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Master of Management in Finance and Investments

(MMFI)

THE IMPACT OF STATE-OWNED BANKS ON ECONOMIC PERFORMANCE OF EMERGING MARKET ECONOMIES

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Abstract

A well-functioning financial system facilitates economic growth through exploitation of market opportunities like product innovation, discovery of novel ideas and new resources, technological advancements, innovative and sustainable ways of using existing resources. The financial system is the engine room of financial intermediation between the surplus and the deficit sectors developing a strong financial system and other economic entities has a great potential of driving economic growth of a country.

The prior studies that investigated the subject did not consider the potential impact of state-owned banks on the both economy and social developments. Therefore, this paper will contribute by broadening the research to include state-owned banks' impact on economic and social development with a particular focus on developing and emerging economies.

A judgemental sampling technique in selecting 13 countries was followed as a deliberate choice to enable selection of study units based on the qualities possessed by such units. The sample units were identifiable into two categories; state-owned banks and privately-owned banks in a sample of countries for the period 1961 - 2016.

The study utilised two forms of panel data models, the fixed effects model and random effects model. The study found that credit extension by state-owned banks has a positive effect on GDP per capita growth, human development, employment rate and lead to a decrease in the poverty rate. However, it is negatively related to manufacturing as a proportion of GDP.

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CHAPTER 1: INTRODUCTION

1.1 Introduction

The development of a financial system and other economic entities has a great potential to drive economic development of a country. It is the engine room of financial intermediation between the surplus and the deficit sectors (Gupta, Yesmin, Omar and Khan, 2013). Therefore, a well-functioning financial system facilitates economic growth through full exploitation of market opportunities such as product innovation, discovery of novel ideas and new resources, technological advancements, innovative and sustainable ways of using existing resources and so forth (Demetriades and Andrianova, 2003). The economies that have poorly-functioning financial systems tend to fail to address problems of information asymmetries such as adverse selection and moral hazards. Thus, problems of financial instability, increased uncertainly, low growth and investments will arise (Demetriades and Andrianova, 2003). It is therefore inferred that a country that wants realistic prospects of economic development will focus on establishing a well-functioning financial system.

The need for economic development demands the establishment of an inclusive financial system that benefits all, including poor and disadvantaged groups, allowing equitable accessibility to financial services with minimum price hurdles for their use (Demirguc-Kunt and Klapper, 2012).The absence of such inclusive financial systems, would mean that poor and disadvantaged groups have to rely much on their limited savings or informal financial institutions to satisfy their financial needs. The lack of inclusive financial systems further exerts pressure on small enterprises to rely on owner contributions when pursuing growth opportunities. Economies that lack such inclusive financial systems justifies government intervention in order to address economic development. There has been a notable worldwide prominence of government ownership of banks (La Porta, Lopez de Silanes and Schleifer, 2002; Sapienza, 2004). However, questions have been raised on the effectiveness of government owned banks in lending given the efficient financial markets, thus the discussion on the role of state ownership of banks still goes on (Sapienza, 2004). Such a debate has its foundation in the social, political and agency theories of state ownership of economic entities. The social theory as outlined by Atkinson and Stiglitz, (1980), submits that any government will establish and own a financial institution to address market failures when social benefits are more than economic costs of owning such an institution. It is thus viewed that economic development and social welfare will be achieved

by state-owned financial institutions during such market failures. However, this may lead to exploitation and misallocation of resources by state officials. On the other hand, Shleifer and Vishny, (1994) argued against state owned banks citing political motives by politicians who use State Owned Enterprises ("SOEs") as instruments to advance their political agendas such as providing funding to favoured entities. Such behaviour renders SOEs inefficient. State ownership of a bank may also come with agency costs due to bureaucracy in state organs that can lead to low morale and weak managerial incentives for the bank. A trade-off between internal efficiency (such as improved public sector governance or performance monitoring arrangements) and allocative efficiency (which refers to the efficient and optimal allocation and channelling of labour and capital resources) is key to ensuring optimal efficiency of such an SOE (Teka, 2016).

It has been argued that the main reason a government would actively participate in financial markets, through ownership of a bank, is to facilitate equitable financial and economic development. Yeyati, Micco and Panizza, (2005) describe financial development as granting the financially excluded population access to banking services. The development view underlines the need for government intervention in economies with scarce capital that allows flow of resources to industries, businesses and entrepreneurs aiming to promote economic growth. Such a social view suggests that state owned entities protect the economy from market failures when funding social projects where social benefits (external effects) exceed economic costs making certain otherwise unprofitable projects necessary for the benefit of the society. Therefore, state-owned banks, would strengthen financial access to the local economy through affordable loans to riskier start-up businesses that are not able to secure private funding (Yeyati, Micco and Panizza, 2005; Vins, 2008).

The *2017 Inclusive Growth and Development report* found that social inclusion should not be exclusively for the developed countries which have the advantage of high income earnings. The report also concludes that a robust inclusive-growth strategy needs to be both pro-labour and pro-business and should be seen as a plan that can amplify both social inclusion and economic efficiency through a stronger focus on state-owned institutions (Samans *et al.*, 2017). The same report however noted that countries such as Brazil, Ireland, Japan, Mexico, Nigeria, South Africa and the United States have much lower Inclusive Development Index ("IDI") rankings relative to GDP per capita rankings. Such an observation implies that economic development is not being turned into social inclusion (Samans, Blanke, Corrigan and Hanouz, 2017). This report has some striking findings where

there are no natural trade-offs during policymaking between social inclusion and long-term economic development. Further in its conclusion, the report states that it is possible for an economy to have policies that are both pro-growth and pro-equity (Samans, Blanke, Corrigan and Hanouz, 2017).

1.2 Problem statement

This study seeks to address the main problem of the widening inequality and economic exclusion that is experienced in many developing and emerging economies. Global organisations; the World Bank and the International Monetary Fund ("IMF") are pushing for the idea of inclusive growth, however the idea cannot be fully realised without responsive financial systems geared towards supporting inclusive growth. The G20 summit in their *2017 G20 Financial Inclusion Action Plan* recognised financial inclusion as a main pillar of global development debate. This plan is a key prerequisite for achieving sustainable development and reaffirms the G20 Leaders' commitment "to advance the financial inclusion that benefiting all countries and all people, including in particular underserved groups (such as the poor, women, youth, and people living in remote rural areas) and vulnerable groups (which include elderly people, migrants, forcibly displaced persons)" (Samans *et al.*, 2017: p7). The lack of financial inclusive systems lead to the emergency of poverty traps that impede economic growth due to lack of accessibility to financial services that enable investment in personal development and education (Zins and Weill, 2016).

As mentioned earlier, the main objective of state-owned banks is to sustain economic growth through supporting access to financial resources. Given the challenges related to inclusive growth in many developing and emerging economies and their slow economic growth, it would be of interest to see if establishing a state-owned bank will assist in addressing some of the problems faced by emerging economies such as South Africa.

1.3 Research questions

The study will address these research questions:

(i) Do state owned banks positively affect economic growth?

(ii) Do state-owned banks promote social development?

1.4 Hypothesis

$H_{0:}$ The credit extension from state-owned banks has no effect on economic and social development.

$H_{1:}$ The credit extension from state-owned banks has a positive effect on economic and social development

1.5 Significance of the study

Studies that have investigated the role of state-owned banks and their effectiveness on economic growth found that these banks are relatively inefficient in allocating credit and therefore have a negative impact on economic growth. However, most state-owned banks' objective is to sustain growth through supporting access to financial lending to the economy (i.e. development objective) in comparison to maximising profits given risk therefore the metrics used to measure efficiency should be different (Brei and Schclarek, 2015a). The studies do not consider the potential impact state-owned banks have on the structure of the economy and social development. Therefore, this paper will seek to broaden the research to include state-owned banks' impact on economic and social development with a particular focus on developing and emerging economies.

