

The relationship between BRIC's FDI (Foreign Direct Investment) and SADC's exports

D le Clus
20282915

Dissertation submitted in partial fulfillment of the requirements
for the degree *Magister Commercii* in International Trade at the
Potchefstroom Campus of the North-West University

Supervisor: Prof W Viviers

Co-supervisor: Prof AE Loots

September 2013

Table of contents

Table of contents	ii
List of tables	iv
List of figures	v
Summary	vi
Opsomming	viii
Acknowledgments	x
Abbreviations	xi
Chapter 1: Introduction	1
1.1 Background.....	1
1.1.1 <i>The establishment of BRIC and BRICS</i>	1
1.1.2 <i>The establishment of SADC</i>	2
1.1.3 <i>South Africa as part of the SADC, COMESA-EAC-SADC tripartite and Africa</i>	3
1.2 The link between FDI and exports.....	4
1.3 Problem statement.....	7
1.4 Aims of the study.....	7
1.5 Research methods.....	8
1.6 Outline of the study	8
Chapter 2: Literature overview on the relationship between FDI and exports	10
2.1 Introduction.....	10
2.2 Theories on FDI and exports	10
2.2.1 <i>What is FDI?</i>	10
2.2.2 <i>Defining export</i>	13
2.3 Country classification systems.....	15
2.4 Literature overview.....	16
2.4.1 <i>The relationship between inward FDI and exports in developed countries</i>	16
2.4.2 <i>The relationship between inward FDI and exports in developing countries</i>	18

2.4.3	<i>The relationship between inward FDI and exports in African countries</i>	22
2.5	Summary and concluding remarks.....	24
Chapter 3: Descriptive analysis of BRIC's FDI and SADC's exports		26
3.1	Introduction.....	26
3.2	World FDI into SADC.....	27
3.3	BRIC FDI outflows to the world	32
3.4	BRIC's outward FDI flows compared to SADC's inward FDI flows.....	34
3.5	BRIC Greenfield and M&A FDI outflows to SADC.....	35
3.6	SADC exports to the world	38
3.7	SADC exports to BRIC.....	41
3.8	BRIC and world outward FDI to SADC vs. SADC exports to BRIC and the world	43
3.9	Industry comparison between BRIC FDI to SADC and SADC exports to BRIC	45
3.10	Summary and concluding remarks.....	47
Chapter 4: FDI and export performance: Empirical evidence for the SADC economies		51
4.1	Introduction.....	51
4.2	The relationship between FDI and exports	51
4.3	Empirical analysis	52
4.4	Estimation of model and results	57
4.4.1	<i>Correlation and covariance of the SADC exports and FDI</i>	57
4.4.2	<i>The regression estimation</i>	58
4.4.3	<i>The Granger causality tests</i>	62
4.4.4	<i>Panel data analysis on FDI and exports</i>	64
4.5	Summary and concluding remarks.....	68
Chapter 5: Conclusions and recommendations		71
5.1	Introduction.....	71
5.2	Summary of the results and conclusions of the study	72
5.3	Recommendations	77
Bibliography		79
Appendix A: Country classification systems		90

List of tables

Table 2.1: Recent studies (2000-2011) on the relationship between FDI and exports in developed countries	16
Table 2.2: Studies (2000-2011) on the relationship between inward FDI and exports in developing countries	18
Table 2.3: Recent studies (2000-2011) on the relationship between FDI and exports in Africa	22
Table 3.1: World and SADC inward FDI growth, and SADC inward FDI as percentage of world inward FDI, 2003-2010 (percentages)	27
Table 3.2: SADC net inward FDI flows, 2003-2010 (USD million)	29
Table 3.3: BRIC FDI outflows compared to world FDI outflows, 2003-2010 (USD millions)	33
Table 3.4: BRIC FDI outflows to the SADC, 2003-2010 (USD millions)	36
Table 3.5: SADC exports to the world, per country, 2003-2011 (USD thousands)	38
Table 3.6: BRIC and world outward FDI flows to SADC; SADC's total exports to the world and to BRIC, 2003-2011 (USD millions)	44
Table 3.7: BRIC FDI and the selected SADC countries' exports in the coal, oil and natural gas industry, 2003-2010 (USD millions)	45
Table 3.8: BRIC FDI and selected SADC countries' exports in the metals industry, 2003-2010 (USD millions)	46
Table 4.1: Description of per deal basis	53
Table 4.2: Description of the raw data	54
Table 4.3: Descriptive statistics of the variables used in the study	54
Table 4.4: Augmented Dickey Fuller (ADF) and Philips Perron (PP) tests for unit roots	55
Table 4.5: Test for structural breaks	56
Table 4.6: Correlation and covariance (indicated in brackets) of the SADC exports and FDI	57
Table 4.7: Estimates of the FDI-Export link for all the SADC countries	60
Table 4.8: Granger causality test results: SADC exports and BRIC FDI, 2003-2011 (USD millions)	63
Table 4.9: Fixed effects results (dependent variable: BRIC FDI <i>lnFDIt</i>)	65
Table 4.10: Dynamic panel data estimates of the link between SADC exports to the world and BRIC FDI	66
Table 4.11: Dynamic panel data estimates of the link between SADC exports to BRIC and BRIC FDI	67
Table A.1: Country classification systems in selected international organisations	90
Table A.2: Countries listed in the literature according to their categories	91

List of figures

Figure 3.1: Net inward FDI to SADC compared to world inward FDI, 2003-2010 (USD millions).....	28
Figure 3.2: SADC, Angola and South Africa, net inward FDI, 2003-2010 (USD millions).....	31
Figure 3.3: SADC countries (excl. South Africa and Angola), inward FDI flows, 2003-2010 (USD millions).32	
Figure 3.4: BRIC and the world, outward FDI flows, 2003-2010 (USD millions)	34
Figure 3.5: BRIC's outward FDI compared to SADC's inward FDI, 2003-2010 (USD millions).....	35
Figure 3.6: M&A, Greenfield and total BRIC outward FDI to the SADC, 2003-2010 (USD millions)	37
Figure 3.7: Total SADC, Angola and South Africa exports, 2003-2011 (USD thousands).....	40
Figure 3.8: SADC countries (excluding South Africa and Angola) exports, 2003-2011 (USD thousands)	41
Figure 3.9: Total SADC, Angola and South Africa exports to BRIC, 2003-2011 (USD thousands).....	42
Figure 3.10: SADC countries (excluding South Africa and Angola), exports to BRIC, 2003-2011 (USD thousands)	43
Figure 3.11: BRIC and the world outward FDI to the SADC compared to the SADC exports to BRIC and the world, 2003-2010 (USD millions).....	44

Summary

South Africa was invited to join the Brazil, Russia, India and China (BRIC) group at the end of 2010, mainly because South Africa is viewed as the 'gateway' into Africa, and South Africa is also considered to be the link between BRIC and the Southern African Development Community (SADC). It is expected that the BRIC countries will increase their foreign direct investment (FDI) to South Africa. This inflow of BRIC FDI may lead to the advantages of boosting SADC exports, which is important as it may lead to the SADC countries experiencing expanded market opportunities, and exports have for a long time been viewed as an engine of economic growth. It has been further indicated that it is evident that relatively few studies have been conducted on the relationship between FDI and exports within the African context and that this relationship is not well understood. In light of these shortcomings in the literature, the first aim of this study was to attempt to contribute to the literature on FDI in SADC by investigating the relationship between BRIC FDI inflows on SADC exports.

From the assessment of recent studies conducted on the relationship between FDI and exports in developed, developing and African countries a number of conclusions have been made. The first was that the majority of the studies conducted between 2000 and 2011 by various authors used causality tests and regression models to determine the relationships between FDI and exports. It also seemed that bi-directional causality is most often found, thereby indicating that FDI has a positive influence on exports and exports also have a positive influence on FDI.

The secondary research aim, to determine the specific relationship between the BRIC's FDI on SADC exports to BRIC and the world, was analysed by means of a descriptive and empirical study (correlation test, regression model, Granger causality test and panel data causality testing method), and the results indicated that, from 2003 to 2011, there was a strong positive correlation between BRIC FDI inflows to SADC and SADC exports to BRIC (59 per cent) and the world (96 per cent). The regression analysis showed that 53 per cent of the variance in the SADC exports to the BRIC is explained by BRIC FDI, while 99 per cent of the variance in the SADC exports to the world is explained by BRIC FDI. Finally the Granger causality test results indicated that BRIC FDI inflows contributed to higher exports from SADC, specifically SADC exports to the world. This was however not the case for SADC exports to BRIC. The results further suggest that there is a possible cointegration between BRIC FDI and the SADC exports to the world, reflecting, among other things, that the simultaneous movement of BRIC FDI inflows with SADC exports to the world may be mainly due to exogenous factors rather than a direct causal relationship. The BRIC FDI inflows on the SADC exports to the world being significant is a motivation for the SADC group to further motivate

integration, co-operation and participation within BRIC, as this may possibly lead to further inward FDI flows, which may further promote exports to the world. Future studies would include determining the market forces that contribute to the simultaneous movement of BRIC FDI inflows into SADC, with the SADC exports to the world.

Keywords: BRIC, SADC, Foreign Direct Investment, FDI, exports

Opsomming

Suid-Afrika is in 2010 uitgenooi om by die Brasilië, Rusland, Indië en China (BRIC)-groep aan te sluit, grootliks omdat Suid-Afrika as die ‘toegangspoort’ tot Afrika gesien word, en ook as die skakel tussen BRIC en die Suider-Afrikaanse Ontwikkelings Gemeenskap (SAOG)-lande beskou word. Na verwagting gaan die BRIC-lande hul Direkte Buitelandse Investering (DBI) na Suid Afrika vermeerder. Die invloed van BRIC DBI mag lei tot voordelige gevolge vir die SAOG se uitvoer, wat belangrik is aangesien dit daartoe kan lei dat die SAOG-lande uitgebreide markgeleenthede kan ervaar, en uitvoer ook as ’n drywer van ekonomiese groei gesien word. Daar is relatief min studies oor die verhouding tussen DBI en uitvoer in die Afrika-konteks, en die verhouding tussen DBI en uitvoer binne die Afrika-konteks word nie goed verstaan nie. Weens dié tekortkominge in die literatuur, is dié studie se eerste doelwit om by te dra tot die literatuur oor DBI in SAOG, deur die verhouding tussen BRIC DBI-invloed op SAOG-uitvoer te ondersoek.

Uit die ondersoek van die mees onlangse studies oor die verhouding tussen DBI en uitvoer in ontwikkelende en Afrikalande, is die volgende gevolgtrekkinge gemaak. Eerstens, die meerderheid van die studies tussen 2000 en 2011 het kousaliteitstoets en regressiemodelle gebruik om te bepaal wat die verhouding tussen DBI en uitvoer is. Dit het geblyk dat twee-rigtingkousaliteit die meeste voorgekom het, en dit dui aan dat DBI ’n positiewe uitwerking op uitvoer, en uitvoer ook ’n positiewe uitwerking op DBI het.

