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2. Student number: 23018055	Year completed: 2012	
E-mail address: jannadp@gmail.com		
Contact numbers:	Tel. N/A	Cell. 0828054427
3. Degree: MBA	Department: GIBS	
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The BRICS countries as potential destinations for multinational manufacturing enterprises (MMEs)

Jan-Adriaan du Plessis

Student No: 23018055

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Abstract

A shift in economic power from the developed world to emerging markets has seen the BRICS countries becoming the new growth centre of the world. In 2010, half of the total global foreign direct investment (FDI) flows went to emerging economies. A large portion of these FDI flows goes to the manufacturing industry with a quarter of the global GDP being generated by the production processes of multinational manufacturing enterprises (MMEs). The challenge for the BRICS countries will be to sustain their trend in FDI inflow. Previous studies on this topic focused on the determinants of FDI at country level as opposed to an industry specific focus. The outcome of this study assists MMEs in their entering decisions and policy makers in developing policies that create an enabling environment that will attract foreign capital.

This research analyses the BRICS countries as potential destinations for FDI in the manufacturing industry. The analyses followed a three phased approach. The first phase identified the potential determinants of FDI to the manufacturing industry of the BRICS countries. The second phase either validated or disproved investor perceptions about the factors that would impact on the performance of an investment. In the third and final phase of the analysis, the competitiveness of the BRICS countries in attracting FDI to the manufacturing industry was assessed.

The analysis of the three hypotheses contributed to the overarching theme of evaluating the BRICS countries as potential destinations for MMEs. The outcome of the analysis highlights that countries are unique and that investor perceptions about a country's conditions and how this will impact on the performance of an investment are not always valid. In the overall analysis of the BRICS countries as potential destinations for FDI, the majority of the BRICS countries, with the exception of South Africa, are found to be competitive destinations for attracting FDI to the manufacturing industry. On the basis of the outcome of the analysis and the methodology followed in this study, a general model that can be used in future FDI research is suggested.

Keywords

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Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination to any other university. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Jan-Adriaan du Plessis

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List of abbreviations

BAT	British American Tobacco
BRIC	Brazil, Russia, India, China
BRICS	Brazil, Russia, India, China, South Africa
EIU	Economist Intelligence Unit
FDI	Foreign Direct Investment
FMCG	Fast-moving Consumer Goods
GDP	Gross Domestic Product
HUL	Hindustan Unilever Ltd
ITC	International Trade Centre
MMEs	Multinational Manufacturing Enterprises
MNCs	Multinational Corporations
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
US	United States
WDI	World Development Indicators
WGI	World Governance Indicators
WIR	World Investment Report

Chapter 1: Introduction to research problem

1.1 Introduction

In the past decade the world has seen a shift in economic power and the organisation and distribution of production (Ranjan & Agrawal, 2011). The environment in which companies operate is changing and will continue to change with the BRICS (Brazil, Russia, India, China and South Africa) countries becoming the new growth centre (Pillania, 2009). The original BRIC (Brazil, Russia, India and China) countries are the world's leading emerging markets and have similar characteristics in terms of population, and gross domestic product (GDP), amongst others. In 2010 China invited South Africa to join the BRICs portfolio and the small "s" became a capital when the African counterpart joined the group (Hounshell, 2011).

In 2010, half of the total global foreign direct investment (FDI) inflows went to developing economies which highlights the increased importance of these emerging markets in the global economic landscape (UNCTAD, 2011). Multinational corporations (MNCs) are increasingly engaging with emerging market countries through various investment vehicles. This presents opportunities to these emerging markets to focus policy making on their internal productive capacity and to improve country competitiveness to attract FDI (UNCTAD, 2011).

Manufacturing firms will rather focus on international market development than product development if they can use existing technologies and minimise sunk costs (Kathuria, Joshi & Dellande, 2008). Various factors impact on the location decisions of multinational manufacturing enterprises (MMEs) and the flow of FDI across country borders. Foreign investors and MNCs have certain perceptions of a country's conditions and how this will impact on the performance of businesses within that country (Kouznetsov, 2009). Having knowledge of the factors that influence investment decisions and the performance of already established MMEs will assist authorities in prioritising efforts to create a congenial business environment so that current MMEs can grow and to stimulate FDI.

The process of international growth is easy for manufacturing firms as any part of the value chain that is tradable, non-perishable, and transportable can be de-linked (Porter, in Kathuria *et al.*, 2008). Value adding activities and processes in the manufacturing value

chain are being fragmented and performed at remote locations closer to the final market (Enderwick, 2009).

International production is expanding with about a quarter of the global GDP being generated by value-added activities through the production processes of MMEs. The challenge for the BRICS countries will be to sustain their trend in FDI inflow. The United Nations Conference on Trade and Development (UNCTAD) predicted that FDI flows would grow to $1.7 trillion in 2012 and reach $1.9 trillion in 2013, the peak achieved in 2007 (UNCTAD, 2011).

1.2 Motivation for research

Previous papers on the subject of foreign investment indicate mixed results for the determinants of FDI (Ranjan & Agrawal, 2011) and the relevance of findings are largely limited to developed countries where the environment is relatively stable (Demirbag, Tatoglu & Glaister, 2007). The determinants of FDI inflow to emerging markets have recently received increased attention in the literature but the results of the studies are still inconclusive and mixed across regions and countries (Ranjan & Agrawal, 2011). The results of previous studies are dependent on the country, time period and the methodology applied (Jadhav, 2012).

Previous studies have tended to focus on factors at the country level and the findings were generalised at the macro-level (Demirbag *et al.*, 2007). The fact that the results across countries are mixed, raises the question about the possible differences at a micro-level for FDI determinants across sectors within a country. FDI at the industry level has not been sufficiently explored although FDI is related to industries rather than countries (Mehic, Brkic & Selimovic, 2009). Firms in the services sector might be more focussed on the quality and availability of human capital whereas manufacturing firms might be more attracted by lower wages and the availability of infrastructure (Kinda, 2010).

An analysis of different sectors will enhance the understanding of industry specific FDI flows and why some of the BRICS countries have managed to attract more FDI than others, specifically in the manufacturing industry (Demirbag *et al.*, 2007; Ranjan & Agrawal, 2011). These lessons that are learned in the more sophisticated emerging markets may be of competitive value to other emerging markets and developed countries (Enderwick, 2009). The decision to invest is based on the perception of the risk and the

reward of a specific investment. The lack of prior research at the micro-level makes it difficult to validate these perceptions in different environments.

This study will contribute to the theory on the entry decisions of MNCs and the determinants of FDI, specifically in an emerging market context. Academic research on FDI has tended to focus on macro-level determinants of FDI and the outcome of this research could open up a new area of focus on the determinants of FDI in different industries and regions within countries.

1.3 Objectives of the study

The first section of the study will contribute to the literature on the determinants of FDI to emerging markets and specifically the manufacturing industry of the different BRICS countries. The study will do this by reviewing the current literature on the determinants of FDI, identifying a number of potentially contributing variables and analysing their relevance to the investment decisions of MMEs.

The second section of the study will investigate the actual performance of MMEs in foreign markets by using firm-level data. MMEs make investment decisions based on the perception of how that investment will perform and the factors that will have an impact on the performance. The analysis in the second section of the study will either validate or disprove those perceptions by assessing the relevance of the FDI determinant variables to the actual performance of already established MMEs.

The third section of the study will be a comparative analysis of the level of FDI inflow to the manufacturing sector of each of the BRICS countries. Although it is important to have knowledge of the factors that influence investment decisions, a lot can be learned from countries that are already successfully attracting FDI. Some countries have managed to attract large volumes of FDI with policy interventions. China is currently by far the leading market destination of FDI received (Ranjan & Agrawal, 2011). Although successful policies can not necessarily be replicated to a different context, it will be useful to understand why some countries are more successful in attracting FDI than others.

1.4 Conclusion

This chapter highlights the increasing importance of emerging markets in the global economy, with specific focus on the BRICS countries, in the global economy. In order to sustain the high levels of growth achieved in the past, these countries need an understanding of what drives foreign investment.

Previous studies focused on the determinants of foreign investment at country level and the results of those studies were inconclusive. The inconclusive results at a country level raise questions about the potential differences at a sector level.

Understanding these differences will assist policy makers in these emerging markets to develop policies that create an enabling environment that will continue to attract foreign capital.

Chapter 2: Literature review

2.1 Introduction

The 21st century has seen the rise of emerging markets as the new dominant global economic force. The first Goldman Sachs study in 2003 focussed on the growth of the original BRIC countries and highlighted that these emerging economies could become much larger future global forces than they were originally projected to be. If these economies achieved their projected growth potential, the BRIC economies could become critical to the global economy (Goldman Sachs Group, 2003). The second Goldman Sachs study in 2005 revealed that all four BRIC economies exceeded the growth projections made in the first study (Goldman Sachs Group, 2005). These economies were starting to play an increasingly important role in the evolution of economic globalisation (Das, 2010).

The BRICS economies have continued to increase in importance in the global economy and have become important destinations for the production of goods and services. Large amounts of foreign investment have started to flow to these nations which have gone a long way to reducing poverty and stimulating economic growth in these countries (Ho & Rashid, 2011). The market size and growth in these countries have attracted a large number of investors around the world (Ranjan & Agrawal, 2011).

Numerous research efforts have tried to determine the drivers of foreign investment in these countries (Mehic *et al.*, 2009). Most of the studies have focused on determining the factors that attract FDI to emerging markets as a whole but there is less research on the uniqueness of these countries and the differences in factors that attract FDI (Ranjan & Agrawal, 2011). The general consensus is that because of the potential size of the market in the BRICS countries, most of the FDI in these countries is market-seeking. The result would be that economic determinants would be more important than institutional and political determinants but this would be dependent on the specific country (Jadhav, 2012).

The ability to achieve significant economies of scale within large emerging markets influence strategic decisions with regard to the development of new products and services (Enderwick, 2009). China and India are growing and becoming the most dominant economic forces in the world. Goldman Sachs predicted that China and India were likely to emerge as dominant global manufacturers (Ranjan & Agrawal, 2011). These economies

will play an increasingly important role as a source of technologies for growth and resources for investment (Das, 2010).

To sustain economic growth and the flow of FDI to these markets requires knowledge and correct information about the determinants of FDI. This will assist authorities in optimising their economic conditions and forming policies that promote investment (De Angelo, Eunni & Fouto, 2010; Ranjan & Agrawal, 2011). Policy makers play the role of facilitators in attracting FDI and it is imperative to identify the major determinants of foreign investment. Identifying these determinants will allow policy makers to understand the potential scale and direction of foreign capital flows (Jadhav, 2012).

2.2 Foreign direct investment (FDI)

UNCTAD (2006) defines FDI as" an investment involving a long-term relationship and reflecting a lasting interest in and control by a resident entity in one economy of an enterprise resident in a different economy" (p. 1). In the 2011 *World Investment Report (WIR)* released by UNCTAD, it was reported that more than two-thirds of reported investment policy measures were in the area of FDI liberalisation and promotion, which highlights the growing importance of foreign investment in a globalising world (UNCTAD, 2011). According to Singhania and Gupta (2011), investments via FDI are less likely to be withdrawn during financial crises when compared to other forms of foreign financing such as portfolio investment.

It is difficult for emerging economies to finance all their investments through domestic savings and, therefore, foreign investments play an important role (Kasuga, 2007). In most cases, FDI accounts for more than 60 percent of the private capital flows to emerging markets (Herzer, Klasen, & Nowak-Lehmann, 2008). The evolution of emerging economies and the increased strength of consumer sales have stimulated FDI (De Angelo *et al.*, 2010). The growth of the consumer market and the strength of consumer sales are more important factors in determining FDI than previously offered explanations related to macroeconomic variables (De Angelo *et al.*, 2010). Previous studies found that countries that have natural resources or large markets such as Brazil and China will attract more FDI (Asiedu, 2006; Kouznetsov, 2009).

However, there are countries that do not have these characteristics but still manage to attract foreign investment. It is widely recognised that the characteristics of the host market

play an important role in attracting FDI and that good infrastructure, an educated labour force, trade openness, an efficient legal system and political stability also promote investment (Asiedu, 2006). These findings cannot be generalised and the results of other studies indicate that various factors influence FDI decisions and differ between countries and regions (Asiedu, 2002; De Angelo *et al.*, 2010; Demirbag *et al.*, 2007).

Why do some countries manage to attract more foreign investment than others? The answer to this question is important from an economic, business and political perspective and requires further analysis to identify the forces that drive FDI (Kinda, 2010).

2.2.1 FDI flow versus FDI stock

Published and unpublished FDI data is regularly collected by various institutes around the world. The data includes measures of FDI flow to and FDI stock of various countries and industries. Data on FDI flows is the net value of inflows and outflows that consists of three components: equity capital, reinvested earnings and intra-company loans. FDI stock is presented at book value or historical cost at the time the investment was made. FDI stock is in essence the accumulation of FDI flows and is estimated by either accumulating FDI flows over a period of time or adding FDI flows to FDI stock that has already been obtained. The measurement of FDI in a specific country or sector may vary between these two units of measurement but FDI data is revised and updated on a continuous basis as the accuracy of reporting improves (UNCTAD, 2012).

2.3 FDI "spillovers"

FDI spillovers can be defined as the net effect of the flow of foreign capital to the host country, for example technology, skills, and knowledge that are transferred from a MME that invested in a country. There are many types of spillovers that can either have a positive or negative impact on a country. Evidence from previous studies suggests that FDI spillovers has a positive net effect on the host economy (Doytch & Uctum, 2011; Herzer *et al.*, 2008; Ito, Yashiro, Xu, Chen, & Wakasugi, 2012; Jadhav, 2012; Sun, 2011).

2.3.1 Economic growth

It is widely documented that FDI flow has a positive impact on the overall development and growth of an economy and hence countries try and create favourable conditions to attract more FDI (Doytch & Uctum, 2011; Herzer *et al.*, 2008; Jadhav, 2012; Sun, 2011). The

various factors that result in long-term growth include the transfer of knowledge and management practices, labour training, skills acquisition, and capital accumulation (Herzer et al., 2008). FDI also increases employment by creating new production capacity and jobs in the host country (Jadhav, 2012; Sun, 2011).

The McKinsey Global Institute conducted a study on the impact of FDI in 14 industrial sectors in China, Brazil, India and Mexico that included both manufacturing and services sectors. The study concluded that in 13 of the 14 case studies FDI had a positive impact on productivity and output within those sectors (Das, 2010). With the belief that FDI plays a big role in the development of the local economy, Chinese leaders have been giving special treatment to foreign firms to encourage investment. An example of this is tax incentives that are not available to domestic firms (Abraham, Konings & Slootmaekers, 2010). China's attempt to introduce new businesses and develop new markets in its economy is linked to its liberal FDI regime (Chantasasawat, Fung, Lizaka, & Siu, 2010)

The impact of foreign investment in the host country is, however, dependent on certain economic and political conditions such as the quality of the human capital base, the per capita income, the level of trade openness and the degree of sophistication of the financial markets (Herzer *et al.*, 2008). If these economic and political conditions have not reached a certain level of development, the country will not be in a position to extract the full potential benefit of the foreign investment.

2.3.2   Increased productivity

The increase in domestic competition forces firms to be more efficient and various studies in China have shown that FDI has a positive impact on the productivity of local firms (Sun, 2011). The increased competition in sectors where foreign firms are active, results in an increase in the total productivity of local firms. The increased productivity is also linked to the introduction of more advanced technology, more sophisticated equipment and the updating of old production practices (Abraham *et al.*, 2010).

Foreign investment is generally more productive than local investment as new technologies are incorporated in the production function of the host economy (Herzer *et al.*, 2008). The transfer of technology to the Chinese economy is seen as one of the essential

factors contributing to the rapid growth of the economy. These positive spillovers from FDI justify the host country's government policies to encourage FDI flow (Sun, 2011).

2.4 Internationalisation of manufacturing operations

It can be argued that FDI brings great benefits to the host economy. Research has shown that the benefits vary across different sectors and the evidence suggests that FDI in the manufacturing sector provides the greatest economic spillovers to the host economy (Alfaro, 2003). In a recent study conducted in the Chinese manufacturing industry, the evidence suggested that domestic firms benefit from the presence of foreign investors in the same industry or region (Abraham *et al*., 2010). Foreign investors in China tend to invest more in the secondary sector (manufacturing) than the primary (agriculture) or tertiary (services) sectors. The secondary sector has received more than 60 percent of the total foreign investment composition in the last decade (Liu & Daly, 2011).

The globalisation phenomenon and the growing emerging market economies have resulted in an increase in MMEs setting up operations in emerging economies (Morris & Aziz, 2011). Perhaps the most common reason for companies opting for an offshore strategy is that the host country's conditions are more favourable for the production than exporting of goods or services (Blonigen, 2005; Singhania & Gupta, 2011). The goal of MNCs is to exploit this "locational" comparative advantage and apart from the benefit that it provides to companies, it influences the income, production, prices, employment, economic growth, development and general welfare of the recipient country (Kok & Ersoy, 2009).

The growing emerging markets have become more important destinations for MMEs in which to establish operational units (Kouznetsov, 2009). These destinations may initially be seen as locations where the cost of production can be lowered only to discover the existence of a potential market that can be exploited. MMEs also have the opportunity to extend product life-cycles by transferring established products from the developed markets (Enderwick, 2009).

An understanding of the differences in conditions when comparing the different markets is required to enter these markets successfully (Kouznetsov, 2009). MMEs have certain perceptions of conditions in a country and their potential impact on the performance of the business. These environmental perceptions are one of the most important criteria for

successful internationalisation (Zeng, Xie, Tam & Wan, 2008). Incorrect perceptions might prevent businesses from entering potentially lucrative markets. This highlights the importance of accurate information to assist the managers of these enterprises and their local business partners to make better strategic decisions (Demirbag *et al.*, 2007).

With the expectation of positive spillovers, governments in the host economies attract foreign investments through various investment programmes and incentives (Abraham *et al.*, 2010). Governments in these emerging markets compete to attract foreign investors by not only eliminating restrictions but also creating tax incentives (Kok & Ersoy, 2009). Countries with a lack of natural resources to attract investors need to understand which other investment determinants can be influenced (Asiedu, 2002; Singhania & Gupta, 2011).

It is important for authorities to create an enabling environment so that businesses can operate. Appropriate policies will attract foreign investment and maximise the investment benefit (Kok & Ersoy, 2009). The investment of MMEs results in increased employment, managerial skills and technological advancements which lead to growth and development in the host country's economy (Asiedu, 2002). A business environment where existing businesses can continue to grow and new businesses can be established is required to maximise the investment benefit.

2.5 Determinants of foreign direct investment

Liu and Daly (2011) cited Dunning (1980) as classifying foreign investment into four different categories: natural resource seeking, market seeking, efficiency seeking and strategic asset seeking. Previous studies of the BRICS countries found that foreign investment in these countries were mostly market-seeking and in some cases efficiency-seeking investments. The variables that would, therefore, have an influence on the FDI flow to these countries include market size, labour cost and technological and physical infrastructure (Liu & Daly, 2011).

Numerous studies have been conducted to identify the determinants of FDI at a country level but the literature illustrates that no consensus has emerged, in the sense that there is no widely accepted set of factors that can be regarded as the generic determinants of FDI (Kok & Ersoy, 2009). Many of the studies have tried to generalise the determinants for a group of countries making the assumption that the conditions in different countries are

similar (Asiedu, 2002, 2006; De Angelo *et al.*, 2010; Demirbag *et al.*, 2007; Kok & Ersoy, 2009; Ranjan & Agrawal, 2011).

Academic research on FDI has focussed on macroeconomic factors that cannot be generalised or applied to countries and industries unless they are validated. Distinguishing between the determinants of FDI in specific countries and the industries within those countries will provide useful insight to the authorities responsible for creating an environment that will stimulate investment (De Angelo *et al.*, 2010).

2.5.1   Market size and growth

One of the variables that has an impact on FDI is the size and growth of the host country's market. Foreign investors are generally attracted to the potential of large growing markets (De Angelo *et al.*, 2010; Asiedu, 2002; Kouznetsov, 2009; Ranjan & Agrawal, 2011; Singhania & Gupta, 2011). There are various definitions for market size but the general measure of market size and growth is the country's per capita GDP (Asiedu, 2002; Kouznetsov, 2009; Singhania & Gupta, 2011).

The size of the market will not influence the investment decision of export oriented and efficiency seeking firms which will do the "locational" comparison based on the business environment and other characteristics of the host market. The influence of the market size will therefore depend on the business strategies of individual firms (Demirbag *et al.*, 2007). Market-seeking foreign investment seeks to set up operations in host countries to supply products and services to the local market. The potential opportunities for MNCs improve as the market size increases (Liu & Daly, 2011). The product life-cycle theory motivates firms to set up operations abroad when products have already been standardised and the home market has reached maturity (Jadhav, 2012).

MME's are not always influenced by the ease of doing business in making investment decisions. If the potential markets are big enough, the factors that impact on the ease of doing business can be overcome (Demirbag *et al.*, 2007; Kouznetsov, 2009; Morris & Aziz, 2011). Companies that are looking to establish operational units in emerging markets are generally both export-oriented and market-seeking. General trends in FDI in emerging markets indicate a positive correlation between market size and FDI inflow but there is not enough evidence to generalise these findings (De Angelo *et al.*, 2010; Asiedu, 2002; Kouznetsov, 2009; Ranjan & Agrawal, 2011; Singhania & Gupta, 2011).

2.5.2 Political and institutional conditions

Political instability is generally more characteristic of emerging, less developed markets and plays a role in the entry decision of MNCs. Large MMEs entering the Russian market focus more on the market potential and with enough financial backing these firms still enter the market, despite the political risks involved (Kouznetsov, 2009).

The political instability in some sub-Saharan African countries has, however, had an impact on FDI flow into this region (Asiedu, 2002), which again highlights the fact that FDI determinants cannot be generalised an applied to countries before being validated. Regardless of the fact that the economic conditions might be favourable, uncertainty deters investors (Chantasasawat *et al.*, 2010). Political risk refers to any form of political action that interferes with business or may cause harm to property or personnel (Jadhav, 2012). Corruption and a lack of the rule of law can increase the cost of doing business and, therefore, discourage FDI (Chantasasawat *et al.*, 2010).

An efficient and effective legal system and an environment where a high level of governance is maintained promote FDI (Asiedu, 2006; Kouznetsov, 2009). MNCs operating in developing countries may potentially be confronted with corruption and bribery. The degree to which the rule of law is enforced can promote FDI (Asiedu, 2006).

2.5.3 Macroeconomic stability

The stability of the macroeconomic environment has an impact on the investment decisions of MNCs as the rate of change in the economy as a whole has an impact on the financial performance of businesses (Kok & Ersoy, 2009). Elements within the macroeconomic environment such as inflation and exchange rate fluctuations have proven to influence the investment decisions of MNCs (Asiedu, 2006; Blonigen, 2005; Singhania & Gupta, 2011).

A stable and low inflation rate is seen as a measure of economic stability and is thus an important determinant of FDI. A lower and stable inflation rate promotes FDI (Asiedu, 2006; Singhania & Gupta, 2011).

Most of the previous studies on the impact of exchange rate fluctuations as a determinant of FDI have focused on United States data of inbound and outbound FDI. Although the impact of the exchange rate has proven to be statistically significant, this must be validated in an emerging market study (Blonigen, 2005).

2.5.4 Cost of doing business

The strategy that MMEs use to decide on potential destinations for international operational units is influenced by the cost of doing business in those countries. The ability to run businesses efficiently, especially if the focus of the business is export-oriented, will give companies a competitive advantage in an increasingly competitive business environment.

Factors that have an impact on the cost of doing business and influence the decision to in certain locations include labour cost (average wage rates of employees in that country), interest rate, taxes and financial incentives for foreign investors. Previous studies indicated that in some cases these factors were significant determinants of FDI but the results were not consistent (Chantasasawat *et al.*, 2010; De Angelo *et al.*, 2010; Demirbag *et al.*, 2007; Mehic *et al.*, 2009; Ranjan & Agrawal, 2011; Singhania & Gupta, 2011).

Initial studies related to FDI determinants mostly focussed on labour cost and productivity as location advantages (Mehic *et al.*, 2009). Firms that engage in labour absorbing manufacturing operations might particularly investigate the opportunity of an off-shore operation if there is a comparative cost advantage (Chantasasawat *et al.*, 2010; Ramasamy & Yeung, 2010). The cost and efficiency of the labour force in the country will impact on the cost of doing business and if this is a deciding factor for foreign investors, high wage rates and low productivity will negatively correlate with FDI flows (Ranjan & Agrawal, 2011).

Lower labour cost, in particular, is regarded as an important location-specific advantage motivating MNCs to invest in developing countries (Demirbag *et al.*, 2007). Lower labour cost reduces cost and effectively adds to the bottom line of a business and, therefore, results in foreign investment flocking to areas with low labour cost (Liu & Daly, 2011). Another study found a positive relationship between the increase in labour cost and the FDI flow. A possible explanation might be the tendency to replace "expensive" labour with capital which results in an increase in FDI (Ramasamy & Yeung, 2010).

The impact of interest rates as a determinant of FDI is inconclusive. Higher interest rates increase the cost of financing and, although higher interest rates have a negative impact on FDI in some emerging markets (De Angelo *et al.*, 2010), the interest rate was not significant in explaining changes in FDI flow to India (Singhania & Gupta, 2011).

According to previous studies the effect of taxes on FDI needs to be investigated further as the differences in data samples and methods for analysing the impact of taxes may be the reason for inconclusive results (Blonigen, 2005). Corporate tax has a direct impact on the profitability of businesses and can be very influential in promoting FDI. Many countries offer various tax incentives to promote foreign investment but corporate tax should have a significant impact on the flow of investment (Chantasasawat *et al.*, 2010).

The role of financial incentives in attracting FDI is still an area that requires further research. The evidence in certain studies indicates that financial incentives, for example, cash grants, tax relief and export-oriented incentives are a determinant of FDI, but they do not necessarily seem to have an impact on the subsequent performance of the project (Demirbag *et al.*, 2007).

2.5.5   Infrastructure

Advanced infrastructure creates an impression of economic welfare in a country (Ranjan & Agrawal, 2011). Good infrastructure increases the productivity of an investment and thus stimulates FDI (Asiedu, 2002, 2006; Mehic *et al.*, 2009; Kok & Ersoy, 2009). The availability of an effective transport and distribution network can have an impact on a firm's cost and revenue. The level of infrastructure development in a region should positively correlate with FDI. MNCs that are looking for efficiency-seeking investments will be more concerned about the level of infrastructure development as a way of reducing cost (Liu & Daly, 2011). In the manufacturing sector, a developed infrastructure reduces the transaction costs by allowing firms to connect efficiently with their suppliers and customers (Kinda, 2010).

The technological development and the continuous movement towards an economic system where information is readily available have increased the emphasis on a well-developed telecommunication system as a vehicle to transfer information (Kinda, 2010). A highly developed telecommunication infrastructure not only saves time but reduces the cost of information gathering to improve the efficiency of business activities (Liu & Daly, 2011).

However, poor infrastructure may lower economic advantages as increased operating cost could limit entry opportunities for firms seeking to gain a competitive cost advantage (Kouznetsov, 2009). The importance of an efficient logistics network and the constant supply of electricity and water as important inputs to most manufacturing processes might

result in a positive correlation between the level of infrastructure and FDI flows to this industry.