CHAPTER 2: LITERATURE REVIEW

2.1 Origins of state-owned banks

The financial system is the engine room of financial intermediation between the surplus and the deficit sectors (Gupta, Yesmin, Omar and Khan, 2013). Brei and Schclarek, (2013) and Gerschenkron, (1962) noted that historically, private banks have always been the channel through which savings reach the industrial sectors. However, some countries, such as Russia, did not have adequately developed institutions, hence private banks did not have major roles in development justifying the argument for governments' participation in financial and economic growth.

According to Yeyati et. al., (2005), there are four categories of arguments for governments' participation in the banking industry. The first argument is to maintain the safety and soundness of the banking system. Banks are naturally fragile institutions due to their role in maturity transformation (Yeyati, Micco and Panizza, 2005). The sector will sometime encounter a mismatch in maturity of intermediation as a consequence of the need to use short term resources to finance long term financial needs thereby requiring lengthening the operating life of short term financial products. These functions can lead to bank runs that can cause a banking system to collapse due to a panic in the market or adverse information. The adverse effects of this failure can generate colossal negative external factors which justifies government interference aimed at guaranteeing the stability of the banking system (Yeyati, Micco and Panizza, 2005). Banks provide a "fail-safe" source of "liquidity for all other institutions and the transmission belt for monetary policy" over and above being the intermediary credit provider therefore banking system failures should be prevented at all times. However, these factors can be mitigated by putting in place more stringent prudential regulations or an implementation of a deposit insurance instead of direct state participation in the banking sector.

Yeyati et. al., (2005)'s second argument is the mitigation of market failures due to information asymmetry. They argue that credit rationing can occur due to asymmetric information meaning that good projects may not be financed or sometimes underfinanced due to unverifiable information. Because the activities in the banking system and financial markets in general require extensive information, information which has features of public-goods non-rivalries in consumption and costly excludability. However, information asymmetries in the private markets can lead to imperfect competition in the banking system (Yeyati, Micco

and Panizza, 2005). Similarly, where consumers have little information about a specific bank or the long-standing customer relationship still needs to be established, this might discourage the consumer from depositing their savings with that bank (Yeyati, Micco and Panizza, 2005).

The third government participation argument is the financing of socially valuable (otherwise financially unprofitable) projects (Yeyati, Micco and Panizza, 2005). The social theory as outlined by Atkinson and Stiglitz, (1980), submits that the government can establish and own a bank to address market imperfections when social benefits are more than economic costs of owning such an institution. Yeyati et. al., (2005) points out another view that the effective prudential regulation and, in some cases, the banks' own incentives tends to make private banks too risk averse to finance all potentially profitable investments. Thus, when alternative sources of funding cannot be accessed, as is the case in most emerging nations, the participation of governments may be necessary to complement private bank lending.

Fourthly, the government participation is necessary to provide financial development and give the financially excluded populations of underserved areas accessibility to competitive banking services (Yeyati, Micco and Panizza, 2005). Supporters of state-owned banks also argue that private banks might find it unprofitable to establish bank branches in geographically remote areas such as rural zones which necessitates the state to intervene in providing banking and financial services to residents in these isolated parts of the country. The underlying belief of this argument is that when the state guarantees financial inclusion through such intervention, it leads to financial inclusivity that might drive growth up and poverty rates down (Yeyati, Micco and Panizza, 2005). The need for economic development demands the establishment of an inclusive financial system that benefits all, including poor and disadvantaged groups, allowing equitable accessibility to financial services with minimum price hurdles for their use (Demirguc-Kunt and Klapper, 2012). In Sapienza, (2004: p372)'s argument for the financial development view, "state-owned banks favour enterprises that find it difficult or too expensive to raise capital from private banks". The broader access to financial services without price barriers to their use is the basis of the financial development view in making good of market failures, thus state-owned banks should be ready to provide funding to firms at lower rates to enable access to these financial resources. On the other hand, Sapienza, (2004: p367) concluded that an "average private bank lends at a higher growth rate than the average government-owned bank in normal times". This conclusion is consistent with the findings of Brei et al., (2013) that private banks are pro-cyclical in their lending.

Table 1 presents a list of developed, emerging and transition countries that have state-owned banks and their inclusive development index.

Table 1

COUNTRY	GOVERNMENT OWNERSHIP OF BANKING SYSTEM[1]	INCLUSIVE DEVELOPMENT INDEX (HDI) RANK - 2015
INCLUDED IN THE SAMPLE		
Argentina	44%	45
Brazil	44%	79
Chile	19%	38
China	50%	90
India	74%	131
Indonesia	38%	113
Malaysia	0%	59
Mexico	13%	77
Poland	22%	36
Republic of Korea	22%	18
Russian Federation	41%	49
South Africa	0%	119
Turkey	32%	71
OTHER FAR EAST COUNTRIES		
Bangladesh	34%	139
Hong Kong	0%	12
Nepal	24%	144
Philippines	12%	116
Pakistan	21%	147
Singapore	Not disclosed	5
Sri Lanka	59%	73
Thailand	18%	87
Taiwan	18%	Not ranked in 2015

[1] "Government ownership of the banking system as measured by the share of assets of state-owned banks (institutions where the government owns 50 percent or more equity) taken as a percent of the banking system's assets as at year 2010".

COUNTRY	GOVERNMENT OWNERSHIP OF BANKING SYSTEM[1]	INCLUSIVE DEVELOPMENT INDEX (HDI) RANK - 2015
DEVELOPED COUNTRIES		
Australia	0%	2
Canada	0%	10
United States	0%	10
Denmark	1%	5
France	2%	21
Iceland	41%	9
Netherlands	14%	7
Switzerland	16%	2
United Kingdom	26%	16
Germany	32%	4

Sources: World Bank, Global Financial Development Report 2013 (Database and Survey).
2017 Inclusive growth and development report

2.2 The structure of State-owned banks

There are several reasons given to why governments should not intervene in the banking system. These reasons range from political interference, lack of transparency, required banking skills, and governance to mention but a few. The next section elaborates on the positive role that state-owned banks have played when they continued to supply of credit to the economy during the 2008 - 2009 financial crisis. This indicates that the state-owned banks can harmoniously co-exist with private commercial banks given that they have the correct structures in place.

The main public policy mandate for state-owned banks is to provide financial services and support that are lacking to communities and sectors of the economy not adequately serviced by the private banking system. It is for this reason that these banks entities are not profitable when their financial performance is measured against private banks (Cornett, Guo, Khaksari and Tehranian, 2008). Therefore, their mandate and its definition is therefore of critical importance and should be stated in the law, as is the case with four of the banks studied in the paper (Rudolph, 2009).

In his paper, Rudolph, (2009) analyses four state-owned financial institutions in diversified geographical areas and finds that these institutions had varying risk mitigation principles to

curb mismanagement of resources. Four state-owned banks were analysed and three of the four banks were development banks with one being a commercial bank with a social motive (Chilean BancoEstado). The three development banks were included in the sample because of their sound governance frameworks (Rudolph, 2009).

The paper also provides guiding components based on the experience of the for banks and his findings. The first component states that the mandate of the state-owned banks needs to clearly define the target sectors they intend to address the market failures for example, financing of small businesses (Rudolph, 2009). The second component Rudolph, (2009) states is that the rules of corporation for the state-owned banks with the private sector and lastly, that their minimum level of efficiencies should also be documented in their mandate.

The funding of state-owned financial institutions can be in a form of government lines of credit provided at subsidised interest rates (Rudolph, 2009). Because of the cheap funding that they receive, state-owned banks can directly pass through this benefit to their financial products resulting in them being cheaper. The risk of crowding out private commercial banks is therefore higher in this context and result in an overall negative effect on financial development. For this reason, the state-owned banks need to play more of a complimentary role and not a substitute of private banks in the banking system. The mandate of state-owned banks therefore needs to implicitly promote the involvement of private banks and healthy competition in the banking system (Rudolph, 2009). The promotion of this participation can be in a form of targeting mainly the clients or viable projects that would not be financed by the private banking sector or developing complimentary products such as guarantees to the financing solution (Rudolph, 2009). Of the four case studies from Rudolph, (2009), only Canada's Business Development Bank ("BDC") was found not to be competing with private commercial banks as it provides financing for higher risk transactions and prices for risk by requiring security.