Die sekondêre navorsingsdoelwit, om te bepaal wat die spesifieke verhouding tussen die BRIC-streek se DBI op SAOG se uitvoer op BRIC en die wêreld is, is met behulp van die beskrywende en ’n empiriese studie (korrelasietoets, regressiemodel, Granger-kousaliteitstoets en paneel data kousaliteitstoets metode) ontleed. Die resultate het getoon dat, vanaf 2003 tot 2011, daar ’n sterk positiewe korrelasie tussen BRIC DBI-invloed na SAOG en SAOG-uitvoer na BRIC (59 persent) en die wêreld (96 persent) was. Die regressie-analises het aangetoon dat 53 persent van die variansie in die SAOG-uitvoer na BRIC verduidelik kan word deur BRIC DBI, terwyl 99 persent van die variansie in SAOG-uitvoer na die wêreld deur BRIC DBI verduidelik kan word. Laastens het die Granger-kousaliteitstoets aangedui dat BRIC-lande se DBI-invloed tot hoër uitvoer in die SAOG, en meer spesifiek die SAOG-uitvoer na die wêreld, bygedra het. Dié was nie die geval vir die SAOG-uitvoer na BRIC nie. Die resultate impliseer verder dat daar ’n moontlike koïntegrasie tussen BRIC DBI en die SAOG-uitvoer na die wêreld kon wees, wat onder meer reflekteer dat die samelopende beweging van BRIC DBI-invloed en die SAOG-uitvoer na die wêreld hoofsaaklik deur markkragte in plaas van ’n direkte kousaliteitsverhouding veroorsaak is. Die BRIC DBI-invloed wat ’n beduidende invloed op SAOG-uitvoer na BRIC het, is ’n motivering vir die SAOG-lande om verdere integrasie, samewerking en deelname met BRIC aan te moedig, aangesien dit moontlik tot verdere DBI-invloed mag lei, wat dan verdere SAOG-

uitvoer na die wêreld kan bevorder. Toekomstige studies kan bepaal wat die eksogene faktore is wat bydra tot die direkte kousaliteitsverhouding tussen BRIC DBI-invloei met SAOG-uitvoer na die wêreld.

Slutelwoorde: BRIC, SAOG, Direkte Buitelandse Investering, DBI, uitvoer

Acknowledgments

I would like to thank the following individuals whose assistance and support helped carry me through this dissertation:

My supervisor, Prof Wilma Viviers, thank you for your time, efforts and enthusiasm. Thank you for always motivating me and for sharing your knowledge within the trade field.

My co-supervisor, Prof Elsabé Loots, thank you for your insight and sharing your knowledge within the FDI field. Thank you also for your kind words and support.

Riaan Rossouw, my fiancé, thank you for being my confidant, for always listening to my ideas and giving me yours. You inspire me.

Thank you to my dear family, friends and colleagues who have given me moral support.

A special thanks to my parents, Alfred and Corlia, for their love and financial support.

And a special thanks to Dr Henri Bezuidenhout and Prof Waldo Krugell for sharing their ideas, especially with regard to my empirical work.

Finally, the financial assistance of the National Research Foundation (NRF) towards this research is acknowledged.

Potchefstroom

April 2013

Abbreviations

ABSA	Amalgamated Banks of South Africa
ADF	Augmented Dickey Fuller
AU	African Union
BRIC	Brazil, Russia, India, China
BRICS	Brazil, Russia, India, China, South Africa
CEO	Chief Executive Officer
COMESA	Common Market for Eastern and Southern Africa
DRC	Democratic Republic of Congo
EAC	East African Community
EU	European Community
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
FTAA	Free Trade Areas of the Americas
GEAR	Growth, Employment, and Redistribution
GNI	Gross National Income
HDI	Human Development Index
H-O	Heckscher-Ohlin
HS	Harmonised Commodity Description and Coding System
IBRD	International Bank for Reconstruction and Development
IBSA	India, Brazil, South Africa
ITC	International Trade Centre
ITRISA	International Trade Centre
LDC	Least Developed Countries
LIC	Low Income Countries
MNE	Multinational Enterprise
OECD	Organisation for Economic Co-Operation and Development
OLS	Ordinary Least Squares
M&A	Mergers and Acquisitions
R&D	Research and Development
SACU	Southern African Customs Union
SADC	Southern African Development Community
SADCC	Southern African Development Coordination Conference
TNC	Transnational Cooperation
UK	United Kingdom
UNCTAD	United Nations Congress on Trade and Development
US	United States
USD	United States Dollar

Chapter 1: Introduction

1.1 Background

The BRICS naming has come from a four-country group name, BRIC (Brazil, Russia, India and China), in 2001 to a five-country grouping, BRICS (when South Africa joined BRIC), in 2010 (Dubbelman, 2011).

Different viewpoints exist as to why South Africa has been invited to join the group. Of these include South Africa being put into the BRICS grouping due to its strategic importance, as South Africa is seen as the ‘gateway’ into Africa (Anon., 2010; Oehler-Şınca, 2011:31). This would suggest that South Africa’s inclusion is meant as a first step to enlarge the BRICS club, despite South Africa not falling into the category of the so called N-11/New-11¹ (Oehler-Şınca, 2011:31). Martyn Davies (2011), Chief Executive Officer (CEO) of Frontier Advisory, supports the aforementioned by suggesting that due to the ‘size’ of South Africa compared to the other BRIC countries, the ‘S’ in BRICS should stand for Southern African Development Community (SADC).

1.1.1 The establishment of BRIC and BRICS

Just as the Asian Tiger-countries² were the hot topic in the 1960s to 1990s due to their high growth rates (Barro, 1998), the hot topic of our current decade is the aptly named BRIC. Jim O’Neil (2001) developed the naming of the BRIC region in 2001, as he referred to China being worthy of being part of the G7 group and the other three BRIC nations actually being worthy of taking the place of a G7 country, namely Canada. He predicted that from 2001 to 2011 the G7 countries would experience much lower growth rates, while the BRIC nations, except for Brazil, would experience excellent gross domestic product (GDP) growth rates within this period (O’Neil, 2001:4-6). O’Neil further predicted that, should the positive growth rates continue, China’s GDP growth would be the same size as Germany’s by 2011, and Brazil and India’s GDP growth would almost be the same as Italy’s³. In contrast to the BRIC countries, South Africa’s growth projections have gone unnoticed, with forecasts of 2.9 per cent for 2001 (African Development Bank & OECD, 2003) and 3.3 per cent for 2011 (African Development Bank & OECD, 2010). Despite the latter, South Africa was invited to join the group in 2010 (Dubbelman, 2011).

¹ N-11/New 11 refers to Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, South Korea, Turkey and Vietnam.

² The “Asian Tiger-countries” refer to Hong Kong, Singapore, South Korea and Taiwan.

³ In 2011 China’s GDP growth rate was 9.6 per cent compared to Germany’s 3 per cent, and Brazil and India’s GDP growth rates, respectively 2.7 and 6.9 per cent, exceeded that of Italy, 0.4 per cent (World Bank, 2013a).

According to the South African Minister of Finance, Pravin Gordhan (2011), the factors that finally brought the BRICS countries together in 2010 were a mutual desire for peace, growth, security and cooperation between these countries. The countries now meet up annually, where they discuss their roles in the global economy. The BRICS partnership is playing an increasing role in financial system reform, global warming and other international issues (Anon., 2010). Their main aim is to decrease inequality and help with the development of humanity⁴ (Gordhan, 2011). This message came through strong at the BRICS Summit that took place in China on 13 April 2011. The partnership also came to an agreement on improving cooperation and promoting coordination on common interest issues (Dubbelman, 2011:6). The BRICS partnership has pledged to strengthen their economic relations and to open their borders to each other in order to improve trade and investment within this region (Gordhan, 2011). At the BRICS Summit in Delhi, India 2012, the BRICS Report (2012) indicated that there were possibilities to increase cooperation among the BRICS countries in order to gain competitive advantages. The first focus area mentioned was Intra-BRICS Trade and Investment Cooperation, which entails the BRICS countries to build trade and investment relations. BRICS countries are motivated to work together in order to identify niche areas, sectors, and markets that offer potential for trade and investment expansion to strengthen productive sectors for mutual benefit and in order to avoid negative competition. Oehler-Şınca, (2011:31) noted that the BRICS 'body' actually works, as they have summits/conferences where they get together and structure ideas that can be implemented. A partnership is giving a voice to the developing nations in the international arena and is also helping to decrease bilateral tensions (Oehler-Şınca, 2011:33).

1.1.2 The establishment of SADC

The SADC is one of the numerous regional groupings that have been put in place between South Africa and its African counterparts to facilitate and improve intra-region transport and trade (UNECA, 2005). According to the SADC's official website (see <http://www.sadc.int/>), the region now consists of 15 Southern African countries, namely Angola, Botswana, the Democratic Republic of Congo (DRC), Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe (SADC, 2012).

The Southern African Development Coordination Conference (SADCC) was created in 1980 by Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe in order to create regional co-operation in especially transport and communication and to reduce dependence from the South African 'apartheid' nation (Jovanović, 2006:704). The SADC evolved out of the SADCC, and was formed in

⁴ This opinion is, however, not shared by everyone, and it should be noted that if government officials have a political agenda then this statement should be viewed as an opinion rather than as a fact.

1992 and South Africa joined in 1995 (Jovanović, 2006:704). The original plan, according to their Regional Indicative Strategic Development Plan (RISDP) roadmap, was for the SADC countries to be transformed into a Customs Union by 2010, a Common Market by 2015, a Monetary Union by 2016 and then lastly for the countries to form an Economic Union by 2018 (Maringwa, 2009:7). What has realised includes the SADC becoming a Free Trade Area (FTA) in 2008. The FTA, however, excludes Angola, the DRC and Malawi because they were said to join the FTA at a later stage, despite them still being part of the SADC (Mbola, 2008). The FTA saw an increase of 85 per cent in intra-SADC duty-free trade flows, with the remaining 15 per cent of sensitive products to be released in 2012 (Maringwa, 2009:7). Despite the latter, Van den Bosch (2011) noted that since the FTA was signed in 2008, there has not been the free movement of people and goods as was meant to be. This has been because some of the SADC members have not come forward to participate in the SADC trade protocol.

1.1.3 South Africa as part of the SADC, COMESA-EAC-SADC tripartite and Africa

The SADC region cannot be viewed in isolation. Amos (2010:130) noted that South Africa is the most important player within the SADC, bringing along access from international markets to SADC. Therefore, according to Amos (2010), SADC countries ought to upgrade their economies to match that of South Africa and have better relationships in order to take full charge of the intra-regional agreement. However, it should be noted that in the meantime, the members of the Southern African Customs Union (SACU⁵), launched in 1910 (SACU, 2012), the main building block of a customs union for SADC, is deteriorating as South Africa remains in a customs and excise revenue battle against its smaller neighbouring countries (Van den Bosch, 2011). While SADC is experiencing problems, the FTA discussions between the Common Market for Eastern and Southern Africa (COMESA⁶), East African Community (EAC⁷) and SADC that was launched in 2011, continue to press on (Pearson, 2011). This group could improve the image of South Africa being the gateway into Africa, as South Africa already has South-South alliances (Van den Bosch, 2011). The result has been that the South African government is now pushing for tripartite integration with these regions.