2.5.6 Trade openness

Economies that are more open will not only attract more FDI but will be more effective and efficient in the beneficiation thereof (Herzer *et al.*, 2008). Trade openness and economic liberalisation complement FDI where the firms that are investing are market seeking (Mehic *et al.*, 2009; Ranjan & Agrawal, 2011). The impact of trade openness on the investment decision will depend on the type of investment.

If firms are market seeking they will rather set up a subsidiary in the host country than pay the trade tariffs. This is referred to as "tariff-jumping". Countries looking to increase the investments of market-seeking firms can increase trade regulations as a method of stimulating these types of investments (Asiedu, 2002; Blonigen, 2005; Jadhav, 2012). The expectation is that there would be a negative correlation between trade openness and market-seeking FDI and a positive correlation with export-oriented FDI (Chantasasawat *et al.*, 2010).

Trade is seen as a complement to FDI rather than a substitute and some evidence from previous studies indicates a positive correlation between FDI and trade openness in countries where the investments are more export-oriented (De Angelo *et al.*, 2010; Asiedu, 2002). Export-oriented MNCs would prefer to locate in more open economies because trade protection generally implies that the transaction costs would be higher (Jadhav, 2012).

Trade openness as a determinant of FDI inflow to India, was not significant in explaining changes in FDI (Singhania & Gupta, 2011) but had an impact on the FDI flows to Brazil, Russia and China (Ranjan & Agrawal, 2011).

2.5.7 Gross capital formation

According to Ranjan & Agrawal (2011), "higher gross capital formation leads to greater economic growth and improvements in the investment climate, which in turn help to attract higher FDI inflows" (p. 257). As an FDI determinant, growth in gross capital formation should positively correlate with FDI inflows (Kok & Ersoy, 2009).

2.6 Summary of literature

Previous studies highlighted some commonalities in determinants for FDI that assists in explaining the variations in FDI flow to different locations. They also indicated that these determinants, although reasonably common, could not necessarily be generalised and applied to all countries and industries.

Most of the previous studies focused on FDI determinants at macro-level. The list of variables identified in the literature review is country FDI enablers that will be tested at the industry level. The list of common variables is grouped into the following eight overarching predictive clusters:

- Market size and growth

- Political and institutional conditions

- Macroeconomic stability

- Cost of doing business

- Level of infrastructure in a country

- Trade openness

- Gross capital formation

Further research might result in additions or changes to these predictive clusters but that will not influence the methodology covered in Chapter 3.

Chapter 3: Research Hypotheses

This research aimed at providing answers to the three research hypotheses listed below. The research hypotheses were developed to analyse the attractiveness of the different BRICS countries as potential destinations for foreign investment specifically in the manufacturing sector. The outcome of the hypotheses provided clarity on the determinants of FDI in each of these countries and possible reasons why some of these countries have managed to attract more FDI to the manufacturing sector than others.

The study will assist investors and policy makers to enhance the understanding of the investment climate in the manufacturing industry of the different countries.

3.1 Hypothesis 1

The following are generic determinants of FDI flow to the manufacturing industry for each of the BRICS countries as determined by their significant correlations with FDI flow over the 2001 – 2010 period:

- The market size and growth
- Political and institutional conditions
- Macroeconomic stability
- Cost of doing business in that country
- Level of infrastructure in the country
- Trade openness
- Gross capital formation

Previous studies highlight certain generic determinants of FDI flow to emerging markets at a country level (Asiedu, 2002; De Angelo *et al.*, 2010; Singhania & Gupta, 2011). The determinants were selected based on FDI theory and previous themes highlighted in the literature (Kok & Ersoy, 2009; Singhania & Gupta, 2011). A comprehensive literature review formed the basis of the analysis as the structure of previous FDI studies is known to induce selection bias (Eicher, Helfman & Lenkoski, 2012).

The predictive clusters listed above were identified as generic determinants of FDI flow to emerging markets and are regarded as independent variables in the analysis.

The relationship between each of the independent variables and FDI was determined by the outcome of nonparametric bivariate correlations in the manufacturing industry of each of the BRICS countries. A bivariate correlation is a statistical analysis that provides the correlation results for a pair of variables (Keller & Warrack, 2003). The outcome of the correlation analysis was used to compare the different BRICS countries as potential investment destinations for MMEs.

The availability of reliable data dictated the methodology that could be used in the analysis. Although a multiple regression analysis would have been ideal, the assumptions for a multiple regression could not be satisfied with the limited number of observations. The annual observations for the 2001 – 2010 period, restricted the study to a nonparametric analysis as the limited number of observations does not meet the underlying assumption of normality (Berenson & Levine, 1986). This type of test is also referred to as a distribution-free test where the data used in the analysis does not meet the assumptions of a normal distribution (Keller & Warrack, 2003).

3.2 Hypothesis 2

The determinants of FDI inflow to the manufacturing industry of the BRICS countries have an impact on the financial performance of MMEs in that industry as determined by their significant correlations with company performance indicators over the 2001 – 2010 period.

The same independent variables used for the first hypothesis were used as input to this hypothesis. Investors make decisions based on the perception that the determinants will have a potential impact on the performance of a company that invests in any of the BRICS countries. The aim of this hypothesis was to either validate or disprove the perceptions of foreign investors.

The potential impact was determined by the nonparametric correlation coefficients between the factors that influence FDI in the manufacturing sector of each BRICS country with the revenues of two listed MMEs from the Goldman Sachs BRICs Nifty 50 group of companies (Goldman Sachs Group, 2009). The methodology is similar to that used by Buccellato, Scheffel and Thomas (2011) in a study that analysed the determinants that influenced the profits of United Kingdom (UK) foreign-based MNCs. In this hypothesis the revenues of the companies were used instead of the profit figure.

The results indicated whether a relationship existed between the identified determinants of FDI and the financial performance of the MMEs already operating within the manufacturing sector of the specific countries. Some of the factors that influence decision-making might only be a perception of the possible risk and in reality have no real impact on the performance of businesses.

3.3 Hypothesis 3

The BRICS manufacturing industries are competitive in attracting FDI as determined by comparisons of FDI inflow to/stock of the manufacturing sector of BRICS relative to the rest of the sample of countries on the International Trade Centre (ITC) investment map over the 2001 – 2010 period and normalised to the per capita GDP of that country to account for the different sizes in economies.

This was determined by comparing the BRIC countries in terms of FDI inflow to the manufacturing sector normalised to the GDP per capita of that country to account for the different sizes of economies (Singhania & Gupta, 2011). The analysis for South Africa followed a similar methodology but of FDI stock. A comparison was made between the BRICS countries and the rest of the sample of countries on the ITC investment map (ITC, 2012).

The BRICS countries were compared to the rest of the sample in terms of the median FDI/ per capita GDP ratio for the 2001 – 2010 period using the Wilcoxon signed rank test for paired samples (Keller & Warrack, 2003) with the matching variable considered as the year of the observation. The Wilcoxon signed rank test is a statistical analysis that is used to determine whether two populations have equivalent medians based on a corresponding pair of samples (Kenkel, 1996).

To complement the paired sample analysis, an illustration was given of the overall international ranking for the average FDI/per capita GDP ratio for the final period of available data. The compound growth rate over the ten-year period was also included in the international ranking table to illustrate which countries have managed to grow foreign investment as a proportion of per capita GDP. The difference scores calculated between successive years were used in an attempt to remove the serial dependence inherent in annual data.

If a BRICS country shows that it can attract significantly more FDI to its manufacturing industry than the rest of the countries in the sample, it was considered a competitive destination. Another measure of competitiveness was the international ranking. If a country ranks within the top 25% of the countries on the ITC investment map it was considered a competitive destination.

The outcome of this analysis was an indication of the competitiveness of the different BRICS countries to attract FDI to the manufacturing sector.

Chapter 4: Research methodology

4.1 Introduction and approach

The analysis was divided into three hypotheses. Each hypothesis used the required methodology to contribute to the overall analysis of the BRICS countries as potential destinations for MMEs and the competitiveness of each country in attracting FDI to the manufacturing sector.

The outcome of the analysis is aimed at assisting MMEs that intend to invest in international operations in any of the BRICS countries. The results highlight the specific offerings of each country and how these might impact on the performance of a potential investment. In addition, the outcome of the research is aimed at assisting the government policy makers to understand the FDI determinants of the manufacturing industry and the factors that have an impact on the performance of already established MMEs.

4.2 Statistical methods

The following statistical methods were used in the analysis. These methods are applicable to all three hypotheses.

4.2.1 Pre-estimation testing

The following potential model inadequacies had to be addressed before analysing any of the hypotheses because of the use of longitudinal data and multiple variables:

4.2.1.1 Autocorrelation

Most statistical methods are based on the assumption of independent observations drawn randomly from an underlying fixed distribution. However, in longitudinal data series displaying trends, adjacent data points are not independent as they are more similar to each other than data points that are further away from each other. Violation of these assumptions that occur in data series displaying trends would render the correlation results highly suspect or invalid. The results could potentially include autocorrelation/serial correlation between the residuals of the observations used in the analysis (Kenkel, 1996). By analysing the longitudinal data in this study, the difference scores were used to remove the autocorrelation. A lag of one was used, which is a well-known means to remove autocorrelation, that is 2001 value = 2002 – 2001. By using the difference scores in the analysis, independence of the residuals is assumed.

4.2.1.2 Multicollinearity

Multicollinearity can be defined as a condition that exists when the independent variables are correlated with one another which might lead to spurious results (Keller & Warrack, 2003). Multicollinearity was not relevant because nonparametric bivariate correlations rather than correlations involving multiple predictors simultaneously were computed. In other words, each of the independent variables used in the analysis was considered independently and relationships between the independent variables were thus not as relevant as they may have been in a multiple regression analysis. For example, statistically significant correlations between a variable categorised under "the cost of doing business" and another variable categorised under "macroeconomic stability" were not considered relevant in the overall analysis.

4.2.2 Including/excluding decision criteria for hypotheses

Different statistical tests were applied in the hypotheses and the results of tests were evaluated using the criteria discussed below.

4.2.2.1 Decision criteria 1

- **p-value (correlation tables, scatter plots)**

The p-value is known as the observed level of significance and is the smallest value at which the null hypothesis can be rejected for a given set of data (Berenson & Levine, 1986). The level of significance adopted was 5%. This means that if the p-value of a test of significance is above 0.05, the variable is unlikely to be a significant contributor to the model. For any p-value of less than 0.05, the relationship between the two values is statistically significant (Saunders & Lewis, 2012), that is if the p-value of the correlation for a political and institutional variable and FDI is less than 0.05, the variable would be considered a significant predictor.

4.2.2.2 Decision criteria 2

- **Spearman's rank correlation coefficient (correlation tables)**

Spearman's rank correlation coefficient represents the strength of the relationship between the dependent and independent variables and the probability that the relationship occurred by chance (Saunders & Lewis, 2012). The Spearman rank correlation coefficient is calculated by first ranking the data and then calculating the correlation between the ranks (Keller & Warrack, 2003). A perfect Spearman correlation of +1 or -1 occurs when there is

either a perfect positive or a perfect negative correlation between variables (Keller & Warrack, 2003). A Spearman rank order correlation of 0.7 between a variable categorised under "infrastructure" and FDI would be an indication of a strong correlation between these variables.

- **Pearson's correlation coefficient (scatter plots)**

Pearson's correlation coefficient also represents the relationship between the two variables and the probability of the relationship occurring by chance (Saunders & Lewis, 2012). The actual difference values will be used to determine the correlation coefficient and not the rank values as in the case of the Spearman rank correlation coefficient (Keller & Warrack, 2003). The Pearson correlation coefficient used scatter plots of the actual values of the differences as opposed to the rank order values used in the Spearman rank correlation coefficient. The scatter plots illustrate the existence of outlying points that are not visible when the rank values are used. These outlying points can, in some cases, be influential in changing the relationships between variables.

4.2.2.3 Decision criteria 3
- **R² value (correlation tables, and scatter plots)**

The R^2 value is known as the coefficient of determination and is a measure of the percentage of variation of the dependent variable that is explained by the correlation analysis (Albright, Winston & Zappe, 2009). The R^2 values lie between zero and one. High values indicate that there is a strong correlation between the variables and zero if the relationship between the variables is not significant. It is better to use the coefficient of determination as the values of R^2 can be interpreted more precisely than the coefficient of correlation, which is the r value (Keller & Warrack, 2003). An R^2 value of 0.8 between gross capital formation and FDI would indicate that 80% of the variation in FDI can be explained by gross capital formation.

4.3 Hypothesis 1

The following are generic determinants of FDI flow to the manufacturing industry for each of the BRICS countries as determined by their significant correlations with FDI flow over the 2001 – 2010 period:

- Market size and growth

- Political and institutional conditions
- Macroeconomic stability
- Cost of doing business in that country
- Level of infrastructure in the country
- Trade openness
- Gross capital formation

4.3.1 Design and methodology

The study followed an exploratory approach in identifying the possible determinants of FDI in emerging markets from previous research (Kok & Ersoy, 2009; Saunders & Lewis, 2012; Singhania & Gupta, 2011). A quantitative analysis of existing secondary data for correlational purposes was conducted (Saunders & Lewis, 2012). The identified explanatory variables were used to determine the correlation coefficient of the determinants that potentially influence the investment decision of MNCs and thus the overall foreign investment in the manufacturing industry of the host country.

The purpose of the study was to compare the different BRICS countries as potential destinations for either investment or establishment of operational facilities by MMEs. The aim was to highlight potential determinants of FDI flow to the manufacturing industry of each country and the degree to which each factor influenced investment decisions. The results highlighted why some BRICS countries attracted more foreign investment in the manufacturing sector than others. It is important to note that correlation does not prove causation but merely indicates a similarity in the patterns of the different variables (Blumberg, Cooper & Schindler, 2008). Further research will have to be conducted to investigate actual causality.

Most of the previous studies followed the panel data analysis technique (Asiedu, 2002; Blonigen, 2005; De Angelo *et al.*, 2010; Kok & Ersoy, 2009; Ranjan & Agrawal, 2011). The main reasons for this methodology are the multi dimensions of time and a group of countries that is analysed concurrently. For the purposes of this analysis, nonparametric bivariate rank order correlations between each of the independent variables and FDI were determined. The reason for this approach was that the limited number of observations did not meet the underlying assumption of normality, that is if the data used in the analysis is not necessarily normally distributed (Berenson & Levine, 1986). If the data does not meet the normality requirement, the relationship between variables is measured by employing a

nonparametric technique, namely the Spearman rank correlation coefficient (Keller & Warrack, 2003).

The methodology and data that were used are similar to those of a previous study conducted by Kok and Ersoy (2009) at a country level. The main objective was to differentiate between the determinants of FDI to the manufacturing industries of each of these countries by means of regression models. The annual data for the ten-year period only allowed nonparametric analysis as the underlying assumption that the data was distributed normally could not be satisfied (Berenson & Levine, 1986).

Bivariate rank order correlations were run on each of the independent variables to identify the statistically significant factors (Saunders & Lewis, 2012). The analysis tested whether a positive or negative relationship held true between the selected variables and FDI. The outcome also measured the extent to which the determining factors were in variation to the FDI. If the study is taken further and causality is proven, the results will allow countries to make predictions about the probability of FDI (Singhania & Gupta, 2011).

4.3.2   Data collection

Collecting reliable data for the different phases of the analysis is important for the reliability of the results. Even the most comprehensive FDI datasets contain large portions of missing data and the source of the data is thus very important for the reliability of the findings (Eicher *et al.*, 2012). The WIR is compiled by the United Nations on an annual basis and contains extensive information on the flow of investments between different countries (UNCTAD, 2011). The ITC breaks these investments flows down further to industry level (ITC, 2012).

The ITC database contains data on the inward FDI flows to the manufacturing industries of the different BRIC countries and the inward FDI stock to the South African manufacturing industry. These values were used as dependent variables in the correlation analysis. The dataset only contains reliable data for the 2001 – 2010 period.

The FDI determinants were used as the independent variables (Asiedu, 2002). The data of the independent variables is similar to a number of data sets that were used in previous studies. The data for these indicators is sourced from international organisations such as the World Bank and the Economist Intelligence Unit (EIU) that conduct annual research on these different factors.

Details of all the variables in each of the groups are provided below:

4.3.3   Variables

- **Market size and growth potential**

Market size and growth potential data consists of basic macroeconomic data that forms part of the word development indicators (WDI) as compiled by the World Bank annually.

Per capita GDP *(current US$)*: The GDP data for each of the countries measures the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products divided by the mid-year population (The World Bank, 2011). The per capita GDP is used as a proxy for the size of the market. Export-oriented and efficiency-seeking firms are not necessarily concerned about market size (Demirbag *et al.*, 2007), but the trend in investment in emerging markets is that most foreign investors are market seeking. Therefore, a positive correlation between per capita GDP and FDI is expected (De Angelo *et al.*, 2010; Asiedu, 2002; Kouznetsov, 2009; Ranjan & Agrawal, 2011; Singhania & Gupta, 2011).

GDP growth (annual %): The growth percentage measures the annual percentage growth rate of GDP at market prices based on constant local currency (The World Bank, 2011). If the GDP growth is high, it might potentially be an indication of a growing market and more promising future prospects (Ranjan & Agrawal, 2011). A positive correlation between GDP growth and FDI is expected.

- **Political and institutional conditions**

The data in this section is sourced through the world governance indicators (WGI) database compiled by the World Bank on an annual basis. The measures of political and legal conditions are divided into three sub-groups with various measures within each sub-group.

1. *The process by which governments are selected, monitored, and replaced:*

Political stability and absence of violence/terrorism: The variable measures the perception of the likelihood that the government of a specific country will be destabilised or overthrown by unconstitutional or violent means. This measure also includes politically-motivated violence and terrorism (The World Bank, 2012). An investment environment that

is politically more stable should increase investor confidence. However, this is an area in which emerging economies have struggled in the past (Asiedu, 2006).

Voice and accountability: As a measure of democracy in a country, this variable captures the perceptions of the extent to which a country's citizens are able to participate in government selection, freedom of expression, freedom of association, and a free media (The World Bank, 2012). MNCs looking to invest in emerging economies will more than likely be confronted with business environments where the rules of the game are dictated by government and this might impact negatively on foreign investment (Asiedu, 2006).

2. *The capacity of the government to effectively formulate and implement sound policies:*

Government effectiveness: Government effectiveness measures the perceived capacity of government in terms of the quality of public services and the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. It is thus a measure of the quality of policy formation and execution (The World Bank, 2012). An environment in which strong governance is enforced promotes FDI (Kouznetsov, 2009).

Regulatory quality: Governments should implement policies that provide an environment that enables the private sector to develop. The data captures the perceptions of the ability of governments to formulate and implement sound policies and regulations that enable and promote private sector development (The World Bank, 2012). An environment in which policies are not sound can increase the cost of doing business and therefore deter investment (Chantasasawat *et al.*, 2010).

3. *The respect of citizens and the state for the institutions that govern economic and social interactions among them:*

Rule of law: The establishment and execution of laws and regulations capturing the perceptions of the extent to which agents have confidence in and abide by laws, in particular the quality of contract enforcement, property rights, the police, the courts, and the likelihood of crime and violence (The World Bank, 2012). The quality of institutions matter to foreign investors as indicated in previous research (Asiedu, 2006). Rule of law is

one of the measures of institutional quality and a higher ranking should positively correlate with FDI flow.

Control of corruption: The control of corruption is measured by capturing perceptions of the extent to which power is exercised for personal gain, including both petty and grand forms of corruption (The World Bank, 2012). Higher levels of corruption are one of the most important deterrents of FDI in emerging markets (Asiedu, 2006). The expectation is that a lower level of corruption would correlate positively with FDI.

- **Macroeconomic stability**

Macroeconomic stability was measured by the degree of variation of the measures over a period of time.

Inflation, consumer prices (annual %): Inflation is a measure of the annual percentage of change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals (The World Bank, 2011). The inflation rate decides the final value of the returns on investments made in a country and foreign investors would want some sort of certainty on future returns. The stability of the inflation rate is an important determinant of FDI flow. Higher and fluctuating inflation rates will correlate negatively with FDI flow (Singhania & Gupta, 2011).

Official exchange rate (LCU per US$, period average): The data captures the exchange rate determined by national authorities or the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages (The World Bank, 2011). Fluctuations in the exchange rate should correlate negatively with FDI flows as previous studies found that fluctuations had an impact on MNCs investment decisions. As a local currency weakens, it increases the value of the foreign capital investment and the expectation is a positive correlation between FDI and the official exchange rate (Asiedu, 2006; Blonigen, 2005; Singhania & Gupta, 2011).

- **Cost of doing business**

Real interest rate (%): Real interest rate is a measure of the actual lending rate adjusted for inflation (The World Bank, 2011). If interest rates remain relatively low and stable it promotes more financing of projects with FDI money. High interest rates will thus correlate negatively with FDI flow (Singhania & Gupta, 2011).

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Taxes on income, profits and capital gains (% of revenue): This measure includes all the taxes levied on the income of individuals, the profits of corporations and enterprises, and capital gains (The World Bank, 2011). A higher corporate tax rate has a direct impact on the profitability of firms and it is expected that higher tax rates would correlate negatively with FDI (Chantasasawat *et al.*, 2010).

Labour cost per hour ($): The labour cost per hour is a measure of the gross average hourly wage paid to workers (EIU, 2012). Efficiency-seeking MNCs want to establish operations in countries with lower wage rates as this has a direct impact on profitability. The expectation is that higher wage rates would negatively correlate with FDI (Liu & Daly, 2011; Mehic *et al.*, 2009).

GDP per person employed (constant 1990 PPP $): This is a measure of the total GDP divided by the total employment in the economy (The World Bank, 2011). A more productive labour force will result in increased operational efficiency and in a traditionally high labour absorbing industry such as manufacturing; the expectation is that FDI flow would correlate positively with higher productivity (Ranjan & Agrawal, 2011).

Labour productivity growth (%): This is a measure of the annual increase in GDP per person employed in the economy (EIU, 2012). As the labour force in an economy becomes more productive, it reduces the cost of doing business in that economy and thus increases the flow of foreign capital (Ranjan & Agrawal, 2011).

- **Infrastructure**

Internet users (per 100 people): This is a measure of technological development and infrastructure in an economy and includes all people with access to the worldwide web (The World Bank, 2011). There is a continuous move towards an economic system where information is readily available. A developed telecommunication infrastructure represented by the number of internet users in a country reduces the cost of information (Kinda, 2010; Liu & Daly, 2011). The expectation is a positive correlation between infrastructure and FDI.

Electric power consumption (kWh): Electric power consumption measures the production volumes of electrical power plants in a country (The World Bank, 2011). The importance of a constant supply of electricity and water as inputs to most manufacturing processes might

result in a positive correlation between the level of infrastructure and FDI to the manufacturing industry (Kinda, 2010).

Railways, goods transported (million tonne-km) – Manufacturing operations require a logistical network and infrastructure to transport either raw material or finished goods between different stakeholders in the supply chain. A higher volume of goods transported by rail is seen as a measure of the efficiency of the rail network in a country. Goods transported by railway are the volume of goods transported by railway, measured in metric tonnes times kilometres travelled (The World Bank, 2011). The availability of an effective transport and distribution network can have an impact on a firm's cost and revenue. The level of infrastructure development in a region should correlate positively with FDI (Liu & Daly, 2011).

- **Trade openness**

Trade (% of GDP): Trade is measured as the sum of total imports and exports as a portion of the total GDP (The World Bank, 2011). The expectation is that there would be a negative relationship between trade openness and market-seeking FDI and a positive correlation between FDI and export-oriented FDI (Chantasasawat *et al.*, 2010).

- **Gross capital formation**

Gross capital formation (% of GDP): Gross capital formation includes any additions to the fixed assets of the economy plus the net changes in the level of inventories. Fixed assets include land improvements, plant, machinery, and equipment purchases, and the construction of roads, railways, schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Inventories include the working capital held by a firm (The World Bank, 2011). As an FDI determinant, growth in gross capital formation should correlate positively with FDI (Kok & Ersoy, 2009).

The summary of the predictors for each variable are illustrated in Table 1:

Table 1 - Summarised information on the predictors used in the analysis

Category	Independent Variable	Indicator	Expected Sign According to the Literature	Theoretical Justification	Source
Market size and growth potential	Per capita GDP (current US$)	Difference scores of per capita GDP in US$	+	Emerging market foreign investors are generally market seeking and the expectation is, therefore, a positive correlation with FDI (De Angelo *et al.*, 2010; Asiedu, 2002; Kouznetsov, 2009; Ranjan & Agrawal, 2011; Singhania & Gupta, 2011).	WDI: The World Bank
	GDP growth (annual %)	Difference scores of annual percentage growth in GDP	+	GDP growth might be an indication of a growing market and would therefore correlate positively with FDI (Ranjan & Agrawal, 2011).	
Cost of doing business	Real interest rate (%)	Difference scores of the percentage annual lending rate adjusted for inflation	-	Lower interest rates helps in better financing of projects along with FDI money. High interest rates will thus correlate negatively with FDI (Singhania & Gupta, 2011).	WDI: The World Bank
	Taxes on income, profits and capital gains (% of revenue)	Difference scores of the tax percentage levied on individuals, corporations and capital gains	-	A higher corporate tax rate directly impacts on profitability and would, therefore, correlate negatively with FDI (Chantasasawat *et al.*, 2010).	
	Labour cost per hour ($)	Difference scores of the gross average hourly wage paid to workers in US$	-	Higher wage rates would correlate negatively with FDI as they increase the cost of doing business (Liu & Daly, 2011; Mehic *et al.*, 2009).	EIU
	GDP per person employed (constant 1990 PPP $)	Difference scores of the total GDP in US$ divided by the total employment in the economy	+	FDI would positively correlate with higher productivity as this improves the efficiency of the investment (Ranjan & Agrawal, 2011).	WDI: The World Bank
	Labour productivity growth (%)	Difference scores of the annual percentage increase in GDP per person employed in the economy	+	A more productive workforce reduces the cost of doing business and should thus increase the flow of foreign capital (Ranjan & Agrawal, 2011).	EIU

Category	Independent Variable	Indicator	Expected Sign According to the Literature	Theoretical Justification	Source
Macroeconomic stability	Inflation, consumer prices (annual %)	Difference scores of annual percentage change in consumer prices	-	Higher and fluctuating inflation rates will correlate negatively with FDI flows (Singhania & Gupta, 2011).	WDI: The World Bank
	Official exchange rate (LCU per US$, period average)	Difference scores of annual average exchange rate based on monthly averages	+	As a local currency weakens it increases the value of the foreign capital investment and the expectation is a positive correlation between FDI and the official exchange rate (Asiedu, 2006; Blonigen, 2005; Singhania & Gupta, 2011).	
Infrastructure	Internet users (per 100 people)	Difference scores of the actual number of internet users for every 100 people	+	Internet users in a country reduce the cost of information (Kinda, 2010; Liu & Daly, 2011). The expectation is a positive correlation with FDI.	WDI: The World Bank
	Electric power consumption (kWh)	Difference scores of annual electrical power consumption in kWh	+	The importance a constant supply of electricity as inputs to manufacturing processes might result in a positive correlation with FDI (Kinda, 2010).	
	Railways, goods transported (million tonne-km)	Difference scores of the volume of goods transported by railway, measured in metric tonnes times kilometres travelled	+	An effective transport and distribution network can impact on cost and revenue and should correlate positively with FDI (Liu & Daly, 2011).	WDI: The World Bank
Gross capital Formation	Gross capital formation (% of GDP)	Difference scores of the measure of the addition in fixed assets and net change in inventory levels in an economy as a percentage of GDP	+	As a FDI determinant, growth in gross capital formation should correlate positively with FDI (Kok & Ersoy, 2009).	WDI: The World Bank
Trade openness	Trade (% of GDP)	Difference scores of the sum of total exports and imports as a portion of the total GDP of a country	+/-	The expectation is that there would be negative relationship between trade openness and market-seeking FDI and a positive correlation between FDI and export-oriented FDI (Chantasasawat *et al.*, 2010).	WDI: The World Bank

Category	Independent Variable	Indicator	Expected Sign According to the Literature	Theoretical Justification	Source
Political and institutional conditions	Control of corruption	Difference scores of the extent to which power is exercised for personal gain	+	Higher levels of corruption are one of the most important deterrents of FDI to emerging markets and better control would thus correlate positively with FDI (Asiedu, 2006).	WGI: The World Bank
	Government effectiveness	Difference scores of the value of the quality of policy formation and execution by government	+	An environment where strong governance is enforced promotes FDI (Kouznetsov, 2009).	
	Political stability and absence of violence/terrorism	Difference scores of the value of the likelihood of a country's government to be overthrown or destabilised by unconstitutional means	+	An investment environment that is politically more stable should increase investor confidence and thus correlate positively with FDI (Asiedu, 2006).	
	Regulatory quality	Difference scores of the value of the country's government's ability to formulate and implement sound policies	+	An environment where policies are not sound can increase the cost of doing business and therefore deter investment. Better regulatory quality should positively correlate with FDI (Chantasasawat *et al.*, 2010).	
	Rule of law	Difference scores of the value of the country's establishment and execution of laws	+	Rule of law is one of the measures of institutional quality and a higher rank should correlate positively with FDI flow (Asiedu, 2006).	
	Voice and accountability	Difference scores of the value of the country's level of democracy	+/-	Democratic societies where the rules of the game are not dictated by government should correlate positively with FDI (Asiedu, 2006).	

