finding will be further explained in chapter 4 and 6 that provides empirical evidence on efficiency. But this does not mean that domestic banks did not feel competition. As mentioned earlier in this section, this implies that if foreign banks from industrialised countries focus on the wholesale segment markets in developing country, it is highly likely that they apply respective models and techniques to analyse wholesale credits.

Two other impacts seem to be very low with almost no improvement over time: these are the involvement of foreign banks in the management of non-financial enterprises in which they have shareholdings, and their involvement in the management of non-financial enterprises that are large debtors. This shows that close bank involvement in the non-financial sector enterprise management does not happen in SA.

I stated previously that competition is the condition for demonstration effect to take place. And as competition occurred in the segment of wholesale banking (as just shown in this section), therefore this clearly implies that demonstration effects occurred. But demonstration effects are channels of spillover effects (as seen in chapter 2); in consequence I can conclude at this stage that the SA wholesale banking has experienced some knowledge spillovers (or spillover effects). The question now is to what extent have spillovers occurred into the entire SA banking sector and affected SMEs and retail banking.

4.6 What is the probability of future scenario in SA banking system?

As far as the further consolidation of the banking system is concerned, table 4.8 shows that almost all banks in the panel score 3 out of 3 on "remain independent" as their most likely option for the period after 2012. However, after 2012, "buy-out of domestic bank" scores 1.45. "Hostile offer for majority share" and "hostile offer for minority share" score each 1.26 and together 2.56, suggesting that beyond 2012 some acquisitions are likely to happen. Therefore, is there any future for SA domestic banks? There are currently four big banks in SA and one, ABSA is foreign-owned by Barclays since 2005 (not included in this study as a foreign bank). The ICBC, (a Chinese bank), has a minority shareholder (20%) in the Standard Bank. Nedbank has a strategic partnership with EcoBank, an African bank. First Rand is the only domestic big bank that has as yet no strategic or commercial partnership and no minority or majority foreign shareholding in its capital structure, but may seek partnership in order to establish activities in the Indian market and implement its technological platform there that has proved successful in the SA market (Interview 5). Kraft (2002) suggests that after a consolidation process, there are market niches for smaller banks with exceptional knowledge of local conditions. This seems to be the case in SA with about 10 small domestic-owned banks left. Moreover, DeYoung, Goldberg and White (1999) provide evidence from the US that relationship lending with small business is generally most successfully practised by small and young banks arguing that a constant flow of new banks is needed, since older banks grow up to become larger and often lose their close relationship to their customers.

Table 4.8: Probability of future scenario

Scenario	Through 2011-12			After 2012		
	Average score	Number of answers (=>) 2	Share in total foreign banking assets	Average score	Number of answers (=>) 2	Share in total foreign banking assets
Remain independent	3	7	54.52	3	7	54.52
Merge with domestic bank	0.18	0	54.52	0.18	0	54.52
Buy-out by domestic bank	0.18	0	54.52	0.18	0	54.52

Buy-out of domestic bank	0.66	1	54.52	1.45	3	54.52
Merge with foreign bank	0.25	0	54.52	0.25	0	54.52
Buy-out by foreign bank	0.30	1	54.52	0.30	0	54.52
Buy-out of foreign bank	0.18	0	54.52	1.18	0	54.52
Hostile offer for minority share	0.12	0	54.52	1.26	0	54.52
Hostile offer for majority share	0.12	0	54.52	1.26	0	54.52

Scale: 0-Not important, 1-less important, 2-important, 3-very important.
Source: Questionnaire feedback (Annex 3.10).

The emergence of Capitec bank, now a medium-sized bank, which has specialised in micro-lending is a perfect illustration. Chapter 4 provides more details about Capitec.

4.7 Conclusion

The survey results analysed here in this chapter help us understand the strategy of the foreign banks and branches in SA and their potential for knowledge spillovers. It is clear that the main reason for entry of the foreign banks in SA market after regime change in SA was the search for new clients and businesses and this reason still remains valid today. However, the type of clients they were looking for at the time of entry was large domestic companies and blue chip companies. This remains the case today and for the future. This aspect of type of clients is very important as it reflects the particular market segment in which the foreign banks are operating. There is no doubt that foreign banks enjoys the most SA profitable market niches and the survey also confirms that they have no interest in operating in the larger segment of retail banking and domestic, small and medium enterprises or micro-enterprises and sole-trader. The type of activities and products also confirm this particular segment in which they are operating. This aspect of market segment in which they operate might have huge implications as competition and knowledge spillovers might be localised in that particular market only.

In terms of knowledge diffusion, this survey reveals the availability of new knowledge, skill and modern risk management system in the SA market due to the presence of foreign banks implying a technological gap in the wholesale segment. The problem was to identify any demonstration effect meaning whether or not the domestic banks adopted the new available knowledge management system. The survey identified the presence of competition occurring in the segment of wholesale banking; we argued that competition is a condition for demonstration effects to take place; as demonstration effects are a channel for spillover effects (as seen in chapter 1) consequently, this survey provides some ground to argue the existenc of some knowledge spillovers in the SA wholesale banking sector.

The next chapter extends the investigation of knowledge spillover through other routes and determinants using the techniques of case studies and empirical analyses.

Chapter 5

5. In search of knowledge transfer and spillovers effects: Evidence from case study

The aim of this chapter is to address the relationship between efficiency and FDI. It investigates further the mechanisms and the impacts of knowledge spillovers and knowledge transfer in two of the SA four big banks. To achieve this, the performance and efficiency of ABSA and the Standard Bank are analysed. Barclays Bank, a British bank, recently acquired ABSA, while ICBC, a Chinese bank took a significant foreign minority (20%) shareholding in the Standard Bank. Contrary to the previous chapter that dealt with foreign banks and branches that operate exclusively in the segment of investment banking, these banks are two of the four big SA-based banks, whose activities cover all segments of banking including wholesale and retail. Entering respectively into a FDI or a Greenfield investment represents two strategies that allow Barclays and ICBC banks to broaden their activities, in particular in the retail segment, to target new customers and perhaps to implement their strategy further in the rest of the African continent.

This chapter addresses two questions: first whether or not ABSA and the Standard Bank performance have improved after their recent change of ownership, and second if their performance is better than those of their peers. Knowledge transfer could materialise through better performance or efficiency. But beyond these expected improvements, it is important to understand how this performance was achieved. Did the foreign bank pass on knowledge to the newly acquired domestic banks in areas such as management, system or products? The change in strategy is equally important to identify, as the new owner may want to concentrate on particular segments of the market, which implies a change of direction in terms of products and clients. But it is clear that any changes in performance could depend directly on the level of ownership. Another important issue is whether or not a change in performance of

these newly foreign-owned banks has influenced the competitors' strategy. If this is the case that would suggest that more competition has occurred and implies some kind of spillover effects.

The literature and practitioners argue that FDI in the banking sector and mergers and acquisitions (M&A) result in efficiency gains (Krabill, 1985; Meehan, 1989; McNamee, 1992). It is argued that FDI is one of the mechanisms by which firms gain access to new resources and that this redeployment of resources increases revenues and reduces cost. This impact of FDI and M&A is the result of intense competition, evolving technology, low interest rates, changing regulation in the financial market and many other factors.

The potential economic benefits from FDI and M&A are changes that increase value, which would probably not be possible in the absence of a change in ownership. These changes in ownership are potentially most valuable when they lead to the re-deployment of assets or restructuring, providing a new operating plan and business strategies. Otherwise, the changes in control could simply provide improvement in free cash flow. This is where the level of ownership can be decisive for future strategy and possible gains in efficiency and performance. For instance, Blomstrom and Sjoholm (1999) show that minority and majority FDI lead to spillovers. On the other hand, Demelis and Louri (2002) find majority ownership leads to spillovers when measured as labour productivity improvements and minority ownership is even more likely to produce knowledge spillovers. Javorcik (2004b) finds no evidence of spillovers and no statistical difference between minority and majority FDI. Jarvocik and Spartareaunu (2008) find spillovers from their studies. However, some analysts have expressed scepticism, as some studies show no efficiency gains (Azarchs, 1995; Srinivasan and Wall, 1992; Berger and Humphrey, 1992; Rhoades, 1993).

The ownership structure is very important when mutinational banks take their advantages from intangible assets or technological leadership. This is also called ownership advantage meaning that the bank has some form of thechnological superiority or competitive advantage over its rivals in the domestic country that needs to be protected. However, sharing of ownership with domestic banks gives the

possibility to increase knowledge and technological spillovers. Mainwhile, it is worth noting that it is difficult to draft an agreement or a contract that exactly specifies all aspects of acquisition or minority participation and the right for using the intangible assets or thechnology (Muller and Schnitzer, 2003). But this particular issue of spillovers should be minimised when the multinational bank (firm) owns a substantial part of the domestic firm (Grossman and Hart, 1986; Hart and Moore, 1990). Therefore, the two levels of owneship, whether it is wholly or partly owned, should have various implications for the transfer and diffusion of knowledge. Thus, this implies that in order to minimise any potential loss from spillovers a multinational may prefer full ownership of its subsidiary or branche. Another reason why the MNE may voluntary agree to share ownership is because of its lack of local experience. The literature categorises knowledge transfer and FDI spillovers as voluntary or involuntary spillovers, resulting from change in ownersip. While voluntary spillover is characracterised by technology transfer arrangements consequently to a change in ownership as just discussed in this paragraph, involuntary spillover is characterised by knowledge spillovers as a result of competition. Competition as we described in previous chapter 2 and 3 may force domestic banks to adopt new knowledge or technology through imitation. But for this to occur competitors may need to develop a minimum absorptive capacity (AC) so that involuntary information and knowledge spillovercmay increase at system level. There are also many other channels as discussed in chapter 2, such as reverse ingeneering that provides information about thechnology used, and mobility of labour, meaning that an employee from a foreign branch, who has the knowledge about the technology, can be hired by the competiting domestic. Because that knowledge is embodies in the employee, thus this allows the hiring firm to use it.

Furthermore, the firm will decide which mode of entry is preferable in order to protect its ownership ownership advantage. Therefore where licensing is not safe because of issues of property right protection, firm may set up production faciities in foreign countires through FDI, as specific advantages in the host country make FDI preferable to exporting (Buckley and Casson, 1976; Dunning 1979, 1988,1993). This is also called technology-exploitation motivation because such advantage is linked to the exploitation of the economy of scale. Work about ownership advantage in a given

location includes for instance Griffith (1999), Griffith and Simpson (2001) Oulton (2001) and Criscuolo and Martin (2004) and see also chapter 1.

In addition to ownership advantage in a given location, location itself constitutes a key component of Dunning (1979) analysis of FDI, as it put it location advantage. As we already analised in chapter 2, location advantage is related to the factor of endowments of a particular country or region. These factors usually include costs differential, in particular unit labour cost differential that includes wages adjusted for productivity differences that constitute an important factor for FDI flows (Bajo-rubio and Sosvilla-Rivero, 1994; Barrell and Pain, 1996; Love and Hidalgo, 2000; Love, 2003). In their work and built on earlier findings, Driffield and Love (2005a, 2005b; 2007) provide a model that identifies FDI and from high and low lobour cost locations. This model provides four alternatives' motivations for FDI, based on technology differences (measured by R&D intensity differetials) and factor costs differences (measured in terms of unit labour costs). These alternatives includes (Driffield and Love, 2007):

1. Technology-sourcing element and location advantage, where the host economy is more R&D intensive and lower unit labour cost than the source investor, meaning that inward investment can exploit the host's location advantage,
2. Pure technology-sourcing investment that attracts the host's higher R&D intensity country despite its higher unit labour costs,
3. Ownership advantage and efficiency seeking (defined in chapter 2) meaning that a lower unit labour cost advantage from the host country suggesting and efficiency seeking motivation (Dunning, 1998),
4. Finally pure ownership advantage motivation, meaning that the source-country R&D intensity is greater than of the corresponding host sector and FDI are taking place in spite of the host country having higher labour costs.

It is important to use this model carefully as costs may not be the only possible location advantage. In this study, for instance, it is hard to envisage ICBC investing in the Standard Bank for lobour costs reasons, as labour constitutes China competitive

advantage. However, this model helps to capture the key FDI motivations between source and host countries provided by most empirical evidences from the litereature. And this is importance when addressing the nature or FDI spillovers and technology transfer.

ABSA and the Standard Bank have been selected as case studies here; because of their size and their market share, they are thought to be the kind of acquisitions most likely to yield efficiency gains. The two deals occurred in 2005 between Barclays and ABSA and in 2007 between ICBC and the Standard Bank. A methodology of case studies rather than cross-section statistical models was used as the study focuses on 2 banks only. Due to the non-random selection, it will not be possible to generalise from the findings to all similar foreign participation or acquisition cases. However, the findings may give indications as to which conditions surrounding FDI in the banking sector in a developing country are most likely to yield efficiency and performance gains and why efficiency and/or performance gains are or are not realised. In this chapter, section 5.1 provides a brief summary of spillover effects already studied in chapter 2, then section 5.2 presents and describes the research design while section 5.3 interprets the findings from the case studies, and the last section concludes.

5.1. Direct, indirect and spillovers effects: Brief theory summary

In figure 2.1 (from chapter 2), a mother bank, in this case Barclays, transfers its ownership-specific advantages such as management competencies, practices and procedures to ensure the competitiveness of its subsidiaries, and in this case ABSA (Uiboupin, 2005). Foreign banks may directly increase the quality, pricing and availability of financial services for domestic firms and individuals (Levine, 1996; Hermes and Lensink, 2004).

Foreign banks may have indirect effects on the domestic banking sector if they succeed in changing the behaviour and the performance of the domestic banks as well as the industrial structure of the host economy as illustrated by figure 3.1. In this case it might be assumed that ABSA and the Standard Bank use outdated practices and

technology, low managerial skills and provide undifferentiated products and services. Therefore, they could both benefit from transfer of knowledge to adopt modern practices and technology. In performing better they could in turn increase the pressure on other competitors, such as Nedbank and First Rand to force them to increase efficiency that allows them to keep market share and profits. Spillover effects could be the result of this pressure that could force Nedbank and First Rand to adopt new skills, modern banking practices and technology, as competitive pressure from foreign banks may force domestic banks to improve the quality and quantity of financial services in order to reduce costs and enhance efficiency (Lensink and Hermes, 2004; Levine, 1996).

Labour turnover from foreign to domestic banks is considered to be one of the most important mechanisms through which management and technical skills are transferred (McKendrick, 1994). Therefore, skilled employees and bank managers by entering the foreign subsidiary participate in the propagation of skills and knowledge, and the local labour force gets access to international know-how (Hemmer, 2002). This definition assumes that labour turnover flows from foreign branches to domestic banks. For this study I use this definition and apply it to the subsidiary bank ABSA as well as the Standard Bank (which is not a subsidiary) and both foreign banks Barclays and ICBC to detect if any knowledge was passed on. I monitor this labour indicator for the competitors. This is because the opposite also occurs, consisting of having local employees, who have better knowledge of the local economy, who are then employed by MNBs, which ensures that these local employees get training (Lehner and Schnitzer, 2008). Training is seen as important for competitiveness of a bank, for identifying and exploiting market opportunities and for being able to cope with geographic and technological changes in competitive markets (Bacom, 1998). Specific skills as well as human capital participate in the gathering of information about borrowers. Thus, the foreign bank contributes to the enhancement of the management of its subsidiary especially if the foreign bank team is directly involved in the domestic management team (Lensink and Hermes, 2004). Spillover effects could materialise when foreign employees or managers of foreign banks leave their employers for domestic banks. As they carry with them new skills and knowledge

about risk management techniques and better data processing routines, it is likely that they transfer this knowledge to the domestic banks (Lehner and Schnitzer, 2006).

Although know-how can take the form of tacit knowledge that is not codified in procedures such as written plans on portfolio structure or pricing, implicit knowledge too requires direct contact amongst individuals (McKendrick, 1994). Inevitably, labour turnover may significantly increase the efficiency of domestic banks as implicit knowledge is transferred (Hamida, 2006). Finally, management know-how is mostly implicit and its adoption requires a sufficient level of personal contact between the sender and receiver of that know-how (Smeet and deVaal, 2005). Therefore as labour turnover catalyses the diffusion of management know-how and skills, then implicit knowledge is transferred (McKendrick, 1994).

5.2. Research design

To measure efficiency and performance, I use a set of different tools and methodologies. The notion of cost reduction and efficiency improvements can be misleading as many consider them as synonymous. Searching for efficiency and performance improvement is essential to identify any potential gains from new ownership. It is therefore important to distinguish between the two notions. Reductions in operations expenses may involve firing employees, shutting down branches, consolidating headquarters' offices, and closing computer and back-office operations. However reduction in expenses does not automatically mean or translate into improvements in efficiency. For instance, as efficiency can be measured by the expenses ratio (expenses to assets or revenues), any decrease in expense could be followed by a reduction in assets and revenues. Consequently a reduction of this ratio could simply means shrinkage of the firm rather than improvement in efficiency.

In this case study it is legitimate to analyse this aspect of performance and efficiency as Barclays branch had important investment banking operations in SA, which could have been overlapping with ABSA investment banking activities. Any change in investment banking activities after the ABSA acquisition may have resulted from

more competition on the SA market, which in return would have triggered a response from other banks.

5.2.1. A case study approach

As seen in the previous chapter, most studies on efficiency effects use cross-section analysis. This type of analysis typically includes a relatively large number of observations. The advantage of the cross-section approach is that it permits statistical tests that control for various other influences on performance and as a result statistically valid generalisations may be made. However, the cross-section methodology may not adequately capture industry-specific or firm-specific idiosyncrasies.

The number of observations here is limited. Case studies will not permit statistical validation but they do provide insights into firm (industry) behaviour and performance that cannot be captured in a cross-section analysis. The case study may utilise a large set of data and institutional details from sources that are more likely to be unique to the firm or industry. The collected details and information may be useful for observed behaviour and performance and help identify situations to which cross-section generalisations do not apply.

5.2.2. Data

I use data from the annual reports of the SA four main banks: ABSA, the Standard Bank, First Rand and Nedbank. To analyse expenses I considered the use of the ratio of total expenses to total assets. Taking only absolute expenses would not translate any gain of efficiency but would show purely a cost reduction. From some studies, it has been acknowledged that accounting data may not give a precise economic view; but some cost-related ratio even though imperfect is considered necessary to assess efficiency performance (Salomon Brothers, 1993). Similarly and as mentioned earlier, if assets were reduced in the same proportion, the ratio would not indicate any gain in efficiency. It would simply show a shrinking bank.

It would be judicious for this study to use average assets over the year, as the asset level may change over the year. For instance it is not surprising to find the asset level

is more important at the end of year. However, the level of assets of the SA banks does not vary dramatically over 12 months, at least not in the same proportion that expenses may do. But to keep consistency I use assets from end-year for all banks of the panel.

Total expenses are important as they represent interest expenses as well as non-interest expenses of the bank. The bank will adjust the interest expenses to the general market rates meaning that interest expenses could be affected by the way the bank chooses to get deposits. I analyse the expense ratio of the ABSA and the Standard Bank in relation to a control group. This should control for the effect of general interest rate movements on expenses. As an illustration, assuming that a firm wants to change from using core deposits (retail deposits) as a source of funds to using purchased money; this core deposits will involve possibly both relatively high non-interest expenses involving costs of retail offices and personnel, and relatively low interest expenses (retail deposit accounts). On the other hand, getting purchased money will involve lower non-interest costs but higher interest expenses. The expense trade-off made by the bank is captured by total expenditure (Rhoades, 1998).

I use the ratio of noninterest expenses (total operating costs / expenditure) to total assets. As mentioned above, this reflects expenses costs relative to personnel, and operations of back office and branches. A policy of cost saving decided by the new owner to improve performance and gain efficiency would be captured by this variable.

