Foreign Direct Investment and the Development of Small and Medium Sized Enterprises in South Africa

A Dissertation

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by

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ABSTRACT

Developing local SMEs will lead to sustainable economic growth, as well as the empowerment of communities. In addition, extensive literature over the years have proven that FDI does not lead to economic development and that it is in the best interest of a country to have an international trade friendly policy. The South African government has a mandate to lessen unemployment by 6% by 2030 as part of their National Development Planning (NDP) Vision 2030. This study seeks to discover the impact of FDI on developing SMEs in South Africa. Literature has supported the notion that SME development leads to growth as it increases economic activity, however, conflicting views exist about contributing FDI to SME development. Additionally, there has been a gap in literature for South Africa as the focus has been on SSA, because of the lack of publicly available information on FDI projects performed by SMEs. This study sets out to learn the factors that affect FDI in SA as well as the impact of those factors on SME development, as they are instrumental in driving economic growth. The factors researched were GDP growth, inflation rate, corruption index, GDP per capita, sum of imports and exports as a % of GDP, infrastructure development, research and development and the GDP. This study used the unrestricted ARDL statistical technique in variables selection. This method kept 3 variables out of 8 initially in the model, eliminating issues of multicollinearity and unreliable coefficients with large variance and standard errors. This method ensured that the best-fit model was selected to explain the determinants of FDI. The findings of the study indicated a positive relationship between FDI, market size and macroeconomic stability, while the relationship to political risk was negative. An assumption that drivers of FDI also impact the development of SME was used and the best-fit variables of FDI drivers were fitted in an ARDL, to determine the relationship between FDI and SME development. The test returned a statistically insignificant yet positive relationship between SME development and FDI. Based on the findings, the research recommends firm level investigation for SMEs on FDI involvements to better determine the factors that lead to their development.

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
BASA	The Banking Association of South Africa
CPI	Corruption Perceptions Index
DSBD	Department of Small Business Development
DTI	Department of Trade and Industry
FDI	Foreign Direct Investment
GEC	Global Entrepreneurship Congress
GEN	Global Entrepreneurship Network
IDC	Industrial Development Corporation
MNE	Multinational Entities
NIS	National Innovation System
OECD	Organisation for Economic Co-operation and Development
R&D	Research and Development
RSA	Republic of South Africa
SAICA	South African Institute of Chartered Accountants
SEDA	Small Enterprise Development Agency
SEFA	Small Enterprise Finance Agency
SME	Small and Medium Sized Enterprises
SPSS	The Statistical Package for Social Sciences
SSA	Sub-Saharan Africa
Stats SA	Statistics South Africa
TNC	Transnational Corporations
UNIDO	United Nations Industrial Development Organization

ACKNOWLEDGEMENT

“I can do all things through Christ who strengthens me” (Philippians 4:13). All gratitude goes to the good Lord, for I would have not been here had it not been for His grace.

I would like to acknowledge the guidance and support I got from my co-supervisors, without whose support this dissertation would not have been possible; Mr Roland Mwesigwa Banya and Professor Biekpe.

My daughter, thank you for the patience you had with mommy being away too long and grumpy over the last twenty-one months. Thank you for allowing me the time away from you, to work on myself. My entire family, for their support and prayers that kept me going through this, it would have been tougher without your support.

CHAPTER 1:
INTRODUCTION

1.1 Background of the Study Research Area

This paper aims to address the impact of foreign direct investment (FDI) on the development of local small and medium sized enterprises (SME) in South Africa. Some parts of the research will be extended to other countries within the continent of Africa[1]. Additionally, the researcher will allude to worldwide research on the subject. A comprehensive analysis of the small and medium sized enterprises development will be studied, paying special attention to the role played by foreign direct investment in funding SMEs for development.

SMEs are at the forefront of economic development in Africa and the rest of the world. In South Africa, SMEs have been estimated to make up 91% of formalised businesses, contributing to 60% employment of the labour force and 34% to the Gross Domestic Product (GDP), thus highlighting SMEs as a key driver of the economy (BASA, 2016). As vital as SMEs are to the economy, their struggle for financing remains prevalent across countries. As small businesses, their funding model is not a traditional corporate finance one as it is often assumed. Moreover, these entities do not qualify for a traditional funding structure because of their small nature.

Foreign direct investment (FDI) is a crucial factor in international economic integration. Countries thrive to attract FDI as it creates opportunities for employment and access to new technologies (Thompson & Zang, 2013). This trump card, if used correctly, can benefit SMEs as they often lack the resources to innovatively carry out business and maximise their growth potential. It is for this reason that developing, local SMEs should be considered when attracting foreign direct investment into the country.

Historical SME literature in Africa at large has focused on the growth determinants of SMEs based on economic conditions, availability of finance, government spending, as well as the regulatory and operating environment. However, not much literature is written on how FDI impacts these factors on SME development.

[1] SADC region countries: Of the 15 countries represented in the SADC region Botswana, Lesotho, Swaziland, Namibia, Zimbabwe and Mozambique will often be referred to due to their geographical location and proximity to RSA.

1.2 Problem Statement

As important as SMEs are to economic development, they also face a higher rate of failures soon after inception. These failures have been linked to many causes, ranging from funding shortage, lack of managerial skills, lack of technology needed to keep up with market trends, as well as competition. All these factors have been documented well and empirical evidence exists to prove the relationship of SME growth and these factors.

1.3 Research Questions and Objectives

The primary objective of this research is to provide the empirical evidence that FDI leads to developing SMEs. This will be determined by looking at the drivers of FDI over the period 1996 to 2016 and linking the SME development to FDI over the period 2000 to 2016. To learn the determinants, the following questions were framed:

i. What are the drivers of foreign direct investment in South Africa?
ii. Which drivers of FDI impact on developing small and medium sized enterprises in South Africa?

The two hypotheses were informed by our research questions: *H1*: a positive relationship exists between FDI and SME development. *H0*: there is no relationship between FDI and SME development. The study was then expressed through the following objectives:

i. To determine the drivers of FDI in South Africa.
ii. To examine the effect of the significant drivers of FDI on SME development in South Africa.

Theoretically, the objectives developed for this study are to conduct a literature review on the significance of the small and medium sized enterprises in South Africa, as well as to conduct a literature review on foreign direct investment and its impact and contribution to enterprise development.

1.4 Justification of the Research

Economic development is essential for any economy to grow. Prioritising activity that leads to this growth is inherently essential. Developing local SMEs that will lead to sustainable economic growth, as well as the empowerment of communities, is that economic activity. Moreover, it cannot be argued that FDI leads to economic development, as proven by extensive literature over the years and that it is in the best interest of a country to have an international trade friendly policy. However, intergovernmental relationships do not always last, as political agendas often cause conflict between governments, thus making FDI unstable. Therefore, if

policies are created to allow for FDI to develop the economy and guide investment in a sustainable manner (building factories and engaging local business in the business flow), even when these conflicts arise, there would still be economic activity in the country, as the businesses would have already been formed and operational.

The local human capital would already have been developed and skilled enough to continue carrying out their duties as managers of local businesses and the communities would not suffer because of government inefficiencies. This study aims to aid in creating policies that prioritise SME development as a point of entry for FDI.

What happens when enterprises are backed by home governments when entering foreign markets? Does that increase their chances of survival? As often seen in South Africa, foreign enterprises backed by their governments financially and technically perform better than local enterprises do, as they offer goods and services at a cheaper cost. Thompson and Zang (2015) supported the statement of policy support on local SMEs. They found that it is important for an economy to have institutions that aid new venture creation, as well as those that provide continuous support to entrepreneurs to cope with the changes in the economy as they arise. In South Africa, institutions like the Industrial Development Corporation (IDC), Department of Trade and Industry (DTI) and Small Enterprise Development Agency (SEDA) should play a vital role. This research discusses involving these institutions in integrating foreign enterprises with local ones.

1.5 Limitations

The research topic suggests a few research questions the study may not address because of data availability; however, these questions remain relevant to the study of FDI and SME development. For instance, discovering what the main determinants are of qualifying for foreign direct investment projects as SMEs depends solely on availability of direct enterprise data receiving FDI. This data is mostly confidential and not available for public consumption. The same limitation applies to specifically identifying the criteria used for SMEs to be eligible for FDI projects, as is not widely published.

There are a few limitations to the study, with data limitations being the most prevalent one inherent to the study, as most of SMEs have limited record keeping. Most SMEs do not keep proper accounting information and their data is not standardised. They adopt reporting and data keeping methods suitable to their business as a means of cost containment. Thus, a comparative

study may be difficult across businesses and analysis may be limited to a certain extent. Time is another limiting factor (impact limitation) to the study, as time constraints will affect the detail covered in this research, as this research will only be run for ten months.

1.6 Organisation of the study

This study consists of 5 chapters. The rest of the chapters are as follow:

Chapter 2, the literature review will be split into 3 parts as follows: Section 2.s discussing the SMEs in SA. This discusses in detail the SME sector and outlines the background of small enterprises in South Africa. This is important because of SMEs in general being confused with micro enterprises, as a result, distracting policies that are set to address them. It further discusses the role, concepts, principles and processes associated with small enterprises. Section 2.3 discusses the literature review on promoting new firm births by FDI in developing economies, and Section 2.4 examines the causal relationships between technology, innovation and SME development to foreign direct investment.

Chapter 3 provides a detailed description of the research methodology used in the research study, focusing on the research method and design adopted. Several statistical methods and techniques used are identified and discussed. A brief description of ethical issues is provided. The chapter covers the pre-testing procedure and the reliability and validity of the data gathered for the study.

Chapter 4 reports the results of the empirical study through an analysis of the data. It includes interpretation and evaluation of the research findings, and an assessment of the reliability and validity of the research instrument.

Chapter 5 provides a final review of the entire study, providing conclusions and recommendations to address the research questions and objectives. The business implications and limitations of the study are discussed and areas for further research presented. In conclusion, it outlines the recommendations for future research.

CHAPTER 2:
LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of literature available on FDI and SMEs. The SME sector will be discussed in detail, from understanding the sector to its contribution to the economy. Also, FDI and relevant literature will be unpacked. Understanding its drivers, trends, to linkages provided by FDIs through mergers and acquisitions, as well as MNEs and their impact on SME development.

2.2 What are SMEs?

SMEs are created from an idea, a need to create, as well as to bring about change, be it in the economy, community or even family life, as is the case with any big business. In doing this, hunger and poverty is curbed, employment is created, and a nation is built. Small and medium enterprises instil improved and innovative thinking to the owners, as they must create a plan to survive for however long the period is, which in turn sparks development in a country, resulting in economic growth. As more and more people are encouraged and enticed to create a living, a nation grows, and socio-economic paradigms shift. Many scholars have mentioned and reiterated the importance of SMEs in economic development in a country, however, just as many have defined small and medium enterprises to no end. Defining small and medium enterprises has taken many faces, often varying with each study into the subject. The biggest contributor to this predicament is the size, unlike corporates. SMEs differ in size, with each definition of the firm by size varying by country, as well as researcher. Besides the size, management style and industry contribute to the definition, with most family-owned businesses managed by their owners falling within the category of SMEs.

“SMEs have indeed not been spared with the definition problem that is usually associated with concepts which have many components. The definition of firms by size varies among researchers. Some attempt to use the capital assets while others use skill of labour and turnover level" (Abor & Quartey, 2010). This highlights the complexity associated with defining SMEs. Most SMEs do not have many assets and using capital assets as part of the definition would cut out many businesses from this category, as many do not own much but still run successful businesses in their fields. For instance, a tuckshop owner would not have many capital assets; however, his business would be thriving on the little that it owns. This brings a question of what

makes up an SME, what do governments talk about when they discuss the biggest contributors to the economy, who are these entrepreneurs and what exactly do they do?

Many definitions have been recorded in literature for SMEs, with one of the most popular of definitions being the definition from the Bolton Report of 1971. The Bolton Committee in its 1971 Report on Small Firms stated that a small firm is an independent business, managed by its owner or part-owners and having a small market share (Department of Trade and Industry, 2001). According to the British Department of Trade and Industry, this is by far the best description of a small firm. This Report also adopted several different statistical definitions. It recognised that the size of a firm is relevant to its sector. Statistically, it forced SMEs to be categorised on their size in the industry in which they operated. For instance, where the market is large with many competitors, a firm may be small, whereas a firm of similar proportions could be large in another sector with fewer players within it. The Bolton Report recognised it may be more suitable to define size by the number of employees in some, but it would be more suitable to use turnover in others, where they are labour intensive, however making less turnover than some companies with fewer employees. It is normal for government to measure SMEs on economic contributions, commonly numbers of full-time employees due to concerns about unemployment rates and active contributors to GDP. Defining SMEs was then framed as follows:

The economic definition, a firm is said to be small if it meets the following three criteria:

- It has a relatively small share of their market place;
- It is managed by owners or part-owners in a personalised way, and not through the medium of a formalised management structure; and
- It is independent, in the sense of not forming part of a large enterprise.

The proposed statistical definition by the Committee was the following criteria:

- The size of the small firm sector and its contribution to GDP, employment, exports, etc.;
- The extent to which the small firm sector's economic contribution has changed over time; and
- Applying the statistical definition in a cross-country comparison of the small firms' economic contribution.

As the word small is a relative concept when it comes to the size of an enterprise, it complicates the definition when solely considering the size of the enterprise across different sectors. It then makes it more fitting to link it to the sector when defining it. The Bolton Committee's different

definitions by sector, resonated with many, as they found a consistent way to define small and medium enterprises. In South Africa, the defining criteria of SMEs differ by sector and cannot be defined by one simple paragraph. The most contested and grey part of SME definition has always been the number of employees a firm has, often creating confusion. For instance, if companies keep a few employees with the most services outsourced, do they also qualify as SMEs? Bearing in mind the benefits that small and medium enterprises are granted by governments to stimulate the economy in countries, has this led to a more complex problem of misclassifying businesses?