4.3.4 Population

The population included all the countries on the ITC investment map (ITC, 2012).

4.3.5 Sampling

This study focused specifically on the Brazil, Russia, India, China, and South Africa and these countries thus constituted the sample used in the analysis.

4.4 Hypothesis 2

The determinants of FDI inflow to the manufacturing industry of BRICS countries have an impact on the financial performance of MMEs in that industry as determined by their significant correlations with company performance indicators over the 2001 – 2010 period.

4.4.1 Design and methodology

Hypothesis 2 used a quantitative analysis (Saunders & Lewis, 2012) of the factors that influence the investment destinations of MMEs for each of the BRICS countries. The analysis used firm-level data and industry-specific variables to investigate the potential determinants of company revenues for these MMEs (Bucellato *et al.*, 2011). The industry-specific variables were used to determine the correlation coefficient of the factors that have an impact on the financial performance of MMEs already operating in the different BRICS countries.

The purpose of the study was to validate or disprove the factors that influence the perceptions of MNCs and to determine whether these factors had an actual impact on the revenues generated by MMEs. The same methodology used in the first hypothesis was used in this hypothesis.

The companies in the analysis formed part of a recent study by Goldman Sachs Group (2009). The sample included a group of fifty companies from the developed market that had various levels of exposure to the different BRICS countries. Companies that specifically operated in the manufacturing industry formed part of the analysis.

The companies that formed part of the analysis are tabulated below:

Table 2 - Summary of the MMEs used in the analysis

Country	Company	Industry
Brazil	Holcim	Industrial manufacturing
	Avon	Manufacturing and marketing of beauty products
Russia	Anheuser-Busch InBev	Beverage manufacturing and distribution
	Carlsberg Group	Beverage manufacturing and distribution
India	ABB Ltd.	Industrial manufacturing
	Hindustan Unilever Ltd (HUL)	Fast moving consumer goods
China	Suzuki Motor Corporation	Vehicle manufacturing
	Anheuser-Busch InBev	Beverage manufacturing and distribution
South Africa	British American Tobacco (BAT)	Cigarette manufacturing and distribution
	Unilever	Fast moving consumer goods

4.4.2 Data collection

The Goldman Sachs research on the BRICS Nifty 50 was used to analyse the third hypothesis (Goldman Sachs Group, 2009). The firm-level data for MMEs in each of the BRICS countries and the industry-specific determinants of FDI flows were the variables in the analysis (Bucellato *et al.*, 2010).

The analysis used the revenue figures for each of these companies for the period 2001 - 2010. The revenue figures were used as the dependent variables in the correlation analysis. The same independent variables used in the first hypothesis were used as the predictors in the second hypothesis (Asiedu, 2002).

The BRICs Nifty 50 and the companies selected to form part of the analysis will be discussed below.

4.4.2.1 The BRICs Nifty 50

The BRICs Nifty 50 consists of a basket of companies from developed markets that have established operations at various levels of exposure to the different BRIC countries. These companies were identified in a Goldman Sachs study as the 50 companies that are best placed to benefit from the BRIC super cycle. These companies are established MNCs that provide an emerging market type return with lower volatility (Goldman Sachs Group, 2009). South Africa was not included in the Goldman Sachs study but many of the identified companies have operations in South Africa and could thus be included in the analysis.

4.4.2.2 MMEs in Brazil

Holcim: Holcim is one of the world's leading suppliers of cement and aggregates (crushed stone, sand and gravel). It was founded in Switzerland in 1912. The company's core business includes the manufacture and distribution of cement, and the production, processing and distribution of aggregates, ready-mix concrete and asphalt. Holcim is a global company with 80 000 employees and production facilities in 70 countries. The company has been operating in Brazil since 1951 with operations in the South East and Federal district. Holcim Brazil employs approximately 2 000 people (Holcim, 2011).

Avon: Avon is a global manufacturer and marketer of beauty products that was incorporated in 1886. The company manufactures and packages beauty products in five geographical regions around the globe that include Latin America; North America; Central & Eastern Europe, Western Europe, the Middle East and Africa, and Asia Pacific. The international operations are conducted primarily by subsidiaries in 62 countries outside the US. Avon employs more than 35 000 people in these operations (Avon, 2011).

4.4.2.3 MMEs in Russia

Anheuser-Busch InBev: Anheuser-Busch InBev is the world's leading brewer and one of the world's top five consumer product companies. The group employs 116 000 people in 23 countries worldwide. The company is geographically diversified with a balanced exposure to developed and developing markets. The Anheuser-Busch InBev beer portfolio includes well over 200 beer brands. The Russian business was formed in 1999 when two brewers, Interbrew and SUN Brewing, merged their brewing operations. SUN InBev currently has nine brewing operations in Russia (Anheuser-Busch InBev, 2012).

Carlsberg Group: Carlsberg is the world's fourth largest brewery group with 41 000 employees worldwide. The group has three target geographic regions, namely Northern Europe, Western Europe, Eastern Europe and Asia. The Carlsberg beer portfolio includes more than 500 brands that vary in price, volume, target audience and geographic penetration. The Russian beer market is considered to be one of the largest in the world. Carlsberg Group operates in a joint venture partnership with the Baltika Brewery that was founded in 1992. Baltika Brewery currently has a market share of around 37% in the Russian market, 10 and 9500 employees (Carlsberg Group, 2011).

4.4.2.4   MMEs in India

ABB Ltd: ABB Ltd India forms part of the ABB group that operates in around 100 countries and employs about 130 000 people. The company was incorporated in 1949 as The Hindustan Electric Company Limited and the name was finally changed to ABB Ltd in 2003. The operations in India include 12 manufacturing facilities with more than 10 000 employees. The company offers an extensive array of products and services in the power and automation technologies (ABB Ltd, 2011).

Hindustan Unilever Ltd (HUL): HUL was incorporated in 1933 and forms part of the Unilever group. HUL employs more than 16 000 people, including 1500 managers. HUL is India's largest fast moving consumer goods (FMCG) company with more than 70 manufacturing locations in the country. The product portfolio includes a range of products, for example soaps and detergents, personal products, beverages, and packaged foods (HUL, 2011).

4.4.2.5   MMEs in China

Suzuki Motor Corporation: The Suzuki Motor Corporation started business in 1909 as Suzuki Loom and the company was registered in 1920. Suzuki develops and manufactures a range of products that include motorcycles, automobiles, outboard motors, boats, motorised wheelchairs, electro-scooters, and industrial equipment. The company employs close to 15 000 people globally. The company has established six manufacturing facilities in China since 1993 with the last of these operations commissioned in 2010. Suzuki employs approximately 3 000 people in the Chinese operations (Suzuki Motor Corporation, 2012).

Anheuser-Busch InBev: Anheuser-Busch InBev first entered the Chinese market in 1984, providing technological assistance to Zhujiang Brewery. The company doubled the Chinese business in May 2006 by acquiring 100% of the Fujian Sedrin Brewery. Anheuser Busch-InBev China employs approximately 23 000 people in 35 beverage plants (Anheuser-Busch InBev, 2012).

4.4.2.6   MMEs in South Africa

British American Tobacco (BAT): BAT South Africa forms part of the BAT group of companies that operate in 180 countries worldwide. The company manufactures and

distributes more than 20 brands of cigarettes in South Africa. The factory in Heidelberg South Africa produces about 26 billion cigarettes annually for domestic and international markets. BAT employs more than 2 000 people throughout South Africa (BAT, 2011).

Unilever: Unilever South Africa (Pty) Ltd is a subsidiary of the Unilever group. The company operates in the FMCG market as a manufacturer and distributor of these goods. Unilever South Africa employs 3 000 workers in two offices and five manufacturing locations (Unilever, 2011).

4.4.3 Population

The population included all the MMEs in each of the BRICS countries.

4.4.4 Sampling

The sample was limited to two MMEs in each of the BRICS countries as listed in the Goldman Sachs "BRICS Nifty 50" report (Goldman Sachs Group, 2009). The specific companies used in the analysis were selected on the basis of the availability of geographic revenue data for their operations in a specific BRICS country.

4.5 Hypothesis 3

The BRICS manufacturing industries are competitive in attracting foreign direct investment as determined by comparisons of FDI inflow to/stock of the manufacturing sector of BRICS relative to the rest of the sample of countries on the ITC investment map over the 2001 – 2010 period. The data is normalised using the per capita GDP of that country to account for the different sizes of economies.

4.5.1 Design and methodology

The study was quantitative in nature (Saunders & Lewis, 2012). The FDI inflow to the manufacturing industry of different countries on the ITC investment map was compared over a period of ten years from 2001 to 2010 (ITC, 2012). The absolute value was normalised by using a value of FDI as a proportion of per capita GDP of these countries as the ratio for comparison (Singhania & Gupta, 2011). The FDI data was normalised to account for the different sizes of economies.

The first phase of the analysis was a comparative study between the BRICS countries and the rest of the countries on the ITC database. Countries were compared using a Wilcoxon signed rank test for paired samples as the limited number of observations did not meet the

underlying assumption of normality (Keller & Warrack, 2003). A confidence level of 95% was used to determine the level of fit into the hypothesis.

The hypothesis formula for the Wilcoxon signed rank test is given below:

H_0: $\theta_1 = \theta_2$

H_a: $\theta_1 > \theta_2$

For each record, the difference score is computed as follows to remove autocorrelation/serial correlation: $d_1 = x_2 - x_1$.

θ_1: The median FDI/per capita GDP ratio of the BRICS group in the first phase of the analysis and the actual FDI/per capita GDP of the individual BRICS countries in the second phase of the analysis.

θ_2: The median of FDI/per capita GDP ratio for the rest of the countries in the sample population.

H_0: The median of the FDI/per capita GDP differences for the BRICS countries. The rest of the population equals zero.

H_a: The BRICS countries attract more FDI to the manufacturing industry than the rest of the countries in the sample population.

The second phase of the analysis compared all the countries on the ITC investment map by ranking the different countries on the basis of the FDI/per capita GDP ratio for the final year of available data (ITC, 2010). The growth in FDI was also tabulated to illustrate which countries had managed to grow its foreign investment as a proportion of per capita GDP for the ten-year period. Countries ranking in the upper quartile (i.e., the top 25% of the countries) based on the FDI/per capita GDP ratios were considered to be competitive destinations for attracting FDI.

4.5.2 Data collection

The analysis used the annually reported FDI in the manufacturing industry of each of the BRICS countries for the 2001 – 2010 period (ITC, 2012).

The annual per capita GDP value for each country in the equivalent time period was used as the denominator to calculate the normalised FDI flow ratio for each year (The World Bank, 2011).

4.5.3 Population

The population includes all the countries in the ITC investment map (ITC, 2012).

4.5.4 Sampling

The sample was limited to the countries with reliable manufacturing FDI data for the 2001 – 2010 period (ITC, 2012).

4.6 Data and methodological assumptions

The following assumptions relating to the data and the choice of the econometric estimation techniques were made in this research report:

- The data for the macroeconomic, political, social and financial variables was reliable and of an acceptable quality for the application of economic theory and the models that were used in the analysis. The data was retrieved from reputable sources in order to produce results that were as accurate as possible.

- Using the methodology of taking the annual differences between all variables minimised autocorrelation to a negligible level. The assumption was that all the observations were independent.

- Although the lack of observations prevented the use of the multiple regression technique in the analysis, it was assumed that the method of nonparametric correlations was sufficient and valid for identifying the potential determinants of FDI in the manufacturing industry of the different BRICS countries. The same assumption was made for the second hypothesis.

- By conducting numerous tests, the tests capitalised on chance, implying that this research should ideally have been conducted over a longer period, yielding a larger sample size. A larger sample size meets the requirements of a multivariate regression where all the predictors are considered concurrently or at least hierarchically in the same analysis.

Chapter 5: Results

5.1 Introduction

The previous chapter described the methodology and the variables that were used in the analysis. The hypotheses posed in Chapter 3 shaped the formulation of the variables. The confirmation of the hypotheses helped to analyse the BRICS countries as potential destinations for MMEs.

The chapter is divided into three distinct sections covering each of the research hypotheses. The first hypothesis focuses on identifying the potential determinants of FDI in the manufacturing industry of the different BRICS countries. Thereafter, the same independent variables were used to either validate or disprove investor perceptions by identifying the factors that potentially impact on the financial performance of MME's in the different countries. Finally, the attractiveness of the BRICS countries as destinations for manufacturing FDI was analysed.

5.2 Hypothesis 1

The independent variables identified in Chapter 4 were analysed by comparing them with the dependent variable FDI flow (Brazil, Russia, India and China) and FDI inward stock (South Africa) to attempt to determine the potential determinants of FDI in the manufacturing industries of the different BRICS countries.

The analysis of Hypothesis 1 was conducted in two phases. The first phase analysed the BRIC countries as a group before the individual groups/countries were analysed independently in the second phase of the analysis. Note that South Africa was excluded from the first phase of the analysis as FDI flow was used as the dependent variable. The purpose of the two-phased approach was to highlight the potential differences in relationships when comparing the results of the BRIC group to the individual countries. The outcome of the analysis highlighted the danger of generalising findings for a group of countries as was the case in many of the previous studies mentioned in Chapter 2.

5.2.1 BRIC group

The results for the BRIC group can be seen in Table 3 below. Because of the larger sample size, the significance level is still at a 95% confidence level but a lower R^2 is considered significant compared to the individual country samples.

Using the difference scores mentioned in the methodology leaves each country with a total of nine observations. The results for the four countries in the BRIC group thus have a total of 36 observations as seen in the table below. Table 3 reports the results of the Spearman rank order correlation analysis done for the BRIC group on the 26 selected predictor variables.

Table 3 - Results of the Spearman rank order correlation analysis for the BRIC group

Category	List of Predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	36	0.201	1.198	0.239	0.041
	Official exchange rate (LCU per US$, period average)	36	-0.214	-1.277	0.210	0.046
Cost of doing business	**Labour cost per hour ($)**	**36**	**0.414**	**2.651**	**0.012**	**0.171**
	Real interest rate (%)	**36**	**-0.527**	**-3.617**	**0.001**	**0.278**
	Taxes on income, profits and capital gains (% of revenue)	36	-0.085	-0.497	0.622	0.007
	GDP per person employed (constant 1990 PPP $)	36	0.229	1.369	0.180	0.052
	Labour productivity growth (%)	36	0.003	0.016	0.988	0.000
Infrastructure	Internet users (per 100 people)	36	0.041	0.242	0.810	0.002
	Electric power consumption (kWh)	36	0.101	0.591	0.558	0.010
	Railways, goods transported (million ton-km)	36	0.140	0.825	0.415	0.020
Gross capital formation	Gross capital formation (% of GDP)	36	0.297	1.814	0.079	0.088
Trade openness	**Trade (% of GDP)**	**36**	**0.333**	**2.060**	**0.047**	**0.111**
Market size	**Per capita GDP (current US$)**	**36**	**0.429**	**2.770**	**0.009**	**0.184**
	GDP growth (annual %)	36	0.151	0.888	0.381	0.023
Political and institutional variables	**Control of corruption: number of sources**	**36**	**-0.358**	**-2.237**	**0.032**	**0.128**
	Control of corruption: percentile rank	36	-0.158	-0.931	0.358	0.025
	Government effectiveness: number of sources	**36**	**-0.358**	**-2.234**	**0.032**	**0.128**
	Government effectiveness: percentile rank	**36**	**-0.351**	**-2.186**	**0.036**	**0.123**
	Political stability and absence of violence/terrorism: number of sources	36	-0.297	-1.814	0.079	0.088
	Political stability and absence of violence/terrorism: percentile rank	36	-0.260	-1.568	0.126	0.067
	Regulatory quality: number of sources	36	-0.303	-1.853	0.073	0.092
	Regulatory quality: percentile rank	36	-0.153	-0.904	0.372	0.023
	Rule of law: number of sources	**36**	**-0.439**	**-2.847**	**0.007**	**0.193**
	Rule of law: percentile rank	36	-0.108	-0.634	0.530	0.012
	Voice and accountability: number of sources	**36**	**-0.339**	**-2.102**	**0.043**	**0.115**
	Voice and accountability: percentile rank	36	-0.283	-1.719	0.095	0.080

The model for the BRIC group highlighted a few variables (in yellow) that were significant as potential determinants of FDI in the manufacturing industry. Only one variable, real interest rate, was significant at the 0.1% level of significance (Spearman rho = -0.527, t(34) = -3.62, p<0.001, with explained variance R^2 = 0.28). There were, however, several variables (highlighted in the table) that were significant at 5% level of significance. The model refers to the combination of all the predictor variables as potential correlates of FDI.

The scatter plots in the following section are an illustration of each of the significant predictors for the different BRIC countries. These scatter plots illustrate the actual values of the differences as opposed to the rank order values used in the tables. Outliers that would not have been visible in the correlation table could, in some cases, change the relationships between variables are also visible. The graphing of the rank values would not have illustrated the outliers.

For completeness the scatter plots also include the correlation line and the Pearson correlation coefficient. The Pearson correlation coefficient used the actual values of the differences as opposed to the rank order values used in the Spearman rank order correlations.

Each of the significant predictors is illustrated for the BRIC group as a whole, after which the values for each country are displayed independently. The purpose of the illustrations is to show how the results can be skewed by a single country and that the results for the group can not necessarily be generalised. It is important to note that it is assumed that the observations in the scatter plots are independent.

- **Cost of doing business**

The first group of significant predictors is cost of doing business, which includes labour cost per hour and real interest rate. The scatter plots of these two significant predictors are illustrated below:

Figure 1 - Scatter plot of FDI flow and labour cost per hour for the BRIC group

Scatterplot of FDI flow Period average against Labour cost per hour ($)
FDI flow Period average = -731.6331+3381.3753*x

Labour cost per hour ($):FDI flow Period average: r = 0.3385, p = 0.0434; r² = 0.1146
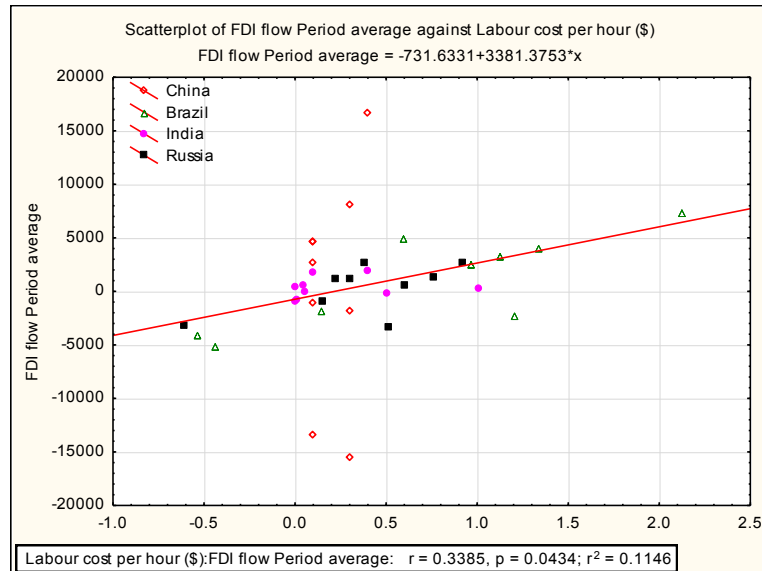
The different data points on the scatter plot illustrate the correlation between labour cost per hour and FDI flow for the different BRIC countries. Each data point represents a different year for a particular country. The Pearson correlation coefficient for the group is significant (*r(34)* = 0.34, p<0.05). The scatter plots of labour cost per hour for each country are illustrated separately to highlight the countries that were significant contributors to the model.

Figure 2 - Scatter plot of FDI flow and labour cost per hour for Brazil

Country=Brazil
Scatterplot of FDI flow Period average against Labour cost per hour ($)
FDI flow Period average = -2002.8475+4153.5169*x

Labour cost per hour ($):FDI flow Period average: r = 0.8201, p = 0.0068
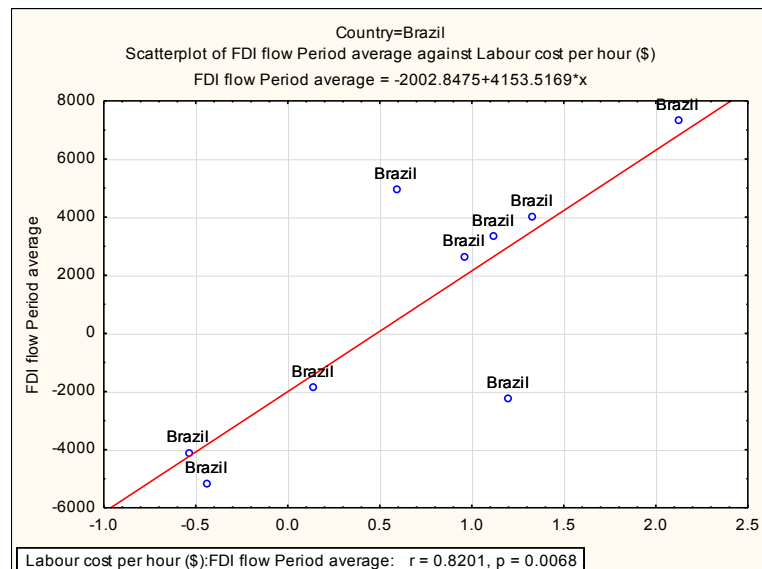
The data points for Brazil form a tight fit around the correlation line and thus labour cost per hour is significant in explaining the variation in FDI flow ($r(34)$ = 0.82,p<0.05, with explained R^2 = 0.67).

Figure 3 - Scatter plot of FDI flow and labour cost per hour for Russia
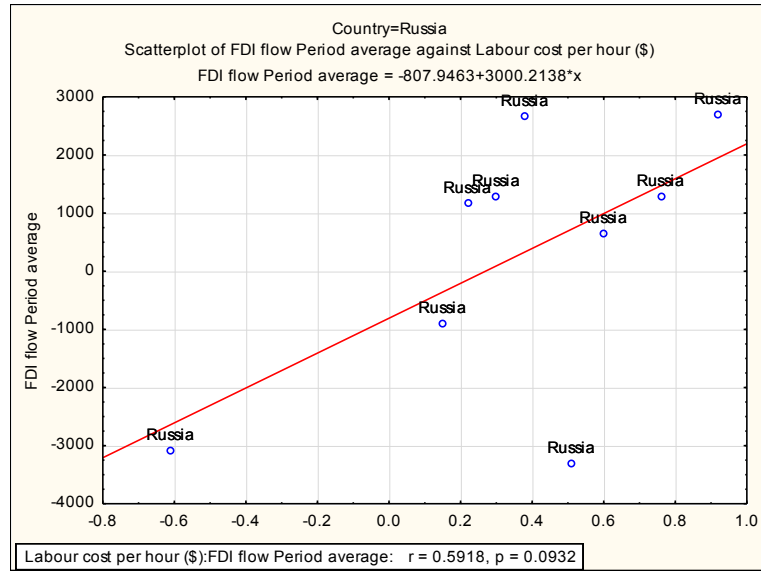
The scatter plot illustrated that the labour cost per hour for Russia is not significant in explaining the variation in FDI flow (p>0.05).

Figure 4 - Scatter plot of FDI flow and labour cost per hour for India
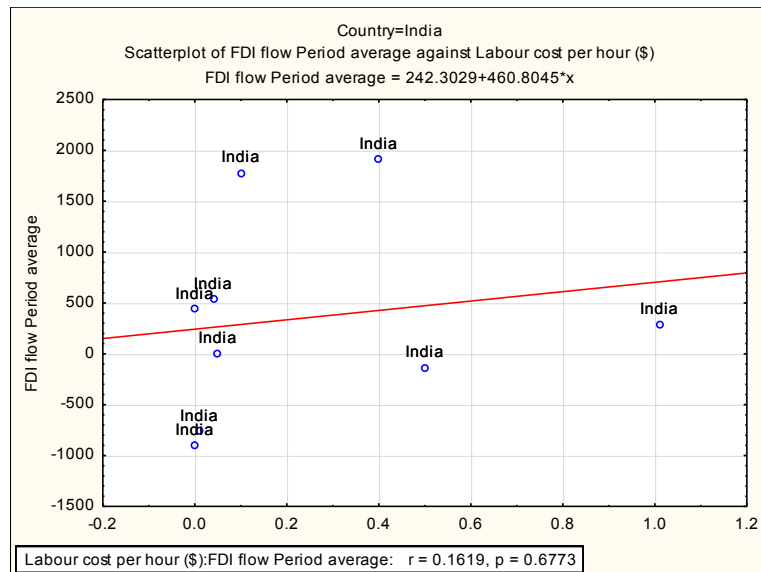
The labour cost per hour for India was also not significant in explaining the variation (p>0.05).