Two additional variables were introduced: total expenses to total revenue and non-interest expenses to adjusted operating revenue. This is to complement the analysis of total expenses to total assets ratios. The denominator, adjusted operating revenue, is defined by total interest income minus total interest expense plus non-interest income. But as total interest income minus total interest expense equals net interest income, then adjusted operating revenue simply becomes net interest incomes plus non-interest income, which is easily identified from all annual reports. There are some advantages in using adjusted operating revenue as an alternative to ratios based assets. First the ratio total operating costs to total revenue is familiar to senior managers of

top banks (Salomon Brothers, 1993); second, using revenue as a denominator provides an indication about the ability of the firm to generate revenue from its expenditures as the definition (above) can show. Third, revenue gives an indication of rate changes, as assets don't. And finally, for most banks, revenue indicates income earned off-balance sheet. It does not mean that the assets ratio base has to be ruled out, because, the advantage of assets, as suggested earlier, is that assets do not fluctuate from year to year as revenue does. However, expenses to asset ratio may be misleading especially in the case of banks that have significant off-balance sheet activities. Therefore, having these two types of ratios can provide good indications of efficiency.

We add two additional variables for efficiency that are commonly used in the banking sector. Operating efficiency is defined as operating expenditure over operating income (operating revenue) and the efficiency index is defined as operating expenditure to net interest income.

To measure performance, two variables were added for the analysis. First, the rate of return on assets (ROA) is defined by the ratio of net income to average total assets. But the definition can sometime differ due to taxes. Rhoades (1998) defines net income as net operating income minus applicable income taxes minus extraordinary items and other adjustments. For this study most of the banks' ROA were directly collected from their annual reports.

In most SA banks' annual reports, net income is reported. Subtracting applicable taxes means that net income becomes profits and because ROAs for the Standard Bank were not available in their annual reports for the entire study period, it was decided to apply the simplest definition and use the net income as it is reported and divide it by the total end-year assets. The ROA is well appreciated by the profession and is regarded as the key measure of operating efficiency (King, 1993). ROA is a good indicator of profitability and a good overall indicator of a banking organisation's performance. This ratio shows how well the bank is capable of generating profits from its own assets. However, some have suggested that it may be biased as some banks generate profits from off-balance sheet operations.

The second indicator of performance, given by net income to equity (ROE), is an alternative to ROA and measures the return to owners' investment. Measuring the return of investment to owners can be a good indicator, but the fact that equity may fluctuate greatly across banks due to discretionary choices by management as to the mix between equity and debt capital as well as the total amount of capital held by the firm (Rhoades, 1998) may make it disadvantageous.

5.2.3. Study framework and hypothesis

The objective as already mentioned is not only to compare the performance of the acquired banks before and after change of ownership structure occurred but also to compare these changes with a control panel of similar banks.

The study framework is characterised by an econometric analysis that uses the T-Statistic test to identify any significant changes in means for the selected variables defined above. The technique of interviews is used not only to refine the quantitative analysis but also to understand better how knowledge spillovers may have occurred.

5.2.3.1 Interview guide and meetings activities

I met with the three big banks and although ABSA (the fourth biggest bank) representative was not available for meeting, he provided succinct answers from the interview guide (Annexe 5.1) that was returned by email. I met the management consultants that operate in the banking and financial sector. Interviews with the regulators, competition institution and former Barclays lawyers that oversaw the acquisition, consumer financial institutions and other academics and practitioners, were informative and while they did not prove to be very significant in terms of findings, they did help understand the legislative and political context in which these foreign participations took place (See list of participants in Annex 5.2). I designed and submitted to them an interview guide (Annexe 5.1) to be used as a guideline for our discussion. The interview guide seemed to be useful as they could prepare their answers. The banks as well as the consultants were mostly cooperative. However, I

had some difficulties in meeting with Barclays and ICBC representatives. I invited the Banking Association to meet with me but they declined and the South African Reserve Bank did not cooperate except to provide me with guidance on how to use their website to collect data. The interviews were conducted from 2010 to 2012.

What is striking is the high degree of consistency from interviewees across consultants and competitors about the lack of spillovers and benefits for ABSA and the change in strategy of ABSA and the Standard Bank, as they perceived it.

When searching for efficiency and performance improvement following ownership changes, the literature and the banking professionals stipulate that (Rhoades, 1998):

1. Half of the savings will occur during the first year and all savings will be achieved within three years;
2. Most significant savings could be accomplished without changing ownership;
3. Any cost saving or efficiency should be observable in public financial data such as annual reports.

5.2.3.2. T-Statistics model to provide changes in variables

The first step is to analyse all variables for three years preceding the change of ownership and three years after the change in ownership occurred. It is worth remembering in this particular case study that efficiency gains or performance improvements are partly indicators of spillovers. The specific strategy of the acquirers has to be taken into consideration, as efficiency gains might not be their primary objective, although the new owners may require a positive return on their investment.

Finally a control group was set up, composed of the 2 other SA big banks: First Rand and Nedbank. These two banks are similar to ABSA and the Standard Bank in terms of size and location. The variables of the control group were examined as simple averages. They provide a base for comparing the efficiency and performance of the study group (ABSA and the Standard Bank). Setting up a control group is very important because it gives an indication of the nature of any observed changes in the

study group. The economic environment can influence the nature of changes or these changes can simply be unique to the study group itself.

T-Statistics were used to provide comparison of average means first between both banks in the periods before and after the event of majority or minority shareholding participation, and second between the study group (ABSA and the Standard Bank) and the control group in the periods before and after the event of majority or minority shareholding participation. The selected indicators for each bank of the sample over a three-year period before (year T-3, T-2 and T-1) and after (year T+1, T+2 and T+3) the acquisition event are calculated and the mean from the sum of each bank indicator for years T-3, T-2 and T-1 is compared with the mean from years T+1, T+2 and T+3, respectively. The year (T=0), which corresponds to the year when the event of ownership change occurred, is purposely omitted. Usually a number of events, which influence the firms' economic performance, are taking place during this particular year. The event includes acquisition transaction costs necessary for the deal (Healy et al., 1992).

T-statistic methodology consist of applying the t-test equation for unequal variance that is given by the following:

$$t = \frac{X_1 - X_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}} \qquad (5)$$

n = Number of variables

X_1 = Mean of pre-foreign participation (majority or minority) variables

X_2 = Mean of post-foreign participation (majority or minority) variables

S = Standard deviation

1 = Group of pre-foreign (majority or minority) participation variables

2 = Group of post-foreign (majority or minority) participation variables

5.2.3.3. Hypothesis

In order to evaluate the relative change with the variables defined above of the group study that had experienced a change in their ownership structure (minority or majority participation) the general form of the hypotheses that are examined for each variable separately is as follows:

Ch5/H1: There is expected to be a relative change in the defined variables after the event of a change in ownership structure for both banks ABSA and the Standard Bank.

Ch5/H2: There is expected to be a relative change with the defined variables after the event in ownership structure for the group study compared to the control group.

Therefore, the crucial research question that is investigated in examining the different variables above is that performance of both ABSA after Barclays' acquisition and Standard Bank after ICBC participation is greater than it is in the period pre-acquisition and pre-foreign participation, regardless whether the performance is tested against itself or against the control group. In addition, the evidence from the interviews may explain the results from the t-statistics model.

5.3. Interpretation of findings and further evidence

The reported findings in table 5.1 below are related to efficiency and performance results of ABSA and the Standard Bank and Stata general procedures and commands for running this model are given in annex 5.3. The table presents the means of the indicators before and after the banks experienced a change in the structure of their shareholding.

5.3.1 Main findings

The analysis of the banks' sample, whose results are shown in table 4.1, reveals 5 out of 6 indicators to be statistically significant and all six indicators' means of efficiency are decreasing in value, which is equivalent to an increase in efficiency for ABSA. This result suggests that significant cost cutting objectives were achieved. In addition,

total expenses to total assets is statistically significant as well as total expenses to total revenues but just at 19% level. This result proves that the bank made significant cuts in non-interest expenses during the three-year period after being acquired. Non-interest expenses involve personnel costs, operations costs at the branches and transaction systems.

An ABSA representative reported for this study (interview 4) that "ABSA benefited from Barclays' systems" meaning that Barclays' system migrated to ABSA to be implemented and processes and procedures were upgraded. ABSA confirms (Interview 4) "it benefited from Barclays' products, management skills, procurement scale and policies". It can be inferred that ABSA reduced its interest expenses, which means that it attracted deposits in a cheaper way. It could be that the Barclays international exposure provided the opportunity of more sources of funding as "ABSA benefited from Barclays strong global investment bank" (Interview 4).

The variable, non-interest expenses to total assets, confirms cuts in non-interest expenses, which is statistically significant.

Table: 5.1: T-Statistic (Two-tail) for the banks sample

Variables	Pre Post	ABSA			The Standard Bank		
		Mean	T-Statistics (Two-Tail)	P-Value	Mean	T-Statistics (Two-Tail)	P-Value
Total Expenses over Total Assets	Pre	0.107			0.077		
	Post	0.089	2.597*	0.060	0.075	0.272	0.798
Total Expenses over Total Revenues	Pre	0.826			0.775		
	Post	0.807	1.558*	0.194	0.765	0.536	0.620
Non-Interest Expenses over Total Assets	Pre	0.035			0.026		
	Post	0.029	2.553*	0.063	0.022	1.841*	0.1394
Non-Interest Expenses over Adjusted Operating Revenues	Pre	0.613			0.540		
	Post	0.580	0.855	0.440	0.489	1.312	0.259
Operating Efficiency	Pre	1.165			1.141		
	Post	1.000	3.590**	0.022	0.898	2.459*	0.069
Index Efficiency	Pre	0.734			0.577		
	Post	0.624	2.498*	0.066	0.630	-2.367*	0.077
ROA	Pre	0.095			0.019		
	Post	0.135	-1.608*	0.183	0.012	20.554***	0.077
ROE	Pre	0.185			0.323		
	Post	0.244	-1.344	0.250	0.210	4.368**	0.012

Source: Banks annual reports
Note: (***) Statistically significant a 1% level, (**) Statistically significant at 5%, (*) Statistically significant at 20% level.

The variable, non-interest expenses to adjusted revenues, is not statistically significant but shows a decrease after the acquisition event. And finally general ratios of operating efficiency and index of efficiency are both highly statistically significant confirming the general idea that a cost cutting programme was achieved.

Decreasing non-interest expenses is particularly critical for ABSA because from feedback with some professionals, keeping jobs at ABSA was one of the conditions of the acquisition. So decreasing non-interest expenses without cutting personnel was found to be challenging. This aspect of conditionality could not be verified from the ABSA/Barclays and the SA Treasury. In addition, feedback (interview 4) says that ABSA did not lay off any personnel or put in place any voluntary redundancy policy. However, the press (Mail & Guardian, 2012) revealed in early 2012 that in 2011, the new ABSA CEO, Maria Ramos had to make cuts in the bank's costs. They reported that Ramos said "this organisation is going to have to become more efficient, and I have to keep a close eye on costs while serving our customers better". Union representative, Sasbo added "retrenchments were inevitable". The same newspaper also reported what an anonymous analyst said regarding job losses citing "it's concerning that there's been such a high turnover of the top people". But this turnover is not only limited to the top management but also to the entire organisation as reported, " Although Ramos is not talking about retrenchments but rather about restructuring, there has been a significant number of staff leaving the bank because of unhappiness over regional departments being moved to and integrated with Johannesburg city centre offices. These effects that people were talking about in early 2012 suggest that deliberate policies regarding efficiency were put in place well before this date.

In the ABSA case, there was a significant improvement in efficiency three years after the event of acquisition, confirming that a programme of cost reduction was achieved.

The results for the Standard Bank contrast with that of ABSA as only two indicators show improvement in efficiency with statistical significance: non-interest expenses to total assets and operating efficiency. An example of cost reduction is illustrated by a

newspaper (Financial Times, 2010), which reported that Standard Bank cut 2100 staff. This was written three years after the event of minority participation took place. This may be a coincidence as the global economic downturn occurred in 2008. The reason provided by the bank CEO to justify this redundancy policy was that the bank was losing in terms of revenues and ROE (as table 5.3 shows).

In contrast, total expenses to total assets and total expenses to total revenue indicators are not statistically significant, and nor is the non-interest expenses to adjusted operating revenues. The difference between the non-interest expenses and total expenses, as explained in the ABSA case above, is that the variable, total expenses, takes into account both the non-interest and the interest expenses. But all four indicators that are not significant show a decrease after the minority participation event took place. This suggests that in comparison with ABSA, the Standard Bank put more emphasis on the non-interest expenses and not much on interest costs. The index efficiency indicator shows a small but significant decline in efficiency (5.3%). This signifies that Standard Bank had a clear objective to cut non-interest expenses after it experienced a change in ownership. It suggests that the Standard Bank may not have had the same capability as ABSA to reduce costs on interest expenses. The difference between Barclays and ICBC is that Barclays is internationally more exposed than ICBC, although ICBC remains one of the largest worldwide financial organisations. In fact Standard Bank offers an international exposure to ICBC through its more advanced investment banking (Interview 3). ABSA then may have found it easier to get deposits at lower costs on international markets thanks to Barclays. Furthermore, feedback (Interview 3) from Standard Bank provides limited evidence of knowledge transfer in terms of process, procedures and methods that could translate into significant gains in efficiency in its SA operations, although ICBC implemented an ICBC transaction card system in Standard Bank to optimise some banking operations. In the Standard Bank case there is a suggestion that improvement in efficiency was achieved three years after the event of foreign participation but on a small scale and mainly in the area of noninterest expenses.

The findings from table 5.1 show the scale in percentage of the cost reduction but not in value. Table 5.2 below shows an interesting aspect of the cost reduction scheme for

both banks that may explain the weak amplitude in decrease of the non-interest costs of Standard Bank. With an important decrease (from 81% in T-3 to 60% in T+2), the index of efficiency confirms ABSA's commitment to cost cutting. On the other hand, the table does not suggest any significant shift for the Standard Bank strategy, as costs were already very low. This may be the explanation.

Table 5.2: Value of Index efficiency for ABSA and the Standard Bank

Source: Banks' Annual reports, author calculation

Bank Name	Variable name	Before change in ownership (%)			T=0	After change in ownership (%)		
		T-3	T-2	T-1		T+1	T+2	T+3
ABSA	Index Efficiency	81.80	71.00	67.55		64.45	60.84	62.00
STD		59.10	59.20	54.80		60.50	62.50	66.3

Before 2005 ABSA had a low level of efficiency around 70% on average whereas the Standard Bank had a much higher level of efficiency prior to 2007 at around 57% (and even 54.8% in T-1), which represents a very good score. The benchmark in the profession suggests that a score of 50% is generally regarded as the maximum optimal ratio. In the period pre-post 2005, ABSA reduced its index of efficiency from a maximum of 81% to a minimum of 60%. Clearly there had been room for improvement. This close look at the figures suggests that Standard Bank had already a culture of keeping costs down (at least the non-interest costs). From this point of view, it can be inferred that this culture of keeping costs down, helped Standard Bank to continue to lower its overall costs and gain some efficiency but not on the same scale as ABSA, which had ample room for further improvement and did so after Barclays took over in 2005.

From table 5.1 it would be possible to conclude that the difference in ownership could influence the scale of the cost reduction and therefore the level of efficiency. This assumption could perhaps validate the case of ABSA and the question would be a counterfactual: what would have happened if no change had occurred. Similarly, one might assume that the weak decrease in the efficiency index in the case of the

Standard Bank is due to the limited participation of ICBC in the Standard Bank shareholding. But the value of the indicator suggests that with or without ICBC, Standard Bank would continue to keep its costs down. It can therefore be concluded here that only majority ownership (as is ABSA case) led to increased efficiency and knowledge transfer. This finding is in line with Blomstrom and Sjoholm (1999) and Demelis and Louri (2002).

Before analysing performance, it is important to note that even when banks have similar revenues, different business models can generate different efficiency ratios. Assuming for instance that a bank puts more emphasis on customer service, this might lower its efficiency but improve its net profit. On the other hand a bank that focuses more on cost control may have a higher efficiency ratio but may have a lower profit margin. And this is the case for ROA and ROE indicators of ABSA and Standard Bank. The ABSA ROA is statistically significant at 18% level and shows some improvement after the period post acquisition (4.18% increase on average). Although ROA is highly statistically significant (at 1% level) for Standard Bank, it shows however a consistent decline after the ICBC minority participation (3.36% decrease on average). Here again it is important to have a look at the value of both ROA and ROE presented in table 5.3 below.

Similarly to the index efficiency indicator, before the events of acquisition and minority participation took place, Standard Bank had on average a higher level of performance than ABSA. It can been seen that its performance after the event did not change dramatically, with an ROA average of 1.93% before and 1.28 after the event; compared with ABSA that had a 0.95% on average before the event and 1.35% after, ABSA came close to the Standard Bank level. It is also noticeable that by T+3 Standard Bank ROA is higher than that for ABSA.

This is equally observable for the ROE indicator. ABSA ROE is not statistically significant despite an improvement in the post-event period. At the same time there is a decline in the Standard Bank ROE. But before the events of acquisition and minority participation in shareholding, Standard Bank ROE on average was 1.75 time

higher than the ABSA ROE. And both ROEs are almost at the same level after the events, despite a decline for Standard Bank.

Table 5.3: Value of performance indicator for ABSA and the Standard Bank

Source: Banks' Annual reports, author calculation

Bank Name	Variable name	Before change in ownership (%)			T=0	After change in ownership (%)		
		T-3	T-2	T-1		T+1	T+2	T+3
ABSA	ROA	0.50	1.20	1.17		1.42	1.47	1.17
STD		1.96	1.89	1.95		1.23	1.31	1.29
ABSA	ROE	10.17	23.34	22.02		25.10	26.40	21.80
STD		31.90	30.90	34.2		25.50	17.30	20.30

Finally, on this aspect of performance it seems that both Standard Bank and ABSA put emphasis on controlling costs successfully but were less successful in keeping performance high.

On both indicators of performance and efficiency it seems that the Standard Bank represented some kind of benchmark for ABSA as indicators reached similar levels after the events.

The results show that after the events of change in ownership, both banks improved their efficiency. The medium cost cutting coupled with the culture of keeping costs down may illustrate the type of management or relationships between Standard Bank and the Chinese ICBC, which is described as smooth and translates into a mutual understanding. It does not seem that ICBC, unlike Barclays, which has a majority of ownership in ABSA, had a strong influence on Standard Bank strategy.