Small and medium enterprises represent 99% of all businesses in the European Union (EU). The main determinants whether an enterprise is an SME are number of employees and either turnover or balance sheet total. For instance, the European Commission takes the two out of three approaches to define a small business, where a company must qualify two out of three as below, and brings control as part of the definition.

Table 1: European Commission's SME definition

Company category	**Staff headcount**	**Turnover**	or	**Balance sheet total**
Medium-sized	< 250	≤ € 50 m		≤ € 43 m
Small	< 50	≤ € 10 m		≤ € 10 m
Micro	< 10	≤ € 2 m		≤ € 2 m

Source*:* http://ec.europa.eu

Control discovers whether an enterprise is a subsidiary where they could leverage off their parent companies. Arguing that an enterprise may be small, for instance with 6 employees but may be part of a larger group of companies, such enterprises would then be excluded from defining SMEs (European Commission, 2003). This definition has been praised for not taking the one size fits all approach, where strict distinction is made between micro, small as well as medium enterprises. So far, the European Commission is one of the few institutions that use financial assets in defining SMEs, with most countries sticking to number of employees as well as turnover.

The Organisation for Economic Co-operation and Development (OECD, 2005) defines small and medium enterprises as non-subsidiary, independent firms, which employ less than a given number of employees, noting the number of employees varies across countries. Two hundred

(200) employees have been noted as the average number of employees that would classify an SME, noting that in the upper limits you would find the EC limit. Literature has criticised defining SMEs on the size of employees, as once the limit is exceeded the definition is compromised. As SMEs grow, they should be classified as corporates, however, if the bracket of measuring these enterprises is so large, when is the cut off? For instance, does it not compromise the SME definition if the enterprise is not balance sheet heavy and most of the transactions are off balance sheet? Storey (1994) argued the EC definition of SMEs hampers growth for these enterprises, as they mostly end in the category and never graduate to corporates, despite failure rates in this sector.

China Liu (2008) states that defining an SME in China is complex, it can include large firms, depends on the industry category, is based on the number of employees, annual revenue, and total assets comprising a company. This is yet another country that uses financial assets as part of defining small and medium enterprises. In his study, he highlights further the differences that might arise in defining SMEs in comparison to other countries. For instance, an industrial SME in China is defined as having up to 2 000 employees, while a medium-sized business has between 301 and 2 000 employees, and a small business has fewer than 300. Thus, what is regarded as an SME in China may be largely relative to SMEs in other countries. Elaian (1996) highlighted the United Nations Industrial Development Organization (UNIDO) also defines SMEs by number of employees by giving different classifications for industrialised and developing countries. Industrialised firms had a much wider bracket, where medium firms have 100–499 employees and developing countries had much narrower brackets.

Considering the definitions, one would ask then, is the number of employees still relevant in defining SMEs, also, must the definition be homogeneous across countries? Other than the number of employees, the common factor so far stays the sectoral differentiation. As it is clear from the various definitions, there is no consensus over what makes up an SME. Definitions vary across industries and across countries. It is important now to examine definitions of SMEs given for South Africa. The formal definition of SMEs in the National Small Business Amendment Act 26 of 2003 (Republic of South Africa, 2003), splits them into small, very small and micro businesses. The distinction is also according to the industry in which they operate. A comprehensive definition of an SME in South Africa is therefore any enterprise with one or more of the following characteristics:

- Fewer than 200 employees;

- Annual turnover of less than ZAR64 million;
- Capital assets of less than ZAR10 million; and
- Direct managerial involvement by owners.

To define SMEs, the study borrows from Falkena et al.'s (2001) work, which gives a detailed breakdown according to the five categories of business used as framework in South Africa, defining the National Small Business Act, as follows:

- **Survivalist enterprise**: The income generated is less than the minimum income standard or the poverty line. This category is considered pre-entrepreneurial, and includes hawkers, vendors and subsistence farmers. (In practice, survivalist enterprises are often categorised as part of the micro-enterprise sector.)
- **Micro enterprise**: The turnover is less than the VAT registration limit (that is R150 000 per year). These enterprises usually lack formality in terms of registration. They include, for example, spaza shops, minibus taxis and household industries. They employ no more than five people. (Will not form part of our SME discussion for this study)
- **Very small enterprise**: These are enterprises employing fewer than 10 paid employees, except mining, electricity, manufacturing and construction sectors, in which the figure is 20 employees. These enterprises operate in the formal market and have access to technology. (Will not form part of our SME discussion for this study)
- **Small enterprise**: The upper limit is 50 employees. Small enterprises are generally more established than very small enterprises and exhibit more complex business practices. (Will not form part of our SME discussion for this study)
- **Medium enterprise**: The maximum number of employees is 100, or 200 for the mining, electricity, manufacturing and construction sectors. These enterprises are often characterised by the decentralisation of power to an additional management layer. This is our area of interest for this study.

Table 2: South Africa's SME definition in the National Small Business Act

Enterprise Size	Number of Employees	Annual Turnover (in South African rand)	Gross Assets, Excluding Fixed Property
Medium	Fewer than 100 to 200, depending on industry	< ZAR4 million to ZAR50 million, depending on industry	< ZAR2 million to ZAR18 million, depending on industry
Small	Fewer than 50	< ZAR2 million to ZAR25 million, depending on industry	< ZAR2 million to ZAR4.5 million, depending on industry
Very small	Fewer than 10 to 20, Depending on industry	< ZAR200 000 to ZAR500 000, depending on industry	< ZAR150 000 to ZAR500 000, depending on Industry
Micro	Fewer than 5	< ZAR150 000	< ZAR100 000

Source: Falkena et al. (2001)

The South African Institute of Chartered Accountants (SAICA) SME insights report (2015) shared results of a survey of 800 enterprises conducted where the effectiveness of small and medium enterprises policy was analysed. The findings showed that most of the SMEs struggled with the red tape in starting a business and compliance with legislation, which they recognised was important, however, asked for a more balanced approach. In addition, it found that labour laws in this sector were a challenge and these businesses would prefer some leniency regarding these laws. Rather, they requested a specialised labour law for small to medium enterprises. Tax incentives for growth and employment were another contentious issue among entrepreneurs. They felt that if the government wants them to create employment, they should provide incentives that would be helpful, specifically to small enterprises. In the question of return on investment for government, the entrepreneurs wanted the policymakers to encourage SMEs to do more business with the government and create platforms that enable such. For instance, it is mostly once SMEs reach the ZAR2 million-turnover mark that they can practically start creating employment (SAICA, 2015). Another major finding was that SMEs looked to the government and its institutions to provide financial support, as well as technical support, in a form of advisory skills and expertise.

Storey's 1994 analysis showed that out of every 100 new enterprises only 40 survived for a decade. Of these, the largest 4 provided half the jobs in the surviving firms, implying that 4% of those that started ended creating half the jobs. Besides this, it highlights the SME policy needs an active collaboration and a change in approach from two groups, the policymakers and the entrepreneurship research community. For instance, when the two parties are working together, it is easier for policymakers to set policies that will address the pain points of small businesses ensuring that they last longer and eventually graduate to big corporates. It is

concerning that SMEs are still suffering with basic issues such as lack of funding and technical support. It has been said that SMEs suffer from short termism from their management style, due to their lack of training. Research highlights the quality of management is important for SMEs, which must be able to adapt quickly to changing markets and circumstances, but which often have limited resources (OECD, 2002). Research also highlighted that formal management training can reduce the failure rates of small firms, in the early years and that it is affected by policy. According to Storey (1994), there is arithmetic merit in providing support for a tiny minority of new and small firms, however, he notes that this is difficult and can be impossible to deliver. In the crux of it all, the impact of the short termism of political regimes brings many changes to SMEs, often changing policy with each political party change. Governments have their own objectives, which at most times clash with the wellbeing of these small businesses, which seek some form of stability in their already turbulent lives.

2.2.1 The significance of SMEs in the South African economy

Having defined SMEs as businesses, it is important to discuss the significance of these enterprises on the country's economy. The importance of SMEs in South Africa was discussed earlier in that they make up 91% of formalised businesses, contributing to 60% employment of the labour force and 34% to the Gross Domestic Product (GDP). Globally, the importance of this sector cannot be ignored. The World Bank (2015) echoed that "formal SMEs contribute up to 60% of total employment and up to 40% of national income (GDP) in emerging economies, noting the stats are significantly higher when informal SMEs are included". Blueprint Strategy & Policy (2005) report emphasised that South Africa's SME sector is expected to fulfil several roles ranging from poverty alleviation and employment creation to international competitiveness. Realising this responsibility, government raised the status of its small business initiatives with creating a department dedicated to this cause in 2014. The Department of Small Business Development (DSBD) was given an initial budget of approximately ZAR1 billion. The South African Government (2013) has a National Development Planning (NDP) Vision 2030, of which part of it is "to reduce unemployment by 6% in 2030" and at the forefront of this development plan are SMEs. It is through SMEs that the government will realise this vision and goal, therefore the DSBD was formed. In the 2017/18 national budget proceedings, it was noted that SEFA disbursed just over ZAR1 billion to SMMEs and Cooperatives in the 2016/17 financial year, which benefited roughly 44 000 enterprises. The DSBD stands confident that if the same momentum is kept on developing SMEs, it will contribute towards achieving the target of 90% of the 11 million jobs, according to the NDP 2030 (Zulu, 2017).

The significance of the role played by SMEs in job creation by the government has been noticed and as a result, the sector prioritised. In doing so, alliances have been created on an international front, as well to drum up support for small enterprises in the country. For instance, having noticed that access to markets hampers growth and development of SMEs, the DSBD has launched the following initiatives to address the gap: a Global Entrepreneurship Congress (GEC) and Global Entrepreneurship Network Africa (GEN Africa). The GEC was hosted in March 2017 and a first on the continent, which established the GEN Africa. As the engagement was hailed a success, African countries are collectively planning to host the first GEC Africa in 2018. These engagements are sought to promote entrepreneurship to improve Intra Africa Trade among small businesses in Africa. Minister L. Zulu (2017) mentioned that a EUR52 million multi-year grant has been decided with the European Commission, to support employment creation through small businesses.

2.3 Qualifying for FDI projects

2.3.1 What is FDI?

Foreign direct investment (FDI) is investment by a resident entity of one economy in an enterprise that is resident in another economy, implying the existence of a long-term relationship between the direct investor and the direct investment enterprise and a significant degree of influence on the management of the latter (Duce, 2003). It is the purchase of income-generating assets in a foreign country that entails the control of the operation or organisation, distinguishing it from portfolio foreign investment, which is the purchase of one country's securities by nationals of another country as the element of control. Therefore, FDI is not just a transfer of ownership, as it usually involves the transfer of factors complementary to capital, including management, technology and organisational skills. Direct investment involves both the initial transaction establishing the relationship between the investor and the enterprise, and all subsequent capital transactions between them and among affiliated enterprises.

OECD (2008b) defined FDI as investment that reflects the objective of obtaining a lasting interest by a resident entity in one economy ('direct investor') in an entity resident in an economy other than that of the investor ('direct investment enterprise'). The lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence on the management of the enterprise (IMF, 2005).

Goldin and Reinert (2006) also defined FDI as the acquisition of part of a foreign-based enterprise that exceeds a threshold of 10%, implying managerial participation in the foreign enterprise. Pick and Worth (2005) further define foreign direct investment as the cross-border capital flow in which a firm creates or acquires control of a subsidiary in another country. Reddy (2009) states that:

> FDI helps in the technological development of a particular country where the investment is being made. It also permits the transfer of technologies. This transfer of technologies can better be accomplished only by way of trading of goods and services with investment of financial resources. FDI helps in the creation of new jobs and even in increasing the salaries of the existing workers in the same sector.

Foreign firms entering the local jobs market often benchmark the salaries they will be paying to the workforce based on their home ranges. Every so often, these salaries are usually higher than the local salaries earned by the workforce. Especially in instances where MNEs interact with developing and transitioning economies, placing pressure on the rest of the industry to align their remuneration with the new competition.

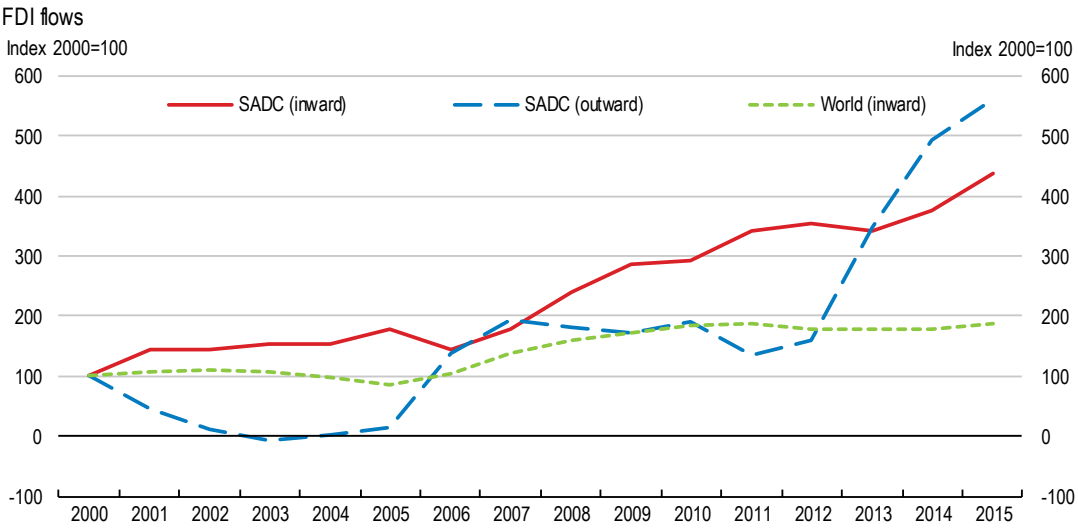
UNCTAD WIR (2009) defines FDI as an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate). Relocating or starting a business in another country can be regarded as FDI from the host country's perspective, as FDI is not limited to enterprises only and impacts individuals. Two types of FDI are often mentioned, namely outward and inward FDI. Outward FDI refers to investment by home-based multinational firms in production and marketing in foreign countries, while inward FDI is investment by foreign firms in production and marketing in the domestic or host country.