The ITC (2011:62) noted that the stronger regional cooperation is, the more likely it will be that foreign direct investment (FDI) will be allocated to a country within that region. In attracting foreign investors to the domestic market, with the attractiveness and ease of entering the host's neighbouring markets, foreign investors would invest abroad with the view of using the host country as the production hub for exports to

⁵ SACU refers to South Africa, Botswana, Lesotho, Swaziland and Namibia (SACU, 2012).

⁶ COMESA refers to Burundi, Comoros, the DRC, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Seychelles, Swaziland, Madagascar, Malawi, Mauritius, Rwanda, Sudan, Uganda, Zambia and Zimbabwe (COMESA, 2012).

⁷ EAC refers to Kenya, Uganda, Tanzania, Rwanda and Burundi (AU, 2012).

the other countries and markets. Regional integration and the accompanying of lowering trade barriers, makes intra-regional trade a more viable option now than in the past.

The latter supports the strategic importance of South Africa being included into the BRICS partnership, as South Africa can act as an intermediary between Africa and the rest of the world (Battersby & Lu, 2011). This relationship can increase South Africa's trade and inward FDI with its new partners and have advances for the African continent as a whole (Chun, 2011). It can give Africa the opportunity to open itself further to more trade and investment, which could help alleviate poverty in the continent. Africa, being 1 billion people strong, makes it the third largest market in the world next to China and India (Gordhan, 2011). Moreover, South Africa is the strongest and most influential country in terms of political and diplomatic environment and also the strongest investor in Africa. Therefore, the BRICS relationships can help to improve the external investment environment within the continent (Wenping, 2011:2). Furthermore, Battersby and Lu (2011) noted that South Africa forming part of the BRICS partnership could further motivate South-South trade, and in effect give the developing world a say in a whole range of international issues.

According to Chun (2011), South Africa as part of the BRICS region should not be seen as a country, but as a continent, as South Africa is the representative of Africa and was chosen to join the BRICS partnership not because of its economic, but because of its geographical standing.

1.2 The link between FDI and exports

An empirical assessment of the role of FDI in a receiver country or region's export performance is important, since exports have for a long time been viewed as an engine of economic growth. The SADC as a whole has growth policies and strategies, and these leading growth strategies wish to focus on export promotion and increasing the quality and quantity of FDI within the region (DTI, 2013; SADC, 2011; TRALAC, 2012).

The need for increased exports is highlighted in the importance of decreasing the countries' trade deficits, as most of the SADC countries are experiencing current account deficits (excluding Angola, Botswana and Zambia) (Ndlela, 2002; World Bank, 2013b). Draper, Freytag and Voll (2009) indicated that a trade deficit within the emerging and developing country context is dangerous, especially during times of crises, as was evident during the 2008 global financial crisis. If the current account deficit is off-set by capital-inflows, the balance of payments is at equilibrium and can function on a current account deficit for some time, however, in emerging and developing economies, most capital inflows are of a short term nature, and therefore the danger of retrieval can take place during times of crises, leaving the country with no funds to pay back its

debt. This further highlights the importance of FDI – should FDI (long-term investments) increase, this would alleviate the balance of payments constraints in SADC economies.

There is a widely shared view that FDI promotes exports of receiver countries or regions by (a) domestic capital enlargement for exports, (b) helping the transfer of technology and new products for exports, (c) simplifying access to new and large foreign markets, and (d) upgrading technical and management skills by providing training for the local labour force. It is however, on the other hand, sometimes suggested that FDI may (a) lower or crowd-out domestic savings and investment, (b) transfer low level or inappropriate technologies for the receiver country or region's factor proportions, (c) primarily target the receiver country or region's domestic market which therefore does not increase exports, (d) restrain the expansion of indigenous firms that could become exporters, and (e) not help to develop the receiver country or region's active comparative advantages by focusing solely on local cheap factors of production (Caves, 1996; UNCTAD, 2002).⁸ Further theoretical insights with empirical analyses of the issue are needed and would be valuable for a better understanding of the FDI-export link.

There has been a growing literature on the FDI-export link in various countries over recent years (for example, ITC, 2011; Reis & Farole, 2012; UNCTAD, 2002). It is postulated that the effects of FDI can be separated into supply capacity-increasing effects and FDI-specific effects. The supply capacity-increasing effects arise when FDI inflows increase the host country or region's production capacity, which, in turn, increases export supply potential (Kutan & Vukšić, 2007). While quantitative analyses offered by most of the existing work are useful and informative, econometric analyses of this issue have been limited.

It is interesting to note that different studies show dissimilar results concerning the relationship between FDI and exports, and whether any relationship even exists. The ITC (2011) noted that FDI has an important role in the development of a country's exports and that if the link between FDI and exports is strong, trade can also complement FDI, as establishing foreign affiliates leads to new trade from the parent company to its subsidiary, or from other home or third country suppliers to the subsidiary. Under both situations – substitute and complementary trade to FDI – greater trade correlates with greater investment flows. FDI therefore has for the most part played a positive role in development, economic growth and exports.

Critics of FDI have, however, identified situations in which foreign investment had negative effects on host countries, which incurred social costs from the foreign investor's activities. However, the majority of

⁸ A detailed discussion on the role of FDI in a receiver-country's export performance may be found in the *World Investment Report 2002: Transnational Corporations and Export Competitiveness* (UNCTAD, 2002). Caves (1996) also offers a brief review on the topic.

observers and policymakers recognise that the benefits from FDI far exceed their costs, and that FDI plays a positive role in a country's economic and social development (ITC, 2011).

Aizenman and Noy (2006:318) noted that the horizontal FDI⁹ tends to divert trade and is more evident in developed countries, while vertical FDI tends to create trade and is more evident between the developing and industrial countries. South-South FDI has almost tripled worldwide between 2000 and 2009, from USD 40 billion in 2000 to USD 180 billion in 2009. China is one of the major contributors in this regard, and they tend to do vertical industry investments, which are mostly carried out by large state-owned enterprises (UNCTAD, 2011a:63-64). Vertical market-seeking FDI can motivate international trade by increasing intra-firm trade (National Board of Trade, 2008:20). This seems to support findings by Aizenman and Noy (2006:333), who found that the relationship between trade and FDI is greater in developing countries than in developed countries. In addition to this, their study stated that developing countries experience more vertical resource FDI, while developed countries experience more horizontal FDI.

African countries are keen on attracting FDI, the reasons for which include overcoming scarcities of resources, gaining foreign markets access, gaining efficient managerial techniques, getting technological transfers and innovation, and experiencing an increase in employment (Mwilima, 2003:33). One of the main reasons why the Southern African region would like to increase their inward FDI is that FDI may lead to increased export competitiveness. This was, for instance, an important factor when South Africa introduced its Growth, Employment, and Redistribution (GEAR) strategy. It emphasised the importance of attracting investment in clusters of industries to develop local companies (Mwilima, 2003:33).

Sharma (2000:3) brought to light that the kind of inward FDI received, whether it will lead to export-led growth or not, is key. If, for example, the motive is to take advantage of the country's comparative advantage, then FDI can add to the country's export growth. Africa's comparative advantage is in resources and commodities, therefore FDI will go after that. However, advanced forms of extraction require high levels of human capital that Africa does not have. Therefore, FDI will not necessarily create jobs directly, but will rather have a spillover effect on the economy.

Within the SADC region, Bezuidenhout and Naudé (2008:16) recommended that greater steps should be taken to decrease the negative reflection and effects that neighbouring countries give one another within the region, as these images obstruct inward FDI within the region. Special reference was made to the non-action from neighbouring countries on the Zimbabwean crisis, which in effect is holding the entire region out on

⁹ Horizontal FDI refers to companies putting similar plants in different markets (ITC, 2011).

inward FDI. Furthermore, regional integration might bring landlocked countries ‘closer’ to their export markets. Bezuidenhout (2007:18) indicated that it is evident that relatively few studies have been conducted, and the relationship between FDI and trade within the African context is not well understood. In light of these shortcomings, this study will attempt to contribute to the literature on FDI in SADC by investigating the relationship between BRIC FDI inflows on SADC’s trade outflows.

1.3 Problem statement

The study of the influence that BRIC’s FDI has on SADC’s exports is important for the following reasons:

- a) The exact influence that BRIC’s FDI has on SADC’s exports has not been empirically researched. It is a topic that, within the separate concepts of FDI and exports, leads to much debate in the popular press and among economists and political analysts alike, but the debate remains unsubstantiated. Determining the role and impact of BRIC’s FDI on SADC’s exports can provide policymakers with valuable information that can aid decision-making.
- b) The SADC region faces plenty of challenges. It is possible that BRIC’s FDI could provide opportunities that may prove important in stimulating export growth within this region. Furthermore, with South Africa being viewed as the ‘gateway’ into Africa, it is of strategic importance that trade within the rest of Africa be promoted.
- c) Although the link between FDI and trade is a widely researched topic within the international trading environment, research on the impact and extent of FDI on SADC exports is still under researched. This study can help to provide a better understanding and overview of FDI’s influence on exports within the SADC region.

1.4 Aims of the study

The aim of this study is twofold:

- a) The primary research aim is to provide a literature overview of the relationship and causality between inward FDI and exports in developed, developing and African countries.
- b) The secondary research aim is to determine the specific influence/relationship of the BRIC FDI on SADC’s exports to BRIC and the world.

Therefore, the research question of this study is: *What influence does BRIC’s FDI have on SADC’s exports to BRIC and the world?*

1.5 Research methods

The main research aim with regard to the relationship of inward FDI on exports will be investigated by means of a literature overview on this topic in developed, developing and Africa countries.

The secondary research aim with regard to determining the specific influence of the BRIC's FDI on SADC's exports will be investigated by means of an empirical analysis using data compiled and supplied by various sources.

The descriptive analysis will be undertaken using the data on FDI contained from UNCTADstats, which are issued by the United Nations Conference on Trade and Development (UNCTAD). The SADC export data was obtained from the International Trade Centre's (ITC) Trademap, covering the trade period of 2003 to 2011. Since information on the amount of outward FDI from the BRIC countries that was invested in SADC during the past decade has been required, Merger and Acquisition (M&A) data was collected from the Zephyr database, and Greenfield data was obtained from FDImarkets®. These two sources of FDI have been combined in order to provide a total FDI value. The reason for this is that the Chinese, Brazilian, Indian and Russian central bank country-specific outward FDI data do not have the same measures of analysis and can therefore not be compared. Data focuses on the period between 2003 and 2010.

With regard to the empirical analysis, the most significant problems experienced were data related. The empirical methods had to be adapted to the data that were available and even in the estimation process the limited data for the country-specific inward FDI received by SADC countries played a significant role, due to the lack of variables. Therefore, it was decided that, because M&A and Greenfield investments are the two elements that form FDI, the country-specific investment data with regard to these two investments will be used to explain the influence of BRIC's outward FDI to SADC on SADC's exports. Each FDI inflow transaction was put against SADC exports to the world and BRIC for that same year, the following year and two years thereafter, in order to show the current, one-year and two-year lagging effect. It is also important to note that Chinese FDI data is only available from 2003 (Claassen, 2011) and this is an important data limitation as China is the 'leading' role-player within BRIC.