Figure 5 - Scatter plot of FDI flow and labour cost per hour for China
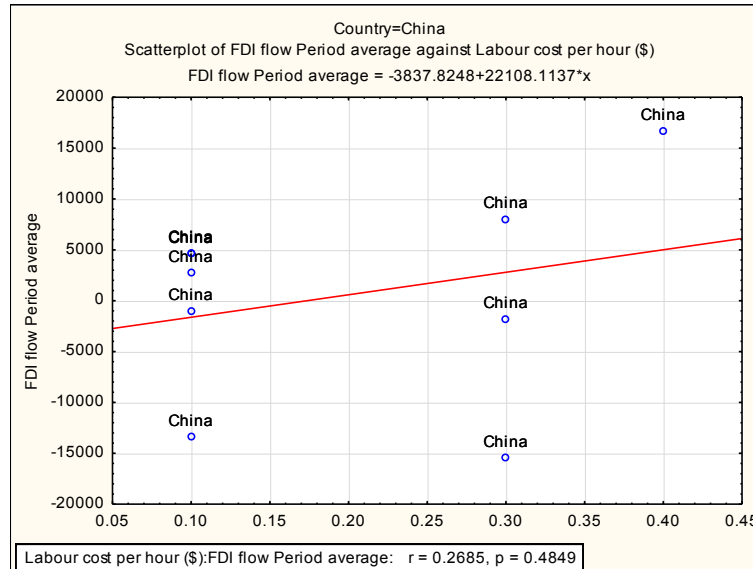
The scatter plot illustrates that China is not a significant contributor to the model (p>0.05). The overall outcome thus illustrated that Brazil was the only significant contributor to the overall model and is an indication that the findings cannot necessarily be generalised to apply to the other countries in the BRIC portfolio.

The real interest rate was the other significant predictor in the cost of doing business category. Scatter plots of the actual difference values used in the Pearson correlation can be seen in Figure 6.

Figure 6 - Scatter plot of FDI flow and real interest rate for the BRIC group
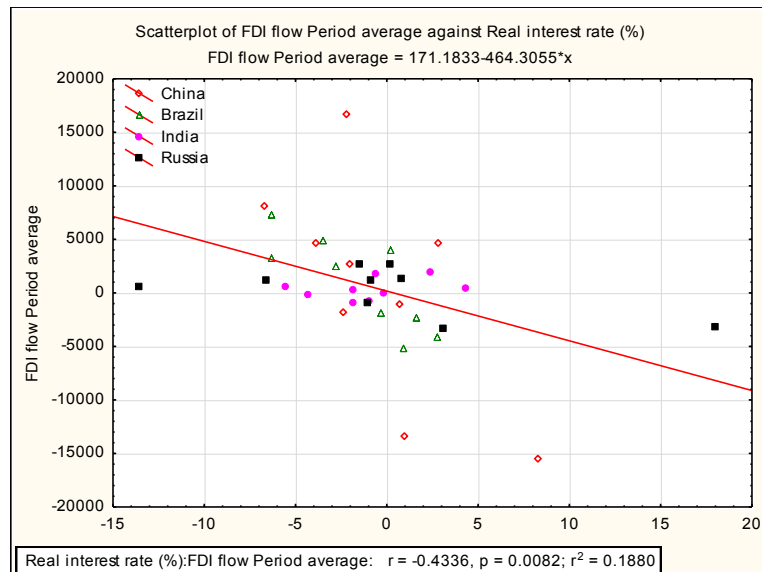
As seen in the scatter plot, the correlation between the BRIC countries and the real interest rate is negative and significant (*r(34)* = -0.43, p<0.05).

Figure 7 - Scatter plot of FDI flow and real interest rate for Brazil
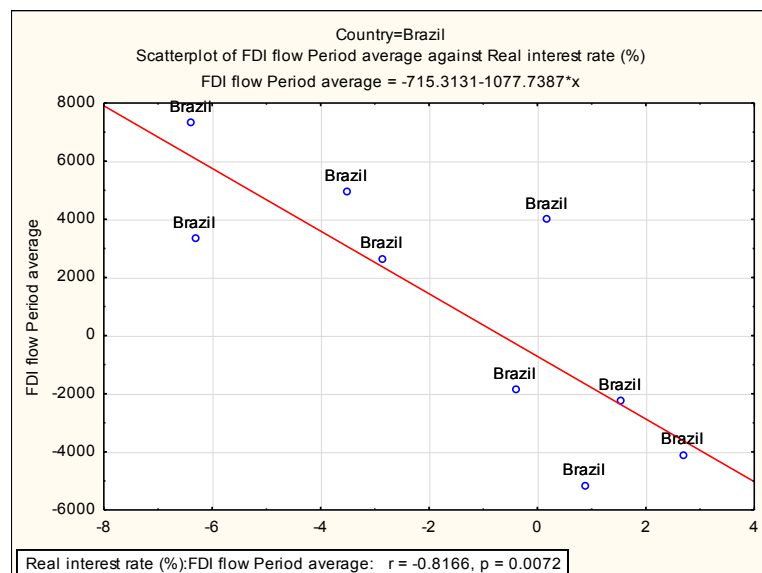
The scatter plot illustrates a significant negative correlation for Brazil (r(34) = -0.82,p<0.05, with explained R^2 = 0.67).

Figure 8 - Scatter plot of FDI flow and real interest rate for Russia
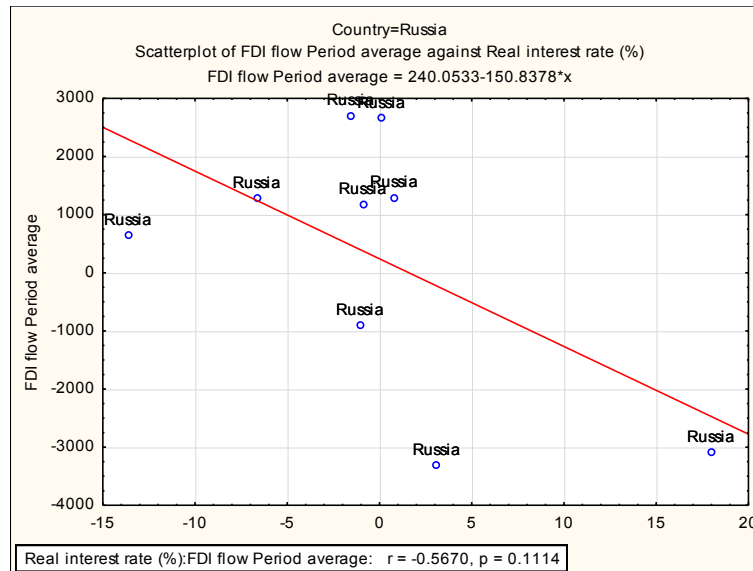
The result for Russia is also not statistically significant (p>0.05).

Figure 9 - Scatter plot of FDI flow and real interest rate for India
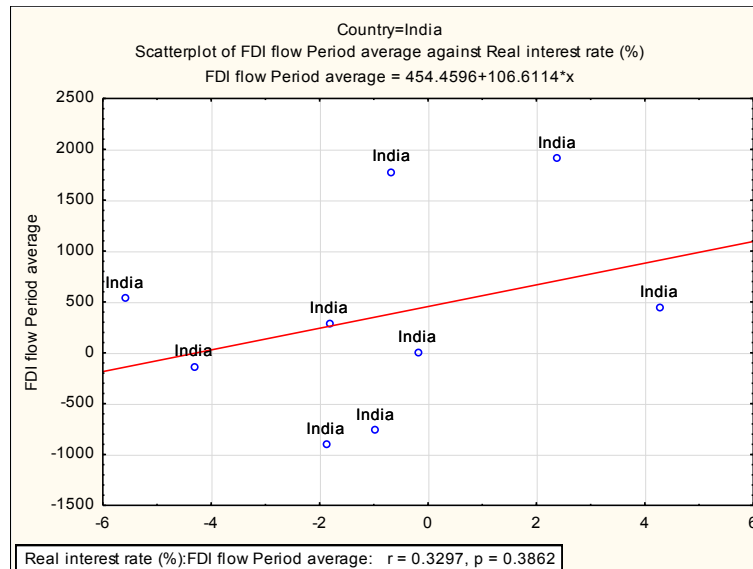
The result for India was not statistically significant (p>0.05).The scatter plot illustrated that unlike the other countries, the relationship for India was positive although not statistically significant (p>0.05).

Figure 10 - Scatter plot of FDI flow and real interest rate for China
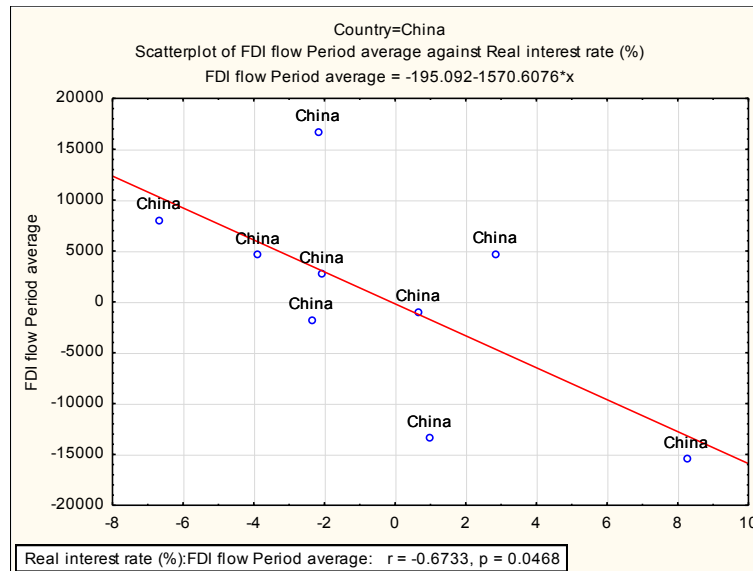
The Chinese correlation follows a similar trend to the overall BRIC group with a negative correlation that was just statistically significant (r(34) = 0.67, p<0.05, with explained R^2 = 0.45). Brazil and China are the two countries with significant relationships. The results could thus not be generalised to apply to India and Russia.

- **Trade openness**

The next significant category for the BRIC group is trade openness and the scatter plots for the group and individual countries can be seen below. Only the countries that were significant contributors to the model will be illustrated.

Figure 11 - Scatter plot of FDI flow and trade for the BRIC group
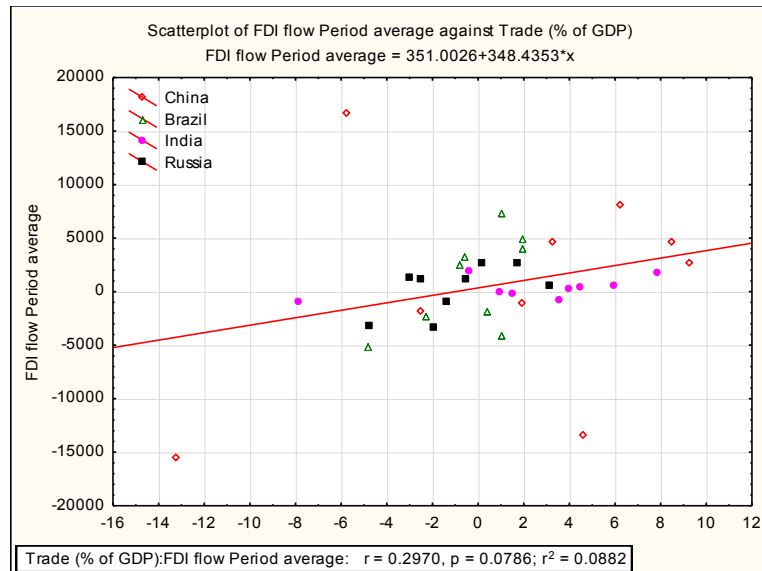
The results for trade openness illustrated where the Spearman correlation was significant for the BRIC group or any of the individual countries (r(34) = 0.33,p<0.05). However, the Pearson correlation coefficient for the group was not significant (p>0.05). The Spearman rank order correlation is considered to be more representative.

- **Market size and growth potential**

The significant predictor in this category was per capita GDP and the results for the BRIC group can be seen below:

Figure 12 - Scatter plot of FDI flow and per capita GDP for the BRIC group
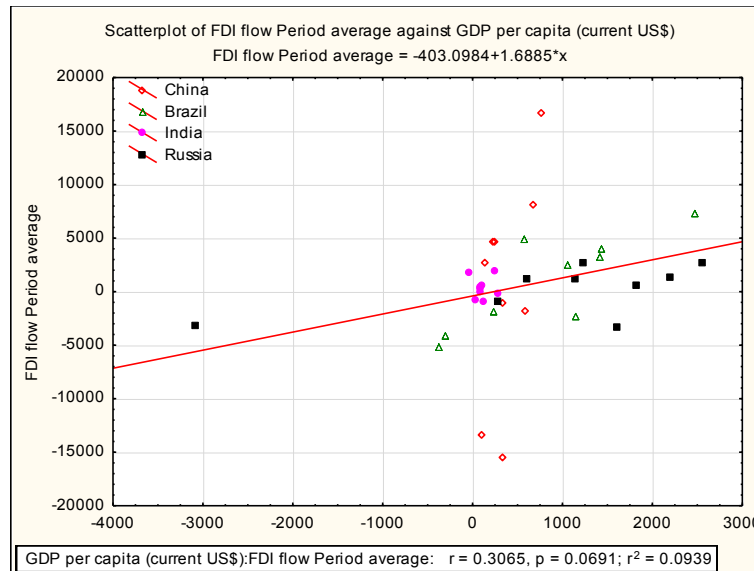
The Pearson correlation was again not significant (p>0.05) and the reason is that the results illustrated that Brazil was the only significant contributor to the model. The scatter plot for Brazil can be seen below:

Figure 13 - Scatter plot of FDI flow and per capita GDP for Brazil
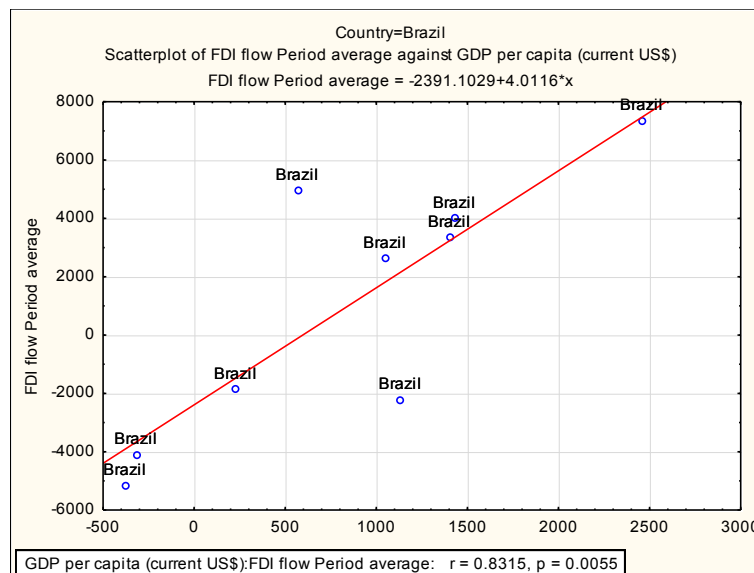
The scatter plot illustrates the fit of the Brazil per capita GDP observations around the correlation line. Per capita GDP for Brazil had a significant positive correlation with FDI flow ($r(34)$ = 0.83, p<0.05, with an explained variance R^2 of 0.69).

- **Political and institutional conditions**

Most of the significant predictors for the BRIC group are categorised under political and institutional conditions. Only the scatter plots of the results for the BRIC group were displayed. Most of these results show that the model for the BRIC group was statistically significant but that none of the individual countries were dominant contributors to the overall model and, in most cases, none of the individual countries were statistically significant.

The first of the political and institutional variables that was a significant predictor in the model is control of corruption and the scatter plot can be seen below:

Figure 14 - Scatter plot of FDI flow and control of corruption for the BRIC group
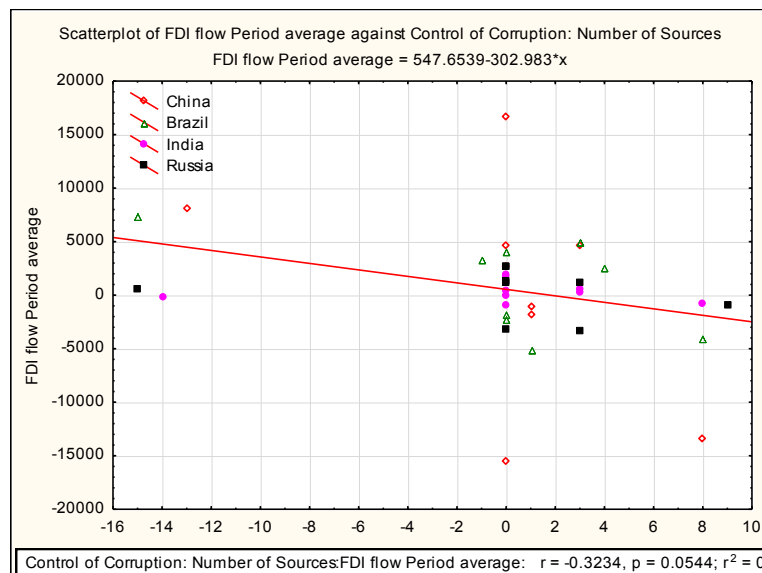
As expected the results showed a negative correlation with FDI. As the number sources of corruption increased, the FDI in the BRIC countries decreased. The Pearson correlation was not statistically significant (p>0.05). The results of the Spearman rank order correlation are considered to be more relevant.

The scatter plot results of the other three significant predictors (see Table 3) in the political and institutional variables category can be seen below. Although as a group the results were statistically significant (p<0.05), none of the individual countries were significant contributors to these models (p>0.05).

Figure 15 - Scatter plot of FDI flow and government effectiveness for the BRIC group
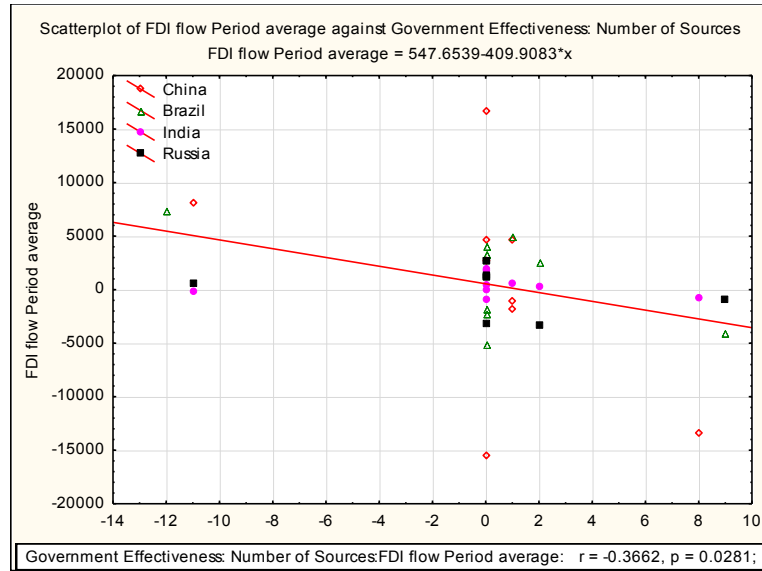
The result illustrated a negative correlation with FDI flow (*r(34)*=-0.36, p<0.05).

Figure 16 - Scatter plot of FDI flow and rule of law for the BRIC group
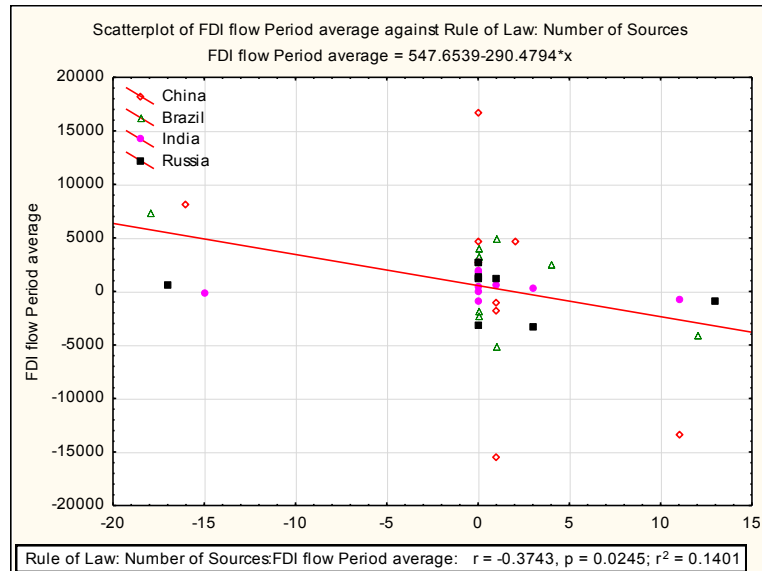
The result illustrated a negative correlation between FDI flow and rule of law (*r(34)*=0.37, p<0.05).

Figure 17 - Scatter plot of FDI flow and voice and accountability for the BRIC group
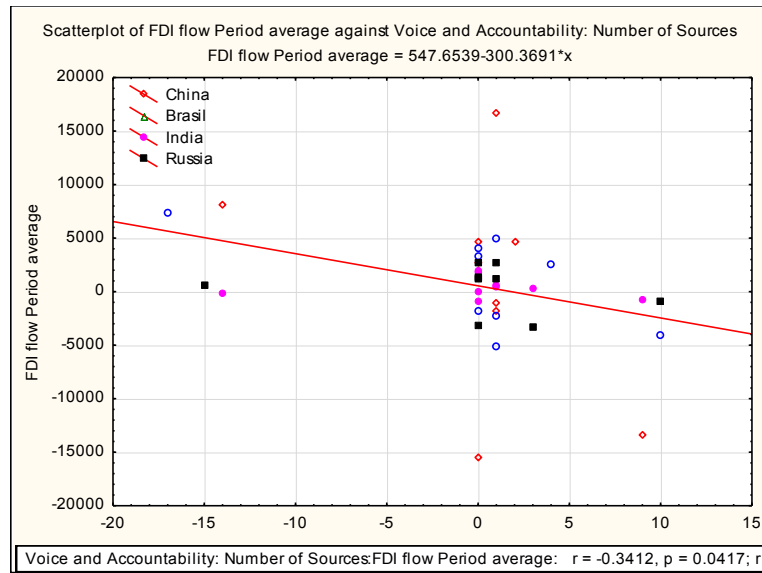
As in the case of the other political and institutional variables, the results for voice and accountability also show a negative correlation.

The correlation results for the individual countries were discussed below. It is important to note the differences in results for the various countries.

5.2.2   Brazil

A summary of the results of the analysis for Brazil is shown in Table 4. Refer to section 8.1 in Appendix A for a detailed breakdown of the results for Brazil.

Table 4 - Summary of significant predictors for Brazil

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Cost of doing business	Labour cost per hour ($)	9	0.700	2.593	0.036	0.490
	Real interest rate (%)	9	-0.817	-3.744	0.007	0.667
	GDP per person employed (constant 1990 PPP $)	9	0.800	3.528	0.010	0.640
Gross capital formation	Gross capital formation (% of GDP)	9	0.950	8.050	0.000	0.903
Market size	Per capita GDP (current US$)	9	0.767	3.159	0.016	0.588
	GDP growth (annual %)	9	0.767	3.159	0.016	0.588
Political and institutional variables	Political stability and absence of violence/terrorism: percentile rank	9	-0.917	-6.068	0.001	0.840
	Voice and accountability: percentile rank	9	-0.748	-2.981	0.020	0.559

The results for Brazil illustrate eight significant predictors as potential determinants of FDI in the manufacturing industry. Two of the predictors were significant at a 0.1% level of significance, namely gross capital formation (Spearman rho = 0.95, t(34) = 8.050, p<0.001, with explained R^2 = 0.9) and political stability and the absence of violence/terrorism (Spearman rho = -0.92, t(34) = -6.068, p<0.001, with explained R^2 = 0.85). All the other variables in the table were significant at a 5% level of significance.

The scatter plots support the results in the table and graphically illustrate the correlation between FDI flow and the different significant predictors for each of the annual observations used in the analysis. The scatter plots of the significant predictors for Brazil showed no real outliers or contradictions with the results in the table and were thus not included.

5.2.3   Russia

The results for Russia show that only one of the predictors was significant, namely inflation, consumer prices (r(34) = 0.783, p<0.05, with an explained R^2 of 0.61). Section 8.1 in Appendix A gives a detailed breakdown of the results for Russia.

Inflation has a positive relationship with FDI flow that is illustrated in the scatter plot below.

Figure 18 - Scatter plot of FDI flow and inflation, consumer prices for Russia

Country=Russia
Scatterplot of FDI flow Period average against Inflation, consumer prices (annual %)
FDI flow Period average = 913.0739+397.1611*x

Inflation, consumer prices (annual %):FDI flow Period average: r = 0.5902, p = 0.0943
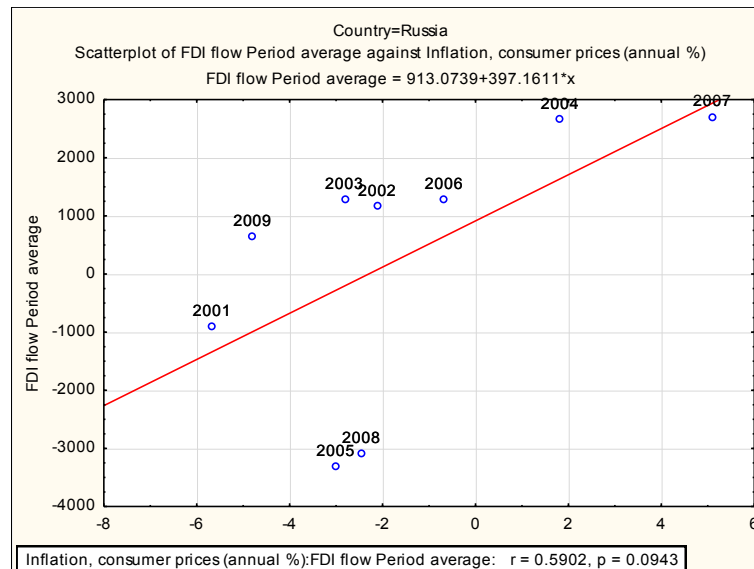
The results of the scatter plot illustrate the difference between the Spearman rank order correlation (p<0.05), and the Pearson correlation result (p>0.05) that was not statistically significant. The Spearman rank order correlation is considered to be more representative.

5.2.4 India

The only significant predictor for India was electric power consumption (r(34) = 0.85, p<0.05, with an explained R^2 of 0.73). A detailed breakdown of the results for India can be seen in section 8.1, Appendix A.

The scatter plot below illustrates the relationship between the electric power consumption and FDI flow for the nine observations.