2.3.2 Trends of FDI

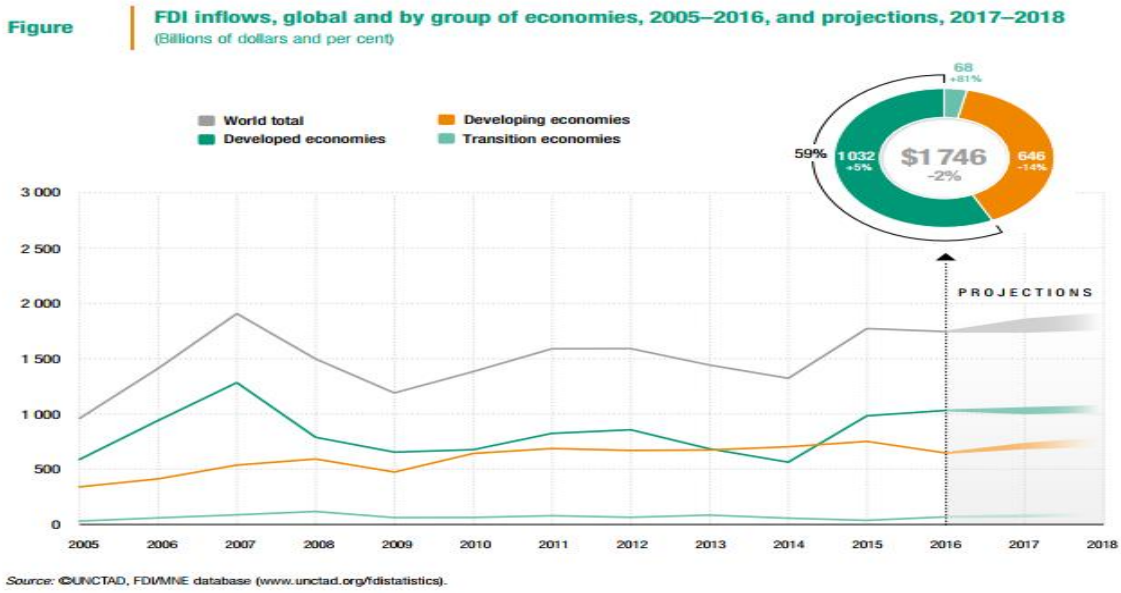
FDI flows are flows from inward direct investment made by non-resident investors in the reporting economy and outward direct investment made by the residents of the reporting economy to external economies. UNCTAD (2017) reported that global FDI flows fell 2% in 2016, reaching US$1.75 trillion, from US$1.76 trillion in 2015, despite weak global economic growth compared to the prior year as developed economies increased their contribution of FDI flow to 59%. The 2015 flows were at their highest level since the global economic and financial crisis of 2008–2009; however, they remained slightly over 10% short of the 2007 peak, as presented in Figure 1:

Figure 1. Global FDI inflows

Figure 1. SADC experienced a rapid increase of inward investment over the past 15 years



Note: FDI flows correspond to 5-year moving average, where the reported year corresponding to the latest of the 5 years.
Source: UNCTAD, World Investment Report 2016.



In contrast to the developed economies, developing economies showed steady growth in FDI flows over the period of ten years to 2015, showing that investors worldwide considered developing economies as a desirable destination for potential growth for investments. The recent decrease in inflows is still lower than the decrease experienced during the economic downturn in 2009. While the rest of the developed economies saw a stagnant trend in FDI flows, developing economies experienced the opposite from 2009 onwards. However, a recovery was noted in developing economies from 2015 to 2016. South Africa though, has been moving in a different direction to the rest of the world. The FDI flows in South Africa have seen a constant decline on average since 2006, with the highest levels recorded around 1994. South Africa saw

a 31% increase in FDI inflows in 2016. The flows remained at a relatively low level of US$2.3billion, from the US$1.8 billion record low in 2015, which was due to the depreciated economic performance, low commodity prices and higher electricity costs (UNCTAD, 2016). The stability in electricity production and costs boosted investor confidence in the economy; however, much has happened since 2016. The continued underperformance by South Africa has finally earned the country a downgrade in the economy where its impact is yet to be felt, especially on the FDI space. Despite the poor performance, there is an increase in South-South FDI, with state-owned Beijing Automotive International Corporation (China) agreeing to build a US$759 million automotive plant—the biggest investment in a vehicle-production facility in the country in four decades (UNCTAD, 2017).

The overall trend of FDI flows in South Africa shows a decline in net flows over the years, owing to factors such as lower commodity prices, weaker demand from main trading partners, and depreciating national currencies. The 2017 UNCTAD's Global Investment Trends recorded a modest 2% recovery in FDI flows, owing to a combined upturn of economic growth in major regions. Improved corporate profits will boost business confidence and thus MNEs' appetite to invest. Increased geopolitical risks and regional tensions continue to threaten global investments and FDI flows in both developed and developing economies. Growth is projected to resume in 2017 globally, however, South Africa might get a different realisation with the recent downgrade of sovereign bonds to junk status. 2017 might prove to be an even tougher year.

2.3.3 Funding for FDI projects

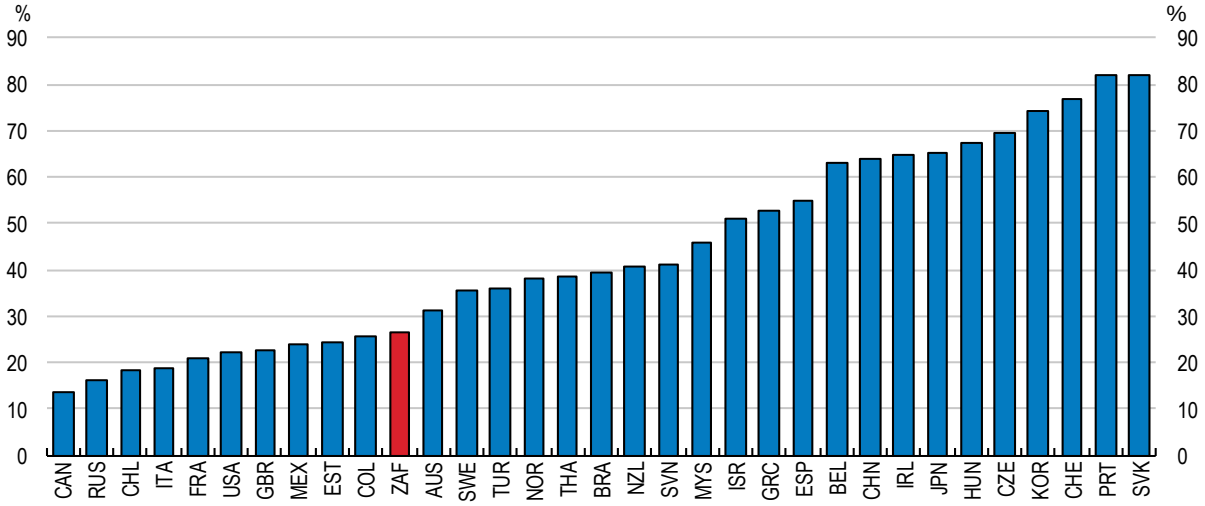
The activity recorded, how does it affect funding SMEs for FDI projects, when FDI has been so unstable in recent years? Several studies have been conducted on financing SMEs and it is widely acknowledged that SMEs in general are subject to great financing constraints. The transaction costs for SMEs have not been at a fair price that reflects the true risk of the company financed, where financiers price the risk of this unstable sector. Collier (2009) found the lack of access to SME finance in Africa due to the high-risk assumption for the continent to other regions. Also, providing finance for small firms is rated as riskier than for large firms. Unfortunately, for SME development, the role of finance is a critical one. Cook and Nixon (2000) noted that despite SMEs' importance in the development of many developing countries, it is constrained by the limited availability of financial resources in meeting various operational and investment needs. The access to capital is limited by the capacity to raise collateral, where traditional finance will most likely not take on a risk that may not be mitigated. How then do

these enterprises deal with the funding gap they are experiencing and how well can it be addressed so to take advantage of FDI that hailed as a driver of growth, both for the enterprise and the economy? De Maeseneire and Claeys (2010) found more severe financing constraints for FDI than for domestic projects for many SMEs. Contributors to these constraints were the volatile returns, information problems and lack of collateral that often characterises FDI. They further continue the credit evaluation for SMEs' projects by financiers. The capital gearing method used by banks worsened the financial constraints, as these models were designed for big corporates, thus not a fit for SMEs.

It has been well researched that inadequate access to external finance improperly hampers economic growth and welfare. However, not much research has been conducted on the financing gap for SMEs in FDI projects. Studies have focused in SME internationalisation (Smallbone, 2006), its benefits and drawbacks, as well as exports. There is little empirical verification of the alleged FDI finance gap, thus very little insight exists on the behaviour of FDI projects on SMEs. This study will aim to discover the criteria on qualifying SMEs for these projects. SMEs are clearly disadvantaged compared to large firms (see Figure 2 below). It is expected that when enterprises are considered for FDI projects, there must be different categories for different types of enterprises participating, to level the playground.

Figure 2. SME lending

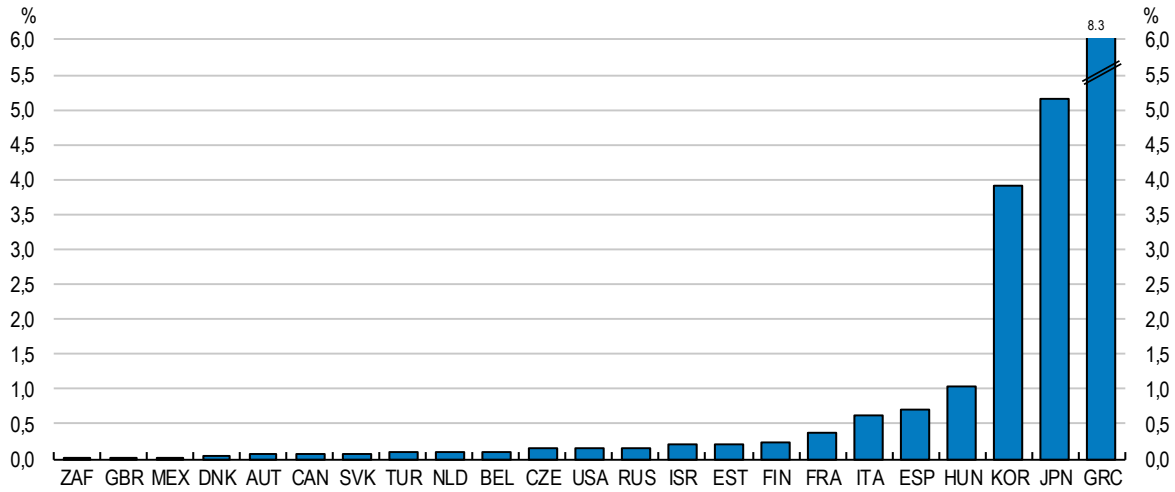
As a percentage of total business lending, 2015 or latest



Note: Definitions differ across countries. Data for South Africa are for 2016.
Source: South African Reserve Bank; OECD (2017), Financing SMEs and Entrepreneurs 2017: An OECD Scoreboard; OECD calculations.

Figure 3. Government guarantee to SMEs

Government loan guarantees as % of GDP, 2015 or latest



Note: Data for South Africa are all guarantees provided by SEFA to financial institutions at 31 March 2016.
Source: OECD (2017), Financing SMEs and Entrepreneurs 2017: An OECD Scoreboard; SEFA Annual Reports; OECD Economic Outlook database

Figure 2 depicts a graphical view of South Africa's ranking globally on its lending to SMEs as a percentage of total business, as by OECD scoreboard. As can be seen from the graph, SMEs receive less than 27% of credit extended to businesses in the country. In comparison to other

developing BRICS countries, this figure puts South Africa 13% behind Brazil and 37% behind China. For a country, delegating majority of its economic growth to SMEs, not much has been done for financing these enterprises. It proves that much work is needed in understanding how to create a sustainable and efficient funding model. Figure 3 further highlights the funding gap in the SME market. Further, it highlights the support or lack thereof of government in funding SMEs for development. As previously noted, commercial financial institutions will most likely never take on a high-risk client without pricing the risk into the finance extended to the business. Therefore, government plays a crucial role in standing as surety for the enterprises that require such aid and reducing the transaction costs. The information provided by SEFA on guarantees they have extended to small businesses, shows the financial institution has much ground to cover in financially supporting SMEs in the country.

2.4 Foreign direct investment linkages and its impact on SME development

When thinking FDI, several questions come to mind. What does FDI do for the country? Does FDI essentially contribute to small and medium scale business development? If FDI is so effective in contributing to growth, what measures are taken to increase and promote it? Literature supported by several empirical evidence always points to the view that foreign firms, through FDI, do transfer technology to their affiliates. This process can allow spill over to unaffiliated firms in the host economy, which in turn could lead to growth through productivity and efficiency gains by local firms (Tülüce & Doğan, 2014). Evidence in Nigeria suggests that FDI promotes productivity by causing both technological and efficiency spill over to local firms, encouraging innovation in the small and medium scale businesses, allowing technology adoption and developing human capital (Dutse, 2008). In Mozambique, FDI was found to have spill over effects where local enterprises have gains of productivity, efficiency and competitiveness resulting from technology and skill transfer from foreign firms. However, it also highlighted challenges and constraints on productivity, efficiency and competitiveness gains due to limitation of local enterprises in providing goods and services of quality and on time, the lack of absorption capacity by local firms to benefit from skilled workers, and the lack of government strategy to articulate this dynamic of FDI and create necessary synergy and linkages for development (Massingue da Costa, 2012). Furthermore, Ayanwale and Bamire (2001) reported a positive spill over of foreign firms on domestic firms' productivity that are dominated by the small and medium scale businesses in Nigeria.