The case of ABSA is different. ABSA was committed to preserve jobs as part of the deal when negotiating the acquisition deal with the Treasury, and confirmed that no plan for redundancy was implemented. In practice, ABSA did not cut any jobs but as some claimed, has been freezing recruitment, and many unhappy staff left. This has helped to keep the costs relative to staff under control. ABSA improved its performance and enhanced its efficiency after Barclays became its main owner. Both

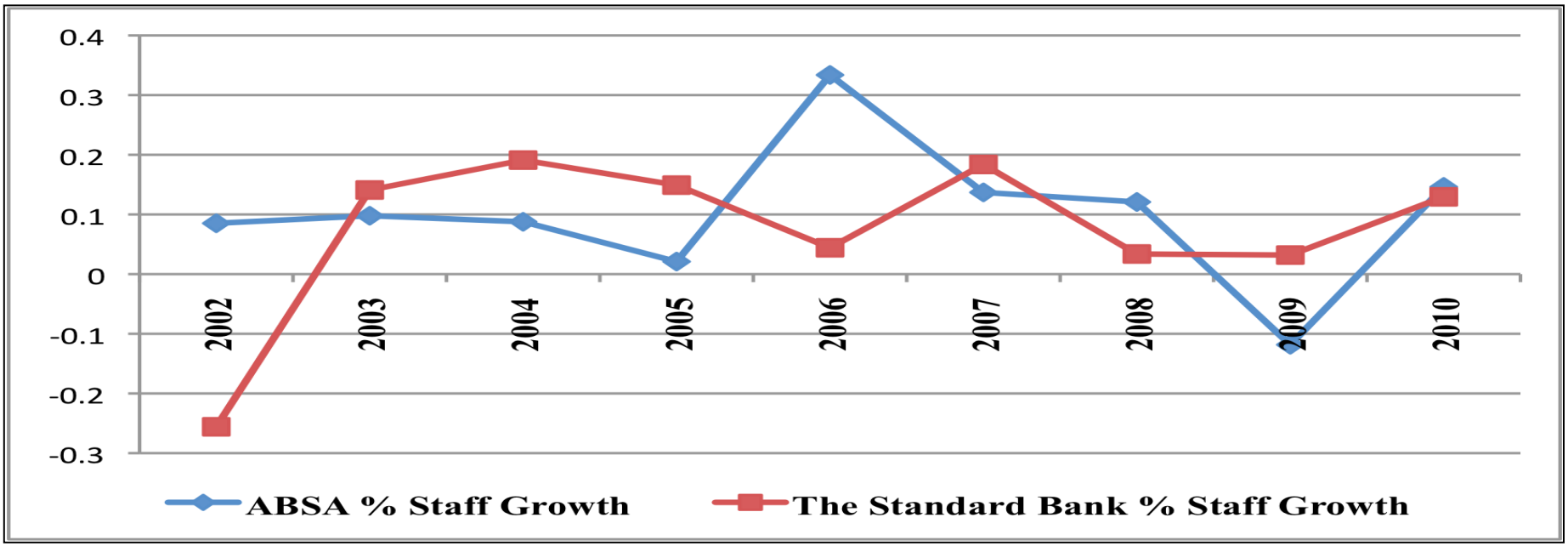
interest and non-interest expenses went down after 2005. These results suggest that knowledge has been passed on from the mother foreign bank Barclays to its domestic subsidiary ABSA. The feedback from the ABSA representative (interview 4) confirmed that new systems and procedures (explicit knowledge) were implemented at ABSA. To some extent, some very limited information systems were transferred from ICBC to Standard Bank, but that knowledge was not strategic enough to contribute to any form of efficiency improvement.

5.3.2 Further evidence of competition and other factors

The fundamental question however is whether or not the change in ownership is the only factor responsible for the efficiency gain. This increase in efficiency could well be a trend more specific to the SA market. Alternatively, some economic constraints may have contributed to force all competitors to become more efficient. It could be that competitors may have anticipated a more efficient ABSA after the announcement of the deal, and the market could have become more competitive. To preserve their margins, the banks had no choice but to reduce their running costs and efficiency gains became the norm.

We saw above that Standard Bank had already this culture of keeping costs down even before the ICBC participation in its ownership. However, this change in ownership occurred in 2007, two years after Barclays bought ABSA. As indicators, 3 years before and after the minority participation event, are compared, one could argue that ABSA/Barclays new entity influenced Standard Bank to become more efficient.

Figure 5.1: Staff growth in costs from 2002 to 2010 (%)



Source: Banks' Annual reports, author calculation

This assumption can be ruled out, as figure 5.1 above shows that Standard Bank from 2002 to 2006 maintained personnel costs growth below 0.2% and even had negative growth from 2001-02; (note that personnel costs are one of the highest costs amongst all costs). Another argument could reside in the fact that some macro economic constraints or regulation may have occurred, which could therefore force the entire sector to become more competitive. This hypothesis should not be ruled out as some regulation in the financial sector occurred at the beginning of 2000. But was it enough to generate efficiency? Finally, it would be interesting to know if any specific event occurred in the SA market that encouraged all competitors to become more efficient. The answer could be yes, triggered by the emergence of a new domestic player.

To provide some answers about competitors' behaviour, I further the investigation by looking at the performance and the efficiency indicators of the two cases, ABSA and the Standard Bank in relation to their peers in table 5.4.

Table 5.4: T-Statistic (Two-tail) for the banks sample compared to their peers

Variables	ABSA			The Standard Bank		
	Mean	T-Statistics (Two-Tail)	P-Value	Mean	T-Statistics (Two-Tail)	P-Value
Total Expenses over Total Assets	-0.004	-0.0610	0.951	0.006	0.824	0.417
Total Expenses over Total Revenues	0.427	0.885	0.384	0.704	1.012	0.321
Non-Interest Expenses over Total Assets	0.001	0.665	0.512	0.007	3.218	0.003***
Non-Interest Expenses over Adjusted Operating Revenues	0.013	0.451	0.655	0.110	3.093	0.004***
Operating Efficiency	0.223	2.234	0.034**	0.333	2.737	0.010***
Index Efficiency	0.055	1.274	0.214	0.076	1.359	0.186*
ROA	-0.025	-1.545	0.134*	-0.002	-0.740	0.465
ROE	-0.042	-1.372	0.182*	-0.037	-0.802	0.429

Source: Banks annual reports, author calculation

Note: (***) Statistically significant a 1% level, (**) Statistically significant at 5%, (*) Statistically significant at 18%.

Table 5.4 presents the difference in mean between ABSA and the control group and between Standard Bank and the same control group. For ABSA only one indicator of efficiency is statistically significant, the operating efficiency. Although 4 out of 5 are not statistically significant they show however a slight advantage for ABSA in terms of efficiency. The total expenses to total assets indicator is not statistically significant but shows that the peers are slightly more efficient than ABSA. Overall it can be concluded that ABSA is just slightly more efficient than its peers but the evidence is not strong enough to generalise or confirm this point. In this context, it is not surprising that competitors feel that nothing has changed since Barclays bought ABSA. They reported (Interview 5 and 6) that the deal was good for Barclays but not necessarily for ABSA. They feel that ABSA has not been performing better and that they never felt threatened by ABSA after the acquisition. This revelation is not what was expected but at the same time it is not a surprise. Firstly, this is because according to theory on FDI, the knowledge gained from Barclays should have helped ABSA to out-perform its peers and increase the competition, giving ABSA a competitive advantage. Others suggest that successful acquisition activities bring economic benefits from changes that increase business performance that would not have been generated without a change in control (Athianos et al, 2003; Mantzaris, 2008; Pazarskis, 2008). However, suggestions from merger & acquisitions studies show that acquisitions don't necessary increase efficiency (Azarchs, 1995; Srinivasan, and Wall, 1992; Berger and Humphrey, 1992; Rhoades, 1993); but this is not the case for ABSA, whose results show improved performance and efficiency gains after the acquisition event occurred.

Competitors (Interviews 5 and 6) argued that ABSA became too efficiency-gain-orientated and was losing out in terms of performance. This perception that ABSA has not been performing better can be partly confirmed by the results on ROA and ROE indicators. ROA and ROE indicators are statistically significant only at 13% and 18% level respectively. And they increased by only 2.5% and 4.2% respectively compared to the control group. Therefore, it is not quite true that ABSA performed worse but its positive performance seems not to have been strong enough to be perceived as significant by competitors or to encourage any change in their strategy.

From this point of view it seems that the Barclays' acquisition was not a factor that triggered competition in the retail-banking sector.

On the other hand, the picture is clearer in the case of Standard Bank. Table 5.4 shows that on efficiency, four indicators out of six are statistically very significant. The results suggest better efficiency than the control group. The last two efficiency indicators are not statistically significant but present a slightly higher score. Similarly to ABSA, Standard Bank results (ROA & ROE) are slightly better than the competitors' but unlike ABSA none are statistically significant. In other words, Standard Bank globally performed better than its competitors and this confirms previous results.

But the same question remains whether or not this good performance was triggered by the ICBC minority participation (or whether ICBC became a minority owner because of Standard bank good performance? I did not access this question, as I could not meet with ICBC representatives). It is hard to say yes as I explained earlier, but it cannot be totally ruled out that ICBC does not influence Standard Bank's strategy. Feedback (Interview 3) from Standard Bank confirms that ICBC does not put pressure on Standard Bank to produce better performance; the ICBC has only 20% of shareholding and only 2 seats on the Standard board. However, this level of shareholding represented $5.6 billion that ICBC paid. ICBC could legitimately influence some aspects of the strategy of Standard Bank citing for instance the simultaneity of some activities of costs reduction and divestment. As already mentioned earlier Standard Bank cut 2100 staff in 2010 (Financial Times, 2010) and the following year in 2011 it sold a 55% stake in the Standard Bank Argentina to ICBC, its significant minority shareholder, keeping a 20% holding and the right to board representation. The same year it divested in Russia and sold its 36.4% stake in Russia Troika Dialog. The following year in 2012 Standard Bank continued to divest by reducing its stake in Turkey's Standard Unlu from 67% to 25%. These multiple divestments in assets abroad and staff cuts, whose objective was to refocus on operations on the Africa continent, fed the speculation that ICBC wanted a higher return on its investment in Africa. This was what many in the SA banking sector including competitors and consultants confirmed. Reinvesting in Africa would be

seen as a legitimate request from ICBC. After all, investing in Standard Bank was motivated by the fact that ICBC wanted a footprint on the African continent and this was part of its extension strategy. And with its presence in 18 African countries Standard Bank was therefore the best match to help support this expansion strategy (Interview3). I explicitly addressed this point with the Standard Bank representative (Interview 3) about the argument by which ICBC has influenced the Standard Bank by encouraging a refocus on Africa operations. The representative provided the following approach framed in three points:

1. Standard Bank had no competitive advantage in these BRIC countries (countries include: Brazil, Russia, India and China. Some now include SA);
2. Standard Bank was in a position to receive significant cash from local financial institutions for these assets;
3. And there was potential growth in Africa due to economic and improved governance conditions. In addition, cash generated could increase Standard Bank's ability to enhance its competitive advantage on the African continent where it already had an important presence (Standard Bank is active in 18 African countries).

Furthermore, the style of management of ICBC was not about imposing a strategy. Instead a harmonious relationship and mutual respect is established. Real effort is made for a post-deal cooperation to work at the operations level in establishing streams and workshops, and at the project level, where agreements are made with specific clients and projects. Ad hoc teams are built around these projects (Eidt, 2012).

When matching the indicator levels of ABSA and Standard Bank against those of the competitors, it could be suggested that competitors' efficiency level may be close to the ABSA level. It could be assumed that the competitors too had or have been implementing a cost-cutting strategy during the same period from 2002 to 2010. Feedback from the competitors confirmed the existence of such an approach or strategy that took different shapes for Nedbank and First Rand. Already from 2003, Nedbank (Interview 6) implemented a programme called Barrett Survey that they speeded up in 2005 after Barclays' acquisition (but did not change the content because of the FDI, as the programme was producing tangible results). This was not a

response to Barclays' acquisition it was told but a process that was already in place. This plan had different components and the first one was based on personnel development, team effectiveness, coaching, flexible work and life balance. The second focused on market strategy. This market strategy consisted of cutting down their fees and targeting the higher segment of the market. Nedbank realised that the SA market landscape was changing as the population was getting wealthier and decided to focus on this particular segment as the traditional one was becoming saturated and competition too high. Nedbank too implemented its strategy to attract more customers in the retail bank[3]. It is worth saying that in the early 2000s, the regulator introduced Basel procedures and encouraged the banking sector to reduce its fees. This could be one of the motives of Nedbank in rethinking its strategy in 2003.

For the second competitor First Rand (Interview 5) the constraint of reducing fees clearly was one of the motives that contributed to the reviewing of their strategy. In fact this rethink started in the late 90s following the re-entry of the foreign banks. As seen in chapters 2 and 3, the entry of foreign banks had some impacts on the domestic banks especially in investment banking and as a consequence domestic banks were forced to reduce their technological gap. To face these challenges First Rand started to invest massively in technology infrastructure[4]. The objective of putting in place new infrastructure platforms was to reduce running operations costs in branches and transfer many of these operations to electronic transactions. New infrastructure included telephone banking and Internet. It can be assumed that a direct consequence of this new strategy was a significant reduction of personnel costs, which translated into efficiency gains. This may be part of the explanation why ABSA did not out-perform the competitors as they had already embarked on cost-reduction programmes.

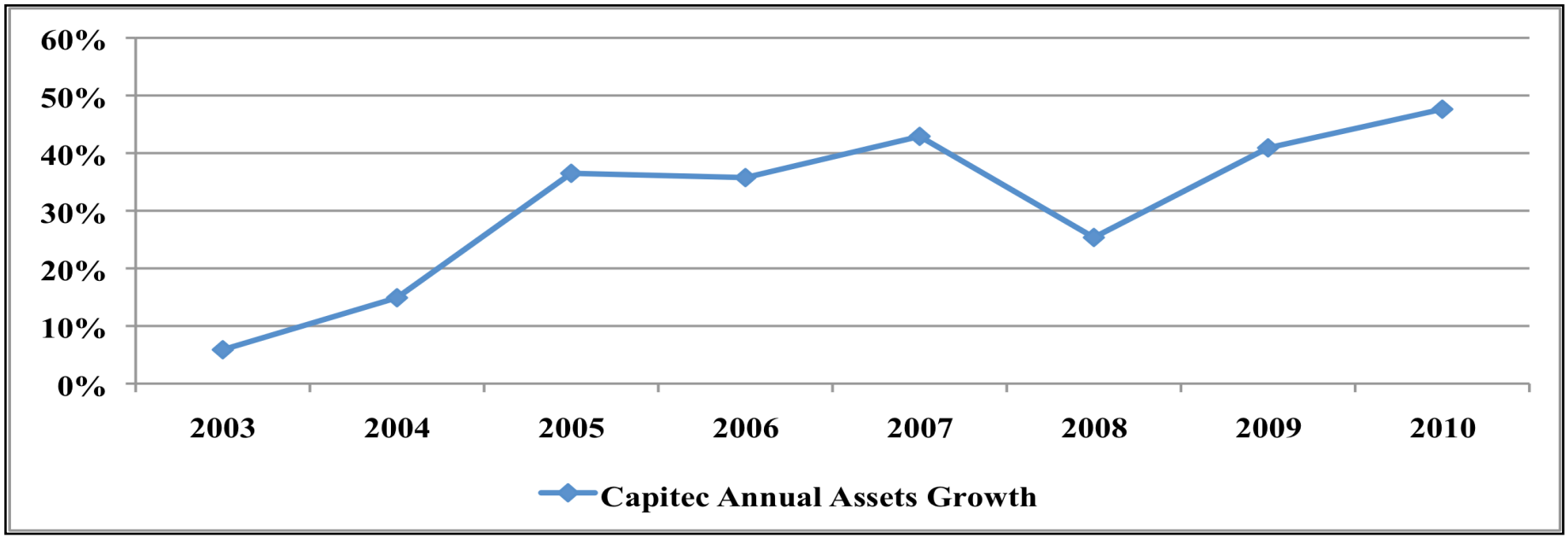
However, both competitors (Interviews 5 and 6) conceded that they feared for their investment banking activities as it became clear that ABSA investment banking was performing well. In fact, Barclays and ABSA investment banking teams combined together. Barclays Capital, the investment banking of Barclays by working with the

[3] This is in line with findings from chapter 4 suggesting that competition forces domestic banks to look for new businesses to maintain or increase revenue.
[4] Although cost indicators in chapter 4 don't capture this but we did find evidence of competition via pre-tax profit indicator due to the re-entry of foreign banks.

ABSA team, became very competitive and created serious competition in this activity. Both Nedbank and FirstRand experienced an unusual turnover in their investment banking teams, and many of their employees attracted by the new ABSA/Barclays investment entity left. This was relatively serious and both banks implemented a staff retention scheme to keep or get their employees back. Furthermore, First Rand became anxious about Barclays products, in particular the Barclay card that was expected to be available on the SA market. However Barclays never introduced this product in SA. Therefore the Barclays/ABSA investment team was the only reported but limited threat that Barclays FDI created in the SA banking sector according to feedback from the competitors.

Another factor that influenced competitors' strategy to become more efficient was the emergence of a new domestic player. This new player is Capitec, a new bank created in 2002 and called by one of the competitors (Interview 5) a "disruptor". As shown on figure 5.2, Capitec has experienced rapid and positive growth in terms of total assets. It has concentrated its offers on the lower segment and targeted low income-earners. Capitec is one of the main players in the SA microlending industry and provides small-unsecured loans. It has a good understanding of the microlending business and manages risks carefully. It has a prudent approach to liquidity and possesses a good information system and as a financial institution, it is supervised by the SARB.

Figure 5.2: Capitec annual growth from 2003 to 2010 (in %)



Source: Banks' Annual reports, author calculation

The main strength of Capitec is its technology-driven strategy. This is why it is regarded by First Rand as a major threat, which had also invested in technology infrastructures. Its technology-driven business model allows it to service the low-income-earning population. Its infrastructure comprises strong front-end information technology, paperless and cashless branches. Its electronic cards can be used in its more than 200 ATMs, and distribution outlets of retailers with whom the banks have concluded business agreements. This ability to provide full banking products and services at the lowest costs gives the bank an edge over direct competitors.

5.4. Discussion and conclusion

This chapter assesses both the relationship between efficiency and foreign investment in particular whether foreign direct investment in the SA banking sector contributed to knowledge transfer and knowledge spillovers through the analysis of efficiency gains and improved performance from majority and minority acquisitions.

The results show that three years after Barclays' foreign acquisition, ABSA had made efficiency gains and better performance, but surprisingly did not out-perform by far the competitors on efficiency indicators nor on performance. The case of Standard Bank shows some significant efficiency gains but no performance improvements after three years of foreign direct participation from ICBC. However, and this is a surprise, Standard Bank globally outperformed its competitors in terms of efficiency gains especially on both indicators involving non-interest expenses. These two indicators, which translate the most gain in efficiency, were highly significant (1% level). The study finds and presents some elements that explain the overall gain in efficiency of the banking sector itself. These reasons can be attributed to external factors such as the entry of foreign banks in the mid-90s (as seen in chapter 2) and to internal factors such as regulation policy and the emergence of a new domestic player.

This study confirms and concluded that there has been some evidence of knowledge transfer from Barclays, a British bank, to ABSA, a SA bank Barclays acquired from FDI channel.

This study contributes to the existing literature and provides similar findings in line with Blomstrom and Sjohalm (1999) and Demelis and Louri (2002) who find that majority shareholding leads to efficiency, more productivity and therefore knowledge spillovers. It seems that the nationality (or the country of origin) of parents can play a significant role in FDI spillovers. For instance, Buckley, Clegg and Wang (2007b) find on one hand that there are non-linear spillover effects from increased FDI in China comparing FDI from Hong-Kong, Macau and Taiwan countries with FDI from Western countries that does appear to generate positive linear spillover effects. The

difference in spillovers FDI between the two different types of ownership is that Western countries' FDI carry more advanced technology. Our finding is in line with this.

This research prefigures our analysis in chapters 6 and 7 that competition has occurred since the re-entry of the foreign banks in the wholesale segment. From the interviews, this study reveals that the big 4 domestic banks made significant investments to modernise their operations infrastructure and processes to become more efficient. This is a clear indication that the banks have reduced their technological gap. Reducing the banks' technological gap was caused partly by external factors such as the re-entry of the banks as well as the pressure from the regulator, and by internal factors such as direct competition from the emergence of a new player such as Capitec. Finally, this study finds strong evidence of labour turnover, which was particularly acute in the wholesale segment after Barclays' acquisition. Labour turnover movements (an aspect of voluntary knowledge spillovers) occurred from most of the SA domestic banks to Barclays/ABSA investment team and these movements were so intense that they forced all domestic players to take actions to limit their impact. This turnover impact coupled with the reduction in technological gap accords with the theory described in chapter 2, on the characteristics of spillover effects. In light of these new findings from this chapter, I can now conclude that spillover effects have been taking place in the entire SA banking sector including wholesale and retail banking, and these effects are more significant in the wholesale segment, in particular in the investment banking sector. Chapters 6 and 7 will confirm this result statistically.

The choice of these two FDIs (acquisition and greenfield investment) was dictated by the fact that only two cases were available for the study. Nevertheless, they (the two FDIs) were very important, first in terms of value, as Barclays a British bank spent $5.5bn to get the majority (51%) of ownership in ABSA in 2005. This foreign acquisition was two years later followed by another major foreign minority participation in the Standard Bank. ICBC, a Chinese bank spent $5.5bn to acquire 20% of the Standard Bank shareholding. Second, these FDIs took place in a context of globalisation in a developing country. There is an increasing interest from China,

which is looking for investments in Africa and tending to diversify its portfolio in sectors such as banking, services and telecommunication. In this context of internationalisation this case study resonates with even greater amplitude. And finally there is currently a growing interest for researchers and academics to assess South-South political economy relationships. This case study could partly provide some embryonic elements of these relations.