The minimum level of efficiencies such as stipulating the minimum level of return of capital that needs to be achieved by state-owned banks needs to be documented in the mandates of these banks (Rudolph, 2009). This is requirement is important in creating long term sustainable financial institutions and addressing the operational efficiencies and mismanagement of resources that might occur (Rudolph, 2009). The paper found that three of the four banks' return on capital resembled the government cost of funding (Rudolph, 2009). Achieving a return that is equal to the cost of funding is not sustainable in the long-term.

It is utmost important to evaluate the financial performance of the state-owned banks against their public policy mandate. However, this evaluation may need to be different to those banks with a profit motive. Rudolph, (2009) found that Statistics Canada organisation measured one of the banks in his study, BDC, using different benchmarks to evaluate their value added to the financial market. These included "business creation" that evaluates number of start-up businesses authorised in comparison to the market standards. Other benchmarks included employment, revenue growth, "business survival" of the supported start-ups over two to five-year horizon and "business growth" which evaluates how BDC's clients perceive their growth in comparison to the market. We have seen other institutions such as the International Financial Corporation ("IFC") developing several qualitative tools to evaluate the institution's accomplishment of the mandate. These tools include the external impact on other variables, such as improved corporate governance, improved innovation or new regulation. The IFC categorises these indicators into three areas mainly; growth, inclusiveness, and sustainability/resilience (World Bank Group, 2018). This allows the IFC to identify the sequence of changes that occurred after their involvement, and determine, whether it was its involvement that lead to changes that, in turn, triggered an ex-post interest by private sector investors (Rudolph, 2009). It the case of South Africa, the corporate plan of the Development Bank of South Africa ("DBSA") is approved by the National Treasury annually (DBSA, 2017b). This corporate plan includes their balanced scorecard that is made up of three components: "sustained growth in development impact", "integrated infrastructure solutions provider" and to "maintain financial sustainability" (DBSA, 2017a).

The risk of political interference can be mitigated by putting in place rigorous prudential supervision by the country's banking supervisor. This, together with appointing strong independent board of directors in the state-owned financial institutions can help reduce the political risk (Rudolph, 2009). Of the four banks that Rudolph, (2009) studied, only the Chilean bank, BancoEstado, was subject to prudential supervision by their banking authority. Prudential regulation and supervision of state-owned banks is important as some of them receive exclusively wholesale or government funding and are also highly leveraged institutions that may create systemic risk (Rudolph, 2009).

2.3 Credit extension of state-owned banks relative to private banks

The resilience in supplying credit by the state-owned banks to the economy during the downturn (caused by the 2008-2009 financial crisis), resulted in the change in public

perception of these entities. In their study, Brei and Schclarek, (2013, p830) concluded by saying they found "robust evidence that government-owned banks increase lending in response to financial crises relative to normal times, while private banks decrease lending relative to their normal lending pattern". Focusing on India, literature indicates that all banks were expanding their loan books at the rate of 25% per annum pre-financial crisis. The divergence between state-owned and private banks started mid-2008 where one can see a sharp decline in credit extension by foreign banks. Gonzalez-Garcia et al. (2013) show evidence of a positive correlation between higher involvement of state-owned banks in the banking system and a relatively lower share of total credit going to the private sector.

State-owned enterprise are normally the largest borrowers for state-owned banks. Evidence from the research done by Gonzalez-Garcia et al., (2013) maps association of increased public-sector financing from the banking system when there is greater participation government in system. They found that on average 20 percent of the banking system's assets are held by government owned banks with 13 percent of these assets as claims on the public sector (Gonzalez-Garcia, Grigoli, Clements and Gajdeczka, 2013). In contrast, in about 24 economies that do not have government participation in the banking system, only 9 percent of its assets are held in the public sector (Gonzalez-Garcia, Grigoli, Clements and Gajdeczka, 2013).

The state-owned banks have the capacity to raise capital through issuing government backed bonds or debt at lower rates than their private opponents. This is due to government guarantees seen as a low risk institution with financial muscles even in crisis times. In times of economic uncertainties, it is likely that lenders, investors and depositors all feel safer putting their money in a government owned bank. A further opinion in support of the resilience of government owned banks is made by Brei et al., (2013) that due to well capitalisation nature of state-owned banks, there are less crisis related losses with less potential of pushing these banks below minimum capital requirements. This further deepens the efficacy of capital held by state-owned banks in creating lending during the turmoil.

The two most important factors that provide bank risk tolerance during crisis are capital and liquidity rather than ownership of the bank. Private Banks are less likely to be well capitalised during the crisis period. This is supported by Brei et al., (2013) who did not find evidence of increase in deposits in state-owned banks during a crisis period. They find that state owned banks lend more during the crisis period which is merely related to the high-risk acceptance of these banks as opposed to the private banks. Such findings by Brei et al. suggest stability

in lending by publicly owned banks over the entire business cycle than private banks which seem stable only during normal times. Private banks are likely to lend pro-cyclically due to their less risk appetite during the crisis period. In times of systemic banking crisis, private banks are likely to reject higher risk credit applications than public owned banks. Brei et al., (2013) argued that state-owned banks could react countercyclically in an unstable and turbulent business cycle by increasing lending with the aim of counteracting a credit crunch and negative spill over to the real sector. However supplementary capital is required to fund such extra lending for the extra stock of illiquid assets which the government is likely to provide.

Alternatively, the cost of funding by banks can be considered in reviewing the differential lending behaviour between state-owned and private banks. Sapienza, (2004: p367), found that "the average interest rate charged by state-owned banks is 23 basis points lower than that charged by private banks". Their findings show that for any risky class of debt issued by government-owned banks require low cost of finance relative to private lending. The lower lending interest rate may possibly be linked to the higher risk appetite of state-owned banks.

2.4 Arguments for state-owned banks

An argument made by Demetriades and Andrianova, (2003) is that state-ownership of banks is usually a consequence of weak institutions than politicians' wish to take control of banks. Brei and Schclarek, (2015) further argue that the objectives of state-ownership of banks is to sustain growth and supplying lending to the economy in contrast to maximising profits given the increased risk. The suggestion is therefore that state-owned banks prefer an "asset portfolio with a higher proportion of loans to entrepreneurs including less liquid asset holdings compared to private banks" (Brei and Schclarek, 2015a).

The recent financial crisis has led to an emergency of several studies on the role played by the government in the financial industry. These studies have shown evidence that government owned banks offer less sensitive lending to the business cycle than private banks, suggesting that government has a key role to play in stabilising accessibility to credit facilities over the business cycle or an active countercyclical role during periods of financial instability (Brei and Schclarek, 2013; Cull and Martínez Pería, 2013; Bertay, Demirgüç-Kunt and Huizinga, 2015). Bertay et. al., (2012) concluded that lending by state-owned banks is

less procyclical in comparison to privately owned banks more so in countries with good governance; “while lending by state-owned banks in high-income countries is even countercyclical; and on the liability side, expand potentially unstable non-deposit liabilities relatively less during booms, in countries with good governance” (Kane, 2000: p23).

Brei and Schclarek, (2015) believe that, firstly, state-owned banks’ “objective is not only to maximise profits but also to avoid deepening of the crisis; less risk averse in a crisis”; secondly, state-owned banks are more likely to be recapitalised as a government possess extra wealth than private banks shareholders in times of credit crunch; thirdly, the probability of a “run on a bank” are lesser for a state-owned banks due to their ability to provide a future recapitalisation in times of severe credit crunches i.e. guarantee deposits; lastly, state-owned banks have better access to short-term wholesale funds; short-term institutional funders trust more the government to bailout the bank.