Subair and Salihu (2011) contradicted the theme by finding that FDI on its own had contributed negatively to developing small and medium scale enterprises in Nigeria, through the MNEs. Citing that it attributed to low profit expectation in small and medium scale businesses alluding to the MNEs being more risk averse. It is expected that not all interactions with FDI will lead to developing SMEs. Crowding out of local businesses can be stated as one of the side effects of FDI, where local enterprises fail to compete with the technology as well as the efficiencies presented by foreign firms in the market. This is the part that government policy must play in strengthening the foundation on which these businesses are built, by offering advisory services as well as technical support to these firms. Government policy would enable internationalisation of small and medium enterprises, by building a support structure around SMEs through training and technical support.

Ram and Zhang (2002) suggested that damaging and undesirable effects of FDI might be worsened if the technology transferred is inappropriate for developing countries leading to crowding out of local investors. Wilson (2006) found that internationalisation was increasingly important to the competitiveness of enterprises of all sizes. Stating that, SMEs that start with a global strategy move quickly in taking advantage of cross-border activities, which provide opportunities not only for revenue growth but also for the exchange of knowledge and enhancing capabilities, which strengthen the long-term competitiveness of the firm. This support can promote the small-scale businesses often relegated to the background, despite their importance as a catalyst of economic growth.

Research has suggested there may be greater scope for developing linkages in the future than in the past with the world getting more technologically advanced and thus business relations as well. Dunning (1992) refers to relations between countries revolving to more than just import and export related transactions, but, one that creates a permanent link between economies across regions. Setting up vehicles that determine trade, its effectiveness and productivity has been the driving force for FDI agreements through MNEs. Furthermore, Svetlicic and Rojec (2003) highlight the change FDI has brought into the global economy, where cross border investments have forced enterprises to internationalise their activities to survive stiff competition. This has led to the increase in SMEs internationalising their operations rather than basic trade. The shift from pure industrialisation sees manufacturers investing in service related activities creating distribution networks for sales of their products. This has led to a continued increase in outsourcing by MNEs, giving local SMEs a chance and exposing them to tough competition.

While the competition may present challenges to SMEs in transition and developing countries, they also present excellent opportunities for growth.

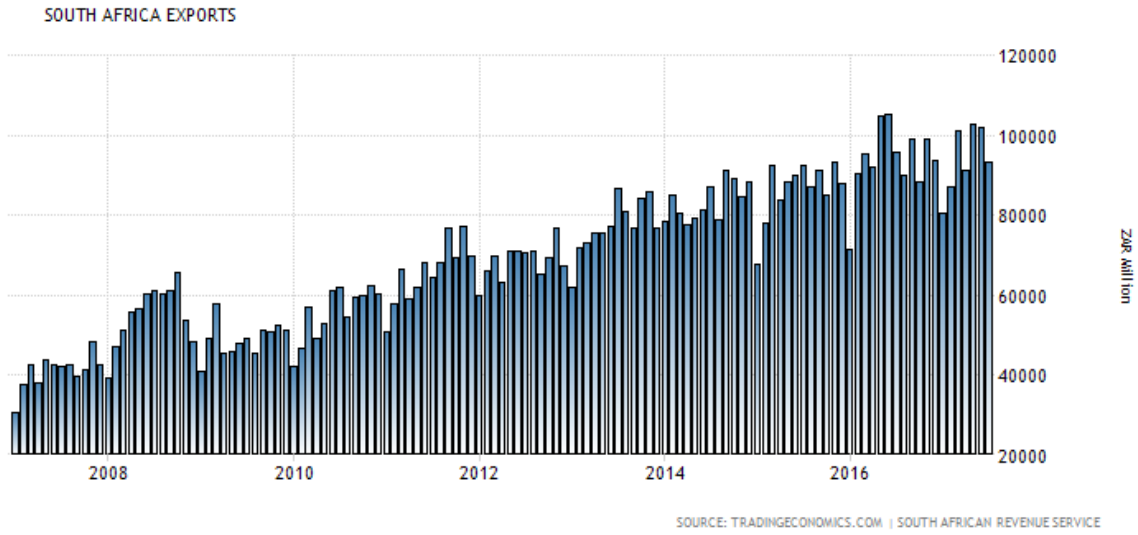
UNCTAD (2000) upholds that FDI contributes to economic growth through technology transfer, with the multinational entities transferring technology either directly to their foreign owned enterprises or indirectly to domestically owned and controlled firms in the host country. Echoing this sentiment, Smallbone (2007) states that linkages may happen with technology partners, where MNEs may initiate common projects with native SME partners, including joint ventures, licensing agreements and strategic alliances, which are an important potential source of technology and expertise for firms in the host economy. Despite the fierce competition that MNEs bring, domestic firms may learn from the foreign firms by collaborating with them. For instance, in the supply chain there will be a greater tendency that the foreign firm will transfer the management, production and technology expertise to their local suppliers, strengthening the transfer of technology and skills. In outward FDI, Akinboade et al. (2005) highlighted the importance of the role that South Africa played in extending FDI to the rest of the continent, stating the new inter-industry linkages formed with domestic producers of raw materials, were an essential ingredient in the economic transformation of the host countries.

Furthermore, on FDI linkages analysis, Malikane and Chitambara (2017) found that FDI had a direct positive effect on economic growth and that democracy was a significant driver of that economic growth. Where democratic institutions benefitted more from FDI spill overs making it key to the nation's absorptive capacity. They further suggested that a policy implication emerging from their empirical analysis was that Southern African countries should sustain the institutional reform policy agenda already in place to benefit more from the significant inflows of FDI. In addition, policymakers should implement policies aimed at restricting some of the excesses of MNEs, such as uncontrolled profit deportations as well as overall monopolistic tendencies and not discriminate against local investors.

Literature has always highlighted the importance of FDI with many scholars proving its role in economic growth; however, it is important for the country to attract the right FDI, one that will lead to that economic growth. Akoto (2016) and Mijiyawa (2016) found that FDI was important to South Africa's export led strategy, as it led to an increase in export, provided the right FDI was attracted. The continent's policymakers should also endeavour to improve management of nominal exchange rates as a means of stimulating exports. The FDI that will lead to a boost in

exports is one that will develop local SMEs and build their capability to increase productivity leading to exports from South Africa. The country needs this investment to attract and safeguard with policy directly aimed at stimulating and channelling FDI into SME capacity building and encouraging domestic firms in export activities. As exports are persistent over time, getting started is important so the country can have the potential to generate a self-sustaining process of export growth.

Figure 4. Exports in South Africa over 10 years



The MNEs in SA have created linkages with the local enterprises, especially in the automotive industry. Toyota, a Japanese automotive company, created linkages with local businesses to distribute spare parts, for example. The manufacturing plant was set up in Durban and realised they needed a distributor of spare parts for after sales service to customers that might not be able to reach their premises for assistance. As of 2017, they have started building a Durban Automotive Supplier Park (DASP), which, according to Ngcongo (2017), will include a large-scale exhibition, conference and learning tours for the public. The centre is expected to offer a powerful platform for trade, investment and meaningful engagement between suppliers and buyers. There are definitely high expectations from this centre, as it is projected to make a significant contribution to increasing levels of localisation in the automotive value chain, by bringing key national and international industry players together. This sort of platform is key to unlocking the development of small enterprises in the country, provided they are equipped and enabled to take part in it. Knowing all the challenges clouding the SME space, information asymmetry is the toughest one, as the ability of managers and entrepreneurs to interpret and adapt to this opportunity is not levelled and depends on their skill and expertise. Further

emphasising the need for government and developmental institutions to support these entrepreneurs in improving their skills and providing advisory as well as technical expertise in utilising such opportunities. This automotive development in Durban promises to provide trading spaces for over 20 local informal motor mechanics and panel beaters, the numbers may be small, but it still acts as a breeding ground for future corporates.

The motive for investment determines the level of FDI a country can attract as well as the direction it will take. Whether it is to seek natural resources, seek new markets, restructuring foreign production, or seeking new strategic assets, it affects the level of FDI into the country. Ndikumana and Verick (2008) concluded that resource intensive versus non-resource intensive countries attracted a different kind of FDI, where the latter crowded in more public investment in relation to the former. In the African continent, it was documented that domestic private investment was a crucial factor in increasing the FDI into the country. Countries that did not depend on the natural resources invested more into developing the economy, by building sustainable infrastructure, which enabled trade and has policies that encourage private sector involvement in investing in the economy. For South Africa, this type of investment would mostly be in the form of SMEs that participate in the economy, making it easier for foreign businesses to transact with local ones, despite the usual "resource drain" found mostly in the continent.

On forward linkages of FDI in South Africa, most of the investments made solely depend on infrastructure, as this type of investment becomes wasteful without the proper infrastructure to distribute the product. The likes of Vodacom and MTN have invested in the continent's telecommunications industry; part of the decision-making was whether these countries could handle such an investment and whether it would be profitable (Mhlanga et al. 2010).

2.5 Empirical Evidence

Previous literature on the relationship between FDI and SMEs has concluded that inflows into a country have numerous benefits associated with them. Tülüce and Doğan (2014) found that FDI could affect labour and capital markets, trade patterns and economic growth. These firm-specific advantages may result in technology transfer from the parent firm to its affiliate in the host country of investment and related spill over effects in the host economy by firms.

Numerous literature has accounted for the direct impact of FDI on local enterprises. Where these benefits cannot be identified, the externalities linked to the investment opportunity are identified. The negative externalities being the crowding out of local enterprises by foreign enterprises in instances where they are competing for the same group of customers. On a positive note, the entrance of foreign entities in the market has led to introducing new technology and products, creating a savvier customer. This forces the local enterprises to adapt improved technology for their offering, as well as keeping up with the foreign entities, leading to growth of businesses. Albulescu and Tămăşilă (2014) discuss the externalities of FDI on SMEs, adding that to survive the entity often depends on the motivation for entrepreneurship, where necessity driven and opportunity driven enterprises showed different reactions to FDI. The study conducted showed that opportunity driven enterprises were positively affected by inwards FDI, where necessity driven enterprises did not have a quantifiable result. Outwards FDI positively affected necessity driven enterprises where opportunity driven enterprises were not favoured. This highlights that competition often has an adverse effect on SMEs overall, as when playgrounds are not levelled, most enterprises cannot survive.

Li (2001) found the absorption of FDI by SMEs depended on the innovative business solutions offered, as well as the location of the small businesses. For instance, areas with high economic activity are the ones with more technologically advanced solutions and they leveraged the most from FDI flows into the country. Li's paper analysed the relationship between absorbing FDI and developing SME, as well as correlating the SMEs' technical level and FDIs' absorption. The result showed absorbing FDI can promote the technical level of the SME (Li, 2001). In his study, Lal (2004) discovered that SMEs with e-business fared better in the exports market, as they could reach a wider range of customers compared to SMEs with traditional business systems. This highlights promoting technology in business activities, as it enables improved record keeping and an audit trail of some sort, should the businesses need external funding. These facilities help in tracking essential key performance indicators for business, like sales records and a customer base.

> To effectively leverage FDI to achieve technology transfer and diffusion, developing countries need to establish an effective national innovation system (NIS). This provides an interface for technology-related TNC activity, whilst supporting developing the absorptive capacities of domestic enterprises and their linkages with TNCs. Furthermore, it provides a regulatory framework, including a

balanced framework for intellectual property that enables developing a knowledge base and technological capacities" (UNCTAD, 2011).

In this insert, the role played by government in enabling the development of SMEs is highlighted. The most important part being, that without the supporting policy to assist SMEs to leverage off the FDI benefits into the country, not much can be done by TNCs alone. South Africa has a free trade policy, where foreign capital flows are not restricted in and out of the country and trade with foreign countries is encouraged. However, there is no published report on how these agreements are meant to benefit local small businesses, as it is on a national level. There is a need for a policy that will guide interaction of FDI with SMEs as well as Research and Development (R&D) programmes for SMEs to enable them to take part in the global economic activities, as they cannot afford to undertake these projects in their own capacity. Participation of small local firms with transnational companies can be in the form of supplying agricultural inputs into producing consumable goods and providing parts. as well as other parts into manufacturing products. All these services need good, reputable and high-quality products to engage transnational businesses, further increasing the role of government in providing development assistance to small business so they can take part in international trade.

Malikane and Chitambara (2017) found that FDI had a direct positive effect on economic growth and that democracy was a significant driver of that economic growth. Where democratic institutions benefitted more from FDI spill overs, making it key to the nation's absorptive capacity. A higher growth rate is expected to attract more FDI, since a rapidly growing economy offers relatively better opportunities for making profits (Mhlanga et al., 2010). Akoto (2016) and Mijiyawa (2016) found that FDI was important to South Africa's export led strategy, as it led to an increase in export, provided the right FDI was attracted and the continent's policymakers also endeavour to improve management of nominal exchange rates as a means of stimulating exports.

Trade openness is a measure of trade volume of the host economy that is measured as a percentage of the sum of exports and imports to GDP (Asiedu, 2002; Chakrabarti, 2001; Morisset, 2000; Nonnemberg et al., 2004; Marial & Teng, 2009). Anyanwu (2012) argued the export-oriented regimes pursued by the countries in their study have contributed to the positive relationship between trade openness and FDI. Masuku and Dlamini (2009) showed positive

relationships between trade openness and FDI due to lower transaction costs associated with liberalised trade regimes.

In most economies, infrastructure development as part of the decision-making was whether these countries can handle such an investment and whether it would be profitable (Mhlanga et al., 2010). Alaya (2004) studied how FDI can be favourable in the Mediterranean and found that economic growth, openness and infrastructure development have a positive and significant effect on FDI. Bouoiyour (2003) studied the deciding factors of FDI in Morocco and found that market size, infrastructure and openness have a positive impact on FDI; however, inflation had negative impact on FDI. The significance of market size lends support to the market-seeking hypothesis that has led past studies to recommend regional cooperation among countries (Mhlanga et al., 2010; Asiedu, 2002).