Figure 19 - Scatter plot of FDI flow and electrical power consumption for India
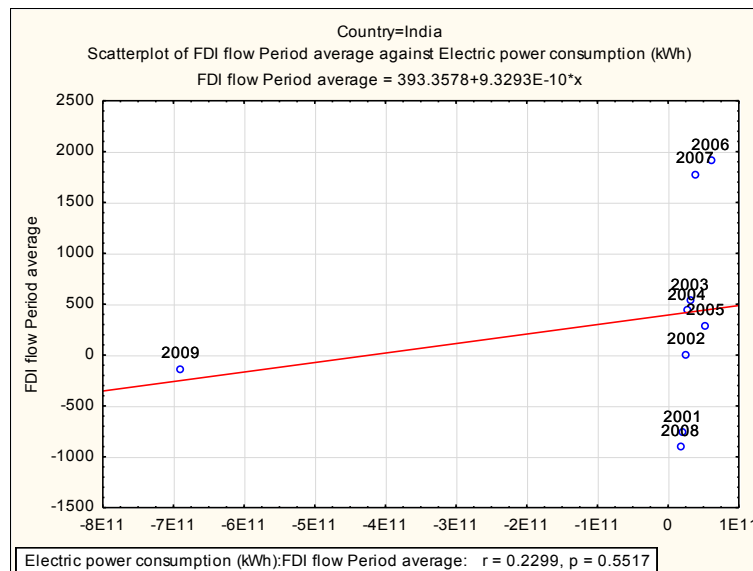
The illustration shows that the 2009 observation is an outlier in the data. The outlier was removed to get a better understanding of the correlation. The graph below shows the data without the outlier.

Figure 20 - Scatter plot of FDI flow and electrical power consumption (outlier removed) for India

Country=India
Scatterplot of FDI flow Period average against Electric power consumption (kWh)
FDI flow Period average = -1314.9822+5.0309E-8*x

Electric power consumption (kWh):FDI flow Period average: r = 0.7508, p = 0.0318
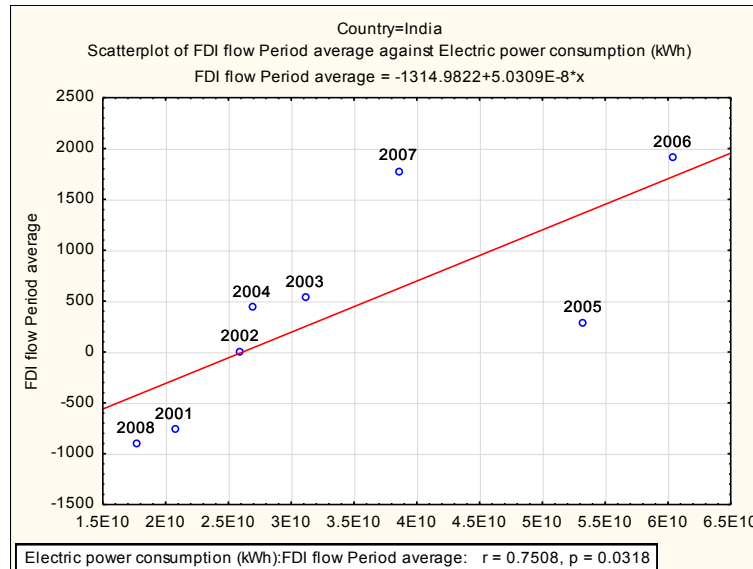
Removing the outlier from the analysis has a significant impact on the results. After removing the outlier, the Pearson correlation is significant (*r(34)* = 0.75, p<0.05, with an explained R² of 0.56). This outlier would not have been visible if the rank values were used.

5.2.5   China

The only significant predictor for China is rule of law that is categorised under political and institutional conditions. The Spearman rank order correlations are negative and significant (r(34) = -0.69, p<0.05, with an explained variation R² of 0.48). For the detailed correlation results for China, refer to section 8.1 in Appendix A.

The scatter plot below illustrates the negative relationship between FDI flow and rule of law.

Figure 21 - Scatter plot of FDI flow and rule of law for China
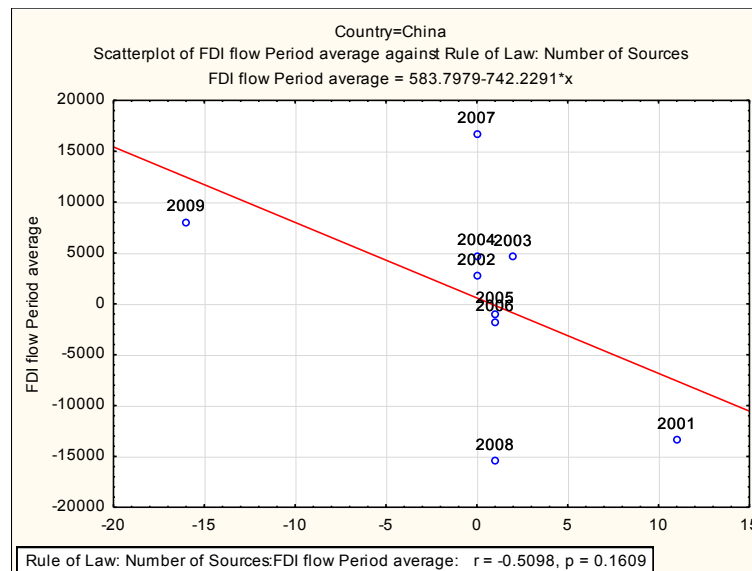
The scatter plot is another illustration of the difference between the more representative Spearman rank order correlation with a statistically significant result (p<0.05) and the Pearson correlation (p>0.05).

5.2.6 South Africa

FDI stock was used as the dependent variable in the analysis of South Africa. The summary of the significant predictors of FDI stock for South Africa can be seen in Table 5. A detailed breakdown of the results for all the variables can be seen in section 8.1 in Appendix A.

Table 5 - Summary of significant predictors for South Africa

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	-0.850	-4.269	0.004	0.723
Infrastructure	Internet users (per 100 people)	9	0.700	2.593	0.036	0.490
	Railways, goods transported (million ton-km)	9	0.729	2.817	0.026	0.531
Trade openness	Trade (% of GDP)	9	-0.783	-3.334	0.013	0.614

South Africa has four significant predictors as illustrated in the table (p<0.05). The scatter plots of the significant predictors highlight the fit around the correlation line and allow the identification of any outlying observations that might influence the results. The scatter plots

for the significant observations had no real outlying observations and were thus not included.

5.3 Hypothesis 2

The independent variables identified in Chapter 4 and used in the first hypothesis were also used in this analysis. The purpose of this analysis was to either validate or disprove the investor perceptions of the factors that might potentially have an impact on the financial performance of an investment.

The independent variables were analysed by using the annual revenue performance of two MMEs for each of the BRICS countries to identify the potential factors that might impact on the performance of a MMEs in those countries. The outcome of this analysis was compared to the results of the first hypothesis to either validate of disprove investor perceptions that the predictors had an impact on the performance of their investments.

The correlation results for each of the BRICS countries will be discussed separately.

5.3.1 MMEs in Brazil

5.3.1.1 Holcim

The summary of the significant predictors for Holcim Brazil can be seen in Table 6:

Table 6 - Summary of significant predictors for Holcim

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Official exchange rate (LCU per US$, period average)	9	-0.883	-4.986	0.002	0.780
Cost of doing business	Labour cost per hour ($)	9	0.667	2.366	0.050	0.444
Market size	Per capita GDP (current US$)	9	0.667	2.366	0.050	0.444
Political and institutional variables	Government effectiveness: percentile rank	9	-0.695	-2.554	0.038	0.482

Holcim has four significant predictors from different categories as illustrated in the table (p<0.05). For the detailed results of all the variables refer to section 9.1, Appendix B.

5.3.1.2 Avon

The summary of the significant predictors for Avon can be seen in Table 7:

Table 7 - Summary of significant predictors for Avon

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Cost of doing business	Labour cost per hour ($)	9	0.900	5.463	0.001	0.810
	GDP per person employed (constant 1990 PPP $)	9	0.933	6.878	0.000	0.871
Gross capital formation	Gross capital formation (% of GDP)	9	0.767	3.159	0.016	0.588
Market size	Per capita GDP (current US$)	9	0.883	4.986	0.002	0.780
Political and institutional variables	Control of corruption: number of sources	9	-0.678	-2.441	0.045	0.460

There are similarities in the results for Holcim and Avon with two corresponding significant predictors. The results illustrate that two of the predictors were significant at a 0.1% level of significance, namely labour cost per hour (r(34)=0.9, p<0.01, with an explained variance R^2 of 0.81) and GDP per person employed (r(34)=0.3, p<0.01, with an explained variance R^2 of 0.87). The other two variables were significant at a 5% level of significance. Refer to section 9.1, Appendix B for the detailed results.

5.3.2   MMEs in Russia

5.3.2.1   Anheuser-Busch InBev

The results for Anheuser-Busch InBev show two significant predictors at a 5% level of significance, namely real interest rate (r(34)=-0.78, p<0.05, with an explained variance R^2 of 0.61) and trade openness (r(34)=-0.68, p<0.05, with an explained variance R^2 of 0.47). The detailed results of all the variables can be seen in section 9.2, Appendix B.

5.3.2.2   Carlsberg Group

Carlsberg Group had one significant predictor in the political and institutional variables category. The predictor, political stability and the absence of violence/terrorism is significant at a 5% level of significance. The detailed results of all the variables can be seen in section 9.2, Appendix B.

5.3.3 MMEs in India

5.3.3.1 ABB Ltd

ABB Ltd had one significant predictor in the infrastructure category. Electric power consumption was significant at a 0.1% level of significance ($r(34)=0.98$, $p<0.01$, with an explained variance R^2 of 0.97). See section 9.3, Appendix B for the detailed results.

5.3.3.2 HUL

The summary of the significant predictors for HUL can be seen in the Table 8:

Table 8 - Summary of significant predictors for HUL

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Infrastructure	Railways, goods transported (million ton-km)	9	0.783	3.334	0.013	0.614
Political and institutional variables	Control of corruption: number of sources	9	-0.725	-2.783	0.027	0.525
	Control of corruption: percentile rank	9	-0.695	-2.554	0.038	0.482
	Government effectiveness: number of sources	9	-0.694	-2.549	0.038	0.481
	Government effectiveness: percentile rank	9	-0.672	-2.403	0.047	0.452
	Political stability and absence of violence/terrorism: number of sources	9	-0.725	-2.783	0.027	0.525
	Regulatory quality: number of sources	9	-0.725	-2.783	0.027	0.525
	Rule of law: number of sources	9	-0.694	-2.549	0.038	0.481
	Rule of law: percentile rank	9	-0.851	-4.292	0.004	0.725
	Voice and accountability: percentile rank	9	-0.706	-2.637	0.034	0.498

HUL had 10 significant predictors at a 5% level of significance as illustrated in the table. One of the predictors was from the infrastructure category and nine were political and institutional variables. For detailed results see section 9.3, Appendix B.

5.3.4 MMEs in China

5.3.4.1 Suzuki Motor Corporation

The correlation results for Suzuki Motor Corporation had two significant predictors at a 5% level of significance, namely real interest rate ($r(34)=-0.72$, $p<0.05$, with an explained variance R^2 of 0.51) and railways, goods transported ($r(34)=0.68$, $p<0.05$, with an explained variance R^2 of 0.47).

5.3.4.2 Anheuser-Busch InBev

The correlation results for Anheuser-Busch InBev had only one significant predictor, namely railways, goods transported, that was significant at a 0.1% level of significance (r(34)=0.93, p<0.01, with an explained variance R^2 of 0.87).

Railways, goods transported, was identified as a significant predictor for both Suzuki Motor Corporation and Anheuser-Busch InBev. The detailed results of all the variables can be seen in section 9.4, Appendix B.

5.3.5 MMEs in South Africa

5.3.5.1 BAT

The summary of the significant predictors for BAT can be seen in Table 9:

Table 9 - Summary of significant predictors for BAT

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Cost of doing business	GDP per person employed (constant 1990 PPP $)	8	-0.810	-3.378	0.015	0.655
Infrastructure	Electric power consumption (kWh)	8	-0.714	-2.500	0.047	0.510
Political and institutional variables	Political stability and absence of violence/terrorism: percentile rank	8	-0.790	-3.161	0.020	0.625

BAT had three significant predictors. All the variables are from different categories and are significant at a 5% level of significance. See section 9.5, Appendix B for detailed results.

5.3.5.2 Unilever

The summary of the significant predictors for Unilever can be seen in Table 10:

Table 10 - Summary of significant predictors for Unilever

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Political and institutional variables	Regulatory quality: number of sources	9	-0.726	-2.791	0.027	0.527
	Rule of law: percentile rank	9	-0.746	-2.963	0.021	0.556
	Voice and accountability: percentile rank	9	-0.707	-2.642	0.033	0.499

All the significant predictors for Unilever are related to political and institutional variables. The variables are all significant at a 5% level of significance as illustrated in the table. For detailed results see section 9.5, Appendix B.

5.4 Hypothesis 3

The third hypothesis aimed at determining the competitiveness of the different BRICS countries in attracting FDI to the manufacturing industry. The FDI flow to the manufacturing industries of the BRIC countries and the FDI stock of the manufacturing industry of South Africa were used to determine how the different countries compared to the rest of the world in terms of ability to attract foreign investment. The FDI data was normalised to different economy sizes by using the per capita GDP value for each of the countries. The FDI data (US$) was divided by the per capita GDP (US$) to provide a comparative ratio.

The competitiveness was analysed in two phases and the combination of the results of these two phases were used to evaluate the BRICS countries.

5.4.1 Phase 1

The first phase of the analysis was a comparative study between the BRICS countries and the rest of the countries on the ITC investment map database. The countries were compared using a nonparametric paired sample test. The pairing was based on each year of an observation. The data was divided into different groups to be used in the statistical analysis where several comparative tests were done. The difference scores of the comparative ratio were used in the analysis to prevent autocorrelation/serial correlation. The comparisons for the FDI flow/per capita GDP were:

- BRIC versus the rest of the ITC countries,
- Brazil versus the rest of the ITC countries,
- Russia versus the rest of the ITC countries,
- India versus the rest of the ITC countries,
- China versus the rest of the ITC countries

The only comparison for the FDI stock sample was South Africa versus the rest of the ITC countries.

To provide a better understanding of the data, Table 11 illustrates the summary of the data used in the nonparametric tests:

Table 11 - Summary of FDI flow/per capita GDP data

Variable	N	Mean	Median	Std. Deviation	Minimum	Maximum
Chinadiff	9	-1.95	-2.14	2.48	-5.16	2.74
ExcludingChinadiff	9	0.02	0.00	0.17	-0.36	0.21
Brazildiff	9	-0.04	0.16	0.80	-1.39	1.37
Indiadiff	9	0.18	0.07	0.85	-1.08	1.53
Russiadiff	9	-0.02	0.06	0.31	-0.76	0.33
MeanBRICdiff	9	-0.45	-0.52	0.71	-1.42	0.51
ExcludingBrazildiff	9	0.00	-0.01	0.17	-0.37	0.20
ExcludingIndiadiff	9	-0.01	0.00	0.17	-0.37	0.19
ExcludingRussiadiff	9	0.00	0.01	0.17	-0.37	0.20
ExcludingBRICdiff	9	0.01	0.01	0.17	-0.38	0.20
SAdiff	9	0.00	-0.06	0.32	-0.56	0.56
ExcludingSAdiff	9	0.00	-0.07	0.32	-0.56	0.57

The results of the different comparative tests can be seen in the tables below:

Table 12 - Hypothesis results for BRIC's competitiveness

Null hypothesis	Test	p-value	Decision
The median of differences between MeanBRICdiff and ExcludingBRICdiff equals 0.	Related-Samples Wilcoxon Signed Rank Test	0.138640634	Retain the null hypothesis.

In the above analysis the BRIC countries ("MeanBRICdiff") were compared to the rest of the sample population ("ExcludingBRICdiff") for the 2001-2010 period. The results indicate that there is no significant difference between the median values of the two groups over the ten year period (p>0.05). There is thus not sufficient evidence to conclude that the BRIC countries as a group are more competitive in attracting FDI to the manufacturing sector than the rest of the countries in the sample.

Table 13 - Hypothesis results for Brazil's competitiveness

Null hypothesis	Test	p-value	Decision
The median of differences between Brazildiff and ExcludingBrazildiff equals 0.	Related-Samples Wilcoxon Signed Rank Test	0.767096868	Retain the null hypothesis.

The table above illustrates the comparison between Brazil ("Brazildiff") and the rest of the sample population ("ExcludingBrazildiff") for the 2001-2010 period. Brazil is not statistically

different from the rest of the sample in attracting FDI to the manufacturing industry over the ten-year period (p>0.05).

Table 14 - Hypothesis results for Russia's competitiveness

Null hypothesis	Test	p-value	Decision
The median of differences between Russiadiff and ExcludingRussiadiff equals 0.	Related-Samples Wilcoxon Signed Rank Test	0.722049142	Retain the null hypothesis.

In the analysis, the median values of Russia ("Russiadiff") were compared with the rest of the countries in the sample ("ExcludingRussiadiff") for the 2001 – 2010 period. The null hypothesis is retained which indicates that there is not sufficient evidence to conclude that Russia is competitive in attracting FDI to the manufacturing industry as defined by the criteria stipulated in Chapter 3 (p>0.05).

Table 15 - Hypothesis results for India's competitiveness

Null hypothesis	Test	p-value	Decision
The median of differences between Indiadiff and ExcludingIndiadiff equals 0.	Related-Samples Wilcoxon Signed Rank Test	0.441268133	Retain the null hypothesis.

The table above illustrates the comparison between India ("Indiadiff") and the rest of the sample population ("ExcludingIndiadiff") for the 2001-2010 period. The results indicate that there is not a statistically significant difference between the median values of the two groups over the ten year period (p>0.05). There is not sufficient evidence to conclude that India is considered to be a competitive destination for attracting FDI to its manufacturing industry compared to the rest of the sample.

Table 16 - Hypothesis results for China's competitiveness

Null hypothesis	Test	p-value	Decision
The median of differences between Chinadiff and ExcludingChinadiff equals 0.	Related-Samples Wilcoxon Signed Rank Test	0.03815171	Reject the null hypothesis.

In Table 16, China ("Chinadiff") was compared to the rest of the sample population ("ExcludingChinadiff") for the 2001-2010 period. The results indicate that there is a statistically significant difference between the median values of the two groups over the

ten year period (p<0.05). The summary statistics show that the median value for China is actually below the rest of the sample population. China is thus not considered a competitive destination for FDI in the manufacturing industry compared to the rest of the countries in the sample.

Table 17 - Hypothesis results for South Africa's competitiveness

Null hypothesis	Test	p-value	Decision
The median of differences between SAdiff and ExcludingSAdiff equals 0.	Related-Samples Wilcoxon Signed Rank Test	0.766699058	Retain the null hypothesis.

The table above illustrates the comparison between South Africa ("SAdiff") and the rest of the sample population ("ExcludingSAdiff") for the 2001-2010 period. There is not sufficient evidence that South Africa is significantly different from the rest of the sample over the ten-year period (p<0.05).

5.4.2 Phase 2

5.4.2.1 *FDI flow/ per capita GDP ranking*

Each of the countries that formed part of the data set was ranked on the basis of the FDI flow/per capita GDP ratio. The highest rank indicates the largest FDI flow/per capita ratio GDP. The different countries were then grouped into four quartiles depending on their ranking. The upper quartile represents the top 25% countries with the largest FDI/per capita GDP ratio for 2010. To provide a better understanding of the data, Table 18 illustrates the summary statistics of the data used in the ranking analysis:

Table 18 - Summary statistics for FDI flow ratio

Variable	FDI flow/per capita GDP ratio	FDI growth
N	99	99
Mean	0.38	77%
Median	0.06	-35%
Std. Deviation	1.39	897%
Minimum	-1.71	-2189%
Maximum	12.15	7386%

All the countries in the upper quartile can be seen in the Table 19:

Table 19 - Upper quartile of FDI flow/per capita GDP ratio

Rank	Country	FDI flow/per capita GDP ratio	FDI growth
1	China	12.15	-59%
2	Vietnam	4.88	309%
3	India	3.48	90%
4	Brazil	1.86	-15%
5	United States	1.78	25%
6	Indonesia	1.53	-166%
7	Algeria	1.41	600%
8	Mexico	1.25	29%
9	Thailand	1.10	-33%
10	Saudi Arabia	0.83	2953%
11	Iran, Islamic Republic	0.61	1457%
12	Netherlands	0.56	-20%
13	Argentina	0.51	7386%
14	Russian Federation	0.44	-27%
15	Germany	0.44	32%
16	Poland	0.42	74%
17	Pakistan	0.41	93%
18	Uganda	0.38	133%
19	Belgium	0.36	-118%
20	Bangladesh	0.35	-6%
21	Republic of Korea	0.32	87%
22	Ukraine	0.31	-47%
23	Romania	0.31	33%
24	Ireland	0.24	-35%
25	United Kingdom	0.23	-67%

The mean of the FDI flow/per capita GDP data is 0.38 and the median is 0.06. The reason for this might be that 75% of the FDI flow goes to the top ten countries. The countries are divided into different quartiles. China (1st), India (3rd), Brazil (4th) and Russia (14th) all ranked in the upper quartile. All these countries also ranked above the mean of the data set. The mean is ranked 19th just below Uganda, indicating where the average FDI flow/per capita GDP ratio ranked.

This second phase of the analysis illustrates that the BRIC countries are in fact competitive destinations for attracting FDI flow to the manufacturing industry when comparing the data for the final year of the period. The table also illustrates that India was

the only BRIC country that has managed to grow its FDI/per capita GDP ratio for the ten-year period. The ranking details of the other three quartiles for the FDI flow/per capita GDP ratio can be seen in section 10.1 Appendix C.

5.4.2.2 FDI stock/per capita GDP ratio

The summary of the data used in the FDI stock/per capita GDP ratio can be seen in Table 20:

Table 20 - Summary statistics for FDI stock/per capita GDP ratio

Variable	FDI stock/per capita GDP ratio	FDI growth
N	71	70
Mean	8.35	145%
Median	1.01	33%
Std. Deviation	40.71	636%
Minimum	0.00	-81%
Maximum	336.31	5220%

Table 21 is an illustration of the upper quartile of countries that formed part of the FDI stock/per capita GDP ranking analysis.

Table 21 - Upper quartile of countries in FDI stock/per capita GDP ratio

Rank	Country	FDI stock/per capita GDP ratio	FDI growth
1	China	336.31	206%
2	Vietnam	77.72	293%
3	Ethiopia	31.38	6%
4	United States	16.02	21%
5	Thailand	11.32	24%
6	Germany	5.55	41%
7	Malaysia	5.47	24%
8	South Africa	5.45	95%
9	Hong Kong (SAR China)	5.40	-31%
10	Turkey	5.27	56%
11	Poland	5.22	79%
12	United Kingdom	5.18	-5%
13	Netherlands	4.79	24%
14	Morocco	4.70	5220%
15	Iran	4.53	N/A

16	Russian Federation	4.51	64%
17	Canada	4.23	6%
18	Saudi Arabia	4.07	137%

The data is even more skewed in the FDI stock table with 75% of the investment ratio going to the top five countries. The mean of the FDI stock data is 8.35 and the median is 1.01. Of the BRICS countries, China (1st), South Africa (8th), and Russia (16th) all ranked in the upper quartile. Of these three countries only China ranked above the mean. The mean ranked 6th just below Thailand. All three of these countries have managed to grow their FDI stock comparative ratio over the ten-year period. The ranking details of the other three quartiles of the FDI stock/per capita GDP ratio can be seen in section 10.2 Appendix C.

5.5 Summary of results

The first hypothesis identified the potential determinants of FDI in the manufacturing industry for each of the BRICS countries. Thereafter, the same independent variables were used to either validate or disprove investor perceptions by identifying the factors that potentially impact on the financial performance of MME's in the different countries. Finally, the attractiveness of the BRICS countries as destinations for manufacturing FDI was analysed in a two-phased analysis. The summary of the results for the three hypotheses will be discussed below.