2.5 Arguments against state-owned banks

In their paper, La Porta et al. (2002: p60) said that in the 1990s, “economies with poor financial systems, low levels of per capita income, domineering and inefficient governments and poor protection of property rights i.e. financial instability had large, pervasive and higher government ownership”. Their research found a correlation between greater state ownership of banks and slower consequent financial growth and lower growth of per capita income and productivity i.e. “economic growth rather than slower factor accumulation”.

Unfortunately, the behaviour of politicians is dictated by political interests’ in order to save those who voted them into office which contradicts with the purpose of a firm of maximising value thereby compromising the performance of SOEs relative to privately-owned banks. This is a consequence of inadequate or below market level incentives to the management of state-owned banks (Cornett, Guo, Khaksari and Tehranian, 2008).

In their research (Khwaja and Mian, 2005) found evidence of politically connected Pakistan firms receiving larger amounts of loans or credit facilities from state-owned banks with high probabilities of default. Vins, (2008), on the other hand found that government-owned banks in Germany tend to increase lending towards election periods. The analyses indicate that the probability of savings banks closing branches, lay-off employees or engage in mergers activities is significantly reduced around elections. These banks tend to “increase their

extraordinary spending, including support for social and cultural events in the area, on average by over 15%" (Vins, 2008) during the same periods. This finding is further affirmed by (Dinç, 2005) who also concludes that state-owned banks increase their lending in election years relative to private-owned banks. Further, charging a lower rate than a privately-owned bank may be consistent with the political perception that state-owned banks are used by politicians as instruments to advance their political agendas such as electioneering. Vins, (2008) in his paper further concludes that political influence seems to be "lower in economically weaker areas; profitable banks are more prone to political influence than less profitable banks and political influence seems to be stronger when political majorities are narrow and lower when one of the parties possesses an absolute majority". These findings indicate that politics has influence on SOEs not only in emerging markets but also in developed economies, (Vins, 2008: p56).

Cornett et al., (2008: p46) studied the 'performance differences between privately-owned and state-owned banks in sixteen Far East countries from 1989 through to 2004, a period which included the 1997 Asian financial crisis". They found that state-owned banks largely operated less profitably, held less core capital, and had greater credit risk than privately-owned banks during the period of 1989-2000. Further the performance differences were much "significant in countries with greater government involvement and political corruption in the banking system". However, the results show that there is no performance difference between state-owned banks and privately-owned banks after the Asian crisis period 2001-2004. These results according to Cornett et al., (2008) were "consistent with the implication of Kane's life-cycle model that increasing globalisation of financial services competition may have the salutary effect of disciplining inefficient regulators and improving the performance of state-owned banks" (what is termed the contestable-markets paradigm).

Yeyati, Micco and Panizza, (2005), also made preliminary conclusions that firstly, state-owned banks located in developing countries are less profitable when compared to privately owned banks; The second conclusion did not find support for a positive effect of government ownership on economic and financial growth; and thirdly, no evidence was found to support that government ownership lead to lesser growth and financial development. The paper however concludes by admitting that there is no conclusive opinion to judge the role and impact of state-owned banks, which calls for further research in the subject area (Yeyati, et. al., 2005).

The perception that government ownership of banks comes with political interference has encouraged Brei and Schclarek (2013) to suggest minimal government participation in the banking industry mainly in administrative role while the major role be left in the hands of the more efficient private banks. This suggestion was developed from the evidence of many Latin America and the transition economies of Eastern Europe which followed the political views and privatised their banking systems during the 1990s, (Brei and Schclarek, 2013: p57).

However, Andrianova, Demetriades and Shortland, (2009), questioned these conclusions and showed evidence that, when there is institutional quality or good governance, banks owned by the state can promote economic growth.

2.6 History of Selected few countries with state-owned banking assets

The 2007-09 financial crisis led to a significant rise in state ownership of banking assets in developed countries such as the United Kingdom, although some countries have had state-owned banks long before this said financial crisis. I provide a brief history on a few of these countries below.

India

When India gained independence from its British colonial masters in August of 1947, its financial system was weak and less developed. The commercial banks mobilised household savings through demand and term deposits, and disbursed the credit primarily to large corporations. This created a skewed pattern of credit disbursement that potentially caused a spate of bank failures in India reducing the numbers from 566 banks in 1951 to only 90 in 1968 forcing the government to nationalise banks in 1969 (Bhaumik, Dang and Kutan, 2011). The report of the Committee of Direction of All Rural Credit Survey (1951) initiated by the Reserve Bank of India ("RBI") had sparked the furore due to its recommendation that the state form one state partnered commercial bank that will stimulate rural credit extension and the banking sector in general (Reddy, 2002). This saw the Imperial Bank taken over by the Indian government and renamed the State Bank of India ("SBI") on the 1st of July 1955 with the RBI acquiring a significant shareholding (Sharma and Chaudhary, 2011). Sharma and Chaudhary, (2011) also note that the SBI had a primary mandate to open at least 400 bank branches in previously neglected areas with immediate effect. Several banks

previously owned by states were also converted to subsidiaries of the SBI in 1959 (Reddy, 2002). In 1967, The government nationalised banks to expand social banking by increasing the geographical coverage of the banking system and extension of credit to the priority sectors that included largely agriculture, agro-processing, and small-scale industries – also known as the social control scheme (Kumbhakar and Sarkar, 2003). This period was dominated by fixed interest rates both on deposits and lending side, compulsory syndicated lending, and anticipation of banks' deposit base in the form of high cash reserve ratio and statutory liquidity ratio (Bhaumik, Dang and Kutan, 2011).

It was obligatory for banks to invest a significant portion of their deposits in government issued bonds and "approved" (quasi-government) institutions. In the same period, 1969 to 1990, the nationalised banks added over 55,000 branches to their network (Bhaumik, Dang and Kutan, 2011). The introduction of the social control scheme; had a provision for banks to be taken over once deposits exceeded a cut-off size. The inadequacies of the social control scheme were further accentuated by political interfering which led to the nationalisation of 14 major commercial banks in 1969 (Reddy, 2002). The reason for more nationalisations was to serve the needs of development of the economy as outlined in the national priorities at the time. In somewhat, a repeat of the history, in 1980, 11 years after initial nationalisation, the Government announced the scheduled nationalisation of 6 more commercial banks above the cut-off size (Reddy, 2002). The second round of nationalisation posed fear that if a private sector bank grew to the cut-off size it would be under the scheduled nationalisation (Reddy, 2002).

While the social agenda of the banking sector measured in terms of geographical and sectoral coverage was arguably a success in the Indian banking sector, about 88 percent of assets managed by state-owned banks were in distress (Kumbhakar and Sarkar, 2003). The financial domination involving state-owned banks was not in harmony with the government of India's agenda of real sector reforms that was unleashed in the aftermath of the balance of payments crisis of 1991 (Bhaumik, Dang and Kutan, 2011). The RBI therefore, introduced reforms in the banking sector in 1992 based on the recommendations of Narasimham Committee I, a committee that was established to analyse the inefficiencies in the Indian banking sector and recommend enhancements to its regulations (Bhaumik, Dang and Kutan, 2011).

In 1998, the RBI introduced the second generation of banking reforms, in keeping with the recommendations of Narasimham Committee II (Bhaumik, Dang and Kutan, 2011). The

Committee recommended the creation of asset reconstruction companies to improve the quality of the balance sheets of banks and facilitate recovery of loans (Bhaumik, Dang and Kutan, 2011).

By 1996, Indian banks were largely making independent decisions on the composition of their asset portfolio and the choice of potential borrowers (Bhaumik, Dang and Kutan, 2011). Bhaumik, Dang and Kutan, (2011) found evidence to suggest that Indian banks allotted resources in a way that was consistent with optimisation of risk-return trade-offs. According to the (India brand equity foundation, 2017) India had 27 public-sector banks, 21 private-sector banks, 45 foreign banks, 56 regional rural banks, 1 589 urban cooperative banks and 93 550 rural cooperative credit institutions as at June 2017. Positive results in the banking sector have been reported by the India brand equity foundation, (2017).