Chapter 6

6. Competition model results and spillover effects of foreign banks entry on SA domestic banks

This chapter provides the results of the empirical estimates measuring the effects of foreign bank re-entry on the performance of the SA domestic banks (income, costs and profitability) for the period 2000-10. While there were already foreign banks before the apartheid regime, during the apartheid regime and due to international pressure, many foreign banks were forced to sell their assets to SA shareholders and leave the country. Foreign banks started coming back in 1994-95, with the end of apartheid and the beginning of a new democratic government. The estimate methodology and data that were presented and explained in chapter 3 is briefly summarised as follow:

1. Model 3.1 estimates foreign bank penetration in the SA banking market on SA domestic banks performance. It also captures the short time effects of the financial crisis in 2001 as well as the short-term effect on the performance of domestic banks, if any, after 2006 when Barclays bank decided to increase its shares in the market by buying the ABSA bank. The results are reported in tables 6.1 and 6.2.
2. Model 3.3 estimates the interaction between the foreign banks entry and the SA banking market development and the results are reported in tables 6.3 and 6.4.
3. And finally Model 3.4 should estimate the interaction between the foreign banks' entry and banks' market share, as banks having different market shares could react differently to foreign banks' entry. But due to high correlation amongst variables the results were not reported.

6.1 Empirical results of foreign banks re-entry in SA

To measure the presence of foreign banks two variables Forbk_Num, the number of foreign over the total banks and Forbk_Shr, the foreign banks' share over the total assets of the banking market were used, alongside interactive terms with private credit to GDP (PCGDP) and bank market share (BKMKSHR). Four bank performance measures are used as dependent variables (NIIN, NOINTIN, BTXP, and TOEX). Just to remind that the total income is giving by the addtion of NIIN and NOINTIN. I use Stata 11 (for Mac) to compute the estimation and Stata general procedures and commands for running these models are given in annex 3.4 and 3.5.

Time dummy variables were measured for all estimations but they appear to be significant only in one case confirming no significant changes over time across the banking industry. This explains why below are only reported the results with time dummy variables. Similarly, results from regressions that include BKMKSHR show no impact. In addition, strong correlations between BKMKSHR and Forbk_Num's interaction term and between BKMKSHR and Forbk_Shr's interaction term make it impossible to measure any interaction effects. Therefore model (6.4) is not reported.

Contrary to Uiboupin (2005), who uses Arellano dynamic panel data and Bond GMM estimator but in common with Claessens et al. (2001), this study uses panel data fixed-effects estimator model, first developed by Nickell (1981).

Table 6.1 shows the estimation results from equation (3.2) with Forbk_Num as the foreign banks' entry variable. Forbk_Num is statistically significant and has a positive effect on the domestic SA banks' interest margin (NIIN). However, this effect is statistically significant at 18% level only, suggesting a weak impact of foreign banks' entry. As anticipated earlier this may result from: first the fact that the foreign banks in SA operate essentially in a specific segment of investment and corporate banking and second; that domestic banks have been generating extra revenues from retail banking where foreign banks have a lesser presence. For instance, the currency crisis may have helped some banks to be more profitable when they bought some lucrative assets from bankrupted banks.

The variables NIIN is used to analyse the effect on interest revenues. A positive relationship between the foreign banks' entry and the interest revenue variable indicates that the foreign banks' entry has not enhanced the level of competition on interest revenues or income activities.

Table 6.1: Foreign bank entry (Forbk_Num) effect on SA domestic banks

	NIIN	NOINTIN	TOEX	BTXP
Forbk_Num	0.338	-0.121	-0.011	-0.136
	(0.248)*	(0.149)	(0.196)	(0.071)*
NINEA	0.342	-0.206	0.208	-0.011
	(0.092)***	(0.055)***	(0.072)***	(0.026)
EQTY	0.415	-0.011	0.222	0.800
	(0.110)***	(0.066)	(0.087)**	(0.031)**
SLTDPA	-0.054	0.093	-0.113	-0.012
	(0.079)	(0.048)*	(0.063)*	(0.023)
PCGDP	-0.011	-0.051	-0.132	-0.016
	(0.129)	(0.077)	(0.102)	(0.037)
GGDP	0.001	-0.001	-0.001	0.001
	(0.003)	(0.002)	(0.002)	(0.001)
Income (log)	0.011	0.235	0.706	0.118
	(0.745)	(0.449)	(0.589)	(0.215)
CPI	-0.0006	-0.002	-0.006	-0.002
	(0.004)	(0.002)	(0.003)*	(0.001)**
Constant	-0.231	-2.288	-7.021	-1.837
	(7.510)	(4.500)	5.899	(2,159)
Number of Obs	86	86	86	86

Source: Banks' annual report and author calculations. Robust standard errors in parentheses.
(***) Significant at 1%, (**) Significant at 5%, (*) Significant at 15%

This result, unlike Uiboupin (2005), is in line with Hermes and Lensink (2004) findings, whose studies show a positive and significant relationship between foreign banks' entry and net interest margin. However, the foreign banks' entry in SA has a negative effect but is not statistically significant on the non-interest income activities (NOINTIN). A negative but non-significant effect on NOINTIN could mean that the SA domestic banks may have experienced a marginal increase in the level of competition in a particular segment of their activities such as investment and

corporate banking. This probably translates the fact that, due to the competition in this segment, the domestic banks were forced to reduce their fees to keep some of their customers and make some provision to cover losses in a segment that does not represent their core activity. Claessen et al., (2001) and Zajc (2002) finds negative effects of the foreign banks' entry on domestic banks non-interest income whereas Hermes and Lensink (2004) find opposite results on non-interest income and loan loss provision.

The hypothesis 1 stipulates that the net interest margin of SA banks is either ambiguous or positively correlated with the foreign bank share in SA. Here the finding indicates that net interest income (NIIN) is significantly and positively correlated to the foreign banks' entry in SA banking market

There is a negative relationship between the non-interest incomes of the domestic banks and the foreign banks' share in SA market, but this relationship is not statistically significant. Therefore the empirical result does not entirely support hypothesis 2 (the non-interest income of a domestic bank in SA is either positively or negatively correlated with the foreign banks' share in SA).

In light of these results it would be fair to deduce, statistically speaking, that the foreign banks entry has no effect on the SA domestic banks' performance, especially on average loan interest rates. But the same results provide some particular and interesting economic insights. What is striking is that all variables confirm the expected relationship with the presence of the foreign banks, although, most of these variables are not statistically significant. First, NOINTIN shows a negative relationship suggesting that the domestic banks have probably lowered their fees on their non-interest activities to offset some losses or to keep some existing customers. This implies the existence of a direct but small effect resulting from weak competition due to the presence of the foreign banks. Second, the variables relative to the SA domestic banks' revenue show a positive relationship, which is statistically significant in the case of NIIN. This tends to suggest that in the segment that the foreign banks are operating, either the SA domestic banks have a limited presence or this activity represents a small portion of their revenues. This could mean as table 6.5

suggests (with high level of NIIN from 2002 to 2009) that the SA domestic banks have succeeded in increasing their revenue in activities or segments, where foreign banks do not operate. And this could represent a strategy to avoid or offset the negative effects of competition. These empirical results, which measure the relationship between the presence of the foreign banks and the SA domestic banks' performance, suggest a direct effect of competition in the SA banking market due to the re-entry of the foreign banks. But due to a lack of statistical significance of some variables, the competition effect could be considered as weak. Therefore, it can be assumed that the competition, resulting from the presence of the foreign banks, has a limited effect on the SA domestic banks' performance.

Table 6.1 shows that banks' total operating expenses (TOEX) have a negative relationship but not statistically significant with foreign bank presence. Economically speaking, a positive correlation may be explained by spillover effects between foreign and domestic banks because domestic banks may invest in new practices and technologies that lead to an increase in their costs in the short term. But this is not the case here. If data were collected from 1994 immediately after the re-entry of the foreign banks and used here, maybe a spillover effect could have been captured more significantly, because as mentioned, the re-entry of foreign banks contributed to the modernisation of the SA banking sector. The simultaneity of the currency crisis also makes it more difficult to measure the effect of foreign banks, accentuated by the small segment in which foreign banks operate in SA. Therefore, from this finding it can be inferred that hypothesis 3, (the overheads of a domestic bank in SA are positively correlated to the foreign banks' share in SA), is not supported by the empirical findings.

Table 6.1 reports that the SA domestic banks before tax profit (BTXP) is negatively associated with foreign banks' presence, as Forbk_Num is used as an explanatory variable. In addition, the relation is very significant at 6.2% level. Before-tax profits are the net revenue before tax generated by SA domestic banks, which takes into account the interest and non-interest income as well as overhead costs and loan loss provisions. For instance, if the share of total foreign banks goes up by about 1%, the before tax profit is affected by about 13% decrease. This finding gives support to

Hypothesis 4 that stipulates that the ratio of pre-tax profit to the total assets of a domestic bank in SA is negatively correlated to the foreign banks' share in SA. This indicates the effects of foreign banks on both revenue and costs of SA domestic banks, confirming the effects of foreign banks on SA domestic banks in both areas of competition and spillovers.

This finding that strongly supports Hypothesis 4 is very important as it confirms previous economic analysis consisting of first the existence of a competition effect resulting from the one hand a positive impact of NIIN, and on the other hand from a negative relationship with both variables NOINTIN. The results specifically support the evidence of decreasing NOINTIN and confirm the existence of a competition effect in non-interest activities, such as corporate and investment banking where foreign banks are mostly operating.

For robustness checks and comparison, this model was estimated with Panel data random-effects GLS (Generalised Least Squares) estimator (see result in annex 6.6). There are minor differences between fixed and random effects and both yield to very close results, which means that for this study parameter estimates are generally robust regardless of estimation methodologies.

When looking at table 6.2 below, which reports results from equation (3.2) with Forbk_Shr that reflects the relative size of foreign banks compared to the size of domestic banks, Forbk_Shr has no statistically significant effect on any of banks' performance variables. However, the presence of the banking market has different effects on SA domestic banks' performance. Forbk_Shr has a negative effect on interest incomes (NIIN). Uiboupin (2005) and Zajc (2002) find a negative relationship between the size of the foreign banks in the domestic market and the net interest margin while Hermes and Lensinz (2004) find the opposite result. This indicates the presence of a competition effect.

In more general terms, Forbk_Shr, is negatively associated with three indicators of performance: net interest income (NIIN), non-interest incomes (NOINTIN) and profits (BTXP), and one indicator of cost: total operating expenses (TOEX). A

positive correlation with the three indicators of performance coupled with a positive relationship with the indicator of costs could mean an increase in profits despite increasing costs, which in turn would suggest an attempt to achieve some economies of scale from the big banks.

Table 6.2: Foreign bank entry (Forbk_Shr) effect on SA domestic banks

	NIIN	NOINTIN	TOEX	BTXP
Forbk_Shr	-0.0140	-0.028	-0.064	-0.012
	(0.199)	(0.119)	(0.155)	(0.058)
NINEA	0.344	-0.206	0.210	-0.011
	(0.093)***	(0.055)***	(0.072)***	(0.027)
EQTY	0.399	-0.007	0.221	0.086
	(0.111)***	(0.066)	(0.086)*	(0.032)**
SLTDPA	-0.077	0.010	-0.113	-0.003
	(0.079)	(0.047)**	(0.061)*	(0.023)
PCGDP	-0.141	0.010	-0.098	0.039
	(0.123)	(0.047)	(0.096)	(0.036)
GGDP	-0.001	-0.0001	-0.0007	0.002
	(0.004)	(0.002)	(0.003)	(0.001)**
Income (log)	0.862	-0.106	0.607	-0.162
	(0.447)*	(0.267)	(0.349)*	(0.131)
CPI	-0.005	-0.0002	-0.005	-0.0006
	(0.003)*	(0.001)	(0.002)**	(0.0008)
Constant	-7.714	1.113	-6.044	1.659
	(7.496)*	(2.68)	(3.506)*	(1,318)
Number of Obs	86	86	86	86

Source: Author calculations. Robust standard errors in parentheses.

(***) Significant at 1%, (**) Significant at 5%, (*) Significant at 10%

But there is a decrease in the four indicators of performance and costs, which leads to the conclusion that the domestic banks tried to reduce their costs after decreasing profits. This suggests that the domestic banks did not try to achieve any economies of scale, but instead they reacted to the competitive pressure exerted by the re-entry of the foreign banks. However, this remains inconclusive, as results are not statistically significant.

The estimation results from equation (3.3) with the interactive terms Inter_Num between foreign ownership Forbk_Num and the banking sector PCGDP are given in the below table 6.3.

Table 6.3: Foreign bank entry Forbk_Num interacting with PCGDP

	NIIN	NOINTIN	TOEX	BTXP
Forbk_Num	0.484	0.127	0.436	-0.045
	(0.960)	(0.578)	(0.757)	(0.275)*
Inter_Num	-0.149	-0.255	-0.459	0.325
	(0.950)	(0.572)	(0.749)	(0.272)
NINEA	0.341	-0.203	0.213	-0.014
	(0.093)***	(0.056)***	(0.0734)***	(0.026)
EQTY	0.414	-0.013	0.220	0.081
	(0.110)***	(0.066)	(0.087)**	(0.031)**
SLTDPA	-0.054	0.092	-0.114	-0.011
	(0.080)	(0.048)*	(0.063)*	(0.023)
PCGDP	0.423	0.040	0.033	-0.133
	(0.366)	(0.221)	(0.289)	(0.105)
GGDP	0.001	-0.001	-0.001	-0.001
	(0.003)	(0.002)	(0.003)	(0.001)
Income (log)	0.0483	0.297	0.819	0.109
	(0.785)	(0.47)	(0.620)	(0.225)*
CPI	-0.001	-0.002	-0.007	-0.002
	(0.004)	(0.002)	(0.003)*	(0.001)
Constant	-0.659	-3.018	-8.336	-0.905
	(7.985)	(4.814)	(6.302)	(2.288)
Number of Obs	86	86	86	86

Source: Author calculations. Robust standard errors in parentheses.

(***) Significant at 1%, (**) Significant at 5%, (*) Significant at 10%

They show that the interaction term has no statistically significant effect in relation to any of the independent variables. It is not possible to conclude whether or not the entry of foreign banks reduces the profitability or increases costs of the domestic banks. Uiboupin (2005) finds that the development of the banking sector has some

negative effects on short-term foreign banks' entry effects in developing markets, but he emphasises that the estimations with the interactive term Inter_Num gives a smaller drop in interest revenues in more developed banking markets, because interest rates have already converged more in developed markets.

This study has long advocated the particular case of SA being a developing country (World Bank Data, 2013; IMF, 2012) with a very strong and developed banking market and findings might reflect this SA aspect. However, tables 6.4 reporting results from equation (5.3), shows estimation of the interactive term between the relative size of the foreign banks, Forbk_Shr, and the domestic private credit to GDP, PCGDP. There is a significant effect at 12.8% level of the interaction term on the before-tax profits of the domestic banks. This statistical significance appears only when two time dummy variables for years 2001 and 2005 are included. The two events that occurred in years 2001 and 2005 correspond respectively to the SA currency crisis and the acquisition of ABSA by Barclays. However, the time dummy variable is not statistically significant for 2005 but it is for 2001 at 18% level. Given that results are not statistically significant without the dummy variables, it would be tempting to conclude that the effect was attributable more to the currency crisis rather than the entry of the foreign banks. To verify this point, a robustness check was conducted by running the same regression with panel data random-effect GLS estimator (see results in annex 6.1). The results show no significance without dummy variables, but in the presence of time dummies the significance of the interactive term is confirmed at 15% level. However there is not statistical significance for any of the time dummies.

In light of these conflicting statistical results what can be concluded? With dummy variables, both regressions confirm the significance of the interaction term, and I can conclude that Inter_Num, the interactive term between foreign ownership Forbk_Num and the banking sector PCGDP, has a negative impact on the SA domestic banks. It could suggest that there was shrinkage of the private credit market due to the foreign banks' entry or other events. Since the regression results show the significant effect of the interactive term only in the presence of time dummies, it suggests that only events at these times are responsible for this effect.

Table 6.4: Foreign bank entry Forbk_Shrinteracting with PCGDP

	NIIN	NOINTIN	TOEX	BTXP	BTXP
Forbk_Shr	0.276	-0.260	0.704	0.240	0.824
	(1.229)	(0.734)	(0.954)	(0.229)	(0.557)*
Inter_Shr	-0.188	0.150	-0.498	-0.156	-0.533
	(0.785)	(0.469)	(0.609)	(0.229)	(0.346)*
NINEA	0.343	-0.205	0.206	-0.012	-0.012
	(0.094)***	(0.056)*	0.073)***	(0.027)	(0.027)
EQTY	0.401	-0.008	0.227	0.087	0.082
	(0.112)***	(0.067)	(0.087)**	(0.031)***	(0.032)**
SLTDPA	-0.077	0.101	-0.112	-0.003	-0.008
	(0.079)	(0.047)**	(0.061)*	(0.023)	(0.023)
PCGDP	-0.107	-0.16	-0.007	0.068	0.193
	(0.189)	(0.113)	(0.147)	(0.055)	(0.100)*
GGDP	-0.001	0.0002	-0.001	0.002	0.003
	(0.004)	(0.002)	(0.003)	(0.001)*	(0.001)**
Income (log)	0.883	-0.082	0.529	-0.186	-0.522
	(0.467)*	(0.279)	(0.362)*	(0.136)	(0.272)*
CPI	-0.005	-0.0007	-0.004	-0.0001	-0.001
	(0.003)	(0.002)	(0.003)	(0.001)	(0.001)
Constant	-8.45	0.906	-5.360	1.873	5.188
	(4.655)*	(2.783)	(3.613)*	(1.360)	(2,703)*
Time dummy					Yes
Number of Ob	86	86	86	86	86

Source: Author calculations. Robust standard errors in parentheses.

(***) Significant at 1%, (**) Significant at 5%, (*) Significant at 15%.

Although results from panel data with fixed effects show a relative significance at 18% level for year 2001, panel data with a random-effect GLS estimator shows no significance for either of the two years. However I will favour the results from panel data with fixed-effects, which captures changes within the banking sector over time. The currency crisis occurring in year 2001 saw a fall in the number of domestic banks. Only the remaining domestic banks were allowed to buy lucrative assets of

those disappearing ones. This asset buy-out may have increased the assets level of the domestic banks left. Therefore a drop in the number of domestic banks could have been offset by a better performance of the assets of the remaining domestic banks after the crisis, which could explain a milder negative effect of the interaction term and a small significance of the dummy variable for year 2001. Consequently, it can be concluded that the finding provides evidence of the negative effect of the interactive term, but due to the SA financial crisis and not to the entry of the foreign banks, thus there is no support for Hypothesis 6 stating that the effect of foreign banks' entry depends on the banking market development in SA. On the other hand, this finding could suggest implicitly that the SA banking market is more developed than the typical banking market in developing countries and that SA interest rates had already converged with developed market rates.

No results are reported here for the interaction term FS_SGLKB_Ass, which represents the interaction term between the presence of the foreign banks and the value of their market share relative to the total SA banking market. The reasons for this are that the regressions suffer from severe problems of correlation amongst variables and a lack of statistical significance.

6.2 Discussion and conclusion

This is the first study to my knowledge that investigates empirically the effect of foreign banks entry in SA during the post-Apartheid period. The main finding is that the foreign banks' entries are associated with both higher net interest income (NIIN) and lower before-tax profit (BTXP) of SA domestic banks. But evidence from NIIN proved to be weak being statistically significant at only the 18% level. However, evidence from BTXP is statistically stronger with a 6% level and decrease of 14%. And higher NIIN confirms the presence of competition faced by SA domestic banks in the segment of investment banking that forced them to improve their presence in activities where foreign banks do not compete. A decrease of both NOINTIN and BTXP combined with statistical significance of BTXP suggest strong competition effects on non-interest activities such as fees, where foreign banks are present.