5.5.1 Hypothesis 1

Based on the results of the bivariate correlations, the correlates of FDI that were significant at the 5% significance level were identified and, therefore, considered to be the highest correlates of FDI for each country. The results also illustrate that the analysis done for the BRIC countries at group level cannot necessarily be generalised and applied to all the countries. The following variables provide the best explanation of the dependent variable for each of the BRICS countries:

Table 22 - Summary of significant predictors for each country

Predictive cluster	List of predictors	Brazil	Russia	India	China	South Africa
Macroeconomic stability	Inflation, consumer prices (annual %)		(+)			(-)
	Official exchange rate (LCU per US$, period average)					
Cost of doing business	Labour cost per hour ($)	(+)				
	Real interest rate (%)	(-)				
	Taxes on income, profits and capital gains (% of revenue)					
	GDP per person employed (constant 1990 PPP $)	(+)				
	Labour productivity growth (%)					
Infrastructure	Internet users (per 100 people)					(+)
	Electric power consumption (kWh)			(+)		
	Railways, goods transported (million ton-km)					(+)
Gross capital formation	Gross capital formation (% of GDP)	(+)				
Trade openness	Trade (% of GDP)					(-)
Market size	Per capita GDP (current US$)	(+)				
	GDP growth (annual %)	(+)				
Political and institutional variables	Control of corruption: number of sources					
	Control of corruption: percentile rank					
	Government effectiveness: number of sources					
	Government effectiveness: percentile rank					
	Political stability and absence of violence/terrorism: number of sources					
	Political stability and absence of violence/terrorism: percentile rank	(-)				
	Regulatory quality: number of sources					
	Regulatory quality: percentile rank					
	Rule of law: number of sources				(-)	
	Rule of law: percentile rank					
	Voice and accountability: number of sources					
	Voice and accountability: percentile rank	(-)				

More detailed results of the significant predictors for each of the BRICS countries are summarised in the Table 23:

Table 23 - Summary results for Hypothesis 1

Country	Predictive cluster	Significant variables	p-value	Spearman correlation	R²
BRICs group	Cost of doing business	Labour cost per hour ($)	0.012	0.414	0.171
		Real interest rate (%)	0.001	-0.527	0.278
	Trade openness	Trade (% of GDP)	0.047	0.333	0.111
	Market size	Per capita GDP (current US$)	0.009	0.429	0.184
	Political and institutional variables	Control of corruption: number of sources	0.032	-0.358	0.128
		Government effectiveness: number of sources	0.032	-0.358	0.128
		Government effectiveness: percentile rank	0.036	-0.351	0.123
		Rule of law: number of sources	0.007	-0.439	0.193
		Voice and accountability: number of sources	0.043	-0.339	0.115
Brazil	Cost of doing business	Labour cost per hour ($)	0.036	0.700	0.490
		Real interest rate (%)	0.007	-0.817	0.667
		GDP per person employed (constant 1990 PPP $)	0.010	0.800	0.640
	Gross capital formation	Gross capital formation (% of GDP)	0.000	0.950	0.903
	Market size	Per capita GDP (current US$)	0.016	0.767	0.588
		GDP growth (annual %)	0.016	0.767	0.588
	Political and institutional variables	Political stability and absence of violence/terrorism: percentile rank	0.001	-0.917	0.840
		Voice and accountability: percentile rank	0.020	-0.748	0.559
Russia	Macroeconomic stability	Inflation, consumer prices (annual %)	0.013	0.783	0.614
India	Infrastructure	Electric power consumption (kWh)	0.004	0.850	0.723
China	Political and institutional variables	Rule of law: number of sources	0.040	-0.690	0.476
South Africa	Macroeconomic stability	Inflation, consumer prices (annual %)	0.004	-0.850	0.723
	Infrastructure	Internet users (per 100 people)	0.036	0.700	0.490
		Railways, goods transported (million ton-km)	0.026	0.729	0.531
	Trade openness	Trade (% of GDP)	0.013	-0.783	0.614

5.5.2 Hypothesis 2

The summary of the significant predictors for the MME's in the different BRICS countries can be seen in Table 24:

Table 24 - Summary of significant predictors for the BRICS MMEs

Country	Company	Predictive cluster	Significant variables	Spearman correlation	t(N-2)	p-value	R²
Brazil	Holcim	Macroeconomic stability	Official exchange rate (LCU per US$, period average)	-0.883	-4.986	0.002	0.780
		Cost of doing business	Labour cost per hour ($)	0.667	2.366	0.050	0.444
		Market size	Per capita GDP (current US$)	0.667	2.366	0.050	0.444
		Gross capital formation	Government effectiveness: percentile rank	-0.695	-2.554	0.038	0.482
	Avon	Cost of doing business	Labour cost per hour ($)	0.900	5.463	0.001	0.810
			GDP per person employed (constant 1990 PPP $)	0.933	6.878	0.000	0.871
		Gross capital formation	Gross capital formation (% of GDP)	0.767	3.159	0.016	0.588
		Market size	Per capita GDP (current US$)	0.883	4.986	0.002	0.780
		Political and institutional conditions	Control of corruption: number of sources	-0.678	-2.441	0.045	0.460
Russia	Anheuser-Busch InBev	Cost of doing business	Real interest rate (%)	0.783	3.334	0.013	0.614
		Trade openness	Trade (% of GDP)	-0.683	-2.476	0.042	0.467
	Carlsberg Group	Political and institutional conditions	Political stability and absence of violence/terrorism: percentile rank	0.762	3.109	0.017	0.580
India	ABB Ltd	Infrastructure	Electric power consumption (kWh)	0.983	14.310	0.000	0.967

Country	Company	Predictive cluster	Significant variables	Spearman correlation	t(N-2)	p-value	R²
India	Hidustan Unilever Ltd (HUL)	Infrastructure	Railways, goods transported (million ton-km)	0.783	3.334	0.013	0.614
		Political and institutional variables	Control of corruption: number of sources	-0.725	-2.783	0.027	0.525
			Control of corruption: percentile rank	-0.695	-2.554	0.038	0.482
			Government effectiveness: number of sources	-0.694	-2.549	0.038	0.481
			Government effectiveness: percentile rank	-0.672	-2.403	0.047	0.452
			Political stability and absence of violence/terrorism: number of sources	-0.725	-2.783	0.027	0.525
			Regulatory quality: number of sources	-0.725	-2.783	0.027	0.525
			Rule of law: number of sources	-0.694	-2.549	0.038	0.481
			Rule of law: percentile rank	-0.851	-4.292	0.004	0.725
			Voice and accountability: percentile rank	-0.706	-2.637	0.034	0.498
China	Suzuki Motor Corporation	Cost of doing business	Real interest rate (%)	-0.717	-2.719	0.030	0.514
		Infrastructure	Railways, goods transported (million ton-km)	0.683	2.476	0.042	0.467
	Anheuser-Busch InBev	Infrastructure	Railways, goods transported (million ton-km)	0.933	6.878	0.000	0.871
South Africa	British American Tobacco (BAT)	Cost of doing business	GDP per person employed (constant 1990 PPP $)	-0.810	-3.378	0.015	0.655
		Infrastructure	Electric power consumption (kWh)	-0.714	-2.500	0.047	0.510
		Political and institutional conditions	Political stability and absence of violence/terrorism: percentile rank	-0.790	-3.161	0.020	0.625
	Unilever	Political and institutional conditions	Regulatory quality: number of sources	-0.726	-2.791	0.027	0.527
			Rule of law: percentile rank	-0.746	-2.963	0.021	0.556
			Voice and accountability: percentile rank	-0.707	-2.642	0.033	0.499

5.5.3 Hypothesis 3

The BRICS countries were analysed in terms of their competitiveness in attracting FDI their respective manufacturing industries. The third hypothesis was analysed in two phases. The summary of the results for the two phases is discussed below.

5.5.3.1 *Phase 1*

In the comparative analysis, China was highlighted as the only BRICS country that was significantly different from the rest of the countries in the sample population in attracting FDI to the manufacturing industry over the last ten years using the FDI flow/per capita GDP ratio as a proxy . The Chinese per capita GDP growth was proportionally a lot higher than the FDI flow over the ten-year period.

5.5.3.2 *Phase 2*

The second phase of the analysis found that all the BRIC countries ranked in the upper quartile for attracting FDI flow to the manufacturing industry for the final year of the ten-year period. All these countries also ranked above the mean of the data set. The different rankings at the end of 2010 were:

- China (1st)
- India (3rd)
- Brazil (4th)
- Russia (14th)

India was the only country that managed to grow its comparative ratio over the ten-year period.

The FDI stock analysis showed a result similar to that of three BRICS countries. China, Russia, and South Africa also ranked in the upper quartile for the final year of the analysis. The different positions of the BRICS countries on the FDI stock/per capita GDP rankings were:

- China (1st)
- South Africa (8th)
- Russia (16th)

Although all three of these countries managed to grow their FDI stock as a portion of GDP over the ten-year period, only China ranked above the mean of the sample of 71 countries that formed part of the FDI stock ranking analysis.

Chapter 6: Discussion of results

6.1 Introduction

In this chapter, the results presented in Chapter 5 are discussed in more detail. The empirical findings of the analysis involving the nonparametric correlations for the first two hypotheses and the paired-sample test for the third hypothesis were linked to the expected results from the previous studies. All the significant explanatory variables were evaluated for each of the BRICS countries relative to the primary research question of the BRICS countries as potential destinations for MME's.

The aim of this research paper was to analyse the BRICS countries as potential destinations for MMEs. The first phase of the overall analysis looked at the potential determinants of FDI to identify the major determinants of FDI flow to these countries. Previous empirical studies highlighted certain generic determinants of FDI to emerging markets (Asiedu, 2002, 2006; De Angelo *et al.*, 2010; Demirbag *et al.*, 2007; Kok & Ersoy, 2009; Ranjan & Agrawal, 2011) but the results in Chapter 5 clearly highlight that countries are different and that results cannot necessarily be generalised. Correlation does, however, not imply causation and the significant predictors identified in the analysis cannot be inferred as the sole reason for the decision to investment in the countries, however, it does provide a good proxy.

The aim of the analysis of the second hypothesis was to either validate or disprove investor perceptions by identifying the potential predictors of company performance and compare the results to the significant predictors of the first hypothesis. As in the first hypothesis, the rule that correlation does not imply causation applies, but this analysis focused more on the comparison than on the identification of the actual determinants of company performance.

The final hypothesis focused on analysing the current competitiveness of the BRICS countries in attracting FDI to the manufacturing sector. The BRICS countries were compared to other countries on the ITC investment map database and after a two-phased analysis, the competitiveness of the different countries was determined. If some countries are more competitive than others, it is useful to know what characteristics drive the competitiveness and how these characteristics could potentially be duplicated in other countries or industries.

6.2 Discussion of Hypothesis 1

The results of the first hypothesis confirm some of the conclusions in Chapter 2, namely that countries are different and that findings for a group of countries cannot necessarily be generalised (Ranjan & Agrawal, 2011). Another important outcome of this analysis was the identification of potential determinants of FDI in the manufacturing industry of the different BRICS countries. Previous studies focused on identifying determinants of FDI at a country level but indicated that there was a need for an analysis at an industry level (Demirbag *et al.*, 2007; Ranjan & Agrawal, 2011).

A number of significant variables were identified using previous studies and categorised in different clusters. These variables were selected on the basis of commonalities in findings from previous studies as the generic determinants of FDI as discussed in Chapter 4.

The results of the nonparametric correlations confirmed that some of these variables were in fact significant predictors of FDI in the manufacturing industry of the BRICS countries. There were also a number of variables that were not significant predictors of FDI. The reason for this might be due to the selection process, that is, variables were selected based on previous country level studies. The results also illustrated that the countries were different. The significant predictors for each of the BRICS countries will be discussed below.

6.2.1 Brazil

The results for Brazil confirmed quite a number of the identified variables as significant predictors of FDI. Four of the seven categories are presented in the results and will be discussed below.

The labour cost per hour for Brazil correlated positively with FDI, which was unexpected considering the fact that there was a steady increase in the labour cost over the ten-year period. The possible cause might be that the relatively lower labour cost was replaced with capital. This would cause the average wage cost and the capital flow to increase. The highly regulated and costly labour system in the formal sector might also have been a contributing factor. The Brazilian government has also been adjusting the minimum wage in the country on an annual basis since 2006. Employers in the country must pay compulsory benefits which can add 50%-80% to any full-time employee's basic wages (EIU, 2012). These facts support the researchers view that there is an incentive to replace

labour with capital in the formal sector but need to be investigated further to be considered as a finding. This is merely speculation and should be investigated further before a conclusion is made.

As that real interest rate has a direct impact on the bottom line of a business, it was expected that a relatively high interest rate would negatively correlate with FDI. If foreign firms are looking for financing in the Brazilian market, higher interest rates would increase the cost of financing and could deter investment (De Angelo *et al.*, 2010). It has been noted that the spread between corporate funding and lending rates in Brazil will remain a barrier for some time to come (EIU, 2012).

It was expected that a steady increase in productivity would attract more FDI. This is specifically relevant to efficiency-seeking firms that move operations offshore to reduce cost. The fact that manufactured goods make up more than 30% of exported goods in Brazil supports this argument (EIU, 2012). A more productive workforce reduces the cost of doing business which in turn increases foreign investment (Chantasasawat *et al.*, 2010; De Angelo *et al.*, 2010; Demirbag *et al.*, 2007; Mehic *et al.*, 2009; Ranjan & Agrawal, 2011; Singhania & Gupta, 2011). Although most of the previous studies on emerging economies found that foreign investment in these countries were mostly market seeking (De Angelo *et al.*, 2010; Asiedu, 2002; Kouznetsov, 2009; Ranjan & Agrawal, 2011; Singhania & Gupta, 2011), it was expected that MMEs would also offshore operations from an efficiency point of view.

With a large and growing domestic market it was expected that per capita GDP and GDP growth as measures of market size would positively correlate with FDI (EIU, 2012). This does not necessarily contradict the results of GDP per person employed as manufacturing firms looking to invest in countries like Brazil could be both efficiency seeking and market seeking (Ranjan & Agrawal, 2011; Singhania & Gupta, 2011).

The strong positive correlation with gross capital formation was expected and aligned with the findings from previous studies (Kok & Ersoy, 2009; Ranjan & Agrawal, 2011). The government invested heavily in schools and other infrastructure projects and the current plan to upgrade road and rail infrastructure is another example of this (EIU, 2012).

The negative correlation between political stability and FDI is as a result of a decline in Brazil's political stability ranking over the ten-year period up to 2009. This is quite

surprising since President Lula is regarded as the saviour of the Brazilian economy and the ruling party has been elected for a third consecutive term (EIU, 2012). The political stability percentile rank for Brazil over this period ranges between 42 and 54 and indicates that Brazil does not rank very high compared to the other countries measured by the same indicator on the World Bank database (The World Bank, 2012). As discussed in Chapter 2, political stability has been one of the areas where emerging markets have struggled in the past which as affected FDI. Politically unstable environments deter investment and the impact of the low percentile rank on FDI flow is an illustration of this (Chantasasawat *et al.*, 2010).

Voice and accountability is the other predictor under political and institutional variables that had a negative correlation with FDI. The rank for Brazil is not very high compared to other countries measured by the same indicator, with the rank ranging between 57 and 62. As a measure of democracy this indicates that Brazil is not considered a very democratic society and foreign investors might be concerned that the rules of the game in the business environment will be dictated by government which could potentially increase the risk of the investment.

6.2.2   Russia

The results for Russia confirmed one of the identified variables as being a significant predictor of FDI. The inflation rate correlated positively with FDI flow. The expectation was that a higher and fluctuating inflation rate would correlate negatively with FDI flows (Singhania & Gupta, 2011). The data on the Russian inflation rate over the ten-year period showed that there was a steady decline in the inflation rate from a high of more than 21% in 2001 to a reasonable level of just above 6% in 2010. The results were thus aligned with expectations as the steady decline in the inflation rate promoted foreign investment. The macroeconomic environment has proven to be one of the most favourable aspects of the Russian business environment (EIU, 2012).

The fact that the central bank in Russia has managed to stabilise the inflation rate in Russia has clearly had a positive impact on foreign perception. The fluctuating inflation rate might be caused by the consistency of the measurement or formula used in the inflation calculation but this will have to be investigated further. The manufacturing sector might be specifically susceptible to higher inflation rates, with the characteristics of being

generally labour absorbing and having high raw material inputs, both of which are influenced by higher inflation rates.

6.2.3 India

The only significant variable for India was electrical power consumption which is categorised under infrastructure. Good infrastructure increases the productivity of an investment and the importance of a constant supply of electricity and water are important inputs to most manufacturing processes and a positive correlation between electrical power consumption and FDI flows to India's manufacturing industry was as expected (Kinda, 2010). The Indian government have made big improvements to India's infrastructure which is widely considered to be in a very poor state. The infrastructure in India is improving most rapidly in areas where the private sector are making profits but is still very much lacking in areas where companies are struggling to generate revenues (EIU, 2012).

6.2.4 China

The results of the analysis of MMEs in China confirmed that only one of the identified variables was a significant predictor of FDI, namely rule of law: number of sources. The correlation for this predictor was negative and the conscious effort of the Chinese government to reorient the economy to private consumption and away from its reliance on foreign investment might have contributed to this outcome (EIU, 2012).

6.2.5 South Africa

The inflation rate in South Africa has been all but stable over the 2001 – 2010 period. The inflation rate fluctuated between 1% and 12% over that period with no clear trend in the up and down movement. As the results of previous studies show, elements within the macroeconomic environment such as inflation rate fluctuations have proven to influence the investment decision of MNCs (Asiedu, 2006; Blonigen, 2005; Singhania & Gupta, 2011) and the negative correlation is thus as expected.

South Africa had two infrastructure variables that positively correlated with FDI. Although South Africa is an African country, the level of infrastructure development can be compared to many of the first world countries and is certainly the best in Africa (EIU, 2012). The two significant infrastructure predictors included internet users per 100 people and railways good transported.

South Africa's telecommunications network is the most advanced in Africa in terms of services rendered and technology (EIU, 2012). The technological advancements are aligned with the continuous move toward an economy where information is readily available. Improved efficiency in gathering and distributing information reduces the cost of doing business and the positive correlation is thus as expected (Kinda, 2010; Liu & Daly, 2011). Although the South African government has continued to invest in infrastructure projects, bottlenecks still exist, specifically in electricity supply and transport (EIU, 2012). Efficiency-seeking MNCs looking to invest in South Africa will keep an eye on the success of these infrastructure projects as a way to reduce costs (Liu & Daly, 2011).

With a relatively high inflation rate and higher than inflation cost increases in most of the labour intensive industries (EIU, 2012), it is expected that firms looking to invest in the manufacturing industry of South Africa would be market seeking rather than efficiency seeking. An open economy is, therefore, not a concern for MNCs that are not looking to export the goods manufactured in the local market. South Africa's trade as a percentage of GDP was reasonably stable over the ten-year period at a level that is consistent with some of the other BRICS countries and the negative correlation is somewhat surprising. Although market-seeking firms are not necessarily concerned about a liberalised trade policy, these investors will not necessarily be deterred by fewer trade controls. This outcome might merely be a similarity in patterns between these two variables but this will have to be investigated further.

6.2.6 The determinants of FDI in the manufacturing industries of the BRICS countries

The results of the first hypothesis illustrate the differences between countries and specifically the potential determinants of FDI in the manufacturing industries of the BRICS countries. Although emerging economies share certain characteristics, countries are inherently different. The factors that shape different economies and the way business is conducted in a specific country are unique to that country but that does not mean that practices and policies cannot be replicated successfully in other environments. The outcome of the first hypothesis illustrates these differences and some of the potential dynamics that shaped these outcomes were highlighted.

6.3 Hypothesis 2

The purpose of the second hypothesis was to either validate or disprove investor perceptions of the factors that might potentially impact on the financial performance of an investment. All the companies that formed part of the analysis were MMEs that had already established operations in the different BRICS countries. The outcome of this analysis illustrated the differences between investor perceptions and the actual factors that had an impact on the financial performance of MMEs.

MMEs have certain perceptions of a country's conditions and how they will impact on the financial performance of an investment. These perceptions of the business environment are one of the most important criteria for successful internationalisation (Zeng *et al.*, 2008). Incorrect perceptions might prevent businesses from entering a potentially lucrative market and this highlights the importance of accurate information to assist the managers of these businesses to make better strategic decisions (Demirbag *et al.*, 2007).

The results for the different the MMEs in each of the BRICS countries were compared with the outcome of the first hypothesis. This analysis focused on patterns in the results of the first and second hypothesis and identified distinct similarities and differences between the two MMEs in each country. Differences in results were an indication of the misalignment between investor perceptions and the actual dynamics that shaped the performance of businesses in these countries.

6.3.1 MMEs in Brazil

The results for Brazil illustrated a number of similarities between the outcomes of the two MMEs and the results of the first hypothesis. Avon and Holcim had two significant predictors that were similar in terms of the results of the two MMEs and the analysis in the first hypothesis. These significant predictors included labour cost per hour and per capita GDP as proxies for the cost of doing business and the size of the market. These results re-emphasised the findings of the first hypothesis, namely that MMEs looking to invest in Brazil were market seeking and that the rising labour costs could result in relatively lower cost labour being replaced with capital equipment that improves the efficiency of operations.

There were a number of other significant predictors for the two MMEs that illustrated some similarities to the outcome of the first hypothesis in terms of the predictive groupings.

Depending on the level detail required, the identification of similarities in the patterns of the predictive groupings can be sufficient and be used as an area of focus for policy makers or MNCs that want to invest. The significant predictive clusters for the industry analysis in the first hypothesis and two the MMEs can be seen in Table 25.

Table 25 - Significant predictive clusters for Brazil

Category	Industry analysis	Holcim	Avon
Macroeconomic stability		✕	
Cost of doing business	✕	✕	✕
Infrastructure			
Gross capital formation	✕		✕
Trade openness			
Market size	✕	✕	✕
Political and institutional variables	✕	✕	✕

The three significant predictive cluster groupings for Brazil were the cost of doing business, market size, and political and institutional variables.

Other significant predictors included gross capital formation (industry analysis and Avon) and macroeconomic stability (Holcim). These variables might have proven to be significant if a larger sample of companies had been included in the analysis.

6.3.2   MMEs in Russia

Russia was the only one of the BRICS countries where no similarities in patterns emerged at company or industry level. This was quite surprising as Russia was the only country where both the MMEs were from a similar sector within the manufacturing industry. The declining inflation rate might have made investors excited about the business environment in Russia but did not seem to have a major impact on the revenue performance of the two MMEs. The significant predictive clusters for the industry analysis in the first hypothesis and two the MMEs can be seen in Table 26.

Table 26 - Significant predictive clusters for Russia

Category	Industry analysis	Anheuser-Busch InBev	Carlsberg Group
Macroeconomic stability	✕		
Cost of doing business		✕	
Infrastructure			
Gross capital formation			
Trade openness		✕	
Market size			
Political and institutional variables			✕

These differences will have to be investigated further before the results can be used in the decision-making of policy makers or MMEs looking to invest in Russia.

6.3.3   MMEs in India

The results for the MMEs in India (ABB Ltd and HUL) did not have any specific significant predictive variables that were similar. The results, however, showed that infrastructure was a significant predictive cluster at both company and industry level. The results of the two MMEs and the outcome of the first hypothesis illustrated a strong positive correlation with a variable in the infrastructure cluster. The significant predictive clusters for the industry analysis in the first hypothesis and two the MMEs can be seen in Table 27.

Table 27 - Significant predictive clusters for India

Predictive cluster	Industry analysis	ABB Ltd	HUL
Macroeconomic stability			
The cost of doing business			
Infrastructure	✕	✕	✕
Gross capital formation			
Trade openness			
Market size			
Political and institutional variables			✕

In a country where the general infrastructure is considered to be poor, the government has made significant progress in developing areas such as the roads, telecommunications,

airports, and ports. The recent Indian government budget confirmed the intention to continue with development in the short to medium term (EIU, 2012). Companies such as ABB Ltd and HUL distribute products and equipment throughout India and a poor state of infrastructure development would have an impact on the efficiency of operations. A company such as HUL is especially sensitive to increasing operating costs due to poor infrastructure in a country (Kouznetsov, 2009). The outcome of this analysis was proof of the progress made by the Indian government in developing the country's infrastructure.

Owing to the importance of an efficient logistics network and the constant supply of electricity and water as inputs to most manufacturing processes, it was expected that there would be a positive correlation between the level of infrastructure and FDI flows to this industry.

The results for HUL also highlighted several political and institutional variables as significant predictors, but these might have been unique to HUL. More companies will have to be included in the analysis to determine if these predictors are, in fact, significant.

6.3.4 MMEs in China

The results of the two MMEs in China showed a similarity in that both companies had an infrastructure variable as significant predictor. The Chinese government invested heavily in infrastructure in the last decade. Most of the investments were made by linking different cities and regional areas and these investments contributed to the effectiveness and efficiency of businesses that operated in various geographical locations in China (EIU, 2012). Both Suzuki Motor Corporation and Anheuser-Busch InBev have multiple operations in China and the efficient transport of goods between these different locations is important from a cost perspective (Liu & Daly, 2011). The relatively low cost of doing business and the potential of a large market have allowed companies like Suzuki Motor Corporation and Anheuser-Busch InBev to successfully exploit the "locational" comparative advantage that China provides (Kok & Ersoy, 2009). The significant predictive clusters for the industry analysis in the first hypothesis and two the MMEs can be seen in Table 28.

Table 28 - Significant predictive clusters for China

Predictive cluster	Industry analysis	Suzuki Motor Corporation	Anheuser-Busch InBev
Macroeconomic stability			
Cost of doing business		✕	
Infrastructure		✕	✕
Gross capital formation			
Trade openness			
Market size			
Political and institutional variables	✕		

Even though there were similarities in the results of the MMEs, they still differed from the outcome of the first hypothesis where the only significant predictor was rule of law in the political and institutional variable cluster. This outcome confirmed that investor perceptions were not necessarily valid and that the successes of MMEs that had invested in China had been based on government policies to develop the Chinese infrastructure rather than the way that laws were enforced in the country.

6.3.5 MMEs in South Africa

The only pattern that emerged from the results for South Africa was that both MMEs correlated negatively with variables in the political and institutional predictive cluster. The political stability in South Africa, specifically the control of corruption, has been in the headlines for many years. The South African government has become known for its formulation of excellent policies. However, it is generally lacking when it comes to their execution (EIU, 2012).

The results showed that uncertainty and inconsistency in the political environment did not only deter investors but also had a potential impact on the financial performance of companies. The negative correlations with the revenue figures of both Unilever and BAT proved that corruption and a lack of the rule of law increased the cost of doing business (Chantasasawat *et al.*, 2010). A summary of all the significant predictive clusters can be seen in Table 29.

Table 29 - Significant predictive clusters for South Africa

Category	Industry analysis	Unilever	BAT
Macroeconomic stability	✕		
Cost of doing business			✕
Infrastructure	✕		✕
Gross capital formation	✕		
Trade openness			
Market size			
Political and institutional variables		✕	✕

The results illustrated that infrastructure was significant for both the industry analysis in the first hypothesis and BAT. These results were, however, not complementary. The industry analysis showed a positive correlation with the infrastructure variables of internet users per 100 people and railways, goods transported, whereas the results for BAT showed a negative correlation with electrical power consumption. This was expected considering the serious electricity shortages in 2008 experienced by Eskom, South Africa's major power producer (EIU, 2012).

The other significant predictors might have been specific to the company and further analysis with a larger sample size of companies will have to be conducted to confirm whether these variables need to be considered.

6.3.6 Factors that impact on the financial performance of MMEs

The results of the second hypothesis highlighted some similarities and patterns between investor perceptions (Hypothesis 1) and the factors that had an actual impact on the financial performance of companies. With the exception of Russia, all the countries had commonalities in significant predictive clusters identified in the first hypothesis and the analysis of the potential factors that had an impact on the financial performance of companies. These "common" variables identified for each of the countries, validated the perception of investors. The other significant predictors that were unique to a specific company or the industry will have to be investigated further to determine if these variables were just significant by chance.

The analysis of the first hypothesis can be used to complement to Hypothesis 2. Increasing the sample size of companies will make this analysis more robust and the findings can then be generalised to be used in decision-making in the policy environment and by potential investors.

6.4 Hypothesis 3

The third hypothesis aimed at determining the competitiveness of the different BRICS countries in attracting FDI to their respective manufacturing industries. The rationale behind the investigation was that the BRICS countries had become increasingly important role players in the global economy and important destinations for the production of goods and services. Although some of these nations are no longer seen as low-income countries, the foreign investment that has flowed to these nations has gone a long way to reduce poverty and stimulate economic growth in these countries (Ho & Rashid, 2011). It is, therefore, important to understand which of these nations were competitive in attracting FDI to their manufacturing industry. This understanding will allow other nations to potentially duplicate some of the successful practices and policies in order to stimulate foreign investment flow.

The results of the two-phased analysis were somewhat contradictory, but inferences could still be drawn. In the first phase of the analysis, China was the only country that differed significantly from the rest of the sample in the analysis in terms of competitiveness in attracting FDI. By comparing the median values of China to the rest of the sample, it actually indicated that China was less competitive than the rest of the sample when using the FDI/per capita GDP ratio as a proxy. The data showed that China managed to grow its per capita GDP a lot faster than FDI flow to the country. The reasons might be that the Chinese government had made a conscious effort to increase the size of the country's middle class, and in the process, reduced dependence on foreign investment. China is no longer seen as a low-income nation and the Chinese government has adopted a more selective approach to FDI in recent years (EIU, 2012). According to the data, the other BRICS countries have been much more dependent on foreign investment for economic growth.

In the second phase of the analysis, the global ranking showed that the BRIC countries were all competitive in attracting FDI flow to their respective manufacturing industries. All the BRIC countries ranked in the top 25% (China-1st, India-3rd, Brazil-4th, and Russia-14th)

of the sample and above the mean of the dataset. The reason why these results are somewhat contradictory to the results of the first phase, that used the data for the entire period, is that the BRIC countries only really emerged as economic superpowers after the first Goldman Sachs study in 2003. The data showed that the FDI in these countries only really started to show significant growth after the second Goldman Sachs study on the BRICS countries in 2005, specifically Brazil and India.

The results of the FDI stock rankings also illustrated that the BRICS countries that formed part of this sample ranked in the upper quartile. China ranked 1st, South Africa 8th and Russia (16th). However, China was the only one of these countries that ranked above the mean of the dataset.

As growth in the developed world started slowing down, many companies and countries started investing in what is known today as the emerging markets. Firms started expanding operations globally to many of these emerging market countries. Governments in these emerging market countries adopted policies to stimulate foreign investment and some countries have been more successful than others in their policy formulation and regulations.

Before adopting any policies or regulations of countries that have proven to be competitive in attracting FDI, it is important to understand the background to the formulation of certain policies. Environments are different and policies can rarely be replicated without being adopted to local conditions.