However rosy the story is, 2017 reported a rise in gross non-performing assets ("NPAs") for public-sector banks to at least 6.2 trillion rupees with an additional 1.5 trillion rupees of restructured standard assets which represent 14.6 percent of advances, three times the percentage for their private-sector peers. Furthermore, in 2017, all nationalised banks except SBI and IDBI banks were trading at less than book value and the majority are at less than half book value (Bergeron, Colyer, Deshpande and Jain, 2017). Over the 2016 and 2017 fiscal years, taxpayers had experienced a loss of 400 billion rupees from the public-sector banks, with all of them losing money except SBI. The distressed asset situation worsened over the last few years, with more than 2% percent of annualised growth rate of NPAs over the last five years (Bergeron, Colyer, Deshpande and Jain, 2017). NPAs have been concentrated in the public-sector banks, whose gross NPAs have grown from 1 trillion rupees in the 2012 fiscal year to 6.2 trillion – six times as much – in the 2017 fiscal year (Bergeron, Colyer, Deshpande and Jain, 2017). A combination of external factors such as problems related to infrastructure projects and the global slowdown in commodity prices and internal factors such as risk mismanagement and excessive growth in lending books caused severe stress in the public-sector banks (Bergeron, Colyer, Deshpande and Jain, 2017).

China

The implementation of the government policy on economic-system reform from the late 1970s to the 1990s led to the Chinese commercial banks' balance sheets being overburdened and degraded (Okazaki, 2007) . This led to their failure to provide appropriate loans to profitable business sectors with huge potential for growth (Okazaki, 2007). This was

a direct consequence of government policy on economic system reform from the late 1970s to the 1990s. The policy was implemented after the Third Plenum of the Eleventh Central Committee of the Communist Party of China ("CPC") in December 1978 (Okazaki, 2007). At this point it was decided that the focus of the Communist Party's work should shift to socialist modernisation (Okazaki, 2007). The reform objectives were thoughtfully constructed to move the country from the "planned economy augmented by market elements" to the "socialist market economy," and gradually becoming more market-oriented, differentiated, and cosmopolitan in accordance with the economic development and social acceptability of the country (Okazaki, 2007).

The past three decades or so, has seen the social market economy of China becoming one of the world's fastest growing economies and the second-biggest economy in the world (Chibber, 2012). The Industrial and Commercial Bank of China ("ICBC") is the biggest publicly-traded bank in the world by market capitalisation (Chibber, 2012). ICBC is the largest of the 'big four' state-owned commercial banks ahead of the Agricultural Bank, China Construction Bank and the Bank of China. In the early 1980s, China liberalised its economy by creating these four banks to oversee the specific parts of its economy that needed funding (Chibber, 2012). In 2006, the ICBC and other entities sold shares to the public in Hong Kong and mainland China (Chibber, 2012). Many provincial commercial banks in China are controlled by government with the largest shareholder of these banks being the Chinese social security fund (Chibber, 2012). The State Administration of Foreign Exchange ("SAFE") is a state organ that manages China's 3 trillion dollars of currency reserves on behalf of the central bank (Chibber, 2012). The Chinese government believes that control of the banking system is crucial to maintaining a growing stable economy (Chibber, 2012).

Germany

In 1948, the federal government of Germany established a state-backed development lender with an 80% ownership while the other 20% is owned by the states (KfW, 2017). The board is made up of five-members and reports to ta 37 member supervisory board which is formally chaired by the federal economy minister, implying a direct role for the government in running the bank (Chibber, 2012). The bank issues government backed bonds in the international capital markets to raise funding. Kreditanstalt für Wiederaufbau ("KfW") development bank backs project finance and export-oriented firms; start-ups; small and medium businesses;

municipal and social infrastructure projects; promotes developing and emerging countries by lending at favourable rates (KfW, 2017).

To give an example, in 2009, the German government instructed the KfW to increase its credit lending to 15 billion Euros of which 3 billion Euros was to be lent to larger enterprises to bridge their short-term liquidity shortfalls and for the financing of infrastructure projects (Rudolph, 2010). Rudolph, (2010) further notes that the 2008 financial crisis also resulted in some of the regional state banks to weaken and KfW funded these banks in order to recapitalise them.

United Kingdom (UK)

The financial crisis of 2008 forced the UK to acquired ownership stakes in many of its banks including Northern Rock, Royal Bank of Scotland (“RBS”), Lloyds TSB, Bradford and Bingley and HBOS (Chibber, 2012). These acquired stakes are run by the UK Financial Investment (“UKFI”) ,a formal company under the Companies Act with Her Majesty's Treasury as its sole shareholder (Chibber, 2012). The objectives of the UKFI is to manage the shareholdings commercially to create and protect value for the taxpayer. However the UK government has since sold Northern Rock to Virgin Money (Chibber, 2012).

CHAPTER 3: METHODOLOGY

This chapter gives an account of how the study was carried out highlighting and justifying the logic behind the techniques used. The study is quantitative in nature.

The study employs the causal research design to test the effect of state ownership of banks on economic growth. Kerlinger and Lee, (2000) claimed such a research design is centred on the principle that existing information on the independent variable can be utilised to predict the dependent variable. A causal research is employed when exploring the effect of one variable on another which is consistent with this study in its attempt to establish the effect of state owned banks on economic and social development.

3.1 Data description

The study applied panel data approaches to analyse the effect of state-owned banks on economic and social development. This utilised the commonly used approaches for data analysis which are fixed and random effects panel data analysis (Gujarati and Porter, 2009; Wooldridge, 2012).

Fixed Effects Panel Data Analysis

The fixed effects model allows a variation in the intercept of the cross section units to allow for unique characteristics that may be existing among individual units. (Wagner, 2006; Greene, 2008). According to Gujarati and Porter, (2009), the fixed effects Least Squares Dummy Variable ("LSDV") and the fixed effects Within-Group are two models that are available for use.

1. The LSDV model groups the observations yet allows units to retain their individual intercepts as presented in the equation below.

$$Y_{it} = \beta_{0i} + \sum_{n=1}^{n} \beta_n \ X_{it} \ + \ \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots .. 1a$$

Where

- *y* = the dependent variable;
- *x* = the independent variables;

- β = coefficient of the independent variables;
- ε = the error term;
- v = the unobserved firm effect;
- i = bank number; and
- t = time.

2. The Within-Group model expresses each variable within the pooled observations as a deviance from its mean value and then estimate an ordinary least square regression on "de-meaned" values as presented in the equation below.

$$\ddot{Y}_{it} = \sum_{n=1}^{n} \beta_n \ \ddot{X}_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 1b$$

Random Effects Panel Data analysis

The Error Components Model deviates from the LSDV model by assuming that intercept values are randomly drawn from a large population (Greene, 2008; Gujarati and Porter, 2009; Wooldridge, 2012) as presented in the equation below.

$$Y_{it} = \beta_{0i} + \sum_{n=1}^{n} \beta_n \ X_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 2a$$

Where

- Y_{it} = the dependent variable for the i^{th} bank at time t;
- X_{it} = the independent variable for the i^{th} bank at time t;
- β_0 = the intercept;
- β_n = the coefficient of the n^{th} independent variables; and
- ε_{it} = the error term for the i^{th} bank at time t.

This model treats the coefficient of the intercept as a random variable with a mean value of β_0 (without a subscript *i*). In the form of an equation, the intercept for each bank is expressed as:

$$\beta_{0i} = \beta_0 + \mu_i, \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 2b$$

The term μ_i is a random error term with a mean value of zero and a variance of σ^2

This means that banks are assumed to have a common mean value for the intercept (= β_1) while the differences among in the units are revealed in the error term ε_i.