Marial and Teng (2009) researched the domestic short-run and long run factors that influence FDI flows into Malaysia using ARDL. The results of the long-run FDI equation showed that FDI flows in Malaysia are positively influenced by real exchange rate, GDP growth, infrastructure and openness, while negatively by exports. In the short-run, FDI flows were negatively influenced by its own lags, GDP growth, infrastructure and exports, while positively affected by economy's openness and real exchange rate variables. Wadhwa and Reddy (2011), Udoh and Egwaikhide (2008), and Ahn et al. (1998) all showed that inflation was negatively related to FDI. The reasons for this negative relationship are that inflation leads to macroeconomic instability and is a potential risk for foreign investors.

Egger and Winner (2005) claimed that corruption was beneficial in evading regulatory and administrative restrictions hence, the positive relationship with incumbent firms, although this is a barrier to the entry of new foreign investors. Contrary to this, Habib and Zurawicki (2002) argued the operational inefficiencies that corruption generated in their sample accounted for the negative relationship between corruption and FDI.

CHAPTER 3:
METHODOLOGY

3.1 Introduction

This chapter outlines the methodology employed in this study. It begins with econometric methodology including model specification, data employed in the analysis, its sources and finally the transformations that have been performed on the data. The data was collected over a period of 17 years. There was an upward trend picked up from the data, this is typical of a developing economy, as over time when the economy grows, more activity is captured.

3.2 Research Approach and Strategy

This study followed a quantitative approach and was informed by positivist assumptions. As the study took the quantitative approach, it was used to answer questions about relationships among measured variables with the purpose of explaining, predicting and controlling phenomenon. This research adopted an exploratory approach of the impact of foreign direct investment and the growth of small and medium enterprises, to further examine the relationship.

Descriptive statistics were used to analyse the composition of the sample. Inferential statistical methods were used to draw conclusions beyond the immediate samples and data. The analysis in this quantitative research was carried out using multiple linear regression techniques, to estimate the static model in equation, as well as the principal component analysis to evaluate data. Data analysis covered descriptive statistics and regression analysis tools, which were performed using Statistical software EViews and Microsoft Excel. Variables included in the analysis, are explained below.

3.3 Model Specifications

3.3.1 Data

In this analysis, South African data is analysed covering the period from 2000 to 2016. Data availability ranged over the same period of year 2000 to 2016.

Table 3: Variables Definition

Variables	Description	Abbreviation
Foreign Direct Investment	Log Net inflows	FDI
Trade Openness	Sum of Imports & Exports (% of GDP)	TO
Macroeconomic Stability	Inflation rate per Consumer Prices	MES
Infrastructure Development	Log Mobile and telephone subscriptions	ID
Political Risk	Corruption Perceptions Index (CPI out of 100)	PR
Return on Investment	Log GDP per capita PPP	RoI
Innovation	Research and development expenditure (% of GDP)	INN
GDP Growth Rate	GDP Annual Growth Rate	GG
Market Size	Log GDP	MS
Small and Medium Enterprises Development	Turnover of small businesses across all industries divided by the turnover of all business sizes across all industries	SME

3.3.2 Empirical model

Two static models were estimated in determining the impact of FDI on SME development in South Africa as well address the empirical objectives.

To determine the drivers of FDI, we have the following equation:

$$FDI_t = \beta_0 + \beta_1 RoI_{t+}\beta_2 PR_t + \beta_3 TO_t + \beta_4 ID_t + \beta_5 MES_t + \beta_6 INN_t + \beta_7 GG_t + \beta_8 MS_t + \varepsilon_t$$

$t = 1 \ldots t$

where:

β_0 is the constant parameter / intercept

$\beta_1 - \beta_8$ the coefficients to independent variables

- FDI_t is the log of net inflows of foreign direct investment
- RoI_t represents the return on investment for investors
- PR_t corruption index is used as a proxy for the political risk for the country
- TO_t trade openness is measured by the sum of exports and imports as a % to GDP
- ID_t represents the infrastructure development
- MES_t represents the macroeconomic stability measured by the inflation rate
- INN_t represents level of innovation depicted by the R&D expenditure as a % to GDP
- GG_t is the GDP growth rate

- MS_t represents the market size
- ε_t is the error term. Random errors are important as they depict the differences between the predicted dependent variable and the observed dependent variable values.

To determine the relationship between FDI and SME development, we have the two equations:

$SME_t = \beta_0 + \beta_1 FDI_t + \varepsilon_t$ ..... ***(1)***

Equation 1 is a simple linear regression testing the relationship of the SME development to FDI. The second equation below is a multiple liner regression, used in estimating the FDI, so to best identify which of the individual FDI drivers have a significant impact on SME development.

$$SME_t = \beta_0 + \beta_1 RoI_{t+}\beta_2 PR_t + \beta_3 TO_t + \beta_4 ID_t + \beta_5 MES_t + \beta_6 INN_t + \beta_7 GG_t + \beta_8 MS_t + \varepsilon_t$$

..... (2)

$t = 1 \ldots t$

where:

β_0 is the constant parameter / intercept

$\beta_1 - \beta_8$ the coefficients to independent variables

- SME_t is the dependent variable
- The independent variables estimate FDI as per description above.
- ε_t is the error term.

Autoregressive distributed lag analysis was used to estimate our time series equation. As time series data is often plagued with error, it is best to use this method, as it reduces standard errors as well as large variances in coefficients.

3.4 Data Collection, Frequency and Choice of Data

This study used annual adjusted data to reduce the extent of measurement error emanating from high frequency data. The period of collected data spanned from 1996 through to 2016 and a sample ranging from 2000 to 2016 was selected, based on the availability of data for all variables. This period was sufficient to capture the phenomena under review and presented complete data for testing. The data sources were Statistics South Africa (Stats SA) publications and databases, the World Bank Databank and OECD Statistics. The data included FDI inward flows, GDP growth rate, inflation, GDP per Capita, research and development expenditure, corruption perceptions index, mobile and telephone subscriptions as a % of the total population, the GDP, sum of imports and exports, and industry turnover contributions in South Africa.

3.5 Sampling

This study looked at macroeconomic factors and their impact on microeconomic elements. As a result, the population of the study looked at the South African economy for the macroeconomic factors, which are factors affecting foreign direct investment. For the microeconomic factors, the population was all SMEs in the country.

A sample was drawn from the SME population, looking at only the formal enterprises that contribute turnover between R2m and R50m, classified as small and medium enterprises as per the National Small Business Amendment Act 26 of 2003. The selection was not focused on location, age and industry however, the size of the enterprise in terms of turnover contribution was considered. The macroeconomic sample was selected based on previous literature conducted on the study, as mentioned below on the justification of variables section.

3.5 Justification of Variables

The macroeconomic factors used in this study were assessed through eight key variables: GDP growth rate, GDP, inflation, mobile and telephone subscriptions, sum of imports and exports, GDP per capita, research and development expenditure, as well as corruption index. The microeconomic factor looked at the turnover contribution of small[2] businesses in comparison to medium and large sectors in the economy. The GDP growth rate is expected to have a positive impact on the level of FDI in the country, as a well as stable inflation rate. In a similar sense, an economy that has high trade volumes is perceived as active and as a result, will attract investors globally to participate in that economy. A detailed breakdown of variables used in this study, based on the existing literature, is done below:

- GDP Growth rate

[2] **Statistics South Africa**

Annual Financial Statistics survey 2015 (AFS)

Trade industry DTI cut-off points

Industry	Small enterprises	Medium enterprises	Large enterprises
Wholesale trade	Turnover ≤ R144,0 million	Turnover > R144,0 million; Turnover ≤ R288,0 million	Turnover > R288,0 million
Retail and motor trade	Turnover ≤ R85,5 million	Turnover > R85,5 million; Turnover ≤ R175,5 million	Turnover > R175,5 million
Accommodation and catering	Turnover ≤ R27,0 million	Turnover > R27,0 million; Turnover ≤ R58,5 million	Turnover > R58,5 million

Source: National Small Business Amendment Bill - DTI 2003

The GDP growth measures the growth potential of the host economy. A higher growth rate is expected to attract more FDI since a rapidly growing economy offers relatively better opportunities for making profits Mhlanga et al. (2010).

- Return on Investment

The proxy used to measure this is the Log form of GDP per Capita PPP on current prices. This variable captures the return on the economy by participants and measures the return on investment by foreign investors.

- Political Risk

When investors decide on host economies to invest in, a significant number cite political stability as a major concern when looking at the country's risk profile (UNCTAD, 2016). The political stability signals the political risk you are exposed to. This is measured by the Corruption Perceptions Index (CPI). A higher CPI rating implies less corruption risk, thus is expected to result in more investment.

- Trade Openness

This is measured by the sum of imports and exports as a % of GDP. Trade openness is a measure of trade volume of the host economy that is measured as a percentage of the sum of exports and imports to GDP (Asiedu, 2002; Chakrabarti, 2001; Morisset, 2000; Nonnemberg et al., 2004; Marial & Ngie Teng, 2009).

- Infrastructure Development

This is measured by the number of mobile and telephone subscriptions as a % of total population in the country. Infrastructure development of the host economy is also crucial for investments. Good infrastructure is expected to lower transaction costs and boost productivity of investments (Mhlanga et al., 2010; Morisset, 2000; ShahAbadi & Mahmoodi, 2006). Therefore, the more developed the infrastructure, the more FDI flows are expected.

- Macroeconomic Stability

This is measured by inflation rate. The higher the inflation rate the less stable the environment thus a negative effect on FDI is expected. Additionally, unstable inflation rates affect the

investors' real returns and introduce an increased level of uncertainty in profitability that would be expected to reduce the level of FDI (Mhlanga et al., 2010).

- Innovation

This is measured by the research and development expenditure as a % to GDP. The higher the spending on R&D, the more innovative the country and thus higher levels of inward FDI is expected. FDI often leads to improvement in innovation and technology employed in business solutions. As a result, if the host economy invests in improving its technological abilities, it is expected to result in pulling FDI.

- Market Size

This is measured by the host country's domestic market that is proxied by the log of GDP. A large market size implies greater demand for goods and services and offers economies of scale for the investor (Mhlanga et al., 2010).

- Foreign Direct Investment

This is the level of inward FDI in the country and is measured by log FDI net inflows. The drivers to FDI are the variables discussed above.

Small and Medium Enterprises is the dependent variable and is measured by the turnover of small businesses across all industries, to the turnover of all business sizes across all industries (Thompson & Zang, 2015). To determine the impact of FDI on SME development, we assumed from the variables, that a strong correlation to FDI would have the same impact on SME development.

3.6 Data Analysis Techniques

3.6.1 Unit Root Test

When using Ordinary Least Squares in a time series, the assumption is the dependent and explanatory variables are stationary. The stochastic process of the dependant and explanatory variable is assumed stationary and ergodic and if not, it is nonstationary. Consequently, it is then assumed the OLS results are spurious unless the dependent and explanatory variable is co-integrating. Nelson and Plosser (1982) provide statistical evidence that many US macroeconomic time series have stochastic trends, and these are also called unit root processes, or processes integrated of order.

A non-stationary time series might need to be differenced more than once before it becomes stationary. A time series that becomes stationary after *d* number of differences is said to be integrated of order *d*. Granger and Newbold (1974) showed that de-trending does not eliminate the problem of spurious correlation, and the superior alternative is to check for co-integration for integrated processes. Thus, the standard current methodology for time series regressions is to check all time series involved for integration.

To conduct these tests, the Augmented Dickey-Fuller and Philips Peron tests were employed. It tests that a variable follows a unit-root process, where the null hypothesis is the variable that contains a unit root, and the alternative is the variable that was generated by a stationary process.

3.6.2 Multicollinearity Test

The pairwise correlation coefficients between the dependant and explanatory variables are estimated to identify potential sources of multicollinearity in the estimated model. Multicollinearity is a phenomenon in which one explanatory variable in a multiple regression model can be linearly predicted from the others with a substantial degree of accuracy. It is caused by the inclusion of a variable, which is computed from other variables in the data set and can result from the repetition of the same kind of variable.

This was analysed using the tolerance level and its reciprocal called Variance Inflation Factor (VIF). The VIF quantifies the severity of multicollinearity in regression analysis. It provides an index that measures how much the variance (the square of the estimate's standard deviation) of an estimated regression coefficient is increased because of collinearity. A VIF above 4 needs further investigation whereas, a tolerance level less than 0.1 combined with a VIF of 10 reflects problematic multicollinearity, warranting correction as a standard rule in statistics. To eliminate the issue of multicollinearity, the autoregressive distributed lag model used had unrestricted lags for the regressors to ensure that the data goes through enough lags to eliminate it.

3.6.3 Co-integration

Co-integration is an econometric concept that imitates the existence of a long run equilibrium among underlying economic time series that converges over time. It is an important property in modern time series analysis, as time series often have trends that are either deterministic or stochastic. Co-integration establishes a stronger statistical and economical basis for empirical

error correction model (ECM), which brings together short run and long run information in modelling variables (Nkoro & Uko, 2016). It is ideal for determining the presence of equilibrium between variables and is a requirement for economic models using non-stationary time series data such as in this study.

If the variables do not co-integrate, the regression is said to be spurious and the results meaningless. Therefore, it is important that the non-stationary variables do co-integrate. In this study, the researcher used the Autoregressive Distributed Lag (ARDL) co-integration technique or bounds test of co-integration by Pesaran and Shin (1999) and Pesaran et al. (2001). This approach determines the long run relationship between series that are a non-stationary as well as realign them to the Error Correction Model (ECM). The realignment result gives the short run dynamics and the long run relationship of the underlying relationship. The robustness of this technique was determined by using the bounds test of co-integration, thus testing for a long run relationship between the underlying variables. This long run relationship was detected through using the F-statistic (Wald test). The long run relationship is said to be established when the F-statistic exceeds the critical value band.