When Ch2/H5 (impact of the foreign banks share associated to PGDP) was tested I found an unexpected result. The interaction term (Forbk_Shr) between the foreign banks share relative to domestic banks share and the private credit over GDP (PCGDP) was found to be statistically significant, suggesting an effect on domestic banks' profits (BTXP). In fact, it appears that this effect was the result of the financial crisis that occurred in 2001. This confirms the concern noted earlier, regarding the difficulty to detect any spillovers during the period 2000-04 when TOEX in table 3.2 increased sharply.

Finally, Ch2/H1 consisting of the net interest margin of SA banks is either ambiguous or positively correlated with the foreign bank share in SA and Ch2/H4 stipulating that the ratio of pre-tax profit to the total assets of a domestic bank in SA is negatively correlated to the foreign banks' share in SA, are fully supported by the study, as NIIN and BTXP were respectively positively and negatively correlated with the presence of foreign banks and both statistically significant. On the other hand support for H6 stating that the effect of foreign banks entry depends on the banking market development in SA is either unclear or not supported because of the ambiguity of the impact of the interactive term Forbk_Shr on the variable BTXP. Ch2/H2, the non-interest income of a domestic bank in SA is either positively or negatively correlated with the foreign banks' share in SA, is not supported empirically supported because the variable NOINTIN is not statistically significant.

But NONINTIN is negatively correlated with the presence of foreign banks, which adds up for more support to a competition effect. The Ch2/H3 that indicates the presence of spillover effects, which says that the overhead of a domestic bank in SA is positively correlated to the foreign banks' share in SA, is not supported by this study. Nevertheless these results are in line with previous studies provided in table 6.5 with some exceptions, which indicates that the SA economy remains a specific case in terms of foreign banks' entry.

The findings from this chapter not only support but also generalise the existence of a significant degree of competition effects on non-interest activities in SA banking market, suggesting strong competition in investment banking where most of the foreign banks are present. Both the survey in chapter 4 and the case study in chapter 5 anticipate this result about competition effect and now in this chapter the results from the empirical model confirm competition effects as domestic banks were forced to increase their performance (profits) in activities where foreign banks are less present. Although the economic analysis of indicators NIIN, NOINTIN, TOEX and BTXP suggests that the SA banks did not achieve any economy of scale, however, this evidence is not strong enough to statistically justify that foreign banks forced the domestic banks to operate more efficiently and /or to realise any economies of scale or scope.

Both survey and case study results from chapter 4 and 5 show the existence of technological gap in high segment of SA banking sector and the avalaibility of new technology, knowledge and know-how. The case study also confirms that knowledge spillover took place in the all SA banking sector. As competition is a condition for knowledge to spillover when there exists some technological gap therefore, this empirical result from this chapter provides further evidence that knowledge spillover occurred in the entire SA banking sector.

Table 6.5: Summary of studies of foreign banks effects

	NIIN	NOINTIN	BTXP	TOEX
Forbk_Num	Claessens (NS)	Claessens (-)	Claessens (-)	Claessens (-)
	Uiboupin (-)	Uiboupin (NS)	Uiboupin (NS)	Uiboupin (NS)
	Zajc (NS)	Zajc (-)	Zajc (-)	Zajc (+)
	Pietrus (+)	Pietrus (NS)	Pietrus (-)	Pietrus (NS)
Forbk_Shr	Claessens (NS)	Claessens (NS)	Claessens (NS)	Claessens (NS)
	Uiboupin (-)	Uiboupin (NS)	Uiboupin (NS)	Uiboupin (NS)
	Zajc (-)	Zajc (-)	Zajc (-)	Zajc (+)
	Pietrus (NS)	Pietrus (NS)	Pietrus (NS)	Pietrus (NS)
Forbk_Num / Forbk_Num*PCGDP	Hermes (2003a) (+) / (-)	Hermes (2003a) (+) / (-)	Hermes (2003a) (-) / (+)	Hermes (2003a) (+) / (-)
	Hermes (2003b) (+) / (-)	Hermes (2003b) (+) / (-)	Hermes (2003b) (-) / (+)	Hermes (2003b) (+) / (-)
	Uiboupin (-) /(+)	Uiboupin (NS)	Uiboupin (NS)	Uiboupin (+) /(-)
	Pietrus (NS)	Pietrus (NS)	Pietrus (-) / (NS)	Pietrus (NS)
Forbk_Shr / Forbk_Shr*PCGDP	Hermes (2003b) (+) / (-)	Hermes (2003b) (-) / (NS	Hermes (2003b) (+) / (-)	Hermes (2003b) (+) / (NS
	Uiboupin (+) /(-)	Uiboupin (NS)	Uiboupin (-) /(+)	Uiboupin (NS)
	Pietrus (NS)	Pietrus (NS)	Pietrus (+) / (-)	Pietrus (NS)
Forbk_Num / Forbk_Num*SGLBK_Ass	Uiboupin (NS)	Uiboupin (-)	Uiboupin (NS)	Uiboupin (NS)
Forbk_Num / Forbk_Shr*SGLBK_Ass	Uiboupin (NS)	Uiboupin (NS)	Uiboupin (NS)	Uiboupin (NS)

Sources: Claessens et al (2001), Hermes and Lensink (2004 a,b) Zajc (2002)
Note: (+) significant positive correlation, (-) significant negative correlation, (NS) not statistically significant

Chapter 7

7. Efficiency model results for foreign and domestic banks in SA

The aim of this chapter is to present and discuss the results from the empirical model of efficiency and generalise the finding from the case study in chapter 5 about the relationship between efficiency and FDI. The theoretical analysis framework, described in chapter 2 clearly shows how efficiency is a transmission channel for benefits fro FDI in the financial sector to the whole economy. This benefits starts at the micro level when the domestic banks achieve some efficiency from economies of scale and scope thanks to technology and knowledge transfer. Then efficiency spillovers may occur as a direct effect of competition. Therefore financial sector efficiency may in turn translate into an increase of GDP.

The interview outcomes from the case study clearly confirm that the entire banking sector in fact undertook the modernisation of its infrastructure, processes and regulation to better comply with international standards, just after the re-entry of the foreign banks (competition) from the 1990s to early 2000s. The SA regulators from 2002, tried to address the issue of competition and costs of services and products provided by the SA banking sector by sponsoring a series of studies[5] and has encouraged the banks to reduce their fees. And findings from the survey in chapter 4 and the competition model in chapter 6 confirm the existence of competition effects accentuated in the activities of investment banking.

This chapter analyse the efficiency for a long period just after 2000 to 2010. It is therefore important to assess whether foreign banks outperform domestic banks from

[5] Competition in SA banking: task group report for the National Treasury and SARB, 2004; Hawkins, 2001, 2004

the angle of efficiency because despite the importance of this question and the relatively strong SA financial sector, only a few studies[6] on SSA are available.

Issues of efficiency have been examined in developing and transition countries such as the Eastern-European economies that are now part of the EU and in many South American emerging markets (Mexico, Brazil, and Argentina) thanks to economic liberalisation. Today, only two big domestic-owned banks, namely the First Rand and Nedbank, are left with no significant foreign shareholders in their ownership structure. It could be the case in the future that the SA banking sector could be dominated by a majority of foreign-owned equity, as is the case in Swaziland. However, whether this growing market share of foreign-owned banks has been improving the performance of the banking sector is an issue that needs further investigation.

To answer the first question whether foreign banks are more efficient than SA domestic banks the model (3.6) presented and described in chapter 3 is used. Its results are reported and analysed in the next section. They will provide an average efficiency score of both banks for the period 2000 to 2010.

Apart from ownership, other factors could influence the level of better efficiency of the foreign banks. The model (3.8) presented and described in chapter 3 is used. Its results are also reported in the next section of this chapter.

7.1 Results for SA banks efficiency scores

The main descriptive statistics for cost efficiency scores, results of x-efficiency model (3.6) are presented in the table 7.1 and the Stata general procedure and command for running this model is given in annex 3.7. The score denotes the ratio of the bank's actual costs to the computed minimum possible cost (cost frontier). Therefore, a lower score means greater efficiency. On average, with a score of 56.11, foreign-owned banks are more efficient than domestic banks, whose score is 84.78. The dispersion

[6] Haddad and Harrison (1993); Okeahalam 1999, 2004a, 2006

score does not show a very significant difference between the two types of banks: standard deviation of 10.37 for the domestic-owned and 6.71 for the foreign-owned banks.

Table 7.1: Descriptive statistics for efficiency scores

Sample	Num Obs.	Mean	Std Dev.	Min	Max
Domestic-owned banks	94	84.78	10.37	59.46	96.17
Foreign-owned banks	37	56.11	6.71	41.82	68.18
All banks	131	76.69	16.04	41.28	96.17

Source: SA Banks' annual reports.
Notes: all scores are in percentage

This study shows that in SA, foreign-owned banks outperform domestic-owned banks by more than 28%. This finding is in line with the literature according to which foreign banks are more efficient than domestic banks in developing countries as previously discussed. But even more importantly it confirms and amplifies the previous empirical finding from chapter 5 that shows foreign-owned banks perform slightly better than domestic-owned banks in term of before-tax profit. In that chapter I concluded in favour of significant competition but limited to the wholesale segment and no spillover effects as the foreign banks' entry had positive and negative effects on domestic banks' performance with small statistical significance and negative effects on costs indicators with no statistical significance. The confirmation that foreign-owned banks have been consistently more efficient over a long period of time (at least ten years figure 6.1) adds to the conclusion from the previous chapters that competition really took place. It indicates a possibility that there were efficiency spillovers to the whole financial sector. This backs up the theoretical section illustrated in figure 2.3, and in figure 7.1 showing from 2000 to 2010 a more than 10% increase in efficiency for both domestic and foreign-owned banks. But this finding does not clarify how spillover effects took place and which channels or areas were used for their diffusion.

Figure 7.1 below shows the scores' trend for both domestic and the foreign-owned banks from 2000 to 2010. By considering the sub-period 2001-06, and for domestic-owned banks it can be observed a very small increase[7] of the efficiency scores from

[7] Note that a lower percentage of efficiency score denotes a higher efficiency.

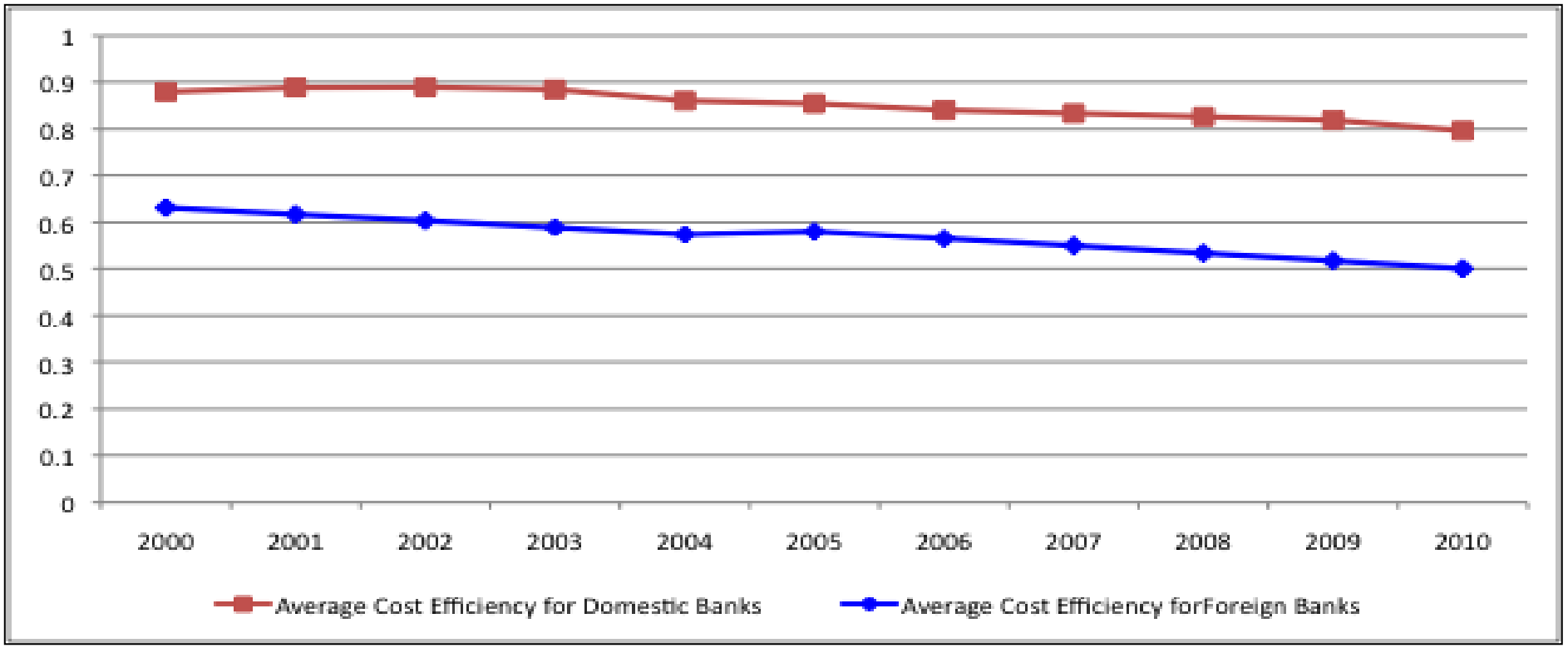
2001 (88.8%) to 2003 (88.4%) then in 2004 there is a bigger increase of 2.4%. The foreign-owned banks too experienced the same trend, with small increase scores of 61.6% and 60.3 in 2001 and 2002 and bigger increase of 58.8% in 2003 as well as 57.3% in 2004 (almost a 4 percentage points increase for the period). This increase in efficiency for both categories of banks, may well be the result of regulatory encouragement to the banks in SA to lower their product prices and fees to customers. It was at this time that Basel processes were implemented to better monitor analysis on banking risks.

On the other hands, in 2005 there is a very small decrease of half a percentage point in efficiency (from 57.3 in 2004 to 57.9 in 2005) followed by a 1.5 percentage point increase in 2006 for the foreign banks while the domestic banks show a slow-down in the trend of increase in 2005 with scores of 86.0% and 85.4% in 2004 and 2005 and a higher increase in 2006 with a score of 84.0%. The year 2005 corresponds to the Barclays acquisition. Perhaps to anticipate possible competition triggered by this acquisition, foreign and domestic banks made some investments in 2005 allowing them to get better knowledge, technology and risk management tools, processes and procedures, which possibly translated into a short term increase of their overhead costs. This could suggest that ABSA, the Barclays acquisition triggered competition in the segment of investment banking, where the majority of foreign banks and branches operate, forcing them (as well as domestic banks' investment banking activities) to pre-emptively respond. This argument was verified and reported in the case study in chapter 4. From the feedback I received from the different actors of the banking sector, the Barclays branch called Barclays Capital was regarded as the benchmark. There were fears that Barclays taking over ABSA could represent a serious threat. Therefore, this provides another piece of evidence for a technological gap and demonstration effect that took place meaning de facto knowledge spillovers.

The analysis of differences in efficiency between the domestic and foreign-owned banks cannot be complete if some banks' characteristics, which are exogenous to the banks managers' decisions, are not taken into account. This is the reason why the level of equity was included in the estimation of efficiency scores, to ensure that the influence of risk preferences was taken into account. However, other factors that seem

to be beyond managers' control could have some impact on the efficiency scores. Therefore, to extend the analysis additional explanatory variables that may influence differences in efficiency such as size and structure were included in the study. Better management is also a factor that accounts for increasing efficiency and managers have also some responsibility for the decisions over production of the banks.

Figure 7.1: Score efficiency level for 2000-10



Source: SA Banks' annual reports
Author calculation

7.2 Results for other factors that influence SA banks efficiency scores

Table 7.2 below provides the results of the regression model (3.8) showing that there is a negative and very significant effect between the efficiency score and all explanatory variables. The negative effect is due to the nature of the efficiency score and should be translated as a positive effect because a lower value of efficiency score, means a higher efficiency cost.

Table 7.2: Other factors estimation

Variables	Equation using Tobit estimate	Equation using GLS estimate
For	-0.3188 (0.2169)***	-0.1453 (0.0395)***
For*Assets	6.05e-07 (7.58e-08)***	2.17e-07 (7.26e-08)***
Assets	6.52e-08 (3.99e-08)*	-5.79e-08 (2.48e-08)**
CustomDep	0.2050 (0.0385)***	-0.0503 (0.0206)**
Linvass	-0.0023 (0.0023)	-0.0065 (0.0017)***
Constant	0.7151 (0.02148)***	0.8958 (0.02927)***

Source: Banks' annual report and author calculations
Notes: Dependent variable is the cost efficiency score in percentage. Coefficient beta is reported and standard error is in parentheses.
(***) Significant at 1%, (**) Significant at 5%, (*) Significant at 15%.
N:14 banks

The main lesson from the results is that the coefficient for foreign ownership *For* is highly significant and positive at 1% level in both regressions, suggesting that in the SA market foreign-owned banks have a significant advantage in cost efficiency relative to domestic-owned banks. In addition, as the regressions control for the influence of size and structure of activities (variables *Assets* and *Linvass*) and for risk preferences of managers (Equity) included in the estimation of efficiency scores, results confirm that foreign-owned banks benefit from better management.

Secondly, the interaction variable *For*Assets*, which is highly significant at 1% level in both regressions, proves that the efficiency gap between domestic and foreign-owned banks is a result of the banks' size. It shows that the correlation between the variables *For* and *Assets*, which is the result of a larger size for domestic-owned banks, influences the relationship between *For* and the efficiency score. This means

that the link between foreign ownership and cost efficiency is the direct result of the smaller size of the foreign-owned bank.

In addition this advantage for foreign banks could be explained by both better control by the foreign shareholder and a comparative advantage in banking know-how, which is provided by their mother companies. The latter explanation is even more plausible as all the foreign banks in the sample operate in the small segment of investment banking that requires particular knowledge and techniques. However, the foreign-owned banks' management, who have greater managerial experience in a market economy than domestic-owned banks' in developing countries, may suffer from poorer information about the domestic market and have less information on the quality of borrowers. In addition, foreign-owned banks' management may be less familiar with moral hazard problems[8] in emerging or developing economies, where the market is less committed to western standards of contract rules (unreliable accounting information and consequently equity and collateral values that are not properly assessed). The results show that this is not the case here. The foreign-owned banks do not have weaker knowledge of domestic customers and this is confirmed by the fact that from at least 1994 when the foreign banks returned to the SA market, they have had time to adjust and understand the local market. It is helpful to remember that some foreign-owned banks have never left the SA market after the establishment of the Apartheid regime (for instance in the case of the Bank of Athens).

The coefficient of *CustumDep* is significant in both regressions suggesting that deposits may imply lower costs than other financing sources. But with opposite signs for each coefficient from both regressions, it is difficult to provide a clear explanation. However, it is important to remember that the big names of foreign investment banks that have easier access to cheaper international financing sources are not represented in the panel as they operate as foreign branches, whose data from financial reports are

[8] Banks collect deposits and invest these funds in risky assets (loans). To safeguard against insolvency, banks hold capital buffers against adverse outcomes in their investments in risky assets (loan default). But the bank's private solvency target may not take into account the interests of depositors, nor of society as a whole. As a result, banks may engage in excessive risk-taking (Nier and Baumann, 2006).

not accessible. On the other hand, *Linvass* is significant in only one regression making it even harder to conclude.

The coefficient of size (*Assets*) is significant at the 10% and 5% levels respectively in Tobit and GLS estimates. This confirms that there is a linear relationship between size and cost efficiency for SA banks as mentioned earlier. This particular observation could be linked to the issue of economies of scale suggesting that potential economies of scale may be achieved in the SA banking sector; but this is beyond the scope of this study and will not be developed further.