Equation 2b can be substituted into 2a to create equation 2c as follows:

$$Y_{it} = \beta_0 + \sum_{n=1}^{n} \beta_n \ X_{it} \ + \ \mathrm{V}_{it} \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots 2c$$

where $\mathrm{V}_{it} = \varepsilon_{it} + \mu_{it}$

Where

- y = the dependent variable;
- x =the independent variables;
- β = coefficient of the independent variables;
- ε = the error term;
- v = the unobserved firm effect;
- i = bank number; and
- t = time.

The fixed and random effects models are different in terms of unobserved individual effects that either correlated with regressors or not (Wagner, 2006; Greene, 2008). The study utilised the Haussmann test where necessary to decide between the two models. Torres-Reyna, (2007) stated that to decide between fixed or random effects Hausman test must be considered. According to Greene, (2008), the null hypothesis is that the preferred model is random effects against the alternative the fixed effects. The Hausman test is applied to choose the most efficient and most suitable between fixed and random effect to derive this relationship as we have more than one independent variable (Hakim and Shimko, 1995). It basically tests whether the unique errors are correlated with the regressors.

The equation 3 below defines the error term (μ_{it}) identified in (2c).

$$\mu_{it} = \varepsilon_i + \mathrm{V}_{it} \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots 3$$

In equation (3), ε_i is the cross-section error component and v_{it}, combines the cross-section and time series error component.

The study customised equations 1 (*a* and *b*), 2 (*a*, *b* and *c*) and 3 and presented them as follows:

Fixed Effects Model

$$\ddot{Y}_{it} = \beta_1 \ddot{Z}_{it} + \beta_2 \ddot{Q}_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots .4$$

Random Effects Model

$$Y_{it} = \beta_0 + \beta_1 Z + \beta_2 Q_{it} + \mathrm{V}_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots .5$$

where

$$\mathrm{V}_{it} = \varepsilon_{it} + \mu_{it}$$

Where

- *B* = the coefficients of the independent variables;
- *ε* = the error term;
- *v* = the unobserved country effect;
- *i* = 1 to 13 which indicates a country ID; and
- *t* = time (*t* = 1961-2016).

Where the variables denote the following:

Table 2

Impact on economic development

	Y	*Z*	*Q*
Growth	• GDP Per Capita Growth • Labour Productivity	Credit extension by state-owned banks	Credit extension by private banks
Impact on investments	Investment Share In GDP	Credit extension by state-owned banks	Credit extension by private banks
Degree of industrialisation of a country	Manufacturing as proportion of GDP	Credit extension by state-owned banks	Credit extension by private banks
Employment	Unemployment Rate	Credit extension by state-owned banks	Credit extension by private banks

Impact on social development

	Y	*Z*	*Q*
Human development	Human Development Index	Credit extension by state-owned banks	Credit extension by private banks
Impact on poverty	Poverty Rate	Credit extension by state-owned banks	Credit extension by private banks
Impact on inequality	Income Gini	Credit extension by state-owned banks	Credit extension by private banks

Dependent variables

Several previous studies provide different measures of economic and social development used in the examination of the impact of state-owned banks on economic performance and growth.

Tracking the country's performance on inclusive growth and economic and social development requires a wider set of Performance Indicators ("PIs") than simply using the conventional metric; Gross Domestic Product ("GDP") per capita, used to measure countries' level of economic development. The PIs presented here include GDP as well as the best available cross-country measures of important factors of sustained, broad-based progress in living standards. Therefore, in trying to study the impact of state-owned banks on economic and social development, the following performance indicators across countries will be utilised:

1. Economic development:

    (i) Growth
    Measured by GDP per capita growth and labour productivity.

    (ii) Impact on investments.
    It is the investment share in GDP calculated as a percentage of GDP.

    (iii) Degree of industrialisation of a country.
    Measured by manufacturing as a proportion of GDP.

    (iv) Employment.
    Measured by unemployment rate to represent the economic opportunities and family security.

2. Social development:

    (i) Human development.
    A summary measure of key dimensions of human development: life expectancy, education, and standards of living, measured by the Human development index.

    (ii) Impact on poverty or poverty rate.

Measure of the effects on standard of living.

(iii) Impact on inequality.

The indicator of inequality measured by the Income Gini coefficient.

Table 3

	VARIABLE	DATES	NUMBER OF OBSERVATIONS	SOURCE
ECONOMIC DEVELOPMENT VARIABLES				
Growth	GDP Per Capita Growth	1961 - 2016	624	World Bank
	Labour Productivity	1971 - 2016	262	OECD
Impact on investments	Investment Share in GDP	1961 - 2016	437	OECD
Degree of industrialisation of a country	Manufacturing as proportion of GDP	1961 - 2016	564	World Bank
Employment	Unemployment Rate	1961 - 2016	634	OECD
SOCIAL DEVELOPMENT VARIABLES				
Human development	Human Development Index	1990 - 2015	326	United Nations
Impact on poverty	Poverty Rate	1976 - 2016	134	OECD
Impact on inequality	Income Gini	1976 - 2016	179	OECD

Independent variables

The study uses credit extension by state-owned and private banks as independent variables.

3.2 Descriptive Statistics

The statistics explain the basic behaviour of the variables. They include mean, Standard Error, Standard Deviation and Variance, Kurtosis and Skewness. These are shown in table 4 below.

Table 4

	GDP	*Investment*	*Manufacturing*	*Unemployment*	*Human Dev*	*Poverty*	*Income Gini*	*Labour*
Mean	3.3165	244282.1	21.9626	7.8295	0.6997	0.1705	4.1839	3.2479
Standard Error	0.1653	46094.15	0.2609	0.1039	0.0054	0.0075	0.3649	0.3063
Standard Dev	4.1298	963577.3	6.1962	2.6170	0.0980	0.0873	4.8820	4.7654
Variance	17.055	9.28E+11	38.3923	6.8487	0.0096	0.0076	23.8334	22.7086
Kurtosis	1.4995	43.72586	0.0449	-0.6277	-0.1338	3.2036	17.3018	0.7717
Skewness	-0.7041	6.320851	0.6834	0.4309	-0.4318	1.5339	3.5756	-0.5875
Range	27.9851	8682060	31.8008	12.3987	0.473	0.453	37.305	27.9564
Count	624	437	564	634	326	134	179	262

3.3 Conclusion

This chapter has given a background of the mixed research methods followed by an exploration of the common grounds and similarities between the qualitative and quantitative approaches. An explication of methods and techniques used in collecting data and the design of the study was fleshed out. Importantly, this chapter has laid out the methodology and design of the study, which are important aspects of any study in so far as the scientificity, reliability and dependability of studies is concerned.

CHAPTER 4: EMPERICAL RESULTS

The study followed a judgemental sampling technique in selecting the countries for investigation. As described by Tongco, (2007), this is a deliberate choice of study units based on the qualities possessed by such units or a non-random technique without considering any underlying theories. As argued by Gustad, Dhillion and Sidibe, (2004), this technique allows the researcher to select countries and banks that will assist in testing the hypothesis in the most appropriate manner.

The sample units were grouped into two; state and privately-owned banks in a sample of countries for the period 1961 - 2016. The analysis was based on a sample of emerging economies with and without state-owned banks based on the available data as at 2010. Similarly, only banks that were identified as state-owned with state and state related entities holding a 50 percent or higher ownership were considered and the remainder being classified as privately-owned banks. This was done in line with the *Global Financial Development Report 2013 (Database and Survey)*.

The data collection process began by selecting a sample of 13 countries in emerging economies that have state owned banks. Bank related data and information was obtained from various databases including, the: World Bank, Organisation for Economic Co-operation and Development ("OECD"), and the United Nations.

The 13 countries selected are Argentina, Brazil, Chile, China, India, Indonesia, Malaysia, Mexico, Republic of Korea, Poland, Russian Federation, South Africa and Turkey.