The advantage of this technique is its efficiency in a single long run relationship with small sample data, as in this study. In this instance, the ARLD's ECM representation becomes relatively more efficient. Equally important is the interpretation of the ECM coefficient, as it measures the speed of adjustment, thus showing how much of the disequilibrium from the previous period is being adjusted. A positive coefficient indicates a divergence, whereas a negative coefficient indicates a convergence. The coefficient must not be zero, as that claims there is no adjustment and presumably no long run relationship.

The choice of using the ARDL co-integration technique was informed by this study's small sample size and that the variables co-integrated in order I (0) and I (1). The ARDL can distinguish between dependent and explanatory variables (Pesaran et al., 2001). One major rule not to be broken by this approach is to ensure that none of the variables shows an integrated stochastic trend of I (2) and for this study, it was eliminated in the unit root testing.

3.6.4 Autocorrelation Test

When the data set being studied presents multicollinearity, it is necessary to determine the level of autocorrelation amongst the variables. Autocorrelation is where error terms in a time series transfer from one period to another. In other words, incorrect estimates made in one year are correlated with the errors in estimates for a subsequent period. This is a correlation coefficient within the same variable lagged over time and is not a pairwise correlation between two variables.

Auto correlated data is a basis for incorrect data analysis as it produces exaggerated goodness of fit. For instance, a time series with positive serial correlation and an independent variable that grows over time shows standard errors that are too small, incorrect t-statistics and false positives for significant regression coefficients. When testing for autocorrelation, the interest is in the first order serial correlation AR (1), where standard errors are carried over to subsequent periods, thus compromising the regression results.

To test the level of autocorrelation in the time series being studied, the Durbin-Watson test was employed. The Durbin-Watson test reports a test statistic with a range: $0 \leq d \leq 4$, where 2 is no autocorrelation; 0 to < 2 is a positive autocorrelation (common in time series data) and > 2 to 4 is a negative autocorrelation (less common in time series data). A rule of thumb is that test statistic values in the range of 1.5 to 2.5 are relatively normal.

3.7 Research Reliability, Validity and Limitations

There were limitations to the conducted study. Due to the scope of the research, there was an inability to collect data from the entire recommended population sample. As such, this study is limited to the convenient sample used. For instance, the list of variables used is not exhaustive, however, was driven by the availability of data. Additionally, marrying macroeconomic and microeconomic factors proves challenging when firm specific data is not present.

Despite the experienced limitations, measurement of the data used was accurate, eliminating research reliability and validity concerns. The reliability of the research is measured by how the overall quality of a research study, including how uniformly, or consistently the procedures are carried out. Validity is how well the collected data and the analysis support the results or findings (internal validity), and whether the results or findings extend to other contexts or generalising (external validity). Validity in research is measured by the significance of F, when

using regression analysis. The validity of the research is dependent on whether the conclusion drawn from this research can be applied to other countries, periods etc. The above tests on data and analysis ensured that statistics were correctly applied in the collection and interpretation of data. As such, conclusions derived from the study can be generalised from a sample to a population of interest.

3.8 Summary

This study sets out to determine the impact of FDI on SME development. The research is conducted via two equations. The first one estimating the determinants of FDI in South Africa, autoregressive distributed lag models were employed to determine the drivers of FDI for a 17-year period from 2000 to 2016. Moreover, the researcher fitted the FDI to SME development also by means of ARDL over the same period to determine the association. The results from the analysis are discussed in the following chapter.

CHAPTER 4:
RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents and discusses the results of the study. The analysis includes a discussion of data properties, statistical tests and regression results. The chapter provides the basis on which conclusions and recommendations of the study are formulated.

4.2 Descriptive statistics

Descriptive statistics are used to summarise the sample and determine the mean and standard deviation of the variables. The mean serves as a standard measure of the distribution whereas the variance shows how far each data point is from the mean. Generally, the mean and variance of variables is constant, however, in time series data, the constancy of the mean and variance is not satisfied at face value. The following table represents them:

Table 4. Descriptive Statistics

	FDI	GG	INN	LNID	MES	MS	PR	ROI	SME	TO
Mean	6.275901	0.444292	-0.101945	1.244772	0.729729	11.72846	1.660333	0.967621	0.174420	4.071594
Median	6.307478	0.503934	-0.090717	1.248587	0.756020	11.76047	1.653213	0.970665	0.174420	4.096220
Maximum	6.446996	0.748472	-0.046791	1.263369	1.062072	11.86889	1.707570	0.977276	0.296418	4.288614
Minimum	5.927354	-0.553840	-0.173925	1.214932	0.141569	11.53876	1.612784	0.951779	0.117971	3.933355
Std. Dev.	0.138024	0.309449	0.043687	0.015620	0.195392	0.110871	0.026384	0.008832	0.036510	0.096900
Skewness	-0.971679	-2.063583	-0.197392	-0.628543	-1.376010	-0.379039	0.062591	-0.554650	2.101513	0.265167
Kurtosis	3.369468	7.469068	1.559941	2.082184	6.239818	1.784254	2.219857	1.854411	8.738195	2.636220
Jarque-Bera	2.771812	26.21263	1.579317	1.716046	12.79961	1.454011	0.442208	1.801235	35.83622	0.292960
Probability	0.250097	0.000002	0.454000	0.424000	0.001662	0.483354	0.801633	0.406319	0.000000	0.863743
Sum	106.6903	7.552958	-1.733068	21.16113	12.40539	199.3839	28.22567	16.44955	2.965140	69.21710
Sum Sq. Dev.	0.304809	1.532140	0.030537	0.003904	0.610846	0.196677	0.011138	0.001248	0.021327	0.150232
Observations	17	17	17	17	17	17	17	17	17	17

The Jarque-Bera test in both data tables is a goodness-of-fit test of whether sample data have the skewness and kurtosis matching a normal distribution. From the results presented, the variables do not follow a normal distribution.

4.3 Unit Root Tests

The time series transformation was conducted with Box-Cox transformation and set the value of Lambda to 0 to apply a log transformation to the series. After that to test for the I (1) aspect of the time series, an Augmented Dickey-Fuller test (ADF) and the Phillips Peron (PP) tests were employed for unit root tests on the transformed time series, was applied yielding results below. The lag selection was carried out using the Schwartz information criterion. Table 5 shows level unit root tests (ADF and PP) in which all variables show different stationarity

levels. The data used to perform the unit root tests have been whitened by 1 lag and then tested for unit root, yielding results below.

Table 5. Unit Root Testing: All variables SME

Sample Period	ADF	ADF	PP	PP
2001.2016	Level	First Difference	Level	First Difference
SME	−3.9362 *(0)	−3.5845 * **(1)	−3.9481 *(1)	−8.8723 (8)
FDI	−2.7047 (0)	−3.6199 ***(3)	−4.9255 (0)	−8.1106 (2)
PR	−3.6761 ***(0)	−3.3427 * ** ***(1)	−3.6731 * ** (1)	−6.5563 (1)
MS	3.5177 *** (1)	−3.6003 * ** (1)	−2.9154 * ** ***(1)	−3.9916 ***(2)
MES	−5.4191 (2)	−2.9818 * ** ***(3)	−5.3039 (0)	−4.6163 * (1)

Note: ADF and PP Test for unit root were performed at both level and first difference (trend and intercept). The critical values are denoted by * 1%, ** 5%, *** 10%. The figure in the parentheses represents the lag selection based on Akaike info criteria (AIC).

For FDI and MES, the *t* stat is smaller than all critical values at level testing on both unit root tests; these variables are I (1) at level. Both variables become I (0) at first difference on ADF test. The PP results differ for the two variables at first difference, where MES becomes I (0) and FDI I (2). SME, PR and MS are all I (0) at both levels and first difference testing on ADF. The results yielded on the level PP tests revealed similar results to ADF, however, at first difference SME and PR remained I (2), which is a different result in comparison to that of the ADF test. Overall, the results in Table 5 concluded that none of the variables is I (2); therefore, we predicted the long run relationship using the bounds test / F test proposed by Pesaran et al. (2001). However, keeping in mind the results of the PP test, the researcher formulated an unrestricted error correction model. Results are presented in Table 8 and 9. The results presented are for both equations used in the model, where the first equation estimated FDI drivers and the second one fits those drivers to SME development to determine the impact of FDI on SME development. As the unit root results were satisfactory, the researcher continued to test for bounds of co-integration.

4.4 Multicollinearity Tests

The pairwise correlation analysis was used to identify patterns of variation common to dependent variables and an independent variable. These tests were performed on the variables selected for the study and the result is presented below.

Table 6. Correlation Matrix

	FDI	*TO*	*MS*	*PR*	*MES*	*RoI*	*INN*	*ID*	*GG*	*SME*
FDI	1,00									
TO	0,81	1,00								
MS	0,77	0,64	1,00							
PR	- 0,31	- 0,03	- 0,54	1,00						
MES	0,72	0,60	0,14	0,26	1,00					
RoI	0,78	0,66	1,00	- 0,52	0,15	1,00				
INN	0,23	0,35	0,45	0,13	- 0,05	0,48	1,00			
ID	0,74	0,62	0,99	- 0,57	0,09	0,99	0,49	1,00		
GG	- 0,46	- 0,25	- 0,55	0,34	- 0,18	- 0,49	- 0,16	- 0,46	1,00	
SME	0,09	0,09	0,23	0,02	0,00	0,17	0,25	0,15	- 0,80	1,00

From table 6, it can be picked up there is medium to moderate correlation between the dependent and independent variables. However, there is a high correlation between the independent variables ID, TO, MS and ROI. This further guaranteed multicollinearity tests among the variables. In the presence of high multicollinearity, the confidence intervals of the coefficients are very wide and the statistics tend to be very small. It becomes difficult to reject the null hypothesis of any study when multicollinearity is present in the data under study (Statistics Solutions, 2017). Multicollinearity was calculated with the tolerance and the variance inflation factor (VIF). If the value of tolerance is less than 0.1 and simultaneously, the value of VIF 10 and above, then the multicollinearity is problematic.

In this study, it is caused by the inclusion of a variable, which is computed from other variables in the data set, i.e. the GDP. All variables are calculated using the GDP, either as a numerator or denominator. This resulted in the low tolerance levels as well as high VIFs. At this point of analysis, any regression tests would not assess the relative importance of these independent variables in explaining the variations in the dependent variable, as it produces an unrealistic R^2. Further preparation of the data was warranted.

To correct the data for further analysis as ID, MS, TO and RoI have a VIF of above 10, the researcher considered the pairwise correlation amongst the variables and discovered that RoI and ID are highly correlated at 98%, also, ID is highly correlated to TO at 82% and TO highly correlated to RoI at 83%. As such, some, if not all, of these predictors must be removed from the model. The reason behind the model is to test the drivers of FDI in RSA. From the results above, it appears that infrastructure development and trade openness are related.

For an economy to experience increased trade with countries outside its borders, it needs to have good infrastructure to enable the transportation of goods in and out of the country, as well as for local distribution. These variables prove to be dependent on each other and related, so, ID will be excluded from the variables for regression analysis. Supporting this decision is Stiglitz et al. (2010) who posit that infrastructure development is a benefit of FDI to many countries. The argument is that the recipients of FDI use the flows to develop the infrastructure at their own disposal. This unarguably may result in more FDI being attracted by the country, as transaction costs are lesser for investors; however, it is not necessarily the determinant.

On forward linkages of FDI in South Africa, most of the investments made solely depend on infrastructure, therefore outwards FDI may depend on infrastructure. The return on investment in the model is measured by the GDP per capita, the inclusion of the variable in the model was based on the finance rule that all investors' decisions are based on the level of return gained in exchange for the exposure to risk. However, as determined in development finance, it is not always as black and white, there are other forces at play when deciding on investing in developing an economy and FDI is that kind of investment. Asiedu (2002) found that return on investment and infrastructure development were drivers for FDI to non-SSA countries, however, it was not a determinant for SSA countries, within which South Africa falls and based on this, RoI was also excluded from the model.

With the excluded variables, RoI and ID, the VIF reduced dramatically, for all variables. As the objective of the research is to determine a relationship between the dependent and explanatory variables, and it was necessary to remove the variables with multicollinearity. The current result on remaining explanatory variables is satisfactory and will be adopted for the final regression model. Furthermore, based on literature, trade openness and market size play a significant role in pulling FDI and are left included in the model.

4.5 Co-integration

As our sample was relatively small, we employed the Pesaran et al. (2001) co-integrating approach, because this model uses the lag selection based on Akaike info criteria (AIC). In estimating the co-integration results, three models are estimated based on the objectives of the research. As discussed in the previous section, the model on the determinants of FDI has three independent variables in MES, MS and PR. For the second objective on the SME development and FDI relationship, two models were estimated. In the first Model (Model 2), FDI was

regressed on the proxy for SME development while in the second model (Model 3), the explanatory variables in the FDI model (Model 1) was regressed on SME development to examine the separate the effect of each explanatory factor for FDI on SME development. Table 7 illustrates the results of the computed F-statistics value on the three scenarios. The F-stat is compared to the lower and upper critical values and if higher than critical values, it is significant. The F-stat tells us whether there is a long run relationship between variables. The computed F-statistics suggest an existence of a long run relationship amongst variables, on all instances, as it is much higher than the upper bound critical values at levels of significance.