A causality test, regression analysis, Granger causality tests and panel data causality testing method were performed using EViews in order to determine the relationship between BRIC FDI and SADC exports.

1.6 Outline of the study

This study will be presented in five chapters, which will be structured as follows:

Chapter 2 provides a literature overview on the studies conducted with regard to the relationship between FDI and trade in developed, developing and African countries.

Chapter 3 provides a descriptive analysis of the trade and FDI data of BRIC and the SADC countries.

Chapter 4 focuses on the empirical analysis, commencing with the analysis of the relationship between FDI and exports, followed by an analysis of the BRIC's FDI influence on the SADC's exports to both the world and to BRIC. Finally, the results and implications will be discussed.

Chapter 5 concludes with a summary of the study's key findings, as well as relevant policy recommendations.

Chapter 2: Literature overview on the relationship between FDI and exports

2.1 Introduction

In Chapter 1, it was emphasised that a study on the potential influence that BRIC's FDI may have on the SADC's exports is important mainly because such a study has not been empirically researched. Given the relationship between FDI and exports, it is possible that BRIC's FDI could provide opportunities that may prove to be important in stimulating export growth within the SADC. Accordingly, this study aims to provide informed evidence of BRIC's FDI's influence on the SADC's exports.

In order to provide a central literature starting point, the main aim of this chapter is to provide evidence of the potential relationship between inward FDI and exports by means of a focused literature overview on developed, developing and African countries in particular. This literature overview will provide the theoretical foundation, which in combination with the empirical findings will help to determine what influence BRIC's FDI has on the SADC's exports to BRIC and the rest of the world.

In this chapter, a description of the theoretical relationship between FDI and trade is provided. To give the reader an understanding of this potential relationship, a description of both FDI and trade is first set out (Section 2.2). This is followed by a brief overview of various country classification systems used in order to determine which countries are classified as 'developed' and 'developing' (Section 2.3). The remainder of the chapter will focus on the literature regarding the potential relationship between FDI and trade in developed countries (Section 2.4), developing countries (Section 2.5), as well as studies focusing on Africa (Section 2.6). This is followed by some concluding remarks (Section 2.7).

2.2 Theories on FDI and exports

Section 2.2.1 will explain the meaning of FDI and related theories behind FDI, whereafter Section 2.2.2 will explain the meaning and basic theories underpinning exports.

2.2.1 What is FDI?

FDI refers to investment in which a firm in one country directly controls or owns a subsidiary in another country. If a foreign company invests in at least 10 per cent of the stock in a subsidiary, the two firms are typically classified as MNEs (Krugman & Obstfeld, 2008:163). There are two main forms of FDI: Greenfield investments and Mergers and Acquisitions (M&As) (UNCTAD, 2012). Van Marrewijk (2007) highlighted that a company becomes an MNE by operating and controlling foreign affiliates, which require FDI in the

form of either Greenfield investments or M&As. Greenfield investments refer to the investing company starting a new enterprise in the host country. M&As refer to a parent company acquiring existing enterprises as either a merger or an acquisition (Liu & Zou, 2008). Greenfield investments accounted for the majority of FDI since 2008 (UNCTAD, 2010).

Foreign direct investors/MNEs are motivated by the determination to either maximise its profit through lowering host country costs, by obtaining cheaper inputs, called resource-seeking FDI and efficiency-seeking FDI or vertical FDI, or by increasing its returns on investment by gaining global market share, called market-seeking FDI or horizontal FDI (ITC, 2011).

As was mentioned above, resource-seeking FDI as well as efficiency-seeking FDI are both vertical in nature. Resource-seeking FDI is investment undertaken to gain access to natural resources in particular countries. This type of investment seeks to acquire factors of production that are more accessible in the host country. The investment seeks access to existing resources. Efficiency-seeking FDI activities may also be undertaken to guarantee optimisation of available opportunities and economies of scale. Typically, firms partake in this type of investment in the hope that they will increase their efficiency by exploiting the benefits of economies of scale and scope. In addition, efficiency-seeking FDI normally involves investing in foreign markets to take advantage of lower cost structures. An example of efficiency-seeking FDI is that of a credit card company opening a call centre in India to serve US customers (ITC, 2011:45). The vertical investment strategy of MNEs connotes that it divides different stages of the production process among geographical locations to minimise production costs.

The market-seeking FDI/horizontal FDI is when the parent company invests abroad to acquire a share of the host country's -and regional market. While establishing a subsidiary would lead to a substitution of exports by FDI, subsidiaries of MNEs often create new trade flows with their parent companies or foreign suppliers, and they can also export to third countries or back to the home country. The process includes the duplication of the company's production processes in the host country (Bezuidenhout, 2007:33; ITC, 2011:44).

Van Marrewijk (2007:321) noted that MNEs are created and undertake FDI because, internationally, MNEs perform so well. In 2007, approximately a third of all international trade flows were exports of foreign affiliates of MNEs. Krugman and Obstfeld (2008:166) supported the latter by indicating that, in 2008, approximately 50 per cent of US imports were transactions between 'related parties'. Further support of the importance of FDI and MNE production and trade can be found through the actions of UNCTAD, who

started gathering FDI data in 1990, with their first *World Investment Report* being published in the same year. Subsequently, UNCTAD has updated this report on an annual basis.

Krugman and Obstfeld (2008) further noted that MNEs were created to undertake FDI because of location and internalisation. Location, because production sometimes occurs in separate locations, which is often determined by the location of necessary factors of production, transportation costs and other barriers to trade that may also influence the location of production. Goods are even sometimes produced in two countries instead of one because of strategic purposes. For example, German cars are produced in Germany and South Africa, in South Africa because the country has good access to countries south of the equator. Internalisation, because production can be done within the same firm, but in different locations, as it is sometimes cheaper to produce in-house than to buy from another company, referring to technological knowledge or licenses being sold. Krugman and Obstfeld (2008) further indicated that the aforementioned factors also influence the pattern of trade.

In comparison to a MNE, a transnational corporation (TNC) is generally regarded as an enterprise comprising entities in several countries, which operate under a system of decision-making that permits coherent policies and a common strategy. These entities are so inter-linked by ownership or otherwise, that one or more of them may be able to exercise a considerable influence over the others, and more specifically share knowledge, resources and responsibilities with the others (UNCTAD, 2011b). TNCs can employ FDI for the creation, expansion or improvement of productive assets, generating additional productive capacity, to finance changes in ownership of assets (M&As), or to add to the financial reserves of foreign affiliates (UNCTAD, 2011b:12). TNC's can also decide to conduct such activities either in-house or by entrusting them to other firms. Choosing the former (in-house) brings with it a cross-border dimension, resulting in FDI, whereby the international flows of goods, services, information and other assets are intra-firm and under the full control of the TNC. Entrusting them to other firms (externalisation) results in trade, where the TNC exercises no control over other firms. Major TNCs include Toyota, Nestle, Coca-Cola, SABMiller and Anglo American (UNCTAD, 2011b:24-124). Throughout the remainder of this study, TNC will be referred to as MNE.

Bezuidenhout and Naudé (2010:263) indicated that FDI has become a major source of capital flows in many developing nations, while van Marrewijk (2007) further indicated that developing and transition economies tend to host Greenfield investment rather than cross-border M&As. According to UNCTAD (2011b:10), when comparing the Greenfield and M&A investments from 2008 to 2011, it is clear that Greenfield investment has become much larger than cross-border M&As. Where M&As accounted for approximately 78 per cent of FDI in 1999 (UNCTAD, 2000), the changeover came at the time of the 2008 global economic

crisis. Van Marrewijk (2007) noted that at the same time investors from these developing and transition economies are becoming increasingly important players in cross-border M&A markets, which were previously dominated by developed country players. He furthermore explains that differing trends between cross-border M&As to Greenfield FDI are therefore not surprising, as to some extent, companies tend to consider the two modes of market entry as alternative options.

Finally, Denisia (2010) noted that despite several researchers having tried to define FDI, there is no generally accepted concept, as every new FDI deal adds to the elements and criticism of a previous FDI deal.

2.2.2 Defining export

Export is part of trade, where trade refers to products and services that are sold to the global market (exports) and products and services that are bought from the global market (imports) (Krugman & Obstfeld, 2008). Trade was initially conducted on the basis of trading goods for goods. Fundamental to the development of trade was the interrelated concepts of division of labour and specialisation. This was part of the neoclassical trade theories (Sithole, 2009). According to Adam Smith's theory of absolute advantage, published in 1776, if countries specialise in the production of those goods and services in which they have an absolute advantage, the total output of such goods and services will increase, using the same resources (Harzing & Van Ruysseveldt, 2004; Krugman & Obstfeld, 2008:625).

According to Ricardo's theory of comparative advantage, published in 1817, one country would have the ability to produce a particular good or service at a lower marginal and opportunity cost than another. Also, even if one country is more efficient in the production of all products than the other, both countries will still gain from trading with one another, as long as they have different levels of efficiencies (Krugman & Obstfeld, 2008:29). Eli Heckscher and Bertil Ohlin expanded Ricardo's theory with the Heckscher-Ohlin (H-O) theory, in the 1930s. The theory states that countries that have more capital will specialize in capital-intensive goods, whereas countries that specialize in labour, will specialize in labour-intensive goods. The country will thus produce the goods based on the resources that they have in abundance, as well as trade those goods in which they are specialised. However, Wassily Leontief questioned the validity of the H-O theory in 1954. This was later called the Leontief paradox, and this paradox highlighted that there are other factors of production besides labour and capital. If natural resources had been included in the original analysis, the results would have been more sensible as natural resources require capital-intensive beneficiation processes. Furthermore, a product might be capital intensive in one country and labour intensive in another country (Mohr & Fourie, 2008).

Sithole (2009) highlighted that neoclassical trade theories mainly focus on the country-level differences in the availability of resources and skills as the main determinants of internationalisation. Consequently, neoclassical empirical findings are limited to country-specific determinants of exports and no focus is placed on firm-level determinants. The modern trade theories of the 1980s are predominantly focused on loosening some of the assumptions of the neoclassical theories such as the H-O theory.

According to Michael Porter's theory of competitive advantage, in the 1980s, a country can excel at international trade if it has the right demand conditions, competitive environment, factors of production, supporting industries, attention to operational excellence and strategic vision. Where such ingredients are missing in a particular industry or product sector, the country tends to fall back on imports of such products (ITRISA, 2006).

Modern trade theories on the determinants of trade at firm level, such as the firm heterogeneity theory, according to Sithole (2009), stated that the most productive firms have characteristics that enable them to successfully enter or self-select into foreign markets with exposure to trade. The least productive firms do not have these opportunities and will most likely be pushed out of business with exposure to trade. One of the other key determinants of exports include the theory of the size of the firm, i.e. the larger the firm, the more experienced, the better the labour skills and the lower the marginal cost.