This section shows that in the SA banking sector, foreign ownership is strongly associated with higher cost efficiency. A higher level of cost efficiency remains, even when adding variables such as size and structure of activities into the regressions. This represents another piece of new evidence about a developing economy that can be added to the existing literature; Claessens et al. (1998), Micco et al (2004), Berger et al. (2005) find that in developing countries foreign banks tend to have higher profits, better performance and lower costs than domestic and state-owned banks. The same literature concludes that domestic-owned banks have better knowledge of the local market. However, this study shows not only that foreign banks perform better but also that they possess as good quality information about the local market as domestic-owned banks and better know-how.

This study could suffer from some particular limitations such as the small segment in which the foreign-owned banks operate, their size in term of assets and their number in the sample (5 foreign-owned banks for 9 domestic-owned banks: almost a ratio of 1:2). Unfortunately, it was not possible to include in the panel the data from the foreign branches' annual reports, as these data were not accessible. And this the reason why the survey on foreign banks where designed and presented in chapter 2.

7.3 Discussion and conclusion on efficiency results

I have analysed empirically the impacts of ownership on the cost efficiency of banks in SA and the channels by which knowledge have spilled over. I have found evidence of impacts of foreign ownership on cost efficiency. The foreign-owned banks have a higher efficiency score resulting from differences in risk preferences between categories of banks. The regressions of cost efficiency on control variables for size and structure of activities shows significant influences of foreign ownership that can be explained by better corporate governance, smaller size and transfer of knowledge and know-how from their mother company. In addition, it can be observed that there is a link between the first big acquisition of a domestic bank by a British bank in 2005 and foreign banks' efficiency scores. One year before the acquisition deal, the efficiency score of foreign banks decreased slightly to increase again one year after the deal. This suggests some competition effects. From 2000 to 2010 both categories of banks increased their cost efficiency scores slowly but steadily. But there is still a big efficiency gap (28 percentage points) on average between domestic and foreign-owned banks. Although it is not easy to use and replicate processes and systems used by foreign banks that operate in investment banking, but with a score of about 80%, the domestic banks have plenty of room for efficiency improvement and clearly this should be a concern for policy makers, especially as efficiency implies economies of scale and scope, which in turn can provide better and cheaper banking products and services. One way is to allow more competition in retail banking by letting more foreign banks operate in this segment. This is what possibly the SA government had in mind when it authorised the acquisition of ABSA by Barclays bank. But 5 years later and despite the acquisition of 20% shares of the ICBC in the Standard Bank, this result show and confirm (finding from case study) that resulting competition did not occur. It is generally considered that foreign banks increase competition and access to financial services, enhance financial and economic performance of their borrowers and bring greater financial stability (Clarke, Cill, Martinez Peria and Sanchez, 2003; Claessens, 2006, Chopra, 2007, and Cull and Martinez Peria, 2011). But with two big independent banks out of four left (Nedbank and First Bank), the SA government may feel reluctant to allow more acquisitions, as it may fear for SA financial and economic

stability. And indeed, there is reason to be fearful. An important concern over foreign banks' presence is the tendency for foreign banks to leave foreign markets in times of economic downturn and political crisis, also called a hit and run strategy. A consequence of this strategy is the possibility of triggering risks for financial stability as well as a decrease of private sector credits. But many examples show that the hit and run strategy is not systematic. For instance in the case of Argentina and Mexico, Dages, Goldberg and Kinney (2000), who look at the rate of growth in lending during and after the Tequila Crisis of 1995 show that foreign banks expand lending even when domestic GDP is stagnating or falling. They conclude that foreign banks' lending provides a counter-cyclical support to the economy. Other fears of policy makers are the tendency of foreign banks to cherry-pick, meaning that foreign banks are more interested in large and less risky customers, neglecting the credit-lending to smaller borrowers. In the policy-makers view, this leaves domestic banks with more potentially risky customers, leading to more bankruptcies and credit constraints on the private sector (Hermes and Lesink, 2002; World Bank, 2002). However, as the survey from chapter 4 shows, this is already the case as most of the foreign banks operate in the wholesale segment (excluding ABSA bought in 2005 by Barclays) and no negative aspects have so far been reported as the retail segment seems to be dominated by the four big SA banks. Therefore, given the huge potential to increase efficiency, the domestic banks should take more opportunity to gain economies of scale and scope. One solution is perhaps to introduce more competition and allow even more acquisition of domestic banks. Since foreign banks are usually large, market-lending banks, they operate at larger scale than domestic banks. There is reason to believe that foreign banks will be able to take advantage of economies of scope because generally they are universal banks and/or members of financial conglomerates that offer a wide range of products and services.

Advocating more competition in the retail-banking sector is important for spillover effects and/or transfer of knowledge. The survey in this study shows that despite the availability of some technologies, knowledge and skills, efficiency as well as spillover effects occurred but were limited to the segment in which the foreign banks operate. This result corroborates the finding on efficiency from this chapter and confirms the result of the empirical model in chapter 6 that finds no evidence of spillovers effects

but limited competition effects. This also confirms the fact that if the foreign banks are only interested in limited market segments then the effect on overall competition will be small. But inversely, it can be assumed that if they are interested in the broader market, their effect on competition may be large (Kraft, 2002)".

8. Conclusion

This thesis investigates FDI knowledge spillovers, a literature that recognises the ambiguity of the empirical evidence of the existence of such spillovers. More specifically the dissertation has focused on the search for such knowledge spillovers in the banking sector and in an atypical developing country, South Africa (SA). The thesis has adopted an approach to this problem in the preceding chapters by i) looking at in detail the relationship between competition and knowledge spillovers in the SA banking sector and how the existence of both competition and FDI spillovers depends very much on distinct markets (chapters 2&4); ii) presenting two major empirical models and their data, one that measures the effect of foreign banks re-entry after the Apartheid regime in SA for the considered period of 2000-10, and the other that measures the score efficiency of foreign and domestic banks in SA for the same period (chapter 3); iii) addressing and analysing the relationship between efficiency and FDI (chapter 5); iv) and presenting the results of the two empirical models (chapters 6 and 7).

The objective of chapter 1 is to present a review of the theoretical and empirical literature on knowledge spillovers in FDI. It intends to show the complexity, the different shapes and the multi-channels that FDI knowledge spillovers can use. It shows the many theories that are available for the manufacturing sector. However, section 1.2 stresses the specificity of the banking sector, which is driven more by information technology (IT) by which its products are defined, and characterised: specific knowledge of its markets, its best practices and its know-how. It also highlights the fact that knowledge spillover is made possible depending very much on the market segment in which foreign banks operate. By using some aspects of MNE theory taken from manufacturing and the internalisation theory, the literature review shows the emergence of the field of study of spillover effects, which still merits more attention as banks are operating in a more global environment.

Chapter 2 presents the theoretical framework of FDI in the banking sector used by this study. On the one hand, analogies are made with the manufacturing sector and concepts, such as demonstration effect, labour turnover, technological gap (figure 2.1) and absorptive capacity are borrowed, distinguishing between direct and indirect effects. On the other hand, concepts that measure performance and determinants of MNBs are also used. As a result, a distinctive two-stage framework emerges. First, this framework contributes to analyse the impacts of the presence of foreign banks on domestic banks and competition effects in the SA market. Second, the framework measures the efficiency gap between the foreign and domestic banks that operate in SA. In addition, the efficiency measure is also used to analyse the performance of domestic banks that were recently subject to FDI. Chapter 2 also identifies the main hypotheses for each stage. For stage one, five hypotheses are set. Ch2/H1, the first hypothesis is about the non-interest incomes of SA domestic banks that can be ambiguous or negatively correlated with the foreign banks' share. Ch2/H2, the second, states that the non-interest income of a SA domestic bank can be either positively or negatively correlated with the foreign banks' share in SA. The third one, Ch2/H3 is concerned with the overheads of the SA domestic banks that can be positively correlated to the foreign banks' share. Ch2/H4 stipulates that the ratio of pre-tax profit to the total assets of a domestic bank in SA is negatively correlated to the foreign banks' share in SA. For stage two, there is one hypothesis Ch2/H6, which states that foreighn-owned banks in SA are more efficient than domestic banks.

Chapter 3 presents the research methods, procedures and data. It includes a survey (Annex 3.10) and two empirical models.

The survey includes eight questions (table 8.1): Question 1 (Ch3/H1) identifies the reasons for entry. Questions 2 and 3 (Ch3/H2) are directed to foreign banks' strategy in the SA market and their comparative advantage at the time of entry. Questions 4 to 6 (Ch3/H3 and Ch4/H4) relate to products, innovation and technology transfer identifying the presence of potential spillovers. Questions 7 and 8, (Ch3/H5 and Ch3/H6), focus on the future of the SA banking sector.

The two empirical models cover 9 SA domestic banks and 5 foreign banks for the period from 2000 to 2010. The first model (3.1) aims to measure the competition and spillovers effects from the re-entry of the foreign banks in SA and distinguishes

between direct, indirect and spillover effects (the results are discussed in chapter 6). Theory and empirical evidence suggest that if domestic banks are able to compete with foreign-owned banks then the efficiency of the domestic banks may also improve (Claessens et al., 2001). The reason for this is that domestic banks may imitate and adopt foreign banks' modern skills and competencies (Lensink and Hermes, 2004) and therefore improve their efficiency. From this hypothesis, the objective of the second model (3.8) is to generalise the relationship between efficiency and FDI by measuring the efficiency scores of both foreign and domestic banks. In order to do so I use an extended model of x-efficiency and present the results in chapter 7.

Chapter 4 presents the results of the survey covering the period that includes before 2010, from 2000 to 2012 and after 2012. A summary of the findings is presented in section 4.7. The survey findings highlight:

i) foreign banks contribute to the introduction of new products, techniques and technologies, practice and know-how (Ch3/H2 to Ch3/H4);
ii) foreign banks operate in the limited scope of the wholesale segment (Ch3/H1, Ch3/H2 and Ch3/H3);
iii) demonstration effects took place (Ch3/H4 and Ch3/H5);
iv) although foreign banks wish to remain independent, they may, in the future, have to enter in some FDI that could trigger a reconfiguration of the SA banking market (Ch3/H6).

Chapter 2 had highlighted how spillover effects depend on the market segment in which foreign banks operate; our results in chapter 4 confirm this observation. Combining the findings from hypotheses and questions, from Ch2/1-4 to Ch3/1-6, leads to the conclusion that, at this stage, competition and spillover effects occured in the wholesale segment of the SA banking sector. These results are in line with Lensink and Hermes (2004) that find that domestic banks imitate and adopt foreign banks' new skills and techniques

Chapter 5 establishes the relationship between efficiency and FDI by analysing whether foreign acquisition and minority participation improves efficiency. It also investigates whether these changes in ownership contribute to knowledge transfer and

spillover effect. This chapter introduces also the difference between voluntary and involuntary spillovers, and shows how FDI spillovers could depend not only on the country of origin (or nationality of parent) but also on the objectives of the foreign participation (technology sourcing, ownership advantage or efficiency seeking).

To this purpose, two cases were examined: ABSA, one of the SA big four controlled by Barclays bank, and Standard Bank another SA big four banks, of which ICBC, a Chinese bank, holds a minority (but significant) shareholding. These two cases were scrutinized through two hypotheses: Ch5/H1 and Ch5/H2 (see table 8.1). Ch5/H1 stipulates that ABSA and the Standard Bank should perform better in terms of efficiency and performance after a change in their ownership structure; Ch5/H2 specifies that a change in the ownership structure of ABSA and the Standard Bank should trigger an increase in competition in SA market. My conclusion is that ABSA has benefited significantly from transfer of know-how, managerial practices, systems and technology, which translate into significant efficiency gains. This contrasts with Standard Bank that did not benefit from significant knowledge transfer from ICBC. But I also find a paradox: although ABSA outperforms slightly the competitors in term of efficiency gains, it does not outperform Standard Bank. The reason is that Standard Bank has developed a culture of keeping costs down during the period of foreign banks re-entry. The second finding is that the competitors are unimpressed with ABSA performance, and these two FDIs have not contributed to changing their strategy. In other words, this does not provide strong evidence for knowledge to spill over in general and into all segments of the banking sector. However, and this is the third finding, all ABSA competitors recognise that the new investment team formed by Barclays/ABSA triggered competition in the wholesale segment and important labour turnover occurred. This backs the conclusion from hypotheses' results Ch3/1-6 in chapter 4 that strong competition and spillover effects occurred in the SA investment-banking sector. But from the interviews' feedback with the big four, I acknowledge that different programmes were implemented (training, infrastructure modernisation, etc) suggesting that there were spillover effects beyond the wholesale segment to the entire SA banking sector. And finally, this chapter reveals another finding: the emergence of a new competitor in the segment of retail banking: Capitec Bank, which poses a serious threat to Standard Bank as they possess a similar technology-driven strategy.

These aspects of ownership advantages are highlighted by To and Tripe (2002) who find that parent-bank specific ownership advantages are dominant in their subsidiaries' performance, and clearly this is the case for Barclays-ABSA, which is in line with hypothesis Ch5/H1 for ABSA. In manufacturing there are more references in favour of the ownership argument such as Blomstrom and Sjoholm (1999) who find foreign ownership leads to spillovers. Demelis and Louris (2002) find that only majority ownership leads to more labour productivity. Abrahanm, Konings and Sloomaekers (2007) suggest that minority ownership effects are larger than majority, whereas Javorcik (2004b) argues that majority ownership does not create spillovers but only firms owned by both foreign and domestic firms generate spillovers. Nationality of parent is a factor in spillover creation. Buckley, Clegg and Wang (2007b) find that Western FDI generates more spillovers because firms from the West are more technologically advanced. This finding is supported by the results from the hypothesis in Ch5/H1 for ABSA and the Standard Bank and by Buckley, Clegg and Wang (2007a) showing that Western FDI generates more spillovers in technology-intensive industries but Asian firms generate more spillovers in labour-intensive industries.

Chapter 6 presents the results of the empirical estimates measuring the effects of foreign bank re-entry on the performance of the SA domestic banks (income, costs and profitability) for the period 2000-10 (model 3.1). The model (3.1) on effects of the foreign banks on SA domestic banks' performance is derived using time dummy variables. The results include: i) the re-entry of the foreign banks had a direct and significant competition effect on the performance of the domestic banks, which support hypotheses Ch2/H1 and Ch2/H4 but not Ch2/H3; ii) but had no spillover effect, which does not support hypothesis Ch2/H4; iii) the SA currency crisis in 2001 had an indirect effect on the SA domestic banks' performance when testing hypothesis Ch2/H5, although Ch2/H5 is not supported by the result. In addition, spillover effects are unlikely to occur if foreign firms operate in isolated market segments, and if technologies and products are very different from those of domestic firms (Kokko, 1994). As the majority of the foreign banks in SA operated exclusively in the wholesale segment, the conclusion was that the competition effect was essentially acute in that wholesale segment, and as this segment is small compared to

the retail segment it could be assumed that overall spillover effects were unlikely to have occurred, or if they did they would have been localised and limited. The finding is in line with those of several authors who find similar results such as Berger et al., (2005); Claessens and al., (2001); Mico et al., (2004); Uiboupin (2005), who find that in developing countries, foreign banks have higher profits than domestic banks, and an increase of foreign banks reduces the level of profitability and margins of domestic banks, in line with results from Ch2/H4. But the literature also suggests that at a higher level of economic development, foreign banks entry has a less significant effect on domestic banks' profitability (Hermes and Lensink, 2004).

Chapter 7 presents the results of the empirical estimates of the x-efficiency regression model (model 3.5), testing hypothesis Ch2/H6. The results confirm a net efficiency margin for the foreign banks of more than 28% on average over the period 2000-10. I also find that since 2000 there is a clear trend of increasing efficiency for both categories of banks: slightly less than 10% for the domestic banks and more than 10% for the foreign-owned banks, suggesting a spread of efficiency to the entire banking system.

The literature on the effects of FDI in the banking sector is divided between the study of the determinants of MNB growth or presence and the profitability of MNBs in foreign markets. Studies on MNB growth or presence include works by Fieleke (1977), Terrell (1979), Golberg and Saunders (1980), Ball and Tschoegl (1982), Cho (1985), Sabi (1986), Ngh et al. (1986), Hultman and McGee (1989), William (1996) Yamori (1998) and William (1998). Studies on the profitability of MNBs in foreign markets concentrates primarily on the MNBs' performance (or profitability) in foreign markets and include De Young and Nolle (1996), William (1996, 1998), Molyneux and Seth (1998) and Peek et al. (1999). But while the literature on effects of FDI in the manufacturing sector is well developed, it is not the case for the banking sector where most empirical investigations of FDI in banking focus on multinational banks (MNBs) operating in the US market or on US MNBs operating abroad. Due to a lack of data, only a few studies have been carried out in Canada, Europe, Japan or Australia.

This dissertation offers an extensive literature review that underpins FDI knowledge spillovers theory in both manufacturing and banking sectors. The literature review represents an important synthesis of work in recollecting in detail the many aspects, and shapes of impacts of FDI that are later linked to the theory of internationalisation of the multinational banks.

This dissertation provides empirical ground and validates the main argument that in developing countries, foreign banks have higher profits than domestic banks and an increase in the number of foreign banks reduces the level of profitability and margins of domestic banks in a specific market (Claessens et al, 2001). The results also confirm that in developing countries, foreign ownership is positively correlated with banks' efficiency and performance Mico et al (2004). Such results from empirical evidence are rare and this study contributes to enriching the discipline of FDI spillovers.

This dissertation innovates in terms of methodology by combining a case study approach and a survey method to evaluate the specific case of SA banking sector and to argue for the existence of knowledge spillovers and competition. The inclusion of empirical models allows the generalisation of the findings, re-enforcing the validity of the empirical argument while the use of the survey methodology was a means to compensate for lack of data from the foreign bank branches. In short the contributions of this dissertation to the literature are three:

i) it contributes to the theoretical debate on the existence and mechanisms whereby FDI brings spillovers to host country firms. The existing theory has focused on manufacturing FDI; this thesis extends this to FDI in banking and examines the different mechanisms whereby spillovers occur in banking. The thesis finds that spillovers, where they occur, are related to copying and transfer of managerial practices and organizational structures related to the IT services that are being brought over by the acquiring firm. They extend only to those segments that the acquiring firm is targeting and do not affect firm practices more widely. This alters theoretically the way in which FDI spillovers should be considered: the issue needs to be considered in the light of the specific sector affected and the strategy of the acquiring and investing firm.

ii) the effects of FDI are investigated in the SA, a region poorly studied and where data are difficult to obtain.

iii) it contributes to the ongoing debate over the growing geopolitical role of China. The SA is an emerging economy, part of the BRICS, and China has started a new phase of diversification in investing in banking and services into SA.

This study, however, suffers from two main limitations. The first is the lack of data at two different levels. Firstly the impossibility to collect data from the domestic banks straight after 1994, despite the fact that they exist and the efforts made to obtain them at the SARB. Secondly, the same data obtained from the domestic banks could not be collected from the foreign banks. This would have helped for instance to apply some more predictable or powerful models such as Arellano-Bond linear model, a dynamic panel data estimation that enables the use of a lagged term for the dependent variable as an exogenous variable, to get more consistent and refined estimates, as used in Uiboupin (2005). Another limitation is the level of response from the foreign banks for the survey; although I had a 50% feedback, I initially expected an 80% response rate. Some banks promised to send back their responses but pulled out at the last minute. On reflection, the number of responses may have increased if I had thought to show the banks a sample of the output that the feedback could have produced.