Table 7. Results of Bounds test for Co-integration

Models	***1***	**2**	**3**	
Estimated Models	FDI_t= *(MES, MS, PR)*	F_{SME} *(SME/FDI)*	SME_t = *(MES, MS, PR)*	
Optimal Lag Length (AIC)	(1,0,0,0)	(4,2)	(1,1,1,1)	
F statistics (Bounds Test)	759.0422***	5.05387***	7.99179***	
Critical Values	1%	2.50%	5%	10%
Lower Bounds I (0)	4.29	3.69	3.23	2.72
Higher Bounds I (1)	5.61	4.89	4.35	3.77

Note: the above table has the different F-statistics values for SME and FDI development by using AIC. The critical values are taken from Pesaran et al. (2001). *** indicates the existence of long run level relationship at 1%

4.6 Long and Short run determinants of FDI

Table 8 represents results of Model 1 on the FDI drivers. The estimated long run coefficient of the independent variables shows that macroeconomic stability (MES) and market size (MS) are positively related to FDI at 1% significance. This indicates that increases in market size and macroeconomic stability contributes to an increase in FDI as seen in the studies of Mhlanga et al. (2010), Akoto (2016), and Asiedu (2002). In contrast, an increase in political risk (PR), resulting in instability, will lead to a decrease in FDI inflows to the country, contrary to the reviewed literature on corruptions perceptions index used as a proxy of political risk. UNCTAD, (2016) stated the investors' outlook was affected by the CPI, where a higher PI attracted investment, as it meant the country was perceived to be less corrupt, thus reduced political risk. That being, a 1% growth in market size and improvement in macroeconomic stability will lead to approximately 1.40% and 0.50% increase in FDI respectively. Likewise, 1% increase in political risk will result in 1.15% decrease in FDI inflows into SA. The signs of the independent variables (MES and MS) are in accordance with theoretical factors affecting FDI, apart from PR. This means there is a positive long run relationship between foreign direct investment, market size, macroeconomic stability and political risk.

This is further confirmed by a negative ECM (−1) which approximates −1 at 0.9669, showing full instantaneous adjustment. This means 97% of the disequilibria from the previous year are adjusted in the current year. The findings indicate the speed of adjustment is strong and quick and will take approximately a year for FDI to get back to equilibrium after a short run shock in the economy. The analysis of the coefficient of determination, R-squared of 0.9956, implies the independent variables explain 99.56% of the variation in foreign direct investment in South Africa. The significantly high R-squared is due to the small sample size, as well as the significant relationship of the regressors to the dependent variable (Table 6). Multicollinearity tests were conducted presenting a finding of low VIF below. Furthermore, the use of ARDL eliminated multicollinearity through AIC lag differencing the variables prior to regressing. The similarity of results in the long and short run is due to the fixed regressors used, as such, the short-run dynamics are eliminated and left with equilibrating equation that defines the long-run relationship.

There is a positive relationship between MS and FDI. MS represents the GDP for South Africa and that means that a growing economy and an improving GDP results in high FDI levels in the country. Recent times have shown a sluggish and deteriorating growth of the GDP and the FDI levels have been responding in line with this growth. The FDI trends in the country have not been growing at the same fast pace that was experienced in the last decade when the economy was on an increasing trend. The significance of market size lends support to the market seeking hypothesis that has led past studies to advocate for regional cooperation among countries (Mhlanga et al., 2010); Asiedu, 2002).

This is further evidenced by the positive relationship between MES and FDI, where MES represents the macroeconomic stability in the country, measured by the consumer inflation rate. A stable economy offers stable returns from an investor's outlook. It creates an environment conducive to return on investment where the assumed risk comes with favourable return. In an environment like South Africa, where inflation targeting is part of the country's monetary policy, it was expected that the impact of inflation on FDI pulling would be greater than the relatively soft relationship determined by the model in comparison to market size.

The findings showed a negative relationship between FDI and PR, which represents the political risk of the country. The political risk in this instance is measured by the CPI, where a higher CPI translates to a less corrupt country. An expected finding in this instance would be a positive

relationship between PR and FDI, as per UNCTAD (2016), and a higher CPI leads to investor confidence. One of the surprises produced by the results was that of trade openness not being a significant driver of FDI. Numerous literature has established a relationship between FDI and trade openness. Asiedu (2002) and Mhlanga et al. (2010) found the relationship to be positive and noted that it was less robust. In this analysis, TO presented high relation to other independent variables and is as such excluded in the final analysis.

Table 8. ARDL Long run and short run results – FDI

Dependent Variable:	**FDI_t ARDL (1,0,0,0)**		
Long run results			
Variable	**Coefficient**	**Standard Error**	**t statistic**
Constant	0.0004	0.0013	0.3002
MES	0.4956	0.0243	20.3889
MS	1.4036	0.3319	4.2297
PR	−1.1462	0.0918	−12.4611
R squared	0.9956	Adjusted R squared	0.9927
F statistic	340.8482	DW	1.9901
Sum Squared residual	0.0001	SE of regression	0.0043
Short run results			
Variable	**Coefficient**	**Standard Error**	**t statistic**
Constant	0.0004	0.0011	0.3753
MES	0.4792	0.0179	26.7389
MS	1.3572	0.3237	4.1932
PR	−1.1083	0.0837	−13.2419
ECM (-1)	-0.9669	0.0143	−16.4852
R squared	0.9980	Adjusted R squared	0.9978
F statistic	4554.253	SE of regression	0.0035
Sum Squared residual	0.0001	DW	1.9901

Notes: MES=Macroeconomic Stability; MS=Market Size; PR= Political Risk; ECM (-1) =Error correction term

4.7 SME Development and FDI: Long and Short-run estimates

Table 9 presents the results of Models 2 and 3 for SME development. As highlighted earlier, Model 1 shows the overall relationship between SME and FDI, while Model 2 examines specific contributing FDI drivers to the SME development. On the overall FDI relationship, the estimated long run coefficient of the independent variable is positive, showing that an increase in FDI contributes to an increase in SME development, however, it is plagued by high standard errors and insignificant *t*-statistics. The expected result was a strong linkage of FDI and SME development, and from the findings of this study, the result was less than expected. Albulescu and Tămăşilă, (2014) discussed the externalities of FDI on SMEs. The study conducted showed that opportunity-driven enterprises were positively affected by inwards FDI where necessity-

driven enterprises did not have a quantifiable result. Outwards FDI positively affected necessity-driven enterprises where opportunity-driven enterprises were not favoured. Subair and Salihu (2011) found FDI was negatively related to SMEs in Nigeria.

The analysis of the coefficient of determination, R-squared of 0.8859, yet remaining statistically insignificant as the F-value is 2.9. Additionally, insignificance of MS in enterprise development, which is a strong driver of FDI, contributes to the overall insignificance of the relationship. Ayanwale (2007) found that as significant as FDI was in the economy, the impact on SMEs was insignificant due to unstable macroeconomic policies. The coefficient of the error correction term is −0.3402, which is highly significant and has the right sign. It is suggesting that 34% of any movement into disequilibrium is corrected within one period. The disequilibria from the previous year is converged and corrected back to the long run equilibrium in the current year. This is a relatively fair ECM, as it reflects the existence of a stable long run relationship.

The second section of Table 9 measures the relationship between SME development and the direct FDI drivers to determine which of the drivers has the most significant impact on SME development. As such, there is a positive long run relationship to political risk and negatively related to market size and macroeconomic factors. The relationship agrees to economic theory and studies conducted previously on SME development and FDI (UNCTAD, 2016; Ayanwale, 2007; Subair & Salihu, 2011). Furthermore, at this level of analysis, the results prove to be statistically insignificant (Ayanwale, 2007). This is further confirmed by a negative ECM (−1) that approximates −2, which is below equilibrium, thus assuming that economic equilibrium for these variables may not exist. The error correction term on equation 1 is −1.9366 suggesting that almost 194% of the disequilibria from the previous year is converged and corrected back to the long run equilibrium in the current year and can be stated as overcorrecting or over adjusted as it is less than −1.

Table 9. ARDL Long run and short run results – SME

Dependent Variable:	**SME_t ARDL (4,2)**				**SME_t ARDL (1,1,1,1)**		
Long run results							
Variable	**Coefficient**	**Standard Error**	***t* statistic**		**Coefficient**	**Standard Error**	***t* statistic**
Constant	1.9701	1.1379	1.7312		-0.0057	0.0052	−1.0939
FDI	0.3673	0.8021	0.4578				
MES					−0.0329	0.0556	−0.5925
MS					−1.9741	1.1995	−1.6456
PR					1.552	0.3386	4.5831
R squared	0.8859	Adj. R squared	0.5816		0.9375	Adj. R squared	0.7919
F statistic	2.9115	DW	1.9085		7.9918	DW	2.0221
Sum Squared residual	0.002	SE of regression	0.0261		0.0007	SE of regression	0.0149
Short run results							
Variable	**Coefficient**	**Standard Error**	***t* statistic**		**Coefficient**	**Standard Error**	***t* statistic**
Constant	0.0068	0.0136	0.5031		−0.0569	0.0033	−1.7029
DFDI (−1)	0.371	0.5947	−0.5721				
D (MES)					0.0685	0.0316	2.1711
D (MS)					−2.1537	0.5916	−3.6405
D (PR)					1.3193	0.1523	8.6598
ECM (−1)	−0.3402	0.1188	3.1221		−1.9366	0.2422	−7.9959
R squared	0.5339	Adj. R squared	0.2009		0.9700	Adj. R squared	0.9501
F statistic	1.6036	SE of regression	0.0443		48.5703	SE of regression	0.0106
Sum Squared residual	0.0137	DW	1.9085		0.0007	DW	2.0221

Notes: MES=Macroeconomic Stability; MS=Market Size; PR= Political Risk; ECM (-1) =Error correction term

The results lead to the conclusion that the FDI channelled towards SME development depends on a healthy political environment, a stable and growing economy, as well as aggressive and intentional enterprise development policy. It can be said that policymakers who are also responsible for a healthy political environment, can implement policies that drive SME development through FDI. An unstable political environment would lead to disrupted implementation and in turn a difficult environment for SME development.

4.8 Autocorrelation Tests

The validity and reliability of the estimation results are confirmed by the diagnostic tests. The diagnostics tests include the Breusch-Godfrey serial correlation LM test (Tursoy & Faizal, 2016). The LM (Arch and White) tests checked for second-order correlation in the ARDL model, which checked for homoscedasticity of the residuals. For equations tested, the null hypothesis is that the residuals are serially uncorrelated, the F-statistic *p*-value of 0.6109 (equation 1) and 0.4465 (equation 2) indicates that the researcher will fail to reject this null.

The researcher therefore concludes that the residuals are serially uncorrelated (Table 13 in the appendix). The VEC residual normality tests rejected the multivariate null hypothesis. The interpretation of the Durbin Watson test in ARDL results is insignificant, as autocorrelation has already been tested and eliminated through differencing lags.

4.9 Summary

The chapter presented the results of the study and an analysis of the estimated model. The results were obtained from autoregressive distributed lag analysis estimated using the EViews statistical software programme. Preliminary tests on the data were conducted using unit root tests, correlation analysis, multicollinearity analysis and autocorrelation tests. The unrestricted ARDL variables selection retained three (3) variables out of eight (8) in the model, eliminating issues of multicollinearity and unreliable coefficients with large variances and standard errors. This method ensured that the best-fit model was selected to explain the determinants of FDI. The findings of the study indicated a positive relationship between FDI, market size and macroeconomic stability, while the relationship to political risk was negative. An assumption that drivers of FDI also impact the development of SME was used. The best-fit variables of FDI drivers were fitted in an ARDL, determining the relationship between FDI and SME development. The test returned a statistically insignificant, yet positive, relationship between SME development and FDI.

CHAPTER 5:
RESEARCH CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This section represents the conclusions of the study, as well as policy recommendations of the research.

5.2 Research Conclusions

To understand the impact of foreign direct investment on the development of small and medium enterprises in South Africa, autoregressive distributed lag models were employed to determine the drivers of FDI in SA for a 17-year period from 2000 to 2016. Moreover, the researcher fit the FDI to SME development also by means of ARDL over the same period to determine the association.

The findings of this study indicate that the drivers to FDI are not synonymous. This conclusion is drawn from previous literature conducted on determinants of FDI in other African countries being different to the findings of this study. Trade openness had an impact on FDI levels, even though marginal in most SSA countries; however, in SA the impact was marginal to nil. In most African studies, infrastructure development as well as GDP growth have been significant drivers of FDI and in this study, it did not have the same impact. As intended to determine with this research, the resulting drivers of FDI in South Africa were MES, MS and PR. Additionally, the findings indicated that a positive relationship exists between FDI and the development of SMEs, although statistically insignificant. The expectation was a strong linkage of FDI and SME development, and from the findings of this study, the result was far from it.

What this study reflected was that economic stability as well as the size of the economy drive the increase in FDI; however, they do not drive SME development. Another surprise in the findings was the negative relationship between FDI and political risk. Political risk in this instance is measured by the CPI, which is positively correlated to investor confidence (UNCATD, 2016) yet, resulted in a negative relationship to FDI. The relationship was positive and significant in SME development. An increase in the index meant less corruption in the economy thus leading to an economically effective state, where chances of economic growth are exponential and increases the risk appetite of investors. A politically stable country can be an enabling ground for enterprise development and this has a huge impact on its development, as rigid and extensive regulation often hinders the development.

5.3 Policy Recommendations

Given the significance of the country's economic standing on determining FDI, it is important for a country to prioritise policies that drive economic growth, thus leading to an increase in the GDP (market size). It can also be advised that the country continue with inflation targeting as it increases the FDI activity. However, be focused on the kind of FDI it attracts, as the important one is investment and not necessarily capital flows. Regarding political risk, an increase in the index would lead to a safer investment environment, thus boosting investor confidence, which could also lead to a reduced return, as the amount of risk assumed is also less, if following finance theory. In this case, it would make sense why the findings indicated the inverse relationship. As such, the developmental institutions are tasked with creating more opportunities that enable diversifying the type investors' portfolio, thus increasing the chances of making a favourable return.

Lastly, an increase in SMEs involvement with FDI can be achieved with targeted investment promotion strategies, with the aim of channelling the international business into SMEs in the country. Initiatives like GEN Africa and the GEC serve as the enabling platform to develop enterprises to enhance their competences and capacity in absorbing foreign investment flowing into the country. Furthermore, the involvement of these initiatives can assist in de-risking as well as upscale SMEs in the continent, which will in turn increase investor appetite.