When fitting a model on panel data we have these two choices, fixed effects model and random effects model. I used the Hausman test to decide between the two models. The Hausman test is a default test when you fit a random effects model in the SAS Statistical system ("SAS"). For that reason, as a point of departure, for all the dependent variables I fitted first the random effects model first. If the Hausman test agreed with the model selection, then those are the results I considered. If that was not the case I went on to fit the fixed effects model.

In order to fit the models, one had to scale the covariates Z and Q. This I did because there was a great difference in values (and currencies) between the predictors Y and the

covariates. This problem I solved by standardising the two covariates Z and Q to get Z_1 and Z_2

where

$$Z_1 = \frac{Z - \bar{z}}{s_z} \ and \ Z_2 = \frac{Q - \bar{q}}{s_Q} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.\ldots\ldots\ldots\ldots\ldots.\ldots\ldots\ldots\ldots\ldots\ldots.6$$

with $\bar{z}$ and $\bar{q}$ being the respective means and s_z, s_Q the respective standard deviations.

Table 5

Below I give a summary of the output from SAS on the different models fitted.

Impact on economic development

	Y	β_0 (Std err) (Pr > |t|)	β_1 (Std err) (Pr > |t|)	β_2 (Std err) (Pr > |t|)	Hausman Test Pr > m	Fitted Model
Growth	GDP	3.4534 (0.5570) (<.0001)	0.2257 (0.5211) (0.0651)	-0.5236 (0.4971) (0.0027)	<.0001	Fixed effects
	Labour productivity	2.2667 (0.6697) (0.0008)	-0.3898 (0.2052) (0.0586)	0 . .	1.0000	Random effects
Impact on investments	Investment share in GDP	0 (0.0391) (1.0000)	0.5630 (0.0396) (<.0001)	0 . .	<.0001	Fixed effects
Degree of industrialisation of a country	Manufacturing as proportion of GDP	21.7664 (1.1686) (<.0001)	-4.6230 (0.6219) (<.0001)	2.8131 (0.5894) (<.0001)	<.0001	Fixed effects
Employment	Unemployment rate	7.8745 (0.6137) (<.0001)	-0.4684 (0.2174) (0.0316)	0.3588 (0.2075) (0.0843)	1.0000	Random effects

Impact on social development

	Y	β_0 (Std err) (Pr > |t|)	β_1 (Std err) (Pr > |t|)	β_2 (Std err) (Pr > |t|)	Hausman Test Pr > m	Fitted Model
Human development	Human Development Index	0.7013 (0.0246) (<.0001)	0.0003 (0.0055) (0.9509)	0.0413 (0.0053) (<.0001)	1.0000	Random effects
Impact on poverty	Poverty rate	0.1947 (0.0180) (<.0001)	-0.0053 (0.0066) (0.4203)	0 . .	1.0000	Random effects
Impact on inequality	Income Gini	5.2393 (0.9218) (<.0001)	-0.7472 (0.3328) (0.0260)	0.3659 (0.1087) (0.0645)	<.0001	Fixed effects

4.1 Interpretation

Consider the fixed effects model (4) and random effects model (5) discussed in the previous section. The estimated value of the dependent variable for the *i*th bank at time *t* for both models is given by

$$\hat{Y}_{it} = \hat{\beta}_0 + \hat{\beta}_1 Z_{it} + \hat{\beta}_2 Q_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots .7$$

where Z and Q_{it} are the credit extension by state-owned banks and the credit extension by privately-owned banks respectively. In the case of standardised values of the credit extension the model can thus be written as

$$\hat{Y}_{it} = \hat{\beta}_0 + \hat{\beta}_1 Z_{1it} + \hat{\beta}_2 Z_{2it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots .8$$

Below I give a discussion and interpretation of the models given in table 5.

4.2 Impact on economic development

(i) Growth

For economic growth, the two standardised extensions were regressed on two dependent variables, first the *GDP per capita growth* then *Labour productivity* variables. The resultant predictive models are:

$$\hat{Y}_{it}^{GDP} = \hat{\beta}_0 + \hat{\beta}_1 Z_{1it} + \hat{\beta}_2 Z_{2it}$$

$$= 3.4534 + 0.2257\, Z_{1it} - 0.5236 Z_{2it}$$

$$\hat{Y}_{it}^{Labour} = \hat{\beta}_0 + \hat{\beta}_1 Z_{1it} + \hat{\beta}_2 Z_{2it}$$

$$= 2.2667 - 0.3898 Z_{1it}$$

From the results above we see that one unit increase in the standardised credit extension by state-owned banks, keeping the standardised credit extension by privately-owned banks constant results in a 0.2257 increase in the value of GDP per capita growth. Also, one unit increase in the standardised credit extension by privately-owned banks, keeping the standardised credit extension by state-owned banks constant results in a 0.5236 reduction in the value of GDP per capita growth. It means credit extension by state-owned banks positively affects growth of GDP per capita, while credit extension by privately-owned banks

has a negative effect. For labour productivity, we see that one unit increase in the standardised credit extension by state-owned banks will result in a 0.3898 decrease in the value of labour productivity and credit extension by privately-owned banks has no effect on labour productivity since estimated parameter for the credit extension by privately-owned banks is $\hat{\beta}_2 = 0$.

(ii) Impact on investment

For the impact on investments the two standardised extensions were regressed on Investment share in GDP ("ISG"). For scaling purposes, not only the two credit extensions were standardised, but also the values of the Investment share in GDP were also standardised. That is $Z_Y = \frac{Y - \bar{y}}{s_Y}$, which explains the intercept value of 0. Also, note that the estimated parameter for the credit extension by privately-owned banks is again $\hat{\beta}_2 = 0$ here. The model we get is

$$\hat{Z}_{Yit}^{ISG} = \hat{\beta}_0 + \hat{\beta}_1 Z_{1it} + Z_{2it}$$

$$= 0.5630 Z_{1it}.$$

This means one unit increase in the standardised credit extension by state-owned banks will result in a 0.5630 increase in the value of the standardised Investment share in GDP. Credit extension by state-owned banks thus has a positive relation to investment share on GDP while credit extension by privately-owned banks has no relation.

(iii) Degree of industrialisation of a country

When the two standardised extensions were regressed on manufacturing as a proportion of GDP the resultant model is

$$\hat{Y}_{it}^{Manuf} = \hat{\beta}_0 + \hat{\beta}_1 Z_{1it} + \hat{\beta}_2 Z_{2it}$$

$$= 21.7664 - 4.6230 Z_{1it} + 2.8131 Z_{2it}.$$

This model shows that one unit increase in the standardised credit extension by state-owned banks, keeping the standardised credit extension by state-owned banks constant, results in a 4.623 decrease in the value of manufacturing as a proportion of GDP, while considering the same for standardised credit extension by privately-owned banks results in a 2.8131

increase in the value of manufacturing as a proportion of GDP. This means credit extension by state-owned banks relates negatively to manufacturing as a proportion of GDP, credit extension by privately-owned banks relates positively.

(iv) Employment

Regressing the two standardised extensions on unemployment yields the following model

$$\hat{Y}_{it}^{Unemp} = \hat{\beta}_0 + \hat{\beta}_1 Z_{1it} + \hat{\beta}_2 Z_{2it}$$

$$= 7.8745 - 0.4684 Z_{1it} + 0.3588 Z_{2it}\,.$$

For this model one unit increase in the standardised credit extension by state-owned banks, keeping the standardised credit extension by privately-owned banks constant, results in a 0.4684 decrease in the value of unemployment, while a one unit increase in standardised credit extension by privately-owned banks results in 0.3588 increase in unemployment. Thus, credit extension by state-owned banks constant relates negatively on the unemployment rate (or positively on the employment rate) and credit extension by privately-owned banks constant relates positively on unemployment rate.