In light of this dissertation's findings, what should the policy makers do to maximise the benefit of MNBs for the SA economy? Chapter 4 shows that the foreign banks are interested only in wholesale activities, and not in SMEs nor in retail banking. Chapter 5 demonstrates that the strategy of the two main foreign owners who entered the SA market by FDIs (by acquisition and greenfield), was focused on SA as a hub, due to its developed banking infrastructure, to serve the African continent. The SA government has three specific pressing issues: first making sure that the internationalisation of its domestic banks does not bring any systemic risks from other African countries; second, that the MNBs contribute to more SA job creation (rather than job destruction); and third to ensure that the banking system becomes affordable for everyone and serves the SMEs in particular, as they are the main source of new jobs. To address these issues, the first area of intervention is perhaps to create conditions for more competition in particular in retail banking and to end the situation of the oligopolistic position of the SA big four. There is no easy way to do this; the examples of Barclays and ICBC two MNBs are more interested in extending their

strategy to the African continent. I argue that SA, for a developing country has a well-developed and sophisticated formal financial sector and SA commercial banks' assets constitute around 87% of GDP (Demirguc and Ross, 1996). Furthermore, the SARB, estimated in 1996 that 60% of the SA population remains unbanked (Wiese, 1996). This demonstrates that there is space for further markets: more banking for the SA population and SMEs. Findings in Chapters 4 and 7 suggest that economies of scale were not achieved by the larger SA banks, in particular the SA big four, despite the availability of best practice in the SA market. As the SA banking sector is concentrated, consequently, the lack of competition hampers efficiency. Despite great efforts from Barclays to increase ABSA performance, the two new entrants Barclays and ICBC were not able to improve performance in such a way that would force the competitors to react. This means that internationalisation alone is not sufficient to improve performance or there is not enough gain in performance just by allowing foreign entry. Thus policy makers should find some incentives to promote more competition, ensuring that new entrants are not monopolists seeking rents and their teams are able to transfer technology and skills and not only benefits through scale. In the short run this technology transfer and skills may destroy a significant number of jobs but by ensuring more capacity building and training may help increase absorptive capacity and create more employment in the long run. A direct consequence would possibly be cheaper banking products for all. And this is exactly what Capitec has done as shown in Chapter 5. As a technology-driven company, it provides unsecured loans for the poorer that require greater knowledge of the business process and cost structures and cheaper banking services; in doing so it represents a direct threat to some of the SA big 4 banks. Capitec has had a spectacular growth rate since it started to operate and continues to thrive. It is therefore important for policy makers to look at these conditions when authorising new banking FDI because in failing to do so, efficiency and spillover effects will not be achieved, as our case study has shown and as other studies support. For instance, Pehlivan and Kirkpatrick (2001), Yeyati and Micco (2004) and Bonin et al. (2005), from their findings support the argument that foreign banks are not more efficient than domestic banks and foreign entry does not necessarily make the market more competitive, particularly when the market is already concentrated, as is the case in SA.

Table 8.1: Summary findings

Hypotheses / Questions	Contributions / Findings
Ch2/H1: The net interest margin of SA banks is either ambiguous or positively correlated with foreign banks' share in SA.	The foreign banks' entries are associated with higher net interest income (NIIN) of SA domestic banks.
Ch2/H2: The non-interest income of a domestic bank in SA is either positively or negatively correlated with the foreign banks' share in SA.	The non-interest income of a domestic bank in SA is negatively correlated with the presence of foreign banks. But this relationship is not statistically significant.
Ch2/H3: The overheads of a domestic bank in SA are positively correlated to the foreign banks' share in SA.	The overhead of a domestic bank in SA is not positively correlated with the presence of foreign banks.
Ch2/H4: The ratio of pre-tax profit to the total assets of a domestic bank in SA is negatively correlated to the foreign banks' share in SA.	The foreign banks' entries are associated with lower before-tax profit of SA domestic banks.
Ch2/H5: The effect of foreign banks entry depends on banking market development in SA.	The positive and statisticaly effect found, was not the result of the banking market development in SA, but the result of the financial crisis that occurred in 2001.
Findings from Ch2/H1 to Ch2/H6 suggest there has been a limited increase in competition confined to wholesale banking. Not in retail banking. There have been no spillover effects that could be statistically significant.	
Ch2/H6: Foreign-owned banks in South Africa are more efficient than domestic-owned banks.	Ch2/H6 is supported by this study, as foreign banks in SA are more efficient than domestic banks. In addition, foreign banks' higher efficiency is explained by: risk preference, better corporate governance, smaller size and transfer of knowledge and know-how from their mother company.
Ch3/H1: What are the reasons for entry of the foreign banks in SA market?	The foreign banks entered (and are still) in the SA market for the search of new clients.

Ch3/H2: In which type of clients foreign banks are interested, in SA market?	The forieng banks have been interested in the limited scope of the SA wholesale segment and not in the retail-banking segment.
Ch3/H3: What products and service innovation do foreign banks contribute to bring into the SA market?	The foreign banks have been contributing to the introduction of new products, techniques and technologies in SA market.
Ch3/H4: What knowledge do foreign banks contribute to bring into SA market?	The foreign banks have been contributing to the introduction of new practices and know-how in SA market.
Ch3/H5: What is the impact of foreign banks on competition, quality and efficiency in SA market?	Demonstration effects took place, implying that competition and spillovers effects have occurred in the SA banking sector due to the presence of the foreign banks.
Ch3/H6: What is the probability of future scenario in SA banking system?	A majority of foreign banks want to be independent, however, a reconfiguration of the SA banking sector may happen in the future through new FDI in SA market.
Ch5/H1: There is expected to be a relative change in the defined variables (performance and efficiency) after the event of a change in ownership structure for both banks ABSA and the Standard Bank.	There is a positive change in the variables of performance and efficiency for ABSA. This leads to the conclusion that the British FDI has contributed to pass on new knowledge and increased both performance and efficiency of its new acquisition ABSA. There is no significant change in variables of performance and efficiency for the Standard Bank. This leads to the conclusion that the Chinese FDI has not improved performance or efficiency of its new SA Greenfield investment, the Standard Bank. However, interviews with representatives of the Standard Bank confirm that the Chinese FDI has contributed to pass on limited new knowledge to the Standard Bank.
Ch5/H2: There is expected to be a relative change with the defined variables (performance and efficiency) after the event in ownership structure for the group study compared to the control group.	There is no significant change in variables of performance and efficiency for both the Standard bank and ABSA compared to there competitors (control group). This leads to the conclusion that the new FDI have not contributed to raise significant competition in SA

	banking sector. And this is also backed by the interview results from the competitors. However, the same interview results suggest that competion has occurred in the wholesale segment and knowledge has spilled over in both retail and wholesale segments since 2000 well before the two FDI due to SA government pressure and the re-entry of the foreign banks from 1994 after the Apartheid regime. The study has also found that the emergence of a recent SA bank, Capitec (a domestic competitor) has raised competition in the entire SA banking sector.
Conclusion on the FDI knowledge spillovers in SA: The combinaison of survey, case study and empirical (statistic) models leads to the conclusion that there are some competition and spillover effects due to the re-entry of foreign banks in SA. But this competition and spillover effects are localised in the segment of wholesale and investment banking.	
Policy implication: How to learn from FDI flows and extend their positive impact and restrict their negative effects can be achieved by opening up the SA banking market further. FDI are positive but too restricted in impact to one segment (wholesale banking).	
Theoretical contribution for FDI spillovers in banking in developing country in South-South context: to extend FDI theory that applies to manufacturing to refocus on nature of spillovers in banking services and role of FDI in transferring knowledge and practices.	

Annexes

Annex 3.1: List of banks operating in SA and banks panel

Banks operating in SA

Locally controlled	Foreign controlled	Branches of foreign banks
African Bank Ltd	Absa Bank Ltd (a member of Barclays Bank Group)	ABN AMRO Bank N Bank of Baroda.V.
Bidvest Bank Ltd	Albaraka Bank Limited	Bank of China, Johannesburg Branch
Capitec Bank Ltd	Habib Overseas Bank Limited	Bank of Taiwan, SA Branch
FirstRand Bank Ltd	Islamic Bank Limited (in liquidation)	Calyon Corporate and Investment Bank SA
HBZ Bank Ltd	Mercantile Bank Limited	China Construction Bank, Johannesburg Branch
Imperial Bank Ltd	South African Bank of Athens Limited, The	Citibank N.A.
Investec Bank Ltd		Commerzbank Aktiengesellschaft
Marriott Merchant Bank Ltd		Deutsche Bank AG
Nedbank Ltd		HSBC Bank plc, Johannesburg Branch
People Bank Ltd		JPMorgan Chase Bank, N.A., Johannesburg Branch
Regal Treasury Private Bank Ltd (in liquidation)		Société Générale, Johannesburg Branch
Rennies Bank Ltd (now a division of Bidvest Bank)		Standard Chartered Bank, Johannesburg Branch
Sasfin Bank Ltd		State Bank of India
Standard Bank of SA Ltd, The		
TEBA Bank Ltd		

Source: South Africa Reserve Bank and other sources

SA Banks Panel

Banks	Ownership		Foreign Branches	Panel
	Local	Foreign		
African Bank Ltd	✓			✓
Bidvest Bank Ltd	✓			✓
Capitec Bank Ltd	✓			✓
FirstRand Bank Ltd	✓			✓
Imperial Bank Ltd	✓			✓
Investec Bank Ltd	✓			✓
Marriott Merchant Bank Ltd	✓			
Nedbank Ltd	✓			✓
People Bank Ltd	✓			
Regal Treasury Private Bank Ltd (in liquidation)	✓			
Rennies Bank Ltd (now a division of Bidvest Bank)	✓			
Sasfin Bank Ltd	✓			✓
Standard Bank of SA Ltd, The	✓			✓
TEBA Bank Ltd	✓			
Absa Bank Ltd (a member of Barclays Bank Group)		✓		✓
Albaraka Bank Limited		✓		✓
Habib Overseas Bank Limited		✓		✓
HBZ Bank Ltd		✓		✓
Islamic Bank Limited (in liquidation)		✓		
Mercantile Bank Limited		✓		✓
South African Bank of Athens Limited, The		✓		✓
Bank of China, Johannesburg Branch			✓	
Bank of Taiwan, SA Branch			✓	
Calyon Corporate and Investment Bank SA			✓	
China Construction Bank, Johannesburg Branch			✓	
Citibank N.A.			✓	
Commerzbank Aktiengesellschaft			✓	
HSBC Bank plc, Johannesburg Branch			✓	
JPMorgan Chase Bank, N.A., Johannesburg Branch			✓	
RBS			✓	
Société Générale, Johannesburg Branch			✓	
Standard Chartered Bank, Johannesburg Branch			✓	
State Bank of India			✓	

Source: South Africa Reserve bank (SARB)

Annex 3.2: Bankscope data definitions

This link below provides all data definitions from Bankscope:
https://bankscope2.bvdep.com/version-201387/Search.QuickSearch.serv?cont

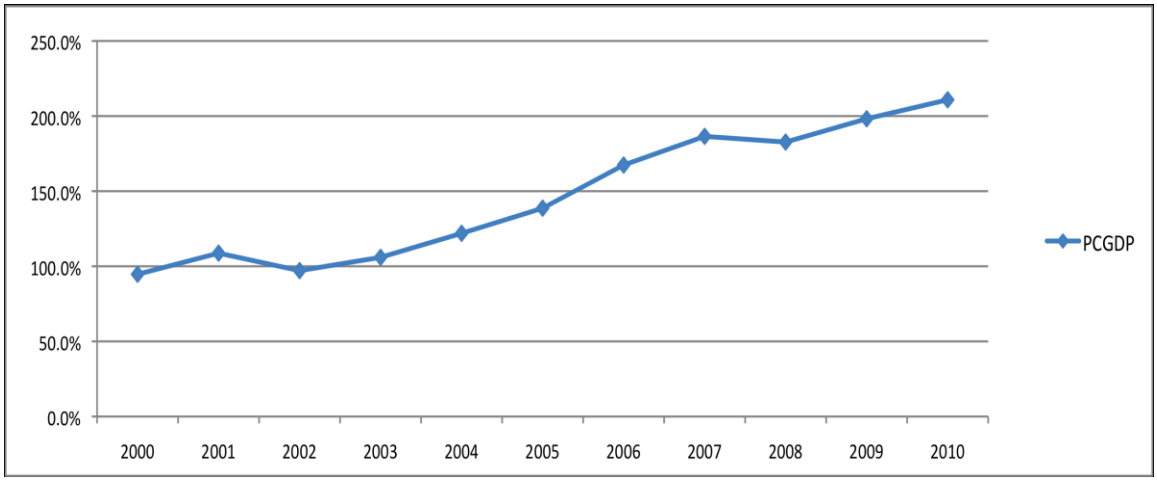
Here is just an extraction to illustrate what the definitions look like:

11250 Total Earning Assets
11090Net Loans
+11140Loans and Advances to Banks
+11210Total Securities
+11230Insurance Assets
+11240Other Earning Assets
+11220Investments in Property

11350 Total Assets
11250Total Earning Assets
+11270Cash and Due From Banks
+11280Foreclosed Real Estate
+11290Fixed Assets
+11300Goodwill
+11310Other Intangibles
+11320Deferred Tax Assets
+11330Discontinued Operations
+11340Other Assets
+11315Current Tax Assets

11550 Total Customer Deposits
11520Customer Deposits - Current
+11530Customer Deposits - Savings
+11540Customer Deposits - Term

Annex 3.3: SA Private Credit to GDP from IMF source



Source: IMF

Procedure for Private Credit extraction from IMF database by IMF team

On 3 Apr 2012, at 22:52, StatisticsQuery wrote:

Dear Alex,

You may want to contact the author of the report to ask which exact IFS series code he used for private credit but for our "claims on private sector" series in IFS, generally speaking:

Claims on the private sector are comprised of claims on other nonfinancial corporations and other resident sectors. Other nonfinancial corporations are privately held businesses. They are called "other" to distinguish them from publically owned nonfinancial companies (state owned enterprises) whose claims are captured in lines 12c/22c/32c/42c/52c. They are called "nonfinancial" because their primary business is not financial intermediation. Thus, the other nonfinancial corporations sector will exclude things likeinsurance companies and pension funds, financial auxiliaries, exchange houses, etc (whose claims are captured in lines 12g/22g/32g).
Other resident sectors comprise of households and nonprofit enterprises serving households (any nonprofits, religious organizations, etc.). Often, if a sole proprietorship's books are entangled with those of the household, sole proprietorships will be included here and not in other nonfinancial corporations. We recommend, however, that sole proprietorships be classified as other nonfinancial corporations if they can be identified distinctly from the household.

Line 12D will be the central bank's claims on the private sector. Mostly, this may refer to loans given to central bank staff, but there are also instances where the central bank has invested directly in private sector securities (like the US Fed's investment in mortgage backed securities) or shares.

Line 22D will be the other depository corporations claims on the private sector.

Line 32D is the sum of lines 12D and 22D. This represents the depository corporation's claims on the private sector.

Line 42D will be the other financial corporations claims on the private sector.

Line 52D is the sum of lines 32D and 42D and represents the entire financial system's claims on the private sector.

Sincerely,

Data Dissemination and Client Services Team
Statistical Information Management Division
Statistics Department
International Monetary Fund

5 April 2012 16:04:41 GMT+01:00

Dear Alex,

Thank you for your email.

1. The codes that you see in the Query within a Dataset are not IFS codes but our Catalog of Time Series Codes so you will not find 12d, 22d, 32d, 42d, 52d here!

2. If you read the introduction to IFS pages, section 5 (from our earlier reply to you), you will note that there are now two presentations of monetary statistics in IFS. Some countries are still reporting monetary statistics based on the old presentation while others are reporting data based on the new presentation. For South Africa, they are now reporting data on the new presentation (based on SRF reporting method). Any country that reports on the new presentation basis will have data only from 2001 forward. Hence, we will not have data prior to 2001A (or 2001Q4 or 2011M12) for those reporting in the new presentation. Having said that, data based on the old presentation for South Africa is still available in IFS if you want to review.

3. If you want to retrieve data for 12d, 22d, 32d, 42d, 52d based on the new presentation on eLibrary Data site, there is a Help link on the top right. Click on it and then click on the "Find Concepts for Codes" link in the text under the "Find Data Using IMFStatistics.org Codes" section. Click on the "IFS" sheet and in the first column look for 12D..ZK, 22D..ZK, 32D..ZK, 42D..ZK 52D..ZK. The "ZK" indicates the series is based on the new presentation. For old presentation codes, look for same codes but with "ZF" in the code, eg. 12D..ZF, 22D..ZF, 32D..ZF, 42D..ZF 52D..ZF. Once you find these in column A, go to Column D and you will see the path you need to follow in the Concept section of the Query builder. Also note that Column C now gives you the code that is in the Query builder.

Hope this is helpful.

Sincerely,

Data Dissemination and Client Services Team
Statistical Information Management Division
Statistics Department
International Monetary Fund

Annex 3.4: Procedure and Command Stata to perform panel data fixed effect regression

1. Create a dataset: The dasetset contains all “Studied Variables”.
2. Insheet using dataset.txt: specifies to Stata the dataset to be used.
3. The following Stata command *xtset bank years* declares bank data to be panel data and years identifies the times within panels.
4. Then the commande: *xtreg (Studied Variable1) (Studied Variable2). . . ., fe* is executed
   a) *xtreg*: estimates the panel data variables
   b) : fe, indicates Stata to use panel data fixed effect estimator.
5. The command is run separately for the six different independent variables.

Annex 3.5: Procedure and Command Stata to perform panel data random effect GLS regression

6. Create a dataset: The dasetset contains all “Studied Variables”.
7. Insheet using dataset.txt: specifies to Stata the dataset to be used.
8. The following Stata command *xtset bank years* declares bank data to be panel data and years identifies the times within panels.
9. Then the commande: *xtreg (Studied Variable1) (Studied Variable2). . . ., re* is executed
   c) *xtreg*: estimates the panel data variables
   d) : re, indicates Stata to use panel data random-effect Generalized Lease Square GLS estimator.
10. The command is run separately for the six different independent variables.

Annex 3.6: Definition of investment assets

Num	Type of assets	Investment Assets	
		Yes	No
1	Acceptance outstanding		x
2	Account receivable		x
3	Associated companies		x
4	Bank term deposits	x	
5	Capital Market Assets	x	
6	Cash and balance with central bank	x	
7	Cash and cash equivalent	x	
8	Cash and short term fund	x	
9	Cash equivalent advances to customers	x	
10	Client Liabilities under Acceptance		
11	Clients indebtedness and acceptance		x
12	Computer software and capitalised development costs		x
13	Debtors		x
14	Derivatives financial instruments	x	
15	Government and other securities	x	
16	Holding companies & fellow Subsidiaries		x
17	Interest associated undertaken		x
18	Investment and trading securities	x	
19	Investment in associate companies and joint ventures		x
20	Investment in subdiaries		x
21	Investment properties	x	
22	Investment securities	x	
23	Leased assets		x
24	Loan to group company		x
25	Long term employee benefit assets		x
26	Money Market Assets		
27	Non current assets held for sale		x
28	Non security asset held for sale		x
29	Other assets	x	
30	Post employment asset		x
31	Retirement benefit assets	x	
32	Securities purchased under Agreement to resell	x	
33	Security assets	x	
34	Security purchased under agreement to resell	x	
35	Short term interbank fund	x	
36	Short term negotiable	x	
37	Statutory Liquid Asset Portfolio (Gvt Stock – Treasury bil – Landbank bill)	x	
38	Statutory liquid Asset portfoliot	x	
39	Sundry debtors		x
40	Trading Asset	x	
41	Trading securities	x	

Annex 3.7: Procedure and Command Stata to perform X-efficiency scores

1. Create a dataset: The dasetset contains all "Studied Variables". Fourteen banks compose the dataset and are identified by a number contained in the variable "Bank". The variable "Ownership" that takes value 0 or 1 corresponding respectively to domestic-owned or foreign-owned, and finally, variable "year" that identifies the year of the observation.
2. Insheet using dataset.txt: specifies to Stata the dataset to be used.
3. The following Stata command *xtset bank years* declares bank data to be panel data and years identifies the times within panels.
4. Then the command *xtfrontier ln(Studied Variable1) ln(Studied Variable2). . . ., tvd* is executed
   a) *Xtfrontier:* estimates the technical efficiency.
   b) *Tvd:* specifies that the parameters of the time-varying decay technical inefficiency model be estimated.
5. Then the command *predict efficiency, te:* allows Stata to get the time-varying technical efficiency scores.
6. *And list efficiency:* displays the efficiency scores.