Microeconomic determinants of trade at firm level include spontaneous orders, managerial attitudes and perceptions, foreign ownership (MNEs prove to increase exports), to gain access to growth opportunities not available at the home country, economies of scale, business opportunities, and benefits of exporting (Grobler, Warnich, Carrell, Elbert & Hatfield, 2006; Sithole, 2009).

According to ITRISA (2006), the main benefits for companies that are involved in international trade, include expanded market opportunities, cost reductions (when companies expand their production to meet the needs of the export market, they are often able to realise cost savings in the production process), economies of scale, the spread of company risk, more balanced production of seasonal goods, extended product life cycle, improved product quality and operational efficiency.

When taking into consideration the macroeconomic determinants of trade, a gravity model can explain the relationship between different countries' trade. A gravity model explains that when taking into consideration large economies in terms of GDP, they tend to import large amounts because they have large incomes to spend. They also tend to attract large shares of other countries' spending because they produce a wide range of products. The gravity model further relates trade between any two countries to the sizes of their

economies. Using the gravity model also reveals the strong effects of distance and international borders. All estimated gravity models show a strong negative effect of distance on international trade and the positive influence of open trade agreements between countries on trade (Krugman & Obstfeld, 2008:17-24). Finally, Krugman and Obstfeld (2008) noted that countries that have the same languages and cultural ties tend to experience greater trade relations than the gravity model would normally predict. According to various authors (Anon., 2012; Longo & Sekkat, 2004:8; USITC, 2005), other factors that also play a role in the macroeconomic determinants of trade, include infrastructure (the better the infrastructure, the better the chances of trade), exchange rates (a devaluation of a specific country's currency can lead to an increase in export for that specific country and *vice versa*), and commercial and trade policies (can include export assistance programmes, trade liberalisation etc.).

The main benefits that the macroeconomic environment obtains from international trade, according to Mankiw (2009) and Sithole (2009), include economic growth, productivity gains, economies of scale, enhanced idea flows, encouragement of domestic employment, foreign currency earnings and an increase in exports over imports may lead to a favourable balance of payments.

Mohr and Fourie (2008:390) noted that one of the basic reasons why international trade exists is because of production factors (natural resources, labour, capital and entrepreneurship) not being evenly spread across the world. Krugman and Obstfeld (2008:4) and van Marrewijk (2007:57) noted that possibly the single most important insight in all of international economics is that there are advantages from trading. In other words, when countries trade goods and services with one another, this exchange is almost always beneficial to both parties.

The following section will focus on the different descriptions and classifications of 'developed' and 'developing' countries as per the International Monetary Fund (IMF), World Bank and United Nations Development Program (UNDP) classification systems.

2.3 Country classification systems

The IMF, World Bank and UNDP all have different terminologies for what they classify as being a 'developed' or 'developing' country. For instance, for 'developed' countries the IMF uses 'advanced', the UNDP uses 'developed', and the World Bank uses 'high income', whereas for 'developing' each use the terms 'emerging/developing', 'developing', and 'middle-/low-income' respectively. The terminologies used in this study will be according to the UNDP's wording of 'developed' and 'developing' countries. Accordingly, those countries which are classified as 'advanced' by the IMF and 'high income' by the World Bank, will be

referred to as ‘developed’ countries, while those countries classified as ‘emerging/developing’ by the IMF and ‘middle-/low-income’ by the World Bank will be referred to as ‘developing’ countries. For more detail regarding each institution’s classification system see Appendix A (Table A1 and table A2).

2.4 Literature overview

2.4.1 *The relationship between inward FDI and exports in developed countries*

Various studies focus on the relationship between FDI and exports, and Table 2.1 will illustrate this relationship in developed countries as found in recent studies, published during the period 2000 to 2011. The table will include the author and year of the study, the relevant countries and timeframe analysed in the study, the method used to explain the data, and finally a brief description of the findings of the study.

Table 2.1: Recent studies (2000-2011) on the relationship between FDI and exports in developed countries

Authors	Relevant countries	Methodology	Description of findings
Chédor, Mucchielli & Soubaya (2002)	French MNEs (1993)	Regression model.	The major findings suggested that inward FDI had a positive influence on foreign trade (exports and imports), and this positive influence was stronger for exports compared with imports.
Jensen (2002)	Polish manufacturing (1989-1996)	Balassa’s index for revealed comparative advantage.	It was found that inflows of FDI had an encouraging influence on the technological foundation of Polish exports.
Pantulu & Poon (2003)	Japan and US to 29 and 32 countries respectively (1996-1999)	Spatial affinities gravity model was used to determine whether FDI substitutes or compliments trade, and a simultaneity bias test were used to test whether correlation exists.	Japan and the US FDI cause the highest trade (imports and exports) in Eastern Asia and advanced industrialised countries of France, Germany and the UK. America’s outward FDI to Canada had a positive effect on Canada’s trade.
Dritsaki, Dritsaki & Adamopoulos (2004)	Greece (1960-2002)	Cointegration analysis and Granger causality test.	The cointegration analysis suggested that there was a long-run equilibrium relationship between trade (imports and exports), FDI and economic growth. The results from the Granger causality test showed that there was a unidirectional causal relationship between FDI and exports.
López Rodríguez & García Rodríguez (2005)	Spain (1998-1999)	Comparative analysis and multiple (non-linear) regression models.	The authors found that with the help of FDI of technological resources, such as Research and Development (R&D) investment, product- and process innovations and patents, the receiving country could attain a sustainable competitive advantage within the specific industry, which may lead to the company being a likely exporter within the industry.
Vukšić (2006)	Croatia - 21 manufacturing	The fixed effects one-way error component model is	The data suggest a positive and statistically significant effect of FDI on exports, primarily

	industries (1996-2002)	used for the estimation.	through productivity increases.
Bezuidenhout (2007)	First-world countries (1973-2004)	Literature review.	It was noted that there was the question of whether FDI causes trade (imports and exports) or whether trade causes FDI, mostly evident in first-world countries where that FDI caused trade, and with little FDI being caused by trade.
Wilson & Cacho (2007)	OECD (1990-2000)	Gravity model.	It was indicated that a complementary relationship seemed to exist between FDI and trade (imports and exports) among the OECD countries, however, the corresponding relationship was not evident in the models used in the study. Furthermore, it was indicated that FDI and trade flows between the OECD countries were mutual.
National Board of Trade (2008)	Swedish multinational firms (1978-2000)	The estimation equations are derived from a three-country model of FDI with heterogeneous firms. Regression model.	When looking at the relationship between a country's exports and outward FDI, it was found that despite a country investing in another country it would still be exporting services in the form of marketing and expertise to the country that has been invested in. In addition to this, vertical FDI could motivate international trade by increasing intra-firm trade.

In Table 2.1, it should be noted that the most popular methods used to explain the data were regression and gravity models. The studies summarised in Table 2.1 did not have the objectives to make recommendations, but rather to indicate whether relationships existed between inward FDI and a specific country's exports. The study done by Vukšić (2006), however, made the recommendations that policy-makers should try to improve the potential positive effects of FDI by targeting specific export-oriented Greenfield FDI, and implement measures to increase prospective spill-over effects.

From Table 2.1, it is further evident that most developed countries showed a positive relationship between inward FDI and exports. Furthermore, it is interesting to note that there have not been many studies conducted on this topic from 2008 to 2011, or with time-series data after 2004. Reasons for this may include the focus shift due to the global financial crisis in 2008, and the possible redistribution of focus on some developing countries' greater expansion within the FDI and trade fields.

The next section will focus on recent studies conducted on the relationship between FDI and exports in developing countries from 2000 to 2011.

2.4.2 *The relationship between inward FDI and exports in developing countries*

Numerous studies focus on the relationship between FDI and exports in developing countries. Table 2.2 will illustrate that relationship as found in recent studies. The table will include the author and year of the study, the relevant countries and timeframe analysed in the study, the method used to explain the data, and finally a brief description of the findings of the study.

It should be noted that the focus of this section is on inward FDI received by the host developing countries¹⁰ and the effect that it had on the host countries' exports.

Table 2.2: Studies (2000-2011) on the relationship between inward FDI and exports in developing countries

Authors	Relevant countries	Methodology	Description of findings
Marchant, Manukyan & Koo (2000)	US FDI and exports into Canada and Mexico (1989-1998), and Brazil (1993-1998).	A system of simultaneous equations is used to capture the interaction of exports and FDI strategies used in Free Trade Areas of the Americas (FTAA).	The research examined the relationship between US FDI and exports into Canada, Mexico and Brazil for the processed food industry by estimating a simultaneous equation system for FDI and exports. The analysis focused on the latter three countries that import a significant portion of US processed foods. Their empirical results indicated a bi-directional complementary relationship between FDI and exports.
Sharma (2000)	India (1970-1998)	Simultaneous equation framework.	It was noticed that India's exports have grown over 11 per cent – and GDP had grown approximately 5 per cent per year from 1970 to 1998. FDI appears to have been one of the several factors that have contributed to this phenomenon, however, no attempt at that stage had been made to link India's export performance to the internal FDI investments received. However, it could not be found that any evidence from the econometric results indicated that there was any significant impact that inward FDI had on India's export performance, despite the FDI variable coefficient having a positive sign.
Zhang & Song (2001)	China (manufacturing firms, provincial level) (1986-1997)	Export levels of provinces were modelled as a function of provincial levels of FDI and other explanatory variables. They constructed	The result showed that inward FDI had a strong positive influence on the export performance of China.