6.4.1 Competitiveness of the BRICS countries in attracting FDI to the manufacturing industry

The third hypothesis compared the different BRICS countries as competitive destinations for attracting manufacturing FDI. Over the ten-year period China had managed to grow the economy proportionally a lot faster than the growth in foreign investment where the other countries had been much more dependent on the flow of foreign investment to stimulate economic growth.

The results showed that the BRICS countries were competitive in attracting FDI to their respective manufacturing industries but the country that was the most successful had not relied on foreign investment to grow its economy. The policies adopted by China focused much more on growing its middle class (i.e., internal consumption). The country is now at

a stage where it can be selective in its approach to foreign investment (EIU, 2012). This might also be the reason why China had only one significant predictor of FDI, as highlighted in the first hypothesis, and why the generic determinants of FDI from previous studies were not necessarily applicable to the Chinese model.

Although South Africa ranked in the upper quartile of countries in the FDI stock/per capita GDP ranking analysis, it still ranked below the mean of the sample. South Africa is a relatively small economy compared to the rest of the BRICS countries and was only included in the BRICS portfolio in 2010 (Hounshell, 2011). The inclusion of South Africa as part of the BRICS group was widely criticised as the country is seen to be out of its depth among these economic superpowers (EIU, 2012).

6.5 Conclusion

The analysis of the three hypotheses contributed to the overarching theme of evaluating the BRICS countries as potential destinations for MMEs. Each of the three hypotheses covered a different facet of the overall analysis. In the first hypothesis, the potential determinants of FDI in the manufacturing sector of each of the BRICS countries were analysed. The outcome of the analysis highlighted that countries are inherently different and that the determinants of FDI cannot necessarily be generalised. The significant predictors for each of the countries and how they fit into policy formulation and the general environment of that country were discussed.

In the second hypothesis the generic determinants were tested against the financial performance of MMEs that had already established operations in the BRICS countries. The aim of this analysis was to either validate or disprove investor perceptions of the factors that might potentially impact on the financial performance of an investment. The results were compared to the outcome of the analysis of the first hypothesis. The results highlighted that in certain instances investor perceptions were valid in that the significant predictor of FDI had an impact on the financial performance of the MMEs in that country. Variables that were significant predictors in the FDI analysis were highlighted, but they did not seem to be significant factors in the analyses of the financial performance of the MMEs.

In the final phase of the analysis, the competitiveness of the BRICS countries in attracting manufacturing FDI was assessed. The assessment included a two-phased approach, the

aim of which was to prove that the results of the two phases were complementary. The results of the two phases were somewhat contradictory. In the first, none of the BRICS countries were considered to be competitive and in the second phase, all of them were considered to be competitive, with perhaps the exception of South Africa.   The reason for the disparity in results is that the BRICS countries only started to attract significant manufacturing foreign investment after 2005.

On the basis of the analysis and the methodology followed in this study, a general model that can be used in future FDI research is suggested. The detail of the model and proposed future methodology will be discussed in the following section.

Chapter 7: Conclusion

7.1 Summary of main findings

The increased importance of emerging markets in the global economic landscape makes these destinations attractive locations for foreign investors (UNCTAD, 2011). The BRICS countries in particular, are seen as the new growth centre of the world and can potentially be used as benchmarks for other emerging markets that are seeking foreign investment (Pillania, 2009). The outcome of the three hypotheses analysed the BRICS countries as potential destinations of FDI in the manufacturing industry. The expansion of international production and a quarter of the global GDP being generated by the production processes of MMEs, highlighted the potential significance of this study (UNCTAD, 2011).

MNCs have certain perceptions about the country conditions and how this will impact on the performance of businesses within that environment (Kouznetsov, 2009). The analysis conducted in the three hypotheses provided MNCs looking to invest in any of the BRICS countries with the required understanding to make more informed investment decisions. The significant predictors of FDI to the manufacturing industry for each of the BRICS countries were identified and could be used in future investment decisions.

The relevance of these significant predictors to the actual performance of MMEs proved to be mixed. The misalignment between investor perceptions and the factors that had an actual impact on the performance of MMEs highlighted the fact that a more robust and complete methodology is needed before such findings can be used in the decision making process of potential investors.

The results of previous studies on the determinants of FDI to emerging markets have been inconclusive and mixed across regions and countries (Ranjan & Agrawal, 2011). The outcome of this study further highlighted the reason for these inconclusive results. Findings cannot be generalised across regions and that the results are dependent on the country, time period and the methodology applied.

The differences in the results at an industry level confirmed that FDI is related to industries rather than countries. Just as countries are different, the industries within countries also differ and the decisions of multinationals and policy makers should be more focused on the industry specific conditions rather than country level factors. The analysis of industry specific FDI flows enhanced the understanding of the differences in FDI determinants at an industry as

opposed to a country level and why some of the BRICS countries have managed to attract more FDI to the manufacturing industry than others.

In the overall analysis of the BRICS countries as potential destinations for FDI, the majority of the BRICS countries, with the exception of South Africa, are found to be competitive destinations for attracting FDI to the manufacturing industry. With the criteria used to measure competitiveness, South Africa was not seen as a competitive destination for FDI in the manufacturing industry when compared to other countries on the ITC investment map. This again raises the question about South Africa's inclusion in the BRICS portfolio.

The BRICS countries that were competitive in attracting FDI to the manufacturing industry can be used as benchmarks for policy makers or MNCs looking to invest in an emerging market context. Although policies cannot necessarily be duplicated in different contexts there is still a lot to be learned from countries that have been successful in attracting FDI, China being a case in point. Lessons learned from China and some of the other BRICS countries that were competitive in attracting FDI could be of value to other emerging market countries.

7.2 Recommended methodology for future studies

As mentioned in Chapter 6, a model was developed that could be used in future studies of a similar nature. It is believed that the application of this model will ensure completeness to the extent that the findings can possibly be used in a policy environment or by MNCs looking to invest in a specific environment. An illustration of the model that was developed by the researcher can be seen in Figure 22. Please note that the names of the countries and companies used are just for illustrative purposes.

Figure 22 - Methodological model for future research
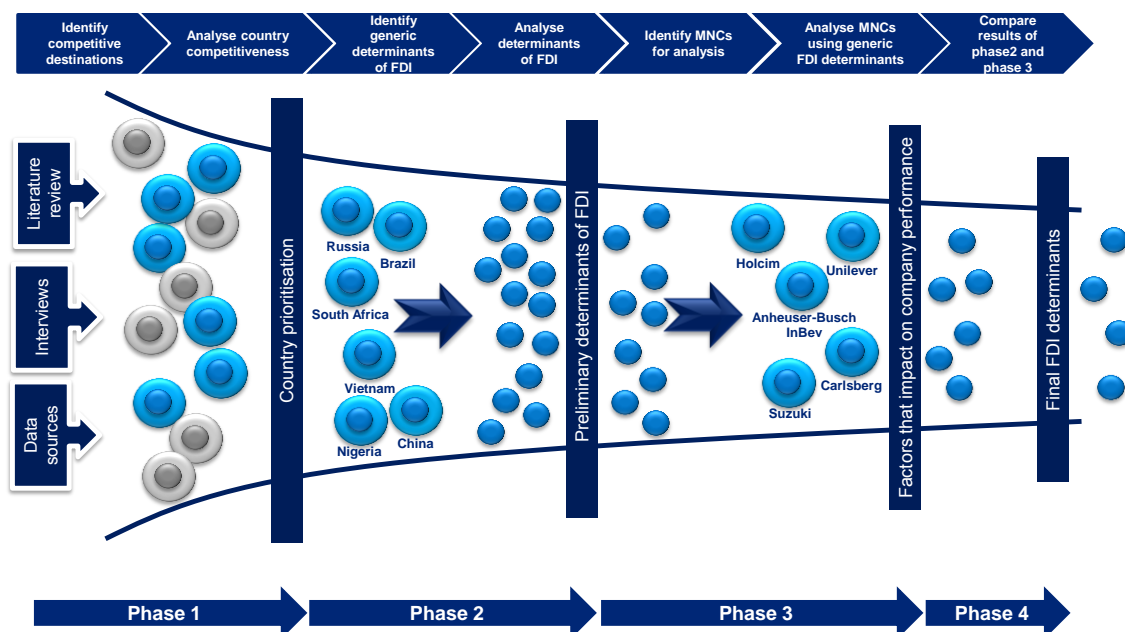
The model follows a four-phased approach to identify the determinants of FDI in a country that is competitive in attracting FDI. This model can be used at country or industry level, depending on the requirements of the study.

In the first phase of the analysis, the researcher identifies countries that are competitive in attracting FDI, following a similar methodology and criteria as used in this research (comparing medians and international ranking). The outcome of the first phase would be any number of competitive destinations for FDI that can be used as benchmarks.

In the second phase of the analysis the researcher identifies generic determinants of FDI. For completeness the variables should be selected from various sources that include, previous studies, making use of data sources such as the WIR, and interviews with representatives from MNCs that have invested in those countries. The competitive countries from the first phase are analysed using these generic determinants to identify the preliminary determinants of FDI in these countries. The researcher can use several techniques to do this analysis, but a panel data analysis or a multivariate time series regression is suggested. The researcher should ensure that the data used in the analysis meets the methodological requirements of these techniques. The outcome of the second phase is the preliminary determinants of FDI for the identified countries.

In the third phase of the analysis, the researcher identifies MNCs that have already invested in the countries analysed in the first two phases. It is suggested that the sample of companies be made as large as possible for completeness and robustness of results. The revenue or profit figures of these companies can be used as dependent variables in the ensuing analysis. These MNCs will then be analysed using the same generic determinants of FDI that were used in phase two. The same methodology used in phase two can be applied again. The outcome of the third phase is a list of factors or determinants that have an impact on the financial performance of these MNCs.

In the final phase of the analysis, the researcher compares the results of phase two and three and identifies similarities in the results. These common factors will be considered as the determinants of FDI in that country.

The final outcome of this methodology would be the determinants of FDI in countries that are competitive in attracting FDI. These countries and determinants can be used as benchmarks for policy makers or MNCs that are considering potential investment opportunities.

7.3   Research limitations

Owing to the nature and the scope of this study, various constraints have been identified. The limitations included the following:

- It might not be possible to generalise and apply these findings to other emerging economies due to the limited observations. The outcome of the analysis also highlight that countries are inherently different. Another implication of the limited observations is that the results of this study cannot be generalised to the population although the findings highlight the potential limitations in previous studies.

- The availability of reliable data limits the researcher in the methodology that can be used in the analysis. The ideal methodology would be a time series multivariate analysis.

- It might not be possible to identify all the potential determinants of FDI to the manufacturing industry due to the lack of prior research focused on the industry.

The identified predictor variables do not explain all the variation in the dependent variable.

- A number of the identified variables were not significant predictors of FDI. The correlation results and scatter plots illustrate that the relationships were not statistically significant. This highlights an inadequacy in the variable selection process.

- The results of the regression analysis do not prove causality but merely similar patterns between variables and the current methodology will have to be expanded to include all the requirements of causality.

7.4 Recommendations for future research

From the methodological limitations and the findings of this study, the researcher suggests the following areas for future research:

A similar study can be conducted that addresses some of the research limitations highlighted in the previous section. Using the recommended methodology as illustrated in Figure 22 will address most of the limitations and improve the robustness of the results.

This study focused on the manufacturing industry and the outcome highlighted that FDI is industry specific rather than country specific. A comparative study of industries within a country will be useful to either validate or disprove this finding.

A misalignment between investor perceptions and factors that have an actual impact on the performance of MMEs was highlighted in this study. This can be further researched and validated in other industries. It is also suggested that the sample size of MMEs be increased and the number of observations should meet the methodological requirements of a multivariate analysis.

7.5 Conclusion

Although the aim of the research was not to add to the academic literature, the researcher felt that the outcome of this study added some new information to the academic theory on international business. The methodology illustrated in Figure 22 can be used in future studies of a similar nature.

The outcome of the analysis may assist MNCs in their entering decisions and identifying the determinants of FDI in an emerging market context. The analysis done at an industry level opens up a new area of focus for future research on the determinants of FDI in different industries and regions within countries and how policy formulation and multinational entering decisions should be more focussed at a micro-level than at a macro-level as has been the suggestion in previous studies.

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Appendix A: Detailed results of Hypothesis 1

Appendix A refers to the results of the Spearman rank order correlations discussed in section 5.2. The detailed results for each of the BRICS countries are illustrated which included the variables that were not significant correlates of FDI.

8.1 Detailed results of the Spearman rank order correlations

Table 30 - Results of the Spearman rank order correlations for Brazil

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	-0.183	-0.493	0.637	0.034
	Official exchange rate (LCU per US$, period average)	9	-0.417	-1.213	0.265	0.174
Cost of doing business	**Labour cost per hour ($)**	**9**	**0.700**	**2.593**	**0.036**	**0.490**
	Real interest rate (%)	**9**	**-0.817**	**-3.744**	**0.007**	**0.667**
	Taxes on income, profits and capital gains (% of revenue)	9	-0.483	-1.461	0.187	0.234
	GDP per person employed (constant 1990 PPP $)	**9**	**0.800**	**3.528**	**0.010**	**0.640**
	Labour productivity growth (%)	9	0.317	0.883	0.406	0.100
Infrastructure	Internet users (per 100 people)	9	-0.267	-0.732	0.488	0.071
	Electric power consumption (kWh)	9	0.133	0.356	0.732	0.018
	Railways, goods transported (million ton-km)	9	0.201	0.542	0.604	0.040
Gross capital formation	**Gross capital formation (% of GDP)**	**9**	**0.950**	**8.050**	**0.000**	**0.903**
Trade openness	Trade (% of GDP)	9	0.600	1.984	0.088	0.360
Market size	**Per capita GDP (current US$)**	**9**	**0.767**	**3.159**	**0.016**	**0.588**
	GDP growth (annual %)	**9**	**0.767**	**3.159**	**0.016**	**0.588**
Political and institutional variables	Control of corruption: number of sources	9	-0.475	-1.427	0.197	0.225
	Control of corruption: percentile rank	9	-0.417	-1.213	0.265	0.174
	Government effectiveness: number of sources	9	-0.329	-0.921	0.388	0.108
	Government effectiveness: percentile rank	9	-0.485	-1.469	0.185	0.236
	Political stability and absence of violence/terrorism: number of sources	9	-0.303	-0.840	0.428	0.092
	Political stability and absence of violence/terrorism: percentile rank	**9**	**-0.917**	**-6.068**	**0.001**	**0.840**
	Regulatory quality: number of sources	9	-0.303	-0.840	0.428	0.092
	Regulatory quality: percentile rank	9	-0.619	-2.087	0.075	0.383
	Rule of law: number of sources	9	-0.516	-1.593	0.155	0.266
	Rule of law: percentile rank	9	-0.536	-1.678	0.137	0.287
	Voice and accountability: number of sources	9	-0.604	-2.004	0.085	0.365
	Voice and accountability: percentile rank	**9**	**-0.748**	**-2.981**	**0.020**	**0.559**

Table 31 - Results of the Spearman rank order correlations for Russia

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	0.783	3.334	0.013	0.614
	Official exchange rate (LCU per US$, period average)	9	-0.267	-0.732	0.488	0.071
Cost of doing business	Labour cost per hour ($)	9	0.550	1.742	0.125	0.303
	Real interest rate (%)	9	-0.367	-1.043	0.332	0.134
	Taxes on income, profits and capital gains (% of revenue)	9	-0.200	-0.540	0.606	0.040
	GDP per person employed (constant 1990 PPP $)	9	0.233	0.635	0.546	0.054
	Labour productivity growth (%)	9	0.050	0.132	0.898	0.003
Infrastructure	Internet users (per 100 people)	9	0.167	0.447	0.668	0.028
	Electric power consumption (kWh)	9	-0.100	-0.266	0.798	0.010
	Railways, goods transported (million ton-km)	9	0.217	0.587	0.576	0.047
Gross capital formation	Gross capital formation (% of GDP)	9	0.283	0.782	0.460	0.080
Trade openness	Trade (% of GDP)	9	0.367	1.043	0.332	0.134
Market size	Per capita GDP (current US$)	9	0.550	1.742	0.125	0.303
	GDP growth (annual %)	9	-0.233	-0.635	0.546	0.054
Political and institutional variables	Control of corruption: number of sources	9	-0.321	-0.897	0.399	0.103
	Control of corruption: percentile rank	9	-0.009	-0.023	0.983	0.000
	Government effectiveness: number of sources	9	-0.386	-1.108	0.305	0.149
	Government effectiveness: percentile rank	9	-0.034	-0.089	0.932	0.001
	Political stability and absence of violence/terrorism: number of sources	9	-0.321	-0.897	0.399	0.103
	Political stability and absence of violence/terrorism: percentile rank	9	-0.025	-0.066	0.949	0.001
	Regulatory quality: number of sources	9	-0.386	-1.108	0.305	0.149
	Regulatory quality: percentile rank	9	0.083	0.221	0.831	0.007
	Rule of law: number of sources	9	-0.365	-1.038	0.334	0.133
	Rule of law: percentile rank	9	0.017	0.044	0.966	0.000
	Voice and accountability: number of sources	9	-0.254	-0.694	0.510	0.064
	Voice and accountability: percentile rank	9	0.142	0.380	0.715	0.020

Table 32 - Results of the Spearman rank order correlations for India

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	-0.333	-0.935	0.381	0.111
	Official exchange rate (LCU per US$, period average)	9	-0.383	-1.098	0.308	0.147
Cost of doing business	Labour cost per hour ($)	9	0.326	0.913	0.391	0.107
	Real interest rate (%)	9	0.383	1.098	0.308	0.147
	Taxes on income, profits and capital gains (% of revenue)	9	-0.017	-0.044	0.966	0.000
	GDP per person employed (constant 1990 PPP $)	9	0.100	0.267	0.797	0.010
	Labour productivity growth (%)	9	-0.483	-1.461	0.187	0.234
Infrastructure	Internet users (per 100 people)	9	-0.167	-0.447	0.668	0.028
	Electric power consumption (kWh)	**9**	**0.850**	**4.269**	**0.004**	**0.723**
	Railways, goods transported (million ton-km)	9	0.317	0.883	0.406	0.100
Gross capital formation	Gross capital formation (% of GDP)	9	0.167	0.447	0.668	0.028
Trade openness	Trade (% of GDP)	9	0.467	1.396	0.205	0.218
Market size	Per capita GDP (current US$)	9	-0.067	-0.177	0.865	0.004
	GDP growth (annual %)	9	-0.183	-0.493	0.637	0.034
Political and institutional variables	Control of corruption: number of sources	9	-0.037	-0.097	0.925	0.001
	Control of corruption: percentile rank	9	-0.444	-1.309	0.232	0.197
	Government effectiveness: number of sources	9	-0.055	-0.145	0.889	0.003
	Government effectiveness: percentile rank	9	-0.244	-0.665	0.527	0.059
	Political stability and absence of violence/terrorism: number of sources	9	-0.037	-0.097	0.925	0.001
	Political stability and absence of violence/terrorism: percentile rank	9	0.261	0.714	0.498	0.068
	Regulatory quality: number of sources	9	-0.037	-0.097	0.925	0.001
	Regulatory quality: percentile rank	9	-0.318	-0.887	0.404	0.101
	Rule of law: number of sources	9	-0.055	-0.145	0.889	0.003
	Rule of law: percentile rank	9	-0.230	-0.625	0.552	0.053
	Voice and accountability: number of sources	9	-0.044	-0.116	0.911	0.002
	Voice and accountability: percentile rank	9	-0.193	-0.521	0.618	0.037

Table 33 - Results of the Spearman rank order correlations for China

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	0.417	1.213	0.265	0.174
	Official exchange rate (LCU per US$, period average)	9	-0.133	-0.356	0.732	0.018
Cost of doing business	Labour cost per hour ($)	9	0.103	0.273	0.793	0.011
	Real interest rate (%)	9	-0.533	-1.668	0.139	0.284
	Taxes on income, profits and capital gains (% of revenue)	9	0.133	0.356	0.732	0.018
	GDP per person employed (constant 1990 PPP $)	9	0.000	0.000	1.000	0.000
	Labour productivity growth (%)	9	-0.250	-0.683	0.516	0.063
Infrastructure	Internet users (per 100 people)	9	-0.067	-0.177	0.865	0.004
	Electric power consumption (kWh)	9	-0.150	-0.401	0.700	0.023
	Railways, goods transported (million ton-km)	9	0.317	0.883	0.406	0.100
Gross capital formation	Gross capital formation (% of GDP)	9	-0.167	-0.447	0.668	0.028
Trade openness	Trade (% of GDP)	9	0.250	0.683	0.516	0.063
Market size	Per capita GDP (current US$)	9	0.467	1.396	0.205	0.218
	GDP growth (annual %)	9	-0.100	-0.266	0.798	0.010
Political and institutional variables	Control of corruption: number of sources	9	-0.498	-1.521	0.172	0.248
	Control of corruption: percentile rank	9	0.185	0.498	0.634	0.034
	Government effectiveness: number of sources	9	-0.550	-1.741	0.125	0.302
	Government effectiveness: percentile rank	9	-0.376	-1.074	0.319	0.141
	Political stability and absence of violence/terrorism: number of sources	9	-0.440	-1.298	0.235	0.194
	Political stability and absence of violence/terrorism: percentile rank	9	0.301	0.836	0.431	0.091
	Regulatory quality: number of sources	9	-0.440	-1.298	0.235	0.194
	Regulatory quality: percentile rank	9	-0.008	-0.022	0.983	0.000
	Rule of law: number of sources	**9**	**-0.690**	**-2.523**	**0.040**	**0.476**
	Rule of law: percentile rank	9	0.219	0.595	0.571	0.048
	Voice and accountability: number of sources	9	-0.276	-0.760	0.472	0.076
	Voice and accountability: percentile rank	9	0.149	0.399	0.702	0.022

Table 34 - Results of the Spearman rank order correlations for South Africa

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	**Inflation, consumer prices (annual %)**	**9**	**-0.850**	**-4.269**	**0.004**	**0.723**
	Official exchange rate (LCU per US$, period average)	9	-0.583	-1.900	0.099	0.340
Cost of doing business	Labour cost per hour ($)	9	0.317	0.883	0.406	0.100
	Real interest rate (%)	9	-0.583	-1.900	0.099	0.340
	Taxes on income, profits and capital gains (% of revenue)	9	-0.650	-2.263	0.058	0.423
	GDP per person employed (constant 1990 PPP $)	9	-0.050	-0.132	0.898	0.003
	Labour productivity growth (%)	9	0.550	1.742	0.125	0.303
Infrastructure	**Internet users (per 100 people)**	**9**	**0.700**	**2.593**	**0.036**	**0.490**
	Electric power consumption (kWh)	9	-0.433	-1.272	0.244	0.188
	Railways, goods transported (million ton-km)	**9**	**0.729**	**2.817**	**0.026**	**0.531**
Gross capital formation	Gross capital formation (% of GDP)	9	-0.233	-0.635	0.546	0.054
Trade openness	**Trade (% of GDP)**	**9**	**-0.783**	**-3.334**	**0.013**	**0.614**
Market size	Per capita GDP (current US$)	9	0.500	1.528	0.170	0.250
	GDP growth (annual %)	9	0.067	0.177	0.865	0.004
Political and institutional variables	Control of corruption: number of sources	9	-0.136	-0.364	0.727	0.019
	Control of corruption: percentile rank	9	-0.418	-1.219	0.262	0.175
	Government effectiveness: number of sources	9	-0.009	-0.023	0.982	0.000
	Government effectiveness: percentile rank	9	-0.312	-0.870	0.413	0.098
	Political stability and absence of violence/terrorism: number of sources	9	-0.257	-0.703	0.505	0.066
	Political stability and absence of violence/terrorism: percentile rank	9	-0.293	-0.810	0.444	0.086
	Regulatory quality: number of sources	9	0.184	0.494	0.636	0.034
	Regulatory quality: percentile rank	9	-0.426	-1.244	0.253	0.181
	Rule of law: number of sources	9	0.068	0.181	0.862	0.005
	Rule of law: percentile rank	9	0.017	0.045	0.965	0.000
	Voice and accountability: number of sources	9	-0.145	-0.387	0.710	0.021
	Voice and accountability: percentile rank	9	-0.400	-1.155	0.286	0.160

Appendix B: Detailed results of Hypothesis 2

Appendix B refers to the results of the Spearman rank order correlations discussed in section 5.3. The detailed results of the MMEs for each of the BRICS countries are illustrated which included the variables that were not significant correlates of annual revenue.