Annex 3.8: Procedure and Command Stata to perform Tobit regression

1. Create a dataset: The dasetset contains all "Studied Variables".
2. Insheet using dataset.txt: specifies to Stata the dataset to be used.
3. Then the commande: *tobit (Studied Variable1) (Studied Variable2). . . ., ul*() is executed
   e) *Tobit*: estimate the different parameters or variables
   f) *Ul()*: indicate the value at which the right censoring begins.

Annex 3.9: QMUL – Ethic approval

Queen Mary
University of London

Queen Mary, University of London
Room E16
Queen's Building
Queen Mary University of London
Mile End Road
London E1 4NS

Queen Mary Research Ethics Committee
Hazel Covill
Research Ethics Administrator
Tel: +44 (0) 20 7882 2207
Email: h.covill@qmul.ac.uk

c/o Professor Brigitte Granville
Francis Bancroft Building, Room 4.25D
Department of Business Management
Queen Mary University of London
Mile End Campus
Mile End Road
London E1 4NS

29th July 2011.

To Whom It May Concern:

Re: QMREC2011/58 - Impacts on the internationalisation of the South Africa (SA) banks in the context of Chine and EU direct Investments.

The above study was approved by The Queen Mary Research Ethics Committee on the 13th July 2011.

This approval is valid for a period of two years, (if the study is not started before this date then the applicant will have to reapply to the Committee).

Yours faithfully

Ms Elizabeth Hall – QMREC Chair.

Annex 3.10: Survey Questionnaire

Queen Mary University of London

UCT GRADUATE SCHOOL OF BUSINESS
UNIVERSITY OF CAPE TOWN

SURVEY OF FOREIGN BANKS IN SOUTH AFRICA

To understand the motives of the presence of foreign banks in South Africa

Please complete the questions in the pages that follow and submit a scanned version via email to Alex PIETRUS at a.pietrus@qmul.ac.uk

Queen Mary
University of London

UCT GRADUATE SCHOOL OF BUSINESS
UNIVERSITY OF CAPE TOWN

PRESENCE OF THE FOREIGN BANKS IN SOUTH AFRICA
QUESTIONNAIRE

INTRODUCTION

The questionnaire is designed to help understand the overall motives of presence and the strategy of the foreign banks in South Africa and contains seven questions:

- Question 1 identifies the reasons for entry. It also helps to clarify whether or not these motives are valid today.
- Questions 2 and 3 provide answers on foreign banks' Strategy in the SA Market and help understand their comparative advantage at the time of entry.
- Questions 4 to 6 relate to products, innovation and technology transfer identifying the presence of potential spillovers in the SA banking sector.
- Question 7 and 8 contribute to the understanding of the future shape of the SA banking sector.

Question 6 is a "yes or no" question. The other questions are "multi-choices" ranking from "not important" to "very important".

This questionnaire was prepared by Alex PIETRUS PhD student at Queen Mary, University of London - School of Business and Management in cooperation with UCT – Graduate School of Business (*Finance Department*) and sponsored by Tralac (*Trade Law Centre for Southern Africa*).

Queen Mary
University of London

UCT GRADUATE SCHOOL OF BUSINESS
UNIVERSITY OF CAPE TOWN

REASONS FOR ENTRY

1. Evaluate according to importance each reason for Entry and for Remaining in the South Africa Market
(0-Not important, 1-Less important, 2- Important, 3- Very important)

Reasons	At time of Entry	Now	In the future
Competition in the home country			
SA regulation			
Search for new clients / new business			
Following clients from home country			
Unused credit potential of the SA economy			
Unused credit potential of SA households			
Geographical proximity			
Similar mentality or way of working			
High interest margins			

STRATEGY IN SA MARKET

2. Evaluate according to importance each type of client
(0-Not important, 1-Less important, 2- Important, 3- Very important)

Clients	At time of Entry	Now	In the future
Foreign investors			
Home country investors			
Other foreign or international companies			
Domestic Blue chips			
Large domestic companies			
Domestic small and medium entreprises			
Micro-entreprises and sole traders			
High net worth individuals			
Households			

3. Evaluate according to importance each type of activity
(0-Not important, 1-Less important, 2- Important, 3- Very important)

Activity	At time of Entry	Now	In the future
Foreign direct investment in SA			
Portfolio investment in SA			
SA exports			
SA imports			
Purchase of fixed capital/modernisation			
Purchase of working capital			
Entreprise restructuring and domestic M&A's			
Expansion of domestic companies abroad			
Household – consumption			
Household – transportation			
Household – real estate			
Foreign direct investment by SA firms abroad			
Portfolio investment by SA firms abroad			

4. Evaluate according to importance each type of banking products and services
(*0-Not important, 1-Less important, 2- Important, 3- Very important*)

Products / Sevices	At time of Entry	Now	In the future
Deposit and lending business with private non-financial sector			
Lending to the government and public enterprises			
Lending to financial institutions			
Domestic payments			
Foreign payments			
Foreign currency dealing			
Trading domestic riskless securities			
Money market trading			
Business leasing			
Financial leasing			
Securities trading			
Equities trading			
Derivatives trading			
Asset management			
Commission business			
Life and non-life insurance			
Pension funds			
Brokerage			

5. Evaluate the success of each new product and service
(*0-Not successful, 1-Less successful, 2- successful, 3- Very successful*

Products / Services	Year of Introduction	Score	If successful please indicate why	If not successful please indicate why
Futures				
Options				
Swaps				
Financial leasing				
Operational leasing				
Factoring				
Forfaiting				
Domestic payments				
Cash and Assets management				
Private banking				
Call deposit				
Call loans				
Revolving credit cards				
Open savings				
Rental saving				
Pension fund management				

Queen Mary University of London

UCT GRADUATE SCHOOL OF BUSINESS
UNIVERSITY OF CAPE TOWN

TRANSFER OF SKILLS AND KNOWLEDGE FROM FOREIGN BANKS TO THE SA BANKING INDUSTRY

6. Did you transferred any of these skills / knowledge to the SA branch any time during the given period?						
Knowledge/ Skills / Systems	Before 2000		2000 - 2011		2012 and +	
	Yes	No	Yes	No	Yes	No
Information technology						
New products and services						
Project assessment methods						
Management methods and skills						
Marketing knowledge and techniques						
Retail knowledge and techniques						
Wholesale knowledge and techniques						
Risk management processes						
Internal control processes and systems						

THE FOREIGN BANKS IMPACT ON COMPETITION, QUALITY OF BANKING PRODUCTS AND SERVICES

7. Evaluate each trend / process according to their importance for the South Africa market? (*0-Not important, 1-Less important, 2- Important, 3- Very important*)			
Trends / processes	Before 2000	2000 - 2011	2012-on
Lending interest rates			
Fees			
Interest margins			
Products and services assortment			
Market competition			
Bank profitability			
Bank efficiency			
Central bank regulation			
Involvement of banks in managing non-financial corporations in which they have equity holding			
Involvement of banks in managing non-financial companies that are major bank debtors			
Introduction of new banking products and services			
Increasing the quality of existing products and services			

THE PROBABILITY OF FUTURE SCENARIOS

8. Evaluate the likelihood of each scenario (*0-Not likely, 1-Less likely, 2- Likely, 3- Very likely*)		
Scenario	Through 2012 - 13	After 2013
Remain Independent		
Merger with domestic bank		
Buy-out by domestic bank		
Buy-out of domestic bank		
Merger with foreign bank		
Buy-out by foreign bank		
Buy-out of foreign bank		
Hostile offer for minority share		
Hostile offer for majority share		

Queen Mary University of London

UCT GRADUATE SCHOOL OF BUSINESS
UNIVERSITY OF CAPE TOWN

Thank you for taking time to complete and submit this survey. Your insight and information are very valuable and contribute greatly to the achievement of our research.

Please use the space below to provide additional comments you may find useful for our research.

Should you have any further questions or concerns about this survey or any of its questions, please contact Alex PIETRUS at +27(0)21 880 2010 or a.pietrus@qmul.ac.uk

Annex 3.11: Survey Information letter

Queen Mary University of London

UCT GRADUATE SCHOOL OF BUSINESS
UNIVERSITY OF CAPE TOWN

Queen Mary University of London – School of Business and Management

Date: 26 August 2011

Dear Sir, Madam,

I am a PhD Student in the School of Business and Management (SBM) at Queen Mary, University of London. I am conducting research under the supervision of Professor Brigitte Granville on the presence of foreign banks in South Africa (SA) and the internationalisation of the SA banks. The SA banking sector seems attractive to foreign banks given the large number of foreign banks branches and subsidiaries present in that market and the more recent foreign participations in two important SA banks such as ABSA Bank Limited and the Standard Bank of South Africa Limited. To my knowledge, no comparable study has ever been carried out in SA.

Your feedback are essential to my research and I would be most grateful if you would agree to take part and complete the attached survey. Completion of the questionnaire should not take more than 20 minutes of your time. You may omit any question you prefer not to answer. Participation in this project is voluntary and all information provided is treated as strictly confidential. The data collected through this study will be kept for a period of 4 years in a locked office in my supervisor's office at Queen Mary, University of London.

This study is also realised in cooperation with the UCT - Graduate School of Business (Finance Department) in Cape Town, and sponsored by the Trade Law Centre for Southern Africa (TRALAC).

If you are willing to take part, please return the completed questionnaire by sending a scanned version to Alex PIETRUS at a.pietrus@qmul.ac.uk by 10 September 2011. If after receiving this letter, you have questions regarding any points included in this research, and/or would like additional information to assist you in reaching a decision about participation, please feel free to contact Professor Brigitte Granville at +44-(0)20-7882-744 or b.granville@qmul.ac.uk

This study has received ethics clearance through the Research Ethics Committee of Queen Mary, University of London. Should you have any comments or ethical concerns resulting from your participation in this survey, contact Dr. Hazel Covill in the Office of Research Ethics at +44-(0)20-7882-2207. Thank you in advance for your interest in this project.

Yours sincerely,

Alex PIETRUS (Principal Investigator)

Annex 3.12: Survey consent form

Queen Mary University of London

UCT GRADUATE SCHOOL OF BUSINESS
UNIVERSITY OF CAPE TOWN

Survey on the internationalisations of the SA banks and the determinants of the presence of foreign banks in the SA banking sector
Consent Form

Agreement to Participate in Research

Responsible Investigator(s): Alex PIETRUS, student at Queen Mary University of London – School of Business and Management (SBM), Centre for Globalisation Research (CGR).

Title of Study: Internationalisation of the SA banks and determinants of the presence of foreign banks in SA banking sector.

1. You have been asked to participate in a research study investigating the determinant of the presence of foreign banks in South Africa.

2. You are asked to take part of a survey by answering 8 questions. A questionnaire is sent to you with some information. Please send a scanned version of the questionnaire as well as signed copy of this consent form to Alex PIETRUS by email at a.pietrus@qmul.ac.uk , by 10 September 2011.

3. The questionnaire is strictly confidential and no name or identification regarding the result of the consultation will be disclosed.

4. To my knowledge, such a research has never been done in South Africa. The result of the survey will contribute to the understanding of the reasons why foreign banks are operating in the South African Market.

5. The results of this study may be published, but your identity will be kept strictly anonymous and no information that could identify you will be included. The return questionnaire result will be kept in a secured area at Queen Mary University of London and will be destroyed after 4 years.

6. Questions about this research may be addressed to ***Alex PIETRUS*** at ***a.pietrus@qmul.ac.uk*** or +27(0)21 880 2010

7. Your consent is being given voluntarily. You may refuse to participate in the entire study or in any part of the study. You have the right to not answer questions you do not wish to answer. If you decide to participate in the survey, you are free to withdraw at any time without any negative effect on your relations with Queen Mary University of London - School of Business and Management, UCT – Graduate School of Business or the Trade Law Centre for Southern Africa (TRALAC).

8. At the time of signing this consent form, you will receive a copy of it for your records, signed and dated by Alex PIETRUS.

The signature of a subject on this document indicates agreement to participate in the study.

The signature of a researcher on this document indicates agreement to include the above named subject in the research and attestation that the subject has been fully informed of his rights.

_____ _____
Participant's Signature Date

_____ _____
Investigator's Signature Date

Annex 5.1: Template of bank interview guide

Interview guide for ABSA
(Impacts of the Barclays majority ownership in ABSA)

Question concerning the informant

- Name
- Position
- Education background and experience
- How long have you been employed in CCBC
- Nationality

Question concerning activities and reasons for investment

- Why your Barclays choose to invest in SA:
    - Labour costs
    - Business/investment incentives
    - Africa will be the Chinese future financial hub in Africa, taking advantage of the JSE?
    - To use SA as an export base for African investment market
    - To get better knowledge in finance/competition . . .
- Why did you accept to partner with Barclays and not another European bank such as HSBC. . .
- Why did you accept an acquisition and not an Greenfield investment
- Which type of investment did you agree with Barclays to finance this shareholding acquisition:
    - Absorption
    - Consolidation
    - Acquisition of stocks (voting stock for cash, share of stocks, or other securities) or assets
- What was the method of payment:
    - Cash payment
    - Stock for stock exchange (including ordinary shares, preference shares, etc…)
    - Cash and stock exchange (which is a combination of the cash payment and stock for stock)
    - Other (loan stock, convertible loan stock, etc. . .)

Questions concerning the strategy and governance of the new entity

- What is the relationship between Barclays and ABSA
- What is the degree of autonomy in decision-making in ABSA?
- Which type of decision are made at headquarter level (London) and which at the branch (ABSA SA)
- Does the branch have any influence on investment projects?

- What level (financially) or which types of investment are considered as strategic for ABSA
- What are the strategy of the ABSA concerning development:
    - Africa and South Continents (Asia, Brazil, India)
    - Local by introducing new products and/or attracting new customers
    - Both. . .
- What procedure do you follow when you have to introduce a new product or penetrate new markets

<u>Questions concerning relationship between ABSA bank and Barclays</u>

- Did Barclays replace a significant number of ABSA top and middle managers with Barclays ones? If yes why
- Did ABSA lay off any personnel, or put in place any voluntary redundancy policy
- Did the Barclays investment team merged with ABSA one?
- Did Barclays assist or help ABSA in anyway in upgrading their management skills, system and operation quality. In what way?
    - Assisted improving product/customer quality: quality control
    - Gave operational guidance
    - Assisted ABSA with operational knowledge and methods
    - Helped upgrading customer satisfaction / delivery system
    - Carried out training and education of employees (which group of personnel? How many, about what?)
    - Training at management level: Planning, marketing, finance, administration of technology
    - Transferred system, technology or other equipment
    - In what form? Licensing arrangement?
    - Helped employees in handling new system
    - Assisted in designing improvements
    - Helped test products
    - Provided information (product development, customers)
- In what way was assistance provided?
    - By whom? Barclays engineers, technician or marketing managers, foreign experts or external consultants
    - Via written or electronic manuals or personal visiting ABSA
- Does Barclays have any joint-project product or investments projects with other SA banks than ABSA?
- Does Barclays normally communicate with ABSA
    - Through fax, mail, telephone, personal, face-to-face contact
- Do ABSA people and Barclays' often meet? Do they meet for other purposes than business? Social events . . .
- Would you say mutual trust exists between the two banks?

- What is your future plan for this co-operation?
    - Increase the number of investment projects in SA
    - Merge African Barclays' operations with ABSA and give ABSA the lead in Africa?
    - Increase the Barclays ownership in ABSA?

- Would a possible EU-Africa partnership influence Barclays strategy in SA via ABSA

Question concerning the SA context and political regulation

- Does the government offer you any assistance or encouragement or incentives or financial support to invest in SASB
- Is any effort made by the government to link you up with Barclays
- Is SA the main regional base for project financing or other financial projects
- In your opinion does SA has a future as the financial hub of Africa
- How the EU-SA and other regional agreements (SACU, SADC) influenced the strategy of your firm

Question concerning the crisis in 2008

- Has the Barclays and SASB made any changes in strategies or future plans because of the recent crisis in 2008,
- Have you suffered and recovered from the crisis?

Annex 5.2: Interviews participants

1. Emilio Pera, Director at Ernst & Young Consultant
2. Roger Vester, Director at Deloitte Consultant
3. Alan Bedford-Shaw, Head of Corporate Development, Standard Bank
4. Alan Hartdegen, Head of Investor Relation, ABSA
5. Sam Moss, Head of Investor Relationship, First Rand
6. Alfred Visagie, Head of Investor Relationship, Nedbank
7. Tralac
8. Simon Robert, Competition Commission
9. Steward Bobo, SA National Treasury
10. Linda Motsumi, South Africa Reserve Bank
11. South Africa Ombudsman
12. Frontier Advisory
13. Feasibility
14. Financial Service Board Regulator
15. Ex-lawyer for the competition commission ex-Barclay Lawyer
16. The Edge Institute Stephen Gelb

Annex 5.3: Procedure and Command Stata to perform T-Statistics

T-statistic to compare indicators of the two banks of the panel:

1. Create a dataset: The dasetset contains all "Studied Variables" in addition to variable "numbank" that that takes value 1 for ABSA and value 2 for Standard Bank and another variable "year" that identifies the year of the observation.
2. The following Stata command is then executed: *ttest* "Studied Variable", *by* (*numbank*). The ttest command tests the hypothesis of no difference in the two banks means assuming equal variances. It provides a test statistic and a p value assuming the population variances are equal. By *numbank* allows Stata to distinguish the Studied Variable of ABSA from Standard Bank.
3. And this command is repeated for each Study Variable.

T-statistics to compare indicators of the two banks of the panel with their peers:

1. Create a dataset: The dasetset contains all "Studied Variables", the variable "numbank" that that takes value 1, 2, 3 and for ABSA, First Rand, Nedbank and Standard Bank respectively, the variable "Ownership" that takes value 0 or 2 corresponding respectively to foreign-owned or domestic-owned, and finally, variable "year" that identifies the year of the observation.
2. The following Stata command is then executed: *ttest* "Studied Variable" *if(year>=2004|year<=2010) & numbank!=4, by(ownership2).*
   c) In this case the ttest command tests the hypothesis of no difference in one foreign-owned bank (here ABSA) and the two domestic banks (peers' banks) means assuming equal variances. It provides a test statistic and a p value assuming the population variances are equal.
   d) *Numbank!=4* instructs stata to exclude the other domestic bank from the panel (here Standard Bank).
   e) *by(ownership2)* allows Stata to distinguish the Studied Variable of ABSA from the peers' Bank.
   f) *if(year>=2004|year<=2010* indicates stata the time period before and after the event of acquisition or greenfield.
3. And this command is repeated for each Study Variable. And the procedure is executed again for the second bank.

Annex 6.1: Regression results of Foreign bank entry effect on SA domestic banks Before-Tax Profit (BTXP)

	Equation (3.2)	Equation (3.3)
Forbk_Num	-0.142 (0.0870)*	_
Forbk_Shr	_	0.960 (0.6793)*
Interact_Shr	_	-0.606 (0.4225)*
NINEA	-0.0004 (0.022)	-0.001 (0.0235)
EQTY	0.168 (0.0285)***	0.173 (0.029)***
SLTDPA	0.0002 (0.0195)	-0.002 (0.0198)
PCGDP	-0.175 (0.0453)	0.194 (0.1233)*
GGDP	0.001 (0.0013)	-0.002 (0.001)
Income (log)	0.2459 (0.2601)	-0.447 (0.332)
CPI	-0.002 (0.0015)*	-0.001 (0.020)
Constant	-2.452 (2.6031)	4.383 (3.294)
Time Dummy		Yes
Number of Obs	86	86

Source: Author calculations.
Notes: Dependent variable is BTXP. Robust standard error is in parentheses.
(***) Significant at 1%, (**) Significant at 5%, (*) Significant at 15%.

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