¹⁰ The host country is the country in which the direct investment enterprise is located. This is the country that will host the investment (OECD, 2002).

		their own dynamic model.	
Zhang & Felmingham (2001)	China (national and provincial level) (1986-1999)	Cointegration/error correction modelling (ECM) techniques.	The result revealed that there was a bi-directional causality between inward FDI and exports at a national level.
Liu, Wang & Wei (2001)	China (1984-1998)	Econometric techniques for panel data are applied to test unit roots and causality.	The causal relationship between inward FDI, trade and economic growth was investigated. A unidirectional causal relationship from inward FDI to exports was found.
Sun (2001)	China (3 macro-regions) (1984-1997)	Time-Series and Cross-Sectional (TSCS) model. Regression model.	The impact of FDI on exports differs between three macro-regions of China. The coastal region experienced the strongest relationship between inward FDI and exports. The central region experienced a positive and significant relationship between FDI and exports and the Western region's relationship between the latter was insignificant.
Alquacil, Cuadros & Orts (2002)	Mexico (1980-1999)	Granger non-causality procedure.	It was found that there existed a positive causal relationship between FDI and exports and that this causal relationship suggested a type of FDI-led export growth linkage.
Marchant, Cornell & Koo (2002)	East Asian countries (China, Japan, Singapore, South Korea and Taiwan) (1989-1998)	Simultaneous equation systems that are estimated using two-stage least squares.	The results of the study indicated a complimentary relationship between FDI and exports within the processed food industry.
Alici & Ucal (2003)	Turkey (1987-2002)	Granger causality test.	The linkage of FDI-led export growth was not found in Turkey.
Pantulu & Poon (2003)	US and Japan's FDI influence on Malaysia and Thailand's exports (1996-1999)	Spatial affinities gravity model was used to determine whether FDI substitutes or compliments trade, and a simultaneity bias test was used to test whether correlation exists.	The US's outward FDI did not seem too beneficial for either Malaysia or Thailand's exports. On the other hand, Japan's outward FDI to Malaysia and Thailand had a very positive impact on the trade of the former countries.
Baliamoune-Lutz (2004)	Morocco (1973-1999)	Granger causality test.	The result showed that there was a bi-directional causal relationship between FDI and exports at a national level.
Metwally (2004)	European countries FDI influence on Egypt, Jordan and Oman's exports (1977-2000)	Simultaneous equations model.	The results suggested that the exports of goods and services were strongly influenced by the inward FDI in these three countries.
Pacheco-Lopez (2005)	Mexico (1970-2000)	Granger causality test.	The results indicated that there was a bi-directional causality between inward FDI and export performance.
Zhang (2005)	China's industrial sector (1980-2004)	FDI gets treated as an additional factor to the conventional framework in which the country's export performance is determined	The results indicated that FDI had a superior influence on export performance in China at the industrial level.

		by factor endowments and scale economies.	
Zhang (2006)	China's industrial sector (1980-2004)	Factor proportion model and FDI-export model.	China's exports boomed from USD 18 billion to USD 593 billion from 1980 to 2004, which was accompanied by a rise in FDI inflows from almost nothing in the 1980s to the accumulated FDI being USD 560 billion by the end of 2004. The estimates indicated that FDI had a positive impact on China's exports, its effects were much larger than those of domestic capital investments, and its effects were larger in labour-intensive industries.
Aizenmana & Noy (2006)	60 developing countries ¹¹ and 21 industrialised countries ¹² according to OECD 1990 (1982-1998)	Regression and two-way feedback analyses.	The reaction between trade (imports and exports) and FDI is stronger in developing than in industrialised countries. This is in line with the assumption that the majority of the FDI to developing countries has been vertical.
IECS Ltd (2006)	Least Developed Countries (LDCs) (1937-2004)	Literature overview.	The results indicated that inward FDI with the help of innovation had a positive effect on a country's exports.
Driffield, Bissoondeal & Pramadhani (2007)	Indonesia (1990-2004)	Granger causality test.	For Indonesia, inward FDI, imports and exports were complements, and FDI furthermore caused an increase in trade.
Wong & Tang (2007)	Malaysia (1991-2000)	Granger causality test.	FDI had contributed significantly to Malaysia's electronics exports as well as the growth and development of their electronics industry.
Cuyvers, Soeng, Plasmans & Van Den Bulcke (2008)	Australia, Canada, China, France, Hong Kong, Indonesia, Japan, Korea, Malaysia, Singapore, Switzerland, Taiwan, Thailand, United Kingdom, and United States FDI influence on Cambodia trade (1995-2005)	Augmented gravity models.	FDI was found to have had a positive impact on both Cambodia's imports and exports, in particular on their exports.

¹¹ Industrialised countries (21 countries): Australia, Austria, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, UK, US.

¹² Developing countries (60 countries): Algeria, Argentina, Bangladesh, Belize, Bolivia, Botswana, Brazil, Cambodia, Cameroon, Chile, China, Colombia, Costa Rica, Ivory Coast, Ecuador, Egypt, El Salvador, Gabon, Gambia, Ghana, Guatemala, Guyana, Honduras, India, Indonesia, Israel, Jamaica, Jordan, Kenya, Korea, Malaysia, Mauritius, Mexico, Morocco, Mozambique, Nepal, Nicaragua, Nigeria, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Senegal, Sierra Leone, South Africa, Sri Lanka, Swaziland, Syria, Tanzania, Thailand, Togo, Tunisia, Turkey, Uganda, Uruguay, Venezuela, Zambia, Zimbabwe.

Iqbal, Shaikh & Shar (2010)	Pakistan (quarterly time series data from 1998 to 2009)	VAR model – measuring the integration and cointegration, and the VECM causality test.	The research showed that a bi-directional causal relationship existed between economic growth, export and FDI, with unidirectional causality existing from import to export and FDI. It was concluded that FDI invested in Pakistan was attracted by its economic growth and its foreign trade strategy.
Jayachandran & Seilan, 2010.	India (1970-2007)	Granger causality test.	No reciprocal causality relationship between the economic growth rate, FDI and exports in India was found, and there was no causality relationship from FDIs to exports.
Samake & Yang, 2011.	Low-income countries (LICs) ¹³ (1970-2009)	Global vector auto regression (GVAR) model.	The correlation between outward FDI from BRICs and LIC trade (imports and exports) with BRICs is insignificant.

It should be noted that the most popular methods used to explain the data studies summarised in Table 2.2 were causality tests, simultaneous equation models and regression models. It also appears that bi-directional causality between FDI and exports is most evident in developing countries.

From Table 2.2, it is evident that most developing countries experience a positive relationship between the inward FDI and the respective country's exports. However, this does not appear to be the case in India and Turkey, as there was no evidence indicating that there was any significant impact of inward FDI on India or Turkey's export growth performance (Alici & Ucal, 2003; Sharma, 2000).

China also appears to be a popular topic appearing in several more recent studies covering a variety of time series and country levels, all indicating that inward FDI has a positive impact on China's exports. Kevin Honglin Zhang is one of the researchers that have addressed this topic on several occasions between 2000 and 2006. Zhang agreed with the majority of the Chinese studies in Table 2.2, indicating that a positive relationship existed between inward FDI and exports within the Chinese manufacturing and industrial sectors. A possible reason for China being focused on in so many studies is because of China's more prominent role in the world economy.

It is somewhat surprising that the study conducted by Samake and Yang (2011) shows that the correlation between outward FDI from BRICs, and LIC trade with BRICs is insignificant, as one would expect FDI to

¹³ These LIC countries refer to Angola, Burkina Faso, Cameroon, Republic of Congo, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Nigeria, Senegal, Tanzania, Uganda, Zambia, Bangladesh, Cambodia, Mongolia, Myanmar, Nepal, Pakistan, Sri Lanka, Vanuatu, Vietnam, Yemen, Azerbaijan, Kyrgyz Republic, Sudan, Uzbekistan, Bolivia, Papua New Guinea, and St. Lucia.

provide positive spill-over effects on host countries, most prominently through exports. The insignificant correlation most likely reflects the early stages of BRIC FDI in LICs, and the dominance of BRIC economic growth (rather than FDI) in driving their trade performances. This relationship will most probably be seen in future studies.

The amount of research conducted with regard to developing countries' performance of exports due to inward FDI seems to by far outnumber the studies conducted on developed countries. The reasons for this may include that ways in improving the 'position' of developing countries attract more attention than the 'position' of the developed countries, and the increase in the percentage of developing countries export and inward FDI growth is growing much more significantly than that of developed countries. In 2011, for the first time, developing and transition economies together attracted more than half of global FDI flows, and in contrast, FDI inflows to developed countries continued to decline (UNCTAD, 2011a).

Section 2.4.3 will focus on recent studies conducted on the relationship between FDI and exports in African countries.

2.4.3 The relationship between inward FDI and exports in African countries

Several studies focus on the relationship between inward FDI and exports within the African context. Table 2.3 will illustrate that relationship as found in recent studies.

The table will include the author and year of the study, the relevant countries and timeframe analysed in the study, the method used to explain the data, and finally a brief description of the findings of the study. The focus is again on studies conducted during the period 2000-2011.

Table 2.3: Recent studies (2000-2011) on the relationship between FDI and exports in Africa

Authors	Relevant countries	Methodology	Description of findings
Mwilima (2003)	Southern Africa and South Africa (1994-2000)	A literature overview.	One of the main reasons why Southern Africa would like to increase their inward FDI is that FDI may lead to increased export competitiveness. This was an important factor when South Africa introduced its GEAR strategy. This study highlighted the importance of attracting investment in clusters of industries to develop local companies.
Wilson & Cacho (2007)	OECD (England, France and Portugal), FDI to Sub-Sahara Africa (Ghana, Mozambique, Tunisia and Uganda) (1990-	Gravity model.	When it came to OECD FDI and trade within the food sector of Africa, it appeared that OECD FDI inflows to Africa was one of the channels that assisted African countries in exporting food produce to the OECD countries.

	2000)		
Ahmed, Cheng & Messinis (2007)	Sub-Sahara Africa (Ghana, Kenya, Nigeria, South Africa, Zambia) (1980-2004)	Granger causality test.	A causality relationship between exports and FDI in Sub-Saharan Africa was found. A bi-directional Granger causality exists between FDI and exports in Ghana, Kenya and Nigeria. For South Africa, the Granger causality ran from FDI to exports and in Zambia, Granger causality ran from exports to FDI.
Bezuidenhout (2007)	SADC (1973-2004)	Adapted gravity model. Regression model.	It was found that in the SADC, trade (imports and exports) caused FDI. In certain cases, the assumption held that there was a complementary bi-directional relationship between the two elements. Furthermore, it was found that for every 1 per cent increase in exports in the SADC, there was a corresponding 1 per cent increase in FDI.
Bezuidenhout & Naudé (2008)	SADC (1973-2004)	Adapted gravity model. Regression model.	It was noted that when using an adapted gravity model, there was a strong correlation between inward FDI and the SADC exports
Bezuidenhout & Naudé (2010)	SADC (1974-2004)	Adapted gravity model. Regression model.	In particular the belief existed that more trade owing to trade liberalisation will have a determining and positive complementary impact on FDI. They did, however, find that the complimentary role between home exports and host FDI inflows clearly depend on the nature of the underlying trading relationship. They also found that distance and political instability have a significant and negative impact on FDI.
Hailu (2010)	16 African countries (1980-2007)	Least Square Dummy Variable (LSDV) regression method.	Increasing FDI in Africa has a positive effect on export promotion and consequently also on the trade balance.

It is interesting to note that the methods used to explain the data studies summarised in Table 2.3 varied. Ahmed *et al.* (2007) used a causality test, which indicated bi-directional causality existing between FDI and exports. Bezuidenhout (2007), Bezuidenhout and Naudé (2008; 2010) and Wilson and Cacho (2007) all used a gravity model and a regression model to prove that FDI and exports are correlated, and finally, Hailu (2010) used an LSDV regression method and found that increasing FDI in Africa would have a positive effect on the trade balance.

The main recommendations that came through with regard to Africa were that African countries should promote and attract FDI, create a favourable environment, adopt liberal policy reforms and further regional integration. Lastly, it is suggested that greater efforts need to be made within the region to minimise the negative impacts and ‘neighbouring country effect’ that political instability can exert on FDI (Ahmed *et al.* 2007; Bezuidenhout 2007; Bezuidenhout & Naudé 2008; Bezuidenhout & Naudé 2010).