9.1 Detailed results for MMEs in Brazil

Table 35 - Results of the Spearman rank order correlations for Holcim

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	-0.167	-0.447	0.668	0.028
	Official exchange rate (LCU per US$, period average)	**9**	**-0.883**	**-4.986**	**0.002**	**0.780**
Cost of doing business	**Labour cost per hour ($)**	**9**	**0.667**	**2.366**	**0.050**	**0.444**
	Real interest rate (%)	9	-0.300	-0.832	0.433	0.090
	Taxes on income, profits and capital gains (% of revenue)	9	0.233	0.635	0.546	0.054
	GDP per person employed (constant 1990 PPP $)	9	0.583	1.900	0.099	0.340
	Labour productivity growth (%)	9	0.150	0.401	0.700	0.023
Infrastructure	Internet users (per 100 people)	9	-0.200	-0.540	0.606	0.040
	Electric power consumption (kWh)	9	0.183	0.493	0.637	0.034
	Railways, goods transported (million ton-km)	9	0.469	1.404	0.203	0.220
Gross capital formation	Gross capital formation (% of GDP)	9	0.450	1.333	0.224	0.203
Trade openness	Trade (% of GDP)	9	-0.133	-0.356	0.732	0.018
Market size	**Per capita GDP (current US$)**	**9**	**0.667**	**2.366**	**0.050**	**0.444**
	GDP growth (annual %)	9	0.133	0.356	0.732	0.018
Political and institutional variables	Control of corruption: number of sources	9	-0.237	-0.646	0.539	0.056
	Control of corruption: percentile rank	9	-0.200	-0.540	0.606	0.040
	Government effectiveness: number of sources	9	-0.037	-0.097	0.926	0.001
	Government effectiveness: percentile rank	**9**	**-0.695**	**-2.554**	**0.038**	**0.482**
	Political stability and absence of violence/terrorism: number of sources	9	-0.083	-0.219	0.833	0.007
	Political stability and absence of violence/terrorism: percentile rank	9	-0.500	-1.528	0.170	0.250
	Regulatory quality: number of sources	9	-0.083	-0.219	0.833	0.007
	Regulatory quality: percentile rank	9	-0.460	-1.372	0.213	0.212
	Rule of law: number of sources	9	-0.236	-0.643	0.541	0.056
	Rule of law: percentile rank	9	-0.402	-1.160	0.284	0.161
	Voice and accountability: number of sources	9	-0.069	-0.183	0.860	0.005
	Voice and accountability: percentile rank	9	-0.387	-1.109	0.304	0.149

Table 36 - Results of the Spearman rank order correlations for Avon

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	-0.100	-0.266	0.798	0.010
	Official exchange rate (LCU per US$, period average)	9	-0.583	-1.900	0.099	0.340
Cost of doing business	**Labour cost per hour ($)**	**9**	**0.900**	**5.463**	**0.001**	**0.810**
	Real interest rate (%)	9	-0.567	-1.820	0.112	0.321
	Taxes on income, profits and capital gains (% of revenue)	9	-0.217	-0.587	0.576	0.047
	GDP per person employed (constant 1990 PPP $)	**9**	**0.933**	**6.878**	**0.000**	**0.871**
	Labour productivity growth (%)	9	0.083	0.221	0.831	0.007
Infrastructure	Internet users (per 100 people)	9	-0.517	-1.597	0.154	0.267
	Electric power consumption (kWh)	9	-0.250	-0.683	0.516	0.063
	Railways, goods transported (million ton-km)	9	-0.109	-0.290	0.781	**0.012**
Gross capital formation	**Gross capital formation (% of GDP)**	**9**	**0.767**	**3.159**	**0.016**	**0.588**
Trade openness	Trade (% of GDP)	9	0.033	0.088	0.932	0.001
Market size	**Per capita GDP (current US$)**	**9**	**0.883**	**4.986**	**0.002**	**0.780**
	GDP growth (annual %)	9	0.283	0.782	0.460	0.080
Political and institutional variables	**Control of corruption: number of sources**	**9**	**-0.678**	**-2.441**	**0.045**	**0.460**
	Control of corruption: percentile rank	9	-0.517	-1.597	0.154	0.267
	Government effectiveness: number of sources	9	-0.621	-2.095	0.074	0.385
	Government effectiveness: percentile rank	9	-0.703	-2.615	0.035	0.494
	Political stability and absence of violence/terrorism: number of sources	9	-0.651	-2.271	0.057	0.424
	Political stability and absence of violence/terrorism: percentile rank	9	-0.667	-2.366	0.050	0.444
	Regulatory quality: number of sources	9	-0.651	-2.271	0.057	0.424
	Regulatory quality: percentile rank	9	-0.527	-1.641	0.145	0.278
	Rule of law: number of sources	9	-0.638	-2.194	0.064	0.407
	Rule of law: percentile rank	9	-0.477	-1.436	0.194	0.228
	Voice and accountability: number of sources	9	-0.621	-2.097	0.074	0.386
	Voice and accountability: percentile rank	9	-0.664	-2.349	0.051	0.441

9.2 Detailed results for MMEs in Russia

Table 37 - Results of the Spearman rank order correlations for Anheuser-Busch InBev

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	0.250	0.683	0.516	0.063
	Official exchange rate (LCU per US$, period average)	9	-0.100	-0.266	0.798	0.010
Cost of doing business	Labour cost per hour ($)	9	-0.017	-0.044	0.966	0.000
	Real interest rate (%)	**9**	**0.783**	**3.334**	**0.013**	**0.614**
	Taxes on income, profits and capital gains (% of revenue)	9	-0.033	-0.088	0.932	0.001
	GDP per person employed (constant 1990 PPP $)	9	0.617	2.073	0.077	0.380
	Labour productivity growth (%)	9	-0.383	-1.098	0.308	0.147
Infrastructure	Internet users (per 100 people)	9	0.067	0.177	0.865	0.004
	Electric power consumption (kWh)	9	0.467	1.396	0.205	0.218
	Railways, goods transported (million ton-km)	9	-0.317	-0.883	0.406	0.100
Gross capital formation	Gross capital formation (% of GDP)	9	-0.150	-0.401	0.700	0.023
Trade openness	**Trade (% of GDP)**	**9**	**-0.683**	**-2.476**	**0.042**	**0.467**
Market size	Per capita GDP (current US$)	9	-0.017	-0.044	0.966	0.000
	GDP growth (annual %)	9	-0.100	-0.266	0.798	0.010
Political and institutional variables	Control of corruption: number of sources	9	0.229	0.623	0.553	0.053
	Control of corruption: percentile rank	9	0.196	0.528	0.614	0.038
	Government effectiveness: Number of sources	9	0.307	0.853	0.422	0.094
	Government effectiveness: percentile rank	9	0.109	0.291	0.780	0.012
	Political stability and absence of violence/terrorism: number of sources	9	0.229	0.623	0.553	0.053
	Political stability and absence of violence/terrorism: percentile rank	9	0.326	0.913	0.391	0.107
	Regulatory quality: number of sources	9	0.307	0.853	0.422	0.094
	Regulatory quality: percentile rank	9	0.233	0.635	0.546	0.054
	Rule of law: number of sources	9	0.256	0.700	0.507	0.065
	Rule of law: percentile rank	9	0.042	0.111	0.915	0.002
	Voice and accountability: number of sources	9	0.324	0.905	0.396	0.105
	Voice and accountability: percentile rank	9	-0.033	-0.089	0.932	0.001

Table 38 - Results of the Spearman rank order correlations for Carlsberg Group

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	0.333	0.935	0.381	0.111
	Official exchange rate (LCU per US$, period average)	9	0.217	0.587	0.576	0.047
Cost of doing business	Labour cost per hour ($)	9	0.317	0.883	0.406	0.100
	Real interest rate (%)	9	0.217	0.587	0.576	0.047
	Taxes on income, profits and capital gains (% of revenue)	9	0.050	0.132	0.898	0.003
	GDP per person employed (constant 1990 PPP $)	9	0.117	0.311	0.765	0.014
	Labour productivity growth (%)	9	-0.300	-0.832	0.433	0.090
Infrastructure	Internet users (per 100 people)	9	-0.517	-1.597	0.154	0.267
	Electric power consumption (kWh)	9	0.600	1.984	0.088	0.360
	Railways, goods transported (million ton-km)	9	0.267	0.732	0.488	0.071
Gross capital formation	Gross capital formation (% of GDP)	9	0.017	0.044	0.966	0.000
Trade openness	Trade (% of GDP)	9	0.033	0.088	0.932	0.001
Market size	Per capita GDP (current US$)	9	0.317	0.883	0.406	0.100
	GDP growth (annual %)	9	-0.367	-1.043	0.332	0.134
Political and institutional variables	Control of corruption: number of sources	9	0.367	1.044	0.331	0.135
	Control of corruption: percentile rank	9	0.358	1.013	0.345	0.128
	Government effectiveness: number of sources	9	0.614	2.058	0.079	0.377
	Government effectiveness: percentile rank	9	0.605	2.011	0.084	0.366
	Political stability and absence of violence/terrorism: number of sources	9	0.367	1.044	0.331	0.135
	Political stability and absence of violence/terrorism: percentile rank	**9**	**0.762**	**3.109**	**0.017**	**0.580**
	Regulatory quality: number of sources	9	0.614	2.058	0.079	0.377
	Regulatory quality: percentile rank	9	0.267	0.732	0.488	0.071
	Rule of law: number of sources	9	0.402	1.160	0.284	0.161
	Rule of law: percentile rank	9	0.301	0.836	0.431	0.091
	Voice and accountability: number of sources	9	0.385	1.103	0.307	0.148
	Voice and accountability: percentile rank	9	0.611	2.041	0.081	0.373

9.3 Detailed results for MMEs in India

Table 39 - Results of the Spearman rank order correlations for ABB Ltd

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	-0.233	-0.635	0.546	0.054
	Official exchange rate (LCU per US$, period average)	9	-0.283	-0.782	0.460	0.080
Cost of doing business	Labour cost per hour ($)	9	0.502	1.536	0.168	0.252
	Real interest rate (%)	9	0.367	1.043	0.332	0.134
	Taxes on income, profits and capital gains (% of revenue)	9	0.183	0.493	0.637	0.034
	GDP per person employed (constant 1990 PPP $)	9	0.259	0.711	0.500	0.067
	Labour productivity growth (%)	9	-0.350	-0.989	0.356	0.123
Infrastructure	Internet users (per 100 people)	9	-0.167	-0.447	0.668	0.028
	Electric power consumption (kWh)	**9**	**0.983**	**14.310**	**0.000**	**0.967**
	Railways, goods transported (million ton-km)	9	0.267	0.732	0.488	0.071
Gross capital formation	Gross capital formation (% of GDP)	9	0.083	0.221	0.831	0.007
Trade openness	Trade (% of GDP)	9	0.383	1.098	0.308	0.147
Market size	Per capita GDP (current US$)	9	-0.117	-0.311	0.765	0.014
	GDP growth (annual %)	9	-0.150	-0.401	0.700	0.023
Political and institutional variables	Control of corruption: number of sources	9	0.239	0.650	0.537	0.057
	Control of corruption: percentile rank	9	-0.109	-0.290	0.781	0.012
	Government effectiveness: number of sources	9	0.256	0.700	0.507	0.065
	Government effectiveness: percentile rank	9	0.067	0.178	0.864	0.005
	Political stability and absence of violence/terrorism: number of sources	9	0.239	0.650	0.537	0.057
	Political stability and absence of violence/terrorism: percentile rank	9	0.168	0.451	0.666	0.028
	Regulatory quality: number of sources	9	0.239	0.650	0.537	0.057
	Regulatory quality: percentile rank	9	-0.234	-0.638	0.544	0.055
	Rule of law: number of sources	9	0.256	0.700	0.507	0.065
	Rule of law: percentile rank	9	-0.136	-0.364	0.727	0.019
	Voice and accountability: number of sources	9	0.227	0.618	0.556	0.052
	Voice and accountability: percentile rank	9	-0.277	-0.764	0.470	0.077

Table 40 - Results of the Spearman rank order correlations for HUL

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	0.383	1.098	0.308	0.147
	Official exchange rate (LCU per US$, period average)	9	-0.167	-0.447	0.668	0.028
Cost of doing business	Labour cost per hour ($)	9	0.469	1.404	0.203	0.220
	Real interest rate (%)	9	0.250	0.683	0.516	0.063
	Taxes on income, profits and capital gains (% of revenue)	9	-0.283	-0.782	0.460	0.080
	GDP per person employed (constant 1990 PPP $)	9	0.611	2.041	0.081	0.373
	Labour productivity growth (%)	9	-0.133	-0.356	0.732	0.018
Infrastructure	Internet users (per 100 people)	9	0.400	1.155	0.286	0.160
	Electric power consumption (kWh)	9	0.233	0.635	0.546	0.054
	Railways, goods transported (million ton-km)	**9**	**0.783**	**3.334**	**0.013**	**0.614**
Gross capital formation	Gross capital formation (% of GDP)	9	-0.467	-1.396	0.205	0.218
Trade openness	Trade (% of GDP)	9	0.133	0.356	0.732	0.018
Market size	Per capita GDP (current US$)	9	0.200	0.540	0.606	0.040
	GDP growth (annual %)	9	-0.233	-0.635	0.546	0.054
Political and institutional variables	**Control of corruption: number of sources**	**9**	**-0.725**	**-2.783**	**0.027**	**0.525**
	Control of corruption: percentile rank	**9**	**-0.695**	**-2.554**	**0.038**	**0.482**
	Government effectiveness: number of sources	**9**	**-0.694**	**-2.549**	**0.038**	**0.481**
	Government effectiveness: percentile rank	**9**	**-0.672**	**-2.403**	**0.047**	**0.452**
	Political stability and absence of violence/terrorism: number of sources	**9**	**-0.725**	**-2.783**	**0.027**	**0.525**
	Political stability and absence of violence/terrorism: percentile rank	9	-0.479	-1.444	0.192	0.229
	Regulatory quality: number of sources	**9**	**-0.725**	**-2.783**	**0.027**	**0.525**
	Regulatory quality: percentile rank	9	-0.628	-2.133	0.070	0.394
	Rule of law: number of sources	**9**	**-0.694**	**-2.549**	**0.038**	**0.481**
	Rule of law: percentile rank	**9**	**-0.851**	**-4.292**	**0.004**	**0.725**
	Voice and accountability: number of sources	9	-0.621	-2.095	0.074	0.385
	Voice and accountability: percentile rank	**9**	**-0.706**	**-2.637**	**0.034**	**0.498**

9.4 Detailed results for MMEs in China

Table 41 - Results of the Spearman rank order correlations for Suzuki

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	0.617	2.073	0.077	0.380
	Official exchange rate (LCU per US$, period average)	9	-0.050	-0.132	0.898	0.003
Cost of doing business	Labour cost per hour ($)	9	0.154	0.412	0.693	0.024
	Real interest rate (%)	**9**	**-0.717**	**-2.719**	**0.030**	**0.514**
	Taxes on income, profits and capital gains (% of revenue)	9	0.000	0.000	1.000	0.000
	GDP per person employed (constant 1990 PPP $)	9	0.000	0.000	1.000	0.000
	Labour productivity growth (%)	9	-0.367	-1.043	0.332	0.134
Infrastructure	Internet users (per 100 people)	9	-0.067	-0.177	0.865	0.004
	Electric power consumption (kWh)	9	0.033	0.088	0.932	0.001
	Railways, goods transported (million ton-km)	**9**	**0.683**	**2.476**	**0.042**	**0.467**
Gross capital formation	Gross capital formation (% of GDP)	9	0.150	0.401	0.700	0.023
Trade openness	Trade (% of GDP)	9	0.367	1.043	0.332	0.134
Market size	GDP per capita (current US$)	9	0.317	0.883	0.406	0.100
	GDP growth (annual %)	9	-0.183	-0.493	0.637	0.034
Political and institutional variables	Control of corruption: number of sources	9	-0.149	-0.398	0.703	0.022
	Control of corruption: percentile rank	9	0.277	0.764	0.470	0.077
	Government effectiveness: number of sources	9	-0.213	-0.576	0.583	0.045
	Government effectiveness: percentile rank	9	-0.079	-0.209	0.841	0.006
	Political stability and absence of violence/terrorism: number of sources	9	-0.138	-0.368	0.724	0.019
	Political stability and absence of violence/terrorism: percentile rank	9	0.410	1.189	0.273	0.168
	Regulatory quality: number of sources	9	-0.138	-0.368	0.724	0.019
	Regulatory quality: percentile rank	9	0.177	0.476	0.648	0.031
	Rule of law: number of sources	9	-0.345	-0.973	0.363	0.119
	Rule of law: percentile rank	9	0.059	0.157	0.880	0.003
	Voice and accountability: number of sources	9	0.069	0.183	0.860	0.005
	Voice and accountability: percentile rank	9	-0.037	-0.099	0.924	0.001

Table 42 - Results of the Spearman rank order correlations for Anheuser-Busch InBev

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	0.300	0.832	0.433	0.090
	Official exchange rate (LCU per US$, period average)	9	-0.367	-1.043	0.332	0.134
Cost of doing business	Labour cost per hour ($)	9	0.000	0.000	1.000	0.000
	Real interest rate (%)	9	-0.400	-1.155	0.286	0.160
	Taxes on income, profits and capital gains (% of revenue)	9	0.233	0.635	0.546	0.054
	GDP per person employed (constant 1990 PPP $)	9	-0.067	-0.177	0.865	0.004
	Labour productivity growth (%)	9	-0.050	-0.132	0.898	0.003
Infrastructure	Internet users (per 100 people)	9	-0.067	-0.177	0.865	0.004
	Electric power consumption (kWh)	9	0.350	0.989	0.356	0.123
	Railways, goods transported (million ton-km)	**9**	**0.933**	**6.878**	**0.000**	**0.871**
Gross capital formation	Gross capital formation (% of GDP)	9	-0.033	-0.088	0.932	0.001
Trade openness	Trade (% of GDP)	9	0.017	0.044	0.966	0.000
Market size	Per capita GDP (current US$)	9	0.233	0.635	0.546	0.054
	GDP growth (annual %)	9	-0.083	-0.221	0.831	0.007
Political and institutional variables	Control of corruption: number of sources	9	0.332	0.932	0.382	0.110
	Control of corruption: percentile rank	9	0.269	0.739	0.484	0.072
	Government effectiveness: number of sources	9	0.310	0.864	0.416	0.096
	Government effectiveness: percentile rank	9	-0.035	-0.093	0.929	0.001
	Political stability and absence of violence/terrorism: number of sources	9	0.303	0.840	0.428	0.092
	Political stability and absence of violence/Terrorism: percentile rank	9	0.285	0.785	0.458	0.081
	Regulatory quality: number of sources	9	0.303	0.840	0.428	0.092
	Regulatory quality: percentile rank	9	0.211	0.571	0.586	0.045
	Rule of law: number of sources	9	0.104	0.275	0.791	0.011
	Rule of law: percentile rank	9	0.068	0.179	0.863	0.005
	Voice and accountability: number of sources	9	0.518	1.600	0.154	0.268
	Voice and accountability: percentile rank	9	-0.447	-1.323	0.227	0.200

9.5 Detailed results for MMEs in South Africa
Table 43 - Results of the Spearman rank order correlations for BAT

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	8	-0.095	-0.234	0.823	0.009
	Official exchange rate (LCU per US$, period average)	8	0.071	0.175	0.867	0.005
Cost of doing business	Labour cost per hour ($)	8	0.690	2.338	0.058	0.477
	Real interest rate (%)	8	0.048	0.117	0.911	0.002
	Taxes on income, profits and capital gains (% of revenue)	8	-0.214	-0.537	0.610	0.046
	GDP per person employed (constant 1990 PPP $)	**8**	**-0.810**	**-3.378**	**0.015**	**0.655**
	Labour productivity growth (%)	8	-0.119	-0.294	0.779	0.014
Infrastructure	Internet users (per 100 people)	8	0.310	0.797	0.456	0.096
	Electric power consumption (kWh)	**8**	**-0.714**	**-2.500**	**0.047**	**0.510**
	Railways, goods transported (million ton-km)	8	0.098	0.240	0.818	0.010
Gross capital formation	Gross capital formation (% of GDP)	8	-0.643	-2.056	0.086	0.413
Trade openness	Trade (% of GDP)	8	-0.310	-0.797	0.456	0.096
Market size	Per capita GDP (current US$)	8	-0.310	-0.797	0.456	0.096
	GDP growth (annual %)	8	-0.500	-1.414	0.207	0.250
Political and institutional variables	Control of corruption: number of sources	8	0.098	0.242	0.817	0.010
	Control of corruption: percentile rank	8	-0.299	-0.769	0.471	0.090
	Government effectiveness: number of sources	8	-0.052	-0.128	0.902	0.003
	Government effectiveness: percentile rank	8	-0.521	-1.496	0.185	0.272
	Political stability and absence of violence/terrorism: number of sources	8	-0.412	-1.109	0.310	0.170
	Political stability and absence of violence/terrorism: percentile rank	**8**	**-0.790**	**-3.161**	**0.020**	**0.625**
	Regulatory quality: number of sources	8	-0.217	-0.545	0.606	0.047
	Regulatory quality: percentile rank	8	-0.196	-0.491	0.641	0.039
	Rule of law: number of sources	8	-0.123	-0.303	0.772	0.015
	Rule of law: percentile rank	8	-0.146	-0.362	0.729	0.021
	Voice and accountability: number of sources	8	-0.037	-0.090	0.931	0.001
	Voice and accountability: percentile rank	8	-0.184	-0.459	0.662	0.034

Table 44 - Results of the Spearman rank order correlations for Unilever

Category	List of predictors	N	Spearman correlation	t(N-2)	p-value	R²
Macroeconomic stability	Inflation, consumer prices (annual %)	9	0.583	1.900	0.099	0.340
	Official exchange rate (LCU per US$, period average)	9	0.300	0.832	0.433	0.090
Cost of doing business	Labour cost per hour ($)	9	0.300	0.832	0.433	0.090
	Real interest rate (%)	9	0.133	0.356	0.732	0.018
	Taxes on income, profits and capital gains (% of revenue)	9	0.383	1.098	0.308	0.147
	GDP per person employed (constant 1990 PPP $)	9	0.117	0.311	0.765	0.014
	Labour productivity growth (%)	9	0.100	0.266	0.798	0.010
Infrastructure	Internet users (per 100 people)	9	0.083	0.221	0.831	0.007
	Electric power consumption (kWh)	9	-0.333	-0.935	0.381	0.111
	Railways, goods transported (million ton-km)	9	-0.610	-2.038	0.081	0.372
Gross capital formation	Gross capital formation (% of GDP)	9	-0.017	-0.044	0.966	0.000
Trade openness	Trade (% of GDP)	9	0.450	1.333	0.224	0.203
Market size	Per capita GDP (current US$)	9	-0.217	-0.587	0.576	0.047
	GDP growth (annual %)	9	-0.033	-0.088	0.932	0.001
Political and institutional variables	Control of corruption: number of sources	9	-0.485	-1.468	0.186	0.235
	Control of corruption: percentile rank	9	-0.427	-1.249	0.252	0.182
	Government effectiveness: number of sources	9	-0.576	-1.866	0.104	0.332
	Government effectiveness: percentile rank	9	-0.565	-1.814	0.113	0.320
	Political stability and absence of violence/terrorism: number of sources	9	-0.541	-1.703	0.132	0.293
	Political stability and absence of violence/terrorism: percentile rank	9	-0.477	-1.436	0.194	0.228
	Regulatory quality: number of sources	**9**	**-0.726**	**-2.791**	**0.027**	**0.527**
	Regulatory quality: percentile rank	9	-0.511	-1.572	0.160	0.261
	Rule of law: number of sources	9	-0.528	-1.644	0.144	0.279
	Rule of law: percentile rank	**9**	**-0.746**	**-2.963**	**0.021**	**0.556**
	Voice and accountability: number of sources	9	-0.460	-1.369	0.213	0.211
	Voice and accountability: percentile rank	**9**	**-0.707**	**-2.642**	**0.033**	**0.499**

Appendix C: Detailed results of Hypothesis 3

Appendix C refers to the analysis conducted in phase 2 of Hypothesis 3. All the countries that formed part of the ranking analysis for the FDI flow and FDI stock rankings are included.

10.1 Ranking analysis – FDI flow

Table 45 - Upper mid quartile of FDI flow/per capita GDP ratio

Rank	Country	FDI flow/per capita GDP ratio	FDI growth
26	Tanzania	0.23	-26%
27	Spain	0.21	-41%
28	Kazakhstan	0.20	37%
29	Egypt	0.19	-74%
30	Australia	0.18	-7%
31	Israel	0.15	37%
32	Cambodia	0.15	29%
33	France	0.15	158%
34	Bolivia	0.14	56%
35	Albania	0.13	805%
36	Italy	0.12	-48%
37	Bulgaria	0.11	-30%
38	Costa Rica	0.11	84%
39	Switzerland	0.10	-449%
40	Colombia	0.10	-7%
41	Tunisia	0.10	25%
42	Ghana	0.09	172%
43	Turkey	0.09	223%
44	Yemen	0.08	-6%
45	Finland	0.08	-2189%
46	Morocco	0.08	-48%
47	Georgia	0.07	-50%
48	Honduras	0.07	43%
49	Malawi	0.07	-87%
50	Jordan	0.06	-44%

Table 46 - Lower mid quartile of FDI flow/per capita GDP ratio

Rank	Country	FDI flow/per capita GDP ratio	FDI growth
51	Guatemala	0.06	0%
52	Latvia	0.06	534%
53	Kyrgyzstan	0.06	-1681%
54	Singapore	0.05	-74%
55	Belarus	0.05	-28%
56	Madagascar	0.05	-323%
57	Japan	0.04	-165%
58	Lithuania	0.04	384%
59	Portugal	0.04	-231%
60	Hungary	0.04	-91%
61	Paraguay	0.03	-18%
62	Ecuador	0.03	-14%
63	Slovakia	0.03	0%
64	Uruguay	0.03	1356%
65	Bosnia and Herzegovina	0.03	-72%
66	Norway	0.02	-620%
67	Estonia	0.02	7%
68	Canada	0.02	-86%
69	Greece	0.02	-43%
70	Denmark	0.02	-73%
71	Afghanistan	0.01	-77%
72	Tajikistan	0.01	-71%
73	Chile	0.01	-94%
74	Armenia	0.01	-27%
75	Dominican Republic	0.01	-60%

Table 47 - Lower quartile of FDI flow/per capita GDP ratio

Rank	Country	FDI flow/per capita GDP ratio	FDI growth
76	Nicaragua	0.01	-83%
77	Macedonia, FYR	0.01	-56%
78	Lao PDR	0.01	-54%
79	Panama	0.01	-91%
80	Oman	0.01	38%
81	Jamaica	0.00	-63%
82	Iceland	0.00	712%
83	Peru	0.00	-97%
84	Malta	0.00	-392%
85	Brunei Darussalam	0.00	186%
86	Cape Verde	0.00	-57%
87	Trinidad and Tobago	0.00	-146%
88	Macao (SAR China)	0.00	-163%
89	Mauritius	0.00	399%
90	Austria	0.00	-100%
91	Cyprus	0.00	-60%
92	Philippines	0.00	-100%
93	El Salvador	-0.02	-164%
94	Czech Republic	-0.04	-115%
95	Croatia	-0.04	-273%
96	Sweden	-0.09	-141%
97	Malaysia	-0.09	-185%
98	Mozambique	-0.10	-111%
99	Hong Kong (SAR China)	-1.71	-936%

10.2 Ranking analysis – FDI stock

Table 48 - Upper mid quartile of FDI stock/per capita GDP ratio

Rank	Country	FDI stock/per capita GDP ratio	FDI growth
19	Ukraine	3.89	76%
20	France	3.76	13%
21	Italy	3.51	65%
22	Argentina	3.44	10%
23	Singapore	3.42	70%
24	Sweden	3.41	55%
25	Bangladesh	3.11	34%
26	Romania	2.98	31%
27	Hungary	2.36	19%
28	Czech Republic	2.15	33%
29	Cambodia	2.13	-15%
30	Japan	1.77	41%
31	Australia	1.72	-1%
32	Korea	1.59	-29%
33	Ireland	1.43	-42%
34	Bulgaria	1.31	76%
35	Switzerland	1.03	141%

Table 49 - Lower mid quartile of FDI stock/per capita GDP ratio

Rank	Country	FDI stock/per capita GDP ratio	FDI growth
36	Slovakia	1.01	171%
37	Kazakhstan	0.81	10%
38	Costa Rica	0.81	5%
39	Israel	0.77	121%
40	Chile	0.69	-55%
41	Sri Lanka	0.63	-5%
42	Finland	0.63	84%
43	Zambia	0.59	107%
44	Peru	0.58	-31%
45	Bosnia and Herzegovina	0.52	120%
46	El Salvador	0.51	102%
47	Greece	0.48	6%
48	Croatia	0.44	131%
49	Portugal	0.42	9%

Rank	Country	FDI stock/per capita GDP ratio	FDI growth
50	Denmark	0.39	133%
51	Norway	0.37	120%
52	Madagascar	0.35	342%
53	Lithuania	0.35	78%

Table 50 - Lower quartile of FDI stock/per capita GDP ratio

Rank	Country	FDI stock/per capita GDP ratio	FDI growth
54	Austria	0.35	-1%
55	Paraguay	0.28	23%
56	Macedonia, FYR	0.26	26%
57	Luxembourg	0.19	73%
58	Estonia	0.19	32%
59	Iceland	0.17	1209%
60	Panama	0.16	-6%
61	Swaziland	0.15	-5%
62	Latvia	0.13	20%
63	Armenia	0.13	-3%
64	Oman	0.12	131%
65	Albania	0.11	85%
66	Slovenia	0.11	-1%
67	Namibia	0.08	177%
68	Malta	0.05	-4%
69	Cyprus	0.01	243%
70	Macao (SAR China)	0.01	-64%
71	Botswana	0.00	-81%