5.4 Recommendations for Future Research

After discovering the positive yet statistically insignificant relationship between FDI and SME, the study requires a more in-depth firm-level research to be conducted to further understand this phenomenon. Variables like innovation and improved competition have been proven by previous literature to have a significant impact on SME development because of interaction with FDI. At this point, it seems that only firm-level data can provide more evidence of this. Accordingly, this study provides an opportunity to further investigate the following:

- The criteria for qualifying for FDI projects

There is little empirical work presented on FDI projects fulfilled by SMEs in South Africa. Given the growth in the services industry and government working increasingly with SMEs, more information can be published on the partnerships of SMEs and government in developmental work conducted in neighbouring countries and regions. Particularly in the construction and information and communication technology services.

- The funding gap – how is it filled in a more efficient manner despite the traditional access to funding barriers generally experienced by SMEs?

FDI is not stable and often not a guarantee, as it is affected by various macroeconomic and political factors, therefore, there is a need to determine how the funding gap for SMEs is widened or lessened by the involvement of FDI, if at all.

- Costs and benefits of compliance to regulation to SMEs that work with MNEs

How do entities in general, quantify the cost and benefit of compliance with MNEs regulations? Are there exceptions given to smaller enterprises or is it a one-size-fits-all approach? It would be interesting to determine whether the benefits of compliance exceed the cost for small and medium enterprises and how that transforms the calibre of SMEs in the continent. This could unlock the improved competitiveness that literature has proven to be a spill over from FDI to SMEs.

- Outward FDI and SME development in South Africa

This study focused on inward FDI and its impact on SME development and a considerable amount of global literature exists for outward FDI and its impact on SME development. A study can be conducted on determining the forward linkages formed by the outward FDI to neighbouring regions like SADC and the rest of Africa. A mixed methodology (qualitative and quantitative) would be best to capture of the phenomena.

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Appendices

Data Analysis Tables

Table 10. Unit Root Tests Summary

Variable	ADF	Probability
FDI	4,366	0,0043
GG	4,186	0,0051
ID	1,932	0,3116
INN	2,669	0,1008
MES	3,998	0,0086
MS	2,141	0,2321
PR	4,069	0,0082
RoI	1,977	0,2935
SME	3,709	0,0159
TO	1,907	0,9991

*indicates 5% significance level

Null Hypothesis: D(FDI) has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on AIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.366484	0.0043
Test critical values:	1% level	-3.920350	
	5% level	-3.065585	
	10% level	-2.673459	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 16

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FDI,2)
Method: Least Squares
Date: 12/08/17 Time: 18:14
Sample (adjusted): 2001 2016
Included observations: 16 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI(-1))	-2.959789	0.677843	-4.366484	0.0011
D(FDI(-1),2)	1.583916	0.547757	2.891640	0.0147
D(FDI(-2),2)	0.906934	0.387920	2.337941	0.0393
D(FDI(-3),2)	0.580240	0.239716	2.420537	0.0340
C	0.056230	0.027806	2.022195	0.0682

R-squared	0.771312	Mean dependent var	0.001493
Adjusted R-squared	0.688153	S.D. dependent var	0.178227
S.E. of regression	0.099528	Akaike info criterion	-1.526449
Sum squared resid	0.108964	Schwarz criterion	-1.285015
Log likelihood	17.21159	Hannan-Quinn criter.	-1.514085
F-statistic	9.275125	Durbin-Watson stat	2.068156
Prob(F-statistic)	0.001568		

Null Hypothesis: D(MES) has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on AIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.997596	0.0086
Test critical values:	1% level	-3.920350	
	5% level	-3.065585	
	10% level	-2.673459	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 16

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(MES,2)
Method: Least Squares
Date: 12/08/17 Time: 18:19
Sample (adjusted): 2001 2016
Included observations: 16 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MES(-1))	-2.684383	0.671499	-3.997596	0.0021
D(MES(-1),2)	1.401391	0.534604	2.621362	0.0238
D(MES(-2),2)	0.808656	0.388098	2.083638	0.0613
D(MES(-3),2)	0.533131	0.257553	2.069983	0.0628
C	-0.005164	0.054073	-0.095509	0.9256

R-squared	0.720953	Mean dependent var	0.007906
Adjusted R-squared	0.619481	S.D. dependent var	0.349509
S.E. of regression	0.215599	Akaike info criterion	0.019515
Sum squared resid	0.511313	Schwarz criterion	0.260949
Log likelihood	4.843878	Hannan-Quinn criter.	0.031879
F-statistic	7.104961	Durbin-Watson stat	2.001677
Prob(F-statistic)	0.004438		

Null Hypothesis: D(PR) has a unit root
Exogenous: Constant
Lag Length: 4 (Automatic - based on AIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.069438	0.0082
Test critical values:	1% level	-3.959148	
	5% level	-3.081002	
	10% level	-2.681330	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 15

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(PR,2)
Method: Least Squares
Date: 12/08/17 Time: 18:21
Sample (adjusted): 2002 2016
Included observations: 15 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PR(-1))	-2.741163	0.673597	-4.069438	0.0028
D(PR(-1),2)	1.273654	0.528192	2.411348	0.0392
D(PR(-2),2)	1.427584	0.439898	3.245262	0.0101
D(PR(-3),2)	1.246881	0.402164	3.100430	0.0127
D(PR(-4),2)	0.471559	0.235367	2.003504	0.0761
C	-0.011757	0.005942	-1.978690	0.0792

R-squared	0.821032	Mean dependent var	0.001833
Adjusted R-squared	0.721606	S.D. dependent var	0.034063
S.E. of regression	0.017973	Akaike info criterion	-4.910742
Sum squared resid	0.002907	Schwarz criterion	-4.627522
Log likelihood	42.83057	Hannan-Quinn criter.	-4.913759
F-statistic	8.257692	Durbin-Watson stat	1.670924
Prob(F-statistic)	0.003543		

Null Hypothesis: D(TO) has a unit root
Exogenous: Constant
Lag Length: 4 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.708653	0.0159
Test critical values:	1% level	-3.959148	
	5% level	-3.081002	
	10% level	-2.681330	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 15

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TO,2)
Method: Least Squares
Date: 12/08/17 Time: 18:23
Sample (adjusted): 2002 2016
Included observations: 15 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TO(-1))	-4.036766	1.088472	-3.708653	0.0049
D(TO(-1),2)	2.406435	0.893367	2.693669	0.0246
D(TO(-2),2)	1.784000	0.680481	2.621676	0.0277
D(TO(-3),2)	1.031394	0.499725	2.063925	0.0690
D(TO(-4),2)	0.442784	0.287172	1.541880	0.1575
C	0.058749	0.030133	1.949642	0.0830

R-squared	0.790235	Mean dependent var	-0.005672
Adjusted R-squared	0.673699	S.D. dependent var	0.160027
S.E. of regression	0.091412	Akaike info criterion	-1.657703
Sum squared resid	0.075206	Schwarz criterion	-1.374483
Log likelihood	18.43277	Hannan-Quinn criter.	-1.660720
F-statistic	6.781024	Durbin-Watson stat	1.898530
Prob(F-statistic)	0.006922		

Null Hypothesis: D(MS) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on AIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.141400	0.2321
Test critical values:	1% level	-3.831511	
	5% level	-3.029970	
	10% level	-2.655194	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 19

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(MS,2)
Method: Least Squares
Date: 12/08/17 Time: 18:20
Sample (adjusted): 1998 2016
Included observations: 19 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MS(-1))	-0.469894	0.219433	-2.141400	0.0470
C	0.009098	0.005017	1.813556	0.0874

R-squared	0.212438	Mean dependent var	-0.000623
Adjusted R-squared	0.166111	S.D. dependent var	0.010195
S.E. of regression	0.009309	Akaike info criterion	-6.416272
Sum squared resid	0.001473	Schwarz criterion	-6.316857
Log likelihood	62.95458	Hannan-Quinn criter.	-6.399447
F-statistic	4.585595	Durbin-Watson stat	1.645916
Prob(F-statistic)	0.047022		

Null Hypothesis: D(SME) has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on AIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.907006	0.9991
Test critical values:	1% level	-4.121990	
	5% level	-3.144920	
	10% level	-2.713751	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 12

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SME,2)
Method: Least Squares
Date: 12/08/17 Time: 18:31
Sample (adjusted): 2005 2016
Included observations: 12 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(SME(-1))	3.031741	1.589791	1.907006	0.0982
D(SME(-1),2)	-4.094738	1.377278	-2.973066	0.0207
D(SME(-2),2)	-3.041250	1.017794	-2.988079	0.0203
D(SME(-3),2)	-1.410581	0.517119	-2.727766	0.0294
C	0.013589	0.009236	1.471320	0.1847

R-squared	0.800531	Mean dependent var	0.008658
Adjusted R-squared	0.686549	S.D. dependent var	0.056287
S.E. of regression	0.031513	Akaike info criterion	-3.782485
Sum squared resid	0.006952	Schwarz criterion	-3.580441
Log likelihood	27.69491	Hannan-Quinn criter.	-3.857289
F-statistic	7.023297	Durbin-Watson stat	1.902974
Prob(F-statistic)	0.013476		

Table 11. Multicollinearity statistics (all variables)

Statistic	FDI	TO	MS	PR	MES	RoI	INN	ID	GG
R^2	1,000	0,863	0,999	0,992	0,999	0,999	0,869	0,993	0,764
Tolerance	0,000	0,137	0,001	0,008	0,001	0,001	0,131	0,007	0,236
VIF	2395,658	7,276	1021,017	129,829	877,792	1888,444	7,627	137,531	4,231

Table 12. Correlation Matrix

Variance Inflation Factors
Date: 12/13/17 Time: 01:42
Sample: 2001 2016
Included observations: 11

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
FDI_W(-1)	0.000663	1.034475	1.027753
MES_W	0.000321	1.699733	1.651410
MS_W	0.104760	1.937931	1.907555
PR_W	0.007005	1.244664	1.228808
C	1.73E-06	1.043330	NA

Variance Inflation Factors
Date: 12/13/17 Time: 00:03
Sample: 2001 2016
Included observations: 11

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
SME_W(-1)	0.213153	6.432590	5.971336
MES_W	0.006657	2.876293	2.794522
MES_W(-1)	0.004649	2.488211	2.484906
MS_W	1.892690	2.858726	2.813917
MS_W(-1)	1.815500	2.874858	2.849843
PR_W	0.160104	2.322643	2.293055
PR_W(-1)	0.511169	7.682904	7.648753
C	2.71E-05	1.329447	NA

Table 13. Autocorrelation results

Equation 1

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.294049	Prob. F(1,5)	0.6109
Obs*R-squared	0.610976	Prob. Chi-Square(1)	0.4344

Test Equation:
Dependent Variable: RESID
Method: ARDL
Date: 12/13/17 Time: 01:42
Sample: 2001 2011
Included observations: 11
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI_W(-1)	0.000172	0.027408	0.006276	0.9952
MES_W	-0.002544	0.019647	-0.129478	0.9020
MS_W	0.004232	0.344661	0.012279	0.9907
PR_W	0.025687	0.100912	0.254544	0.8092
C	-2.77E-06	0.001402	-0.001980	0.9985
RESID(-1)	-0.275808	0.508625	-0.542263	0.6109

R-squared	0.055543	Mean dependent var	1.00E-18
Adjusted R-squared	-0.888914	S.D. dependent var	0.003311
S.E. of regression	0.004551	Akaike info criterion	-7.644449
Sum squared resid	0.000104	Schwarz criterion	-7.427415
Log likelihood	48.04447	Hannan-Quinn criter.	-7.781258
F-statistic	0.058810	Durbin-Watson stat	1.550919
Prob(F-statistic)	0.996283		

Equation II: Model 1

VEC Residual Serial Correlation LM T...
Null Hypothesis: no serial correlation a...
Date: 12/12/17 Time: 00:59
Sample: 2000 2016
Included observations: 13

Lags	LM-Stat	Prob
1	3.640742	0.4568
2	0.163831	0.9968
3	3.812528	0.4320

Probs from chi-square with 4 df.

VEC Residual Portmanteau Tests for Autocorrelations
Null Hypothesis: no residual autocorrelations up to lag h
Date: 12/12/17 Time: 01:00
Sample: 2000 2016
Included observations: 13

Lags	Q-Stat	Prob.	Adj Q-Stat	Prob.	df
1	1.858536	NA*	2.013414	NA*	NA*
2	1.918316	NA*	2.084063	NA*	NA*
3	3.348326	0.7640	3.943076	0.6844	6

*The test is valid only for lags larger than the VAR lag order.
df is degrees of freedom for (approximate) chi-square distribution

Equation II: Model II

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.883138	Prob. F(1,2)	0.4465
Obs*R-squared	3.369425	Prob. Chi-Square(1)	0.0664

Test Equation:
Dependent Variable: RESID
Method: ARDL
Date: 12/12/17 Time: 23:57
Sample: 2001 2011
Included observations: 11
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SME_W(-1)	-0.075359	0.477727	-0.157744	0.8891
MES_W	0.016956	0.085158	0.199110	0.8606
MES_W(-1)	-0.005971	0.069844	-0.085484	0.9397
MS_W	0.018877	1.403499	0.013450	0.9905
MS_W(-1)	0.514389	1.479425	0.347695	0.7613
PR_W	0.078776	0.416678	0.189057	0.8675
PR_W(-1)	-0.103502	0.737576	-0.140327	0.9013
C	-0.003208	0.006309	-0.508540	0.6616
RESID(-1)	-1.150345	1.224091	-0.939754	0.4465

R-squared	0.306311	Mean dependent var	-4.73E-18
Adjusted R-squared	-2.468443	S.D. dependent var	0.008194
S.E. of regression	0.015261	Akaike info criterion	-5.595405
Sum squared resid	0.000466	Schwarz criterion	-5.269854
Log likelihood	39.77473	Hannan-Quinn criter.	-5.800619
F-statistic	0.110392	Durbin-Watson stat	0.668724
Prob(F-statistic)	0.991197		