Within the Ahmed *et al.* (2007) and Bezuidenhout (2007) studies on Sub-Sahara Africa and the SADC respectively, it was evident that a bi-directional causal relationship between exports and FDI appeared to exist, which gives this study the preconception that a possible causal relationship may exist between BRIC inward FDI and SADC exports.

Based on the studies summarised in Table 2.3, it is evident that inward FDI has a positive relationship on exports within the African context. However, as per the number of studies apparent in this section, compared to the number of studies conducted in Sections 2.3 and 2.4, and also as indicated in Chapter 1, it is apparent that relatively few studies have been conducted on the relationship between FDI and exports in Africa. Reasons for this may include the lack of inward FDI data that may have been available in previous years and the unreliable trade data available for the African continent, and also perhaps the lack of research interest in Africa. The situation regarding data and interest in African countries is, however, changing. This includes the availability of data for the SADC and BRIC countries, and the increasing role of China and India on the continent. Finally, the previous studies conducted on SADC only stretch up to 2007, and this study will attempt to extend the analysis to 2011, as much has happened within the 2007 to 2011 timeframe, including a global financial crisis. Therefore, this study will attempt to contribute specifically to the existing literature on FDI in the SADC countries by focusing on the relationship between BRIC's FDI inflows and SADC's exports.

2.5 Summary and concluding remarks

The main research aim of determining the relationship of inward FDI on exports was investigated by means of a literature overview of research conducted specifically on developed, developing and African countries. This was to provide a foundation to help answer the research question of what the potential influence of BRIC's FDI may be on SADC's exports to the world.

In the context of this study it is important to clearly define FDI and exports. FDI refers to investment in which a firm in one country directly controls or owns a subsidiary in another country, with FDI being divided into either Greenfield investments or M&As. Greenfield investments refer to the investing company starting a new enterprise in the host country. M&As refer to a parent company acquiring existing enterprises as either a merger or an acquisition. International trade exists because of production factors not being evenly spread over the world and when countries sell goods and services to one another, this exchange is almost always beneficial to both parties. Understanding the importance of both FDI and exports led to the classifications of countries in order to better understand how regions/countries/development groups work.

The IMF, World Bank and UNDP all have different descriptions and names for ‘developed’ and ‘developing’ countries. They are called advanced- and emerging/developing countries by the IMF, developed and developing countries by the UNDP and high- and middle-/low-income countries by the World Bank. The descriptions for this study will be according to the UNDP’s categorisation of developed and developing countries and the countries will be classified according to the IMF and the World Bank, as the majority of the countries are categorised similar by these two institutes.

The recent studies conducted on the relationship between FDI and exports in developed, developing and African countries indicated that the majority of the studies conducted between 2000 and 2011 by various authors used causality tests and regression models to determine the relationships between FDI and exports. It also appeared as if bi-directional causality was most often found, thereby indicating that FDI has a positive influence on exports and exports also has a positive influence on FDI.

Surprisingly, the study done by Samake and Yang indicated that the correlation between outward FDI from BRICs to LIC, and LIC trade with BRICs is insignificant. One would have expected FDI to provide positive spill-over effects on host countries, most prominently through exports. The insignificant correlation is most likely to reflect the early stage of BRIC FDI in LICs and the dominance of BRIC’s economic growth (rather than FDI) in driving trade. However, the role of China and India is expected to change the trade and investment environment in the SADC. It is therefore further evident that an assessment of the BRICS partnership is further needed in order to determine whether this group will be able to encourage trade and FDI between them.

It should be noted that relatively few studies have been conducted with regard to SADC before 2007. Reasons may include the lack of inward FDI data that may have been available in previous years, the unreliable trade data available when it comes to the African continent, and the lack of interest in the region pre-2007. The situation regarding data for African countries is, however, changing. This includes data for the SADC and BRIC countries, and therefore this study will further attempt to contribute to the literature on FDI in the SADC by investigating the relationship between BRIC FDI inflows on the SADC’s trade outflows.

Chapter 3 will provide some descriptive analyses based on data for SADC’s inward FDI from the world, BRIC’s outward FDI to the world and to SADC, and SADC’s exports to BRIC and the world.

Chapter 3: Descriptive analysis of BRIC's FDI and SADC's exports

3.1 Introduction

The literature background to the potential link between FDI and exports in developed, developing and African countries was investigated in Chapter 2. This chapter will provide a descriptive analysis of BRIC outward FDI to SADC, and SADC exports to both BRIC and the world. The descriptive analysis will provide context for the empirical analysis of the inward FDI export relationship between BRIC, SADC and the world, which will be described in Chapter 4.

For the purpose of this study, the period covered for FDI will be from 2003 to 2010, and for exports will be from 2003 to 2011. The reason for this is that inward FDI can possibly have a lagging effect on a country's exports. As indicated in Chapter 2, the most significant problem that is encountered in this study is data related. The methods had to be adapted to the data that were available and even in the estimation process the limitation of data for the country-specific inward FDI received by SADC countries played a significant role. Therefore, it was decided that, because M&A and Greenfield investments are the two major elements that make up FDI, the country-specific investment data with regard to these two investments will be used to explain the influence of BRIC's outward FDI to the SADC on the SADC's exports. The M&A and Greenfield data obtained from Zephyr and FDImarkets® are only available from 2003, and the FDI for 2011 will not be seen in 2012's export data, as this data was not yet available. Therefore, the FDI data stretched from 2003 to 2010.

Chapter 3 provides some background information on the description of the data of the world's FDI to the SADC (Section 3.2) and FDI outflow trends from BRIC to the world (Section 3.3). Section 3.4 will thereafter help to shed some light on the potential relationship between BRIC outward FDI to the world and the SADC's inward FDI from the world. Section 3.5 discusses the flow of BRIC's M&A, Greenfield and total FDI to SADC, followed by Section 3.6, which analyses SADC exports to the world. Finally, Section 3.7 analyses SADC exports to BRIC, Section 3.8 compares BRIC and the world's outward FDI to the SADC's exports to both BRIC and the world, and Section 3.9 focuses on the two main FDI receiving and export industries in order to determine whether a further industry analysis will be possible. Section 3.10 concludes this chapter.

3.2 World FDI into SADC

As a first step of the descriptive analysis, this section presents an overview of the SADC and world's inward FDI growth patterns as well as the share of the SADC's inward FDI as percentage of total world FDI.

Table 3.1: World and SADC inward FDI growth, and SADC inward FDI as percentage of world inward FDI, 2003-2010 (percentages)

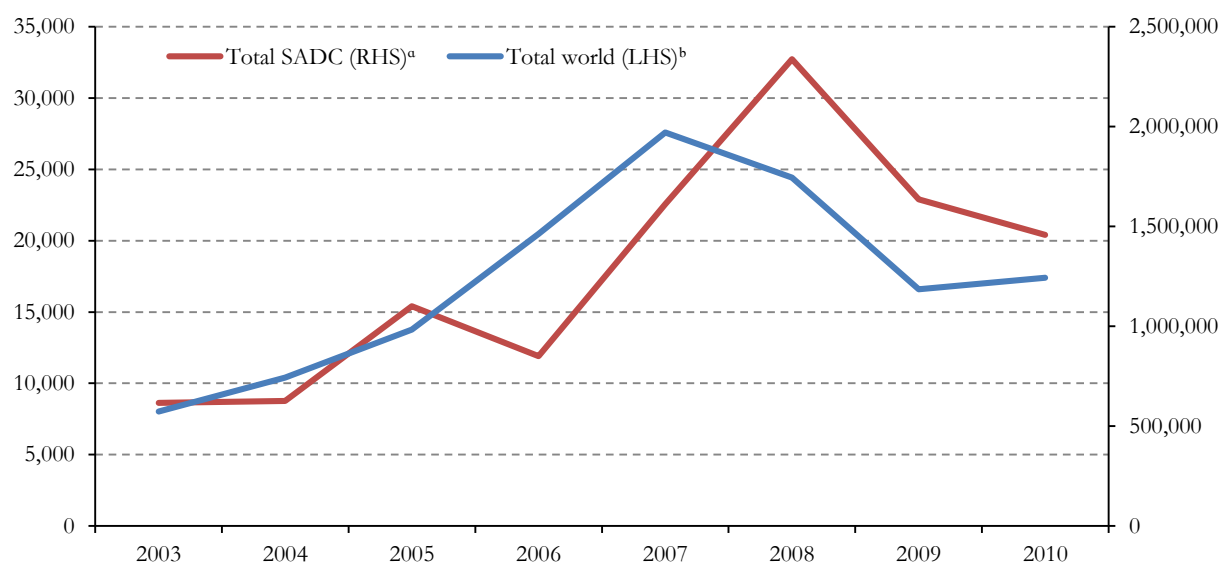
Country/Year	2003	2004	2005	2006	2007	2008	2009	2010
World inward FDI growth rate	-9%	30%	32%	49%	35%	-12%	-32%	5%
SADC inward FDI growth rate	27%	1%	76%	-23%	90%	45%	-30%	-11%
SADC inward FDI as % of world inward FDI	1.5	1.2	1.6	0.8	1.1	1.9	1.9	1.6

Source: Compiled by the author based on UNCTADstat (2012)

From Table 3.1, it is evident that from 2004 to 2007 the world experienced positive inward FDI growth rates, which declined in 2008 and in 2009 notably due to the 2008 global financial crisis. However, the world inward FDI growth rate slowly started to increase by 5 per cent in 2010, which can be attributed to the marginal global recovery. SADC, however, has had major fluctuations in their growth rates, which can be attributed to the volatile political and nature of risks in SADC; such as Zimbabwe's economic crash at the end of 2008, due to a lack of government credibility, state control over the central bank, sanctions put up against political leaders, a disregard for the rule of law, hyperinflation, violent land reforms, physical infrastructure deterioration etc. (NKC, 2012).

From Table 3.1, it is further apparent that the SADC's inward FDI as a percentage of world inward FDI varies between 0.8 per cent and 1.9 per cent, indicating that FDI in the region remains comparatively low and has also not experienced significant changes in the 2003 to 2010 period.

Figure 3.1: Net inward FDI¹⁴ to SADC compared to world inward FDI, 2003-2010 (USD millions)



Notes: ^a) LHS refers to left-hand side or axis. ^b) RHS refers to right-hand side or axis.

Source: Compiled by the author based on UNCTADstat (2012)

From Figure 3.1, it is evident that inward FDI flows to the world gradually increased from 2003 up to 2007, while SADC's inward FDI flows increased more significantly from 2006 to 2008. From 2007 to 2009, the world experienced a slump in inward FDI flows, due to the aftermath of the financial crisis. The SADC countries, however, experienced a decrease in inward FDI flows from 2008 to 2010. By comparison, it appears that the SADC's inward FDI flows follow a similar pattern to the world's inward FDI flows. SADC received only 1.6 per cent of total world FDI flows in 2010.

Table 3.2 presents the data on world inward FDI to SADC countries from 2003 up to 2010 (millions of US Dollars at current prices and current exchange rates) as captured in the UNCTADstat dataset (UNCTADstat, 2012).