4.3 Impact on social development

(i) Human development

Regressing the two standardised extensions on Human Development Index ("HDI") gives

$$\hat{Y}_{it}^{HDI} = \hat{\beta}_0 + \hat{\beta}_1 Z_{1it} + \hat{\beta}_2 Z_{2it}$$

$$= 0.7013 + 0.0003 Z_{1it} + 0.0413 Z_{2it}$$

In the interest of not repeating myself. For this model, it is rather clear that both credit extension by state-owned banks and credit extension by privately-owned banks relate positively to human development, with credit extension by privately-owned banks contributing more to the HDI.

(ii) Impact on poverty

Regressing the two standardised extensions on poverty rate ("PR") gives

$$\hat{Y}_{it}^{PR} = \hat{\beta}_0 + \hat{\beta}_1 Z_{1it} + \hat{\beta}_2 Z_{2it}$$

$$= 0.1947 - 0.0053 Z_{1it}$$

This model shows that the credit extension by privately-owned banks has no relations with the poverty rate, while credit extension by state-owned banks has a negative relationship with the poverty rate. This means an increase in the credit extension by state-owned banks results in a decrease in the poverty rate.

(iii) Impact on inequality

Regressing the two standardised extensions on Income Gini ("IG") gives

$$\hat{Y}_{it}^{HDI} = \hat{\beta}_0 + \hat{\beta}_1 Z_{1it} + \hat{\beta}_2 Z_{2it}$$

$$= 5.2393 - 0.7472 Z_{1it} + 0.3659 Z_{2it}$$

From the model above, we see that credit extension by state-owned banks contributes negatively to the Income Gini while credit extension by privately-owned banks contributes positively to the Income Gini.

4.4 Conclusion

The study utilised two choices of panel data models, the fixed effects model and random effects model. The Hausman test was used to choose between the fixed and random effect models. In order to fit the models, one had to scale the covariates Z and Q because there was a great difference in values (and currencies) between the predictors Y and the covariates. The study found that credit extension by state-owned banks has a positive effect on GDP per capita growth, human development, employment rate and lead to a decrease in the poverty rate. However, it is negatively related to manufacturing as a proportion of GDP.

CHAPTER 5: CONCLUSION

A well-functioning financial system facilitate an economy through exploitation of market opportunities like product innovation, discovery of novel ideas and new resources, technological advancements, innovative and sustainable ways of using existing resources and many more (Demetriades and Andrianova, 2003). The financial system is the engine room of financial intermediation between the surplus and the deficit sectors (Gupta, Yesmin and Khan, (2013). The development of a strong financial system and other economic entities has great potential of driving economic development of a country. Thus failure to establish such a key component of the economy lead to problems of financial instability, increased uncertainty, low growth and investments (Demetriades and Andrianova, 2003).

This study aims to investigate the problem of widening inequality and economic exclusion experienced in many developing and emerging economies. Without financially inclusive systems, poverty traps emerge and hamper economic development as a result of lack of access to financial tools which allow people to invest in their education, projects and entrepreneurial skills (Zins and Weill, 2016). As such, governments would actively participate in financial markets, through direct ownership of banks and economic entities to drive financial development and economic growth. The social theory as outlined by Atkinson and Stiglitz, (1980) further submits that any government will establish and own a financial institution to address market failures when social benefits are more than economic costs of owning such an institution. The main objective of state-owned banks is to sustain economic growth through supporting access to financial resources.

The studies that have investigated the role of state-owned banks and their effectiveness on economic growth found that these banks are relatively inefficient in allocating credit and therefore have a negative impact on economic growth. However, these studies did not consider the potential impact state-owned banks have on the structure of the economy and social development. Therefore, this paper seeks to broaden the research to include state-owned banks' impact on economic and social development with a particular focus on developing and emerging economies.

Summary of findings

The study tested the impact of state ownership of banks on economic growth by utilising two standardised extensions of economic growth in terms of GDP per capita growth and labour productivity. The results revealed that credit extension by state-owned banks has a positive effect on GDP per capita growth, while credit extension by privately-owned banks has a negative effect. For labour productivity, standardised credit extension by state-owned banks has a negative effect on the value of labour productivity while credit extension by privately-owned banks has no effect on labour productivity. The standardised credit extension by state-owned banks lead to increase in the value of the standardised Investment share in GDP. Credit extension by state-owned banks thus has a positive effect on the investment share in GDP while credit extension by privately-owned banks has no relation. The standardised credit extension by state-owned banks lead to a decrease in the value of unemployment, while credit extension by privately-owned banks lead to an increase in unemployment. Thus, credit extension by state-owned banks is negatively related to unemployment rate (or positively on the employment rate). Therefore, the study concludes that state owned banks play a major role in economic growth. These findings are supported by Brei and Schclarek, (2015) who argued that state-owned banks' goal is to sustain growth and supplying lending to the economy in contrast to maximising profits given the increased risk. It also synonymous with the suggestion that state-owned banks prefer an asset portfolio with higher proportion of loans to entrepreneurs including less liquid asset holdings compared to private banks (Brei and Schclarek, 2015a).

However, the credit extension by state-owned banks, lead to a decrease in the value of manufacturing as a proportion of GDP, while credit extension by privately-owned banks lead to increase in the value of manufacturing as a proportion of GDP. This means credit extension by state-owned banks relates negatively to manufacturing as a proportion of GDP whereas credit extension by privately-owned banks relates positively.

When studying the impact of state-owned banks on social development, we see that both credit extension by state-owned banks and by privately-owned banks are positively related to human development, while credit extension by privately-owned banks contributed more to the historically disadvantaged individuals. On one hand, credit extension by privately-owned banks has no relationship with the poverty rate, while credit extension by state-owned banks is negatively related to the poverty rate. The implication is that an increase in credit

extension by state-owned banks results in a decrease in the poverty rate. Credit extension by state-owned banks contributes negatively to the Income Gini while credit extension by privately-owned banks contributes positively to the Income Gini.

As literature points out, government ownership of banks is not all bad. State-owned banks are normally the largest lenders to state-owned enterprises and the economically excluded individuals. The state-owned banks have the capacity to raise capital through issuing government backed bonds or debt at lower rates than their private opponents. This is due to government guarantees seen as a low risk institution with financial muscles even in crisis times. In times of economic uncertainties, it is likely that lenders, investors and depositors all feel safer putting their money in a government owned bank. A further argument in support of the resistance of state-owned banks is made by Brei et al., (2013) that due to well capitalisation nature of state-owned banks, there are less crisis related losses which are less likely to push these banks below minimum capital requirements. Therefore, the most important factors that provide bank risk tolerance are capital and liquidity rather than ownership of the bank.

Conclusions

The increase in lending by government owned banks is related to the high-risk tolerance of state owned banks as opposed to the private banks. Such findings by Brei et al. suggest stability in lending by publicly owned banks over the entire business cycle than private banks which seem stable only during normal times and support the findings of this study concluding that both economic development and social welfare will be achieved by state-owned financial institutions through inclusive lending. Even though this study did not consider the institutional quality indicators, it has shown that state ownership of banks has a positive effect on both economic and social development. Therefore an emerging economy like South Africa, as suggested by Demirguc-Kunt and Klapper, (2012), the need for economic development demands the establishment of an inclusive financial system that also benefits poor and disadvantaged groups and allowing a broader access to financial services without price barriers to their use. The absence of such inclusive financial systems, would mean that poor and disadvantaged groups have to rely much on their limited savings or informal financial institutions to satisfy their financial needs. Such lack of inclusivity will further deepen the income inequality and slow economic growth.

Areas for further research

Further research to be done on the topic should include a control for the size of state-owned banks through the use of proxies such as employee workforce, market capitalisation and other factors or variables that affect the dependent variables other than credit extension by banks. The amount of debt these banks hold is also something worth considering. State-owned bank culture is crucial as it has an impact on employee productive, hence it would be beneficial to control for it in future research. Not controlling for the above-mentioned variables was a limitation for our results, therefore they should be interpreted with caution.

Authors against state-owned banks often site political interference and corruption as reasons against such institutions, it would therefore be of interest to test whether governance matters in this study.

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