¹⁴ Annual inward FDI flows contain information on FDI inflows by individual country expressed in millions of US dollars (UNCTADstat, 2012).

Table 3.2: SADC net inward¹⁵ FDI flows, 2003-2010 (USD million)

Country/Year	2003	2004	2005	2006	2007	2008	2009	2010
Angola	5 685	5 606	6 794	9 064	9 796	16 581	11 671	9 942
Botswana	418	391	279	486	495	528	579	529
DRC	391	409	0	256	1 808	1 727	664	2 939
Lesotho	42	53	57	89	97	56	48	55
Madagascar	95	95	86	295	773	1 169	1 066	860
Malawi	66	108	52	72	92	9	60	140
Mauritius	62	11	42	105	339	383	257	430
Mozambique	337	245	108	154	427	592	893	789
Namibia	149	226	348	387	733	720	516	858
Seychelles	58	37	86	146	239	179	275	369
South Africa	734	798	6 647	-527	5 695	9 006	5 365	1 553
Swaziland	-61	71	-46	121	37	106	66	93
Tanzania	308	331	494	597	647	679	645	700
Zambia	347	364	357	616	1 324	939	695	1 041
Zimbabwe	4	9	103	40	69	52	105	105
Total SADC	8 635	8 754	15 407	11 900	22 570	32 725	22 906	20 403

Source: UNCTADstat (2012)

From the data contained in Table 3.2, it is apparent that the SADC's total inward FDI increased from 2003 to 2005, almost doubling from USD 8.6 billion in 2003 to USD 15.5 billion in 2005. It further appears as if SADC's inward FDI, however, decreased in 2006 to approximately USD 12 billion, whereafter FDI almost doubled again in 2007 to USD 22.5 billion, further increasing again in 2008 to USD 32.7 billion, thereafter declining again in 2009, and finally decreasing even more to USD 20 billion in 2010. Despite the latter, the growth in flows to SADC since 2003 has been exponential. Angola and South Africa are the countries within SADC that have received the majority of inward FDI from the world during the period under review. Angola and South Africa's joint contribution as a percentage of total SADC inward FDI flows decreased from 31.4 per cent in 2007 to 21.8 per cent in 2008, whereafter its relative share increased again in 2009 to 25.6 per cent, and surged to 43.7 per cent in 2010. South Africa, however, witnessed a major decline in inflows in 2006, due to the sale of a foreign equity stake in a domestic gold-mining company to a local firm (UNCTAD, 2007). It is further evident in Table 3.2 that South Africa has experienced a significant decline in inward FDI flows

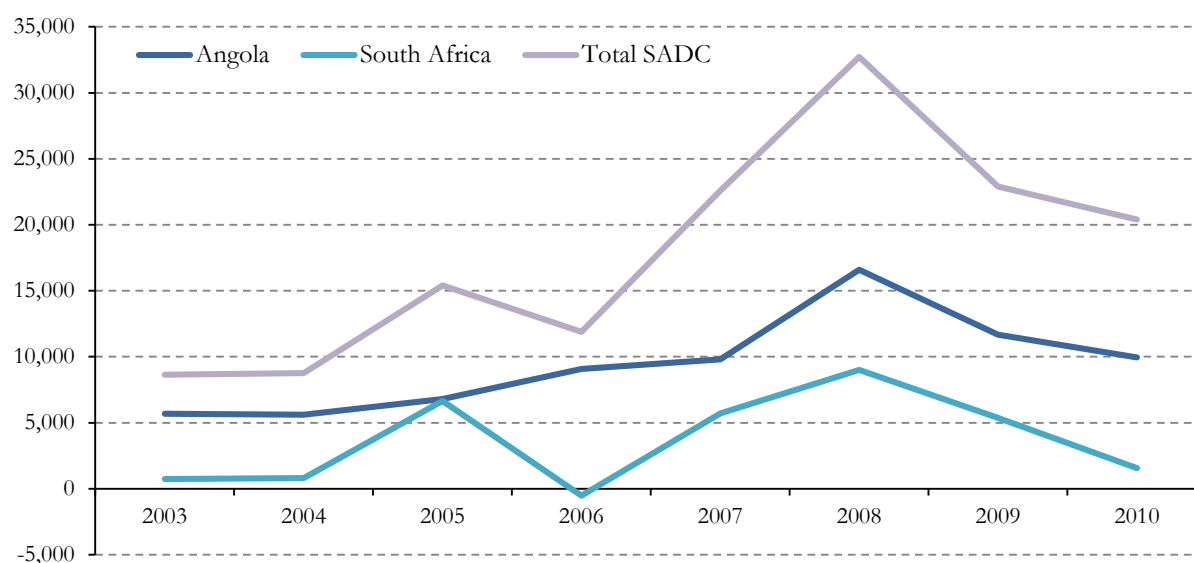
¹⁵ FDI flows are presented on net bases (capital transactions' credits less debits, between the direct investors and their foreign affiliates). Therefore, FDI flows with a negative sign, called reverse investment or disinvestment, indicate that at least one of the three components of FDI (equity capital, reinvested earnings and intra-company loans) is negative and not offset by positive amounts of the remaining components (UNCTADstat, 2012).

from 2008 to 2010. The reason for this is that within the developing economies' context, FDI's stability relative to other types of capital should be treated with caution, bearing in mind the dramatic rise and fall in FDI inflows to such countries (e.g. South Africa USD 9 billion in 2008, USD 5.4 billion in 2009 and USD 1.6 billion in 2010) (UNCTAD, 2011a). This is largely due to a few large individual transactions that have taken place in specific years, e.g. Industrial and Commercial Bank of China Ltd., that obtained a 20 per cent minority stake in Standard Bank, South Africa (in 2008). FDI is also likely to contain some short-term and volatile flows.

Major FDI recipients, such as Angola, being a commodity-rich host country, have been attracting large shares of the Africa continent's FDI inflows from 2003. The record rise of FDI inflows to the country in 2008 was partly due to favourable global commodity markets (at least during the first half of 2008) and good returns on investment related to high commodity prices. MNEs, including firms from within the region, took advantage of this situation to expand their regional operations, opening a variety of investments in oil exploration projects and activities in new locations and injecting large volumes of capital into Greenfield projects. These firms also undertook a record level of cross-border M&As (UNCTAD, 2009:42).

On closer inspection of Table 3.2, there does not seem to be any correlation between the inward FDI flows of the various SADC countries during the specified period. The inward investment increases in one member country do not necessarily explain the increase/decrease in inward investment in its neighbouring country, or any other SADC member country within the same year. In comparison to other joint regions, such as the European Union (EU), where data show that inward FDI to various EU member countries is mostly integrated, inward FDI flows to the various SADC countries seem to be more country specific and therefore unrelated to the inward FDI flows of any other SADC member country. This might imply that due to various underlying differences (e.g. political, ideological, cultural, fundamental, etc.) the SADC countries are not integrated to the same extent as member countries of the EU. This further illustrates the individual nature of and diversity between the various SADC countries. Loots and Kabundi (2012:7) confirm the latter, and indicate that within the African context much diversity exists between the sub-regions and also between the individual countries. Inward FDI flows in all the SADC countries, however, have increased from 2003 to 2008. Figures 3.2 and 3.3 illustrate these trends.

Figure 3.2: SADC, Angola and South Africa, net inward FDI, 2003-2010 (USD millions)



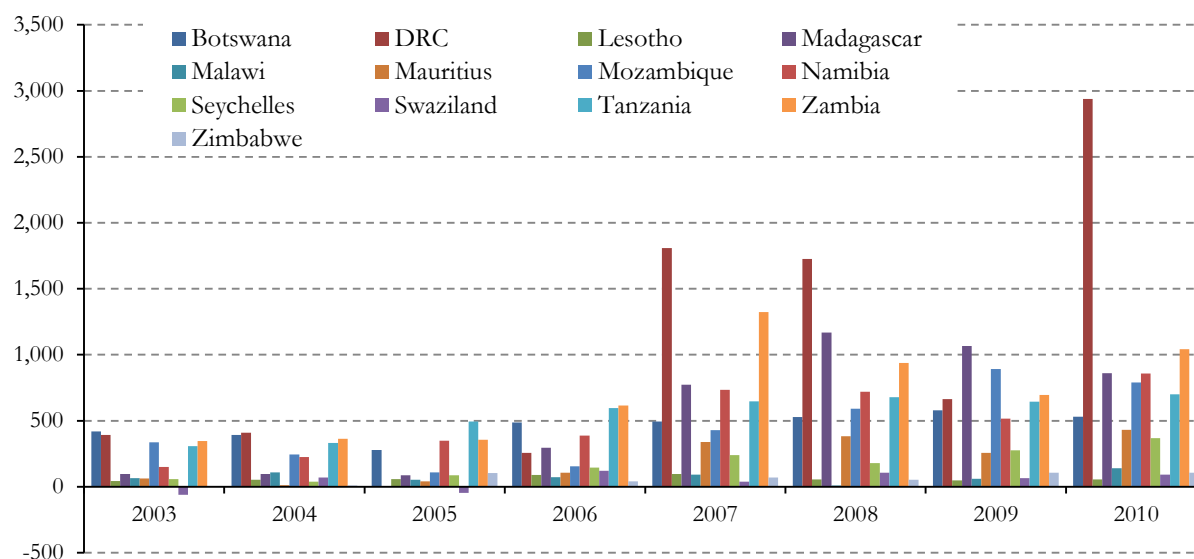
Source: Compiled by the author based on UNCTADstat (2012)

Figure 3.2 illustrates the inward FDI received by Angola and South Africa (the two largest recipients of inward FDI within the SADC) and the inward FDI received by the total SADC from the world during the 2003 to 2010 period. From the trends in Figure 3.2 it is evident that from 2003 to 2009 South Africa was the main contributor to the trend in overall inward FDI received in the SADC (South Africa and SADC have a more similar trend line), whereas from 2007 to 2010, Angola seems to drive overall change in the SADC's inward FDI flows. On average, Angola's inward FDI is higher than South Africa's inward FDI throughout the period, with Angola contributing an average of 55 per cent of SADC's inward FDI throughout the period, and South Africa a mere 18 per cent. The difference in the high value of Angola and South Africa's investments compared to the other SADC countries may be due to the nature of the investments received (e.g. capital investment).

The main industries of investment within the SADC were coal, oil and natural gas industries, followed by the metals industry. The coal, oil and natural gas industries' inward FDI received was driven by Angola, while the metals industries' inward FDI received was driven by South Africa during the period (FDImarkets®, 2012). The SADC's inward FDI from the world grew by 136 per cent from 2003 to 2010.

In order to get a better view of the FDI inflows in the other 13 SADC countries, Angola and South Africa are removed from Figure 3.3.

Figure 3.3: SADC countries (excl. South Africa and Angola), inward FDI flows, 2003-2010 (USD millions)



Source: Compiled by the author based on UNCTADstat (2012)

In Figure 3.3, it can be seen that Lesotho, Malawi, Swaziland and Zimbabwe are the minor players regarding inward FDI within the SADC region. The total combined inward FDI received by Lesotho, Malawi, Swaziland and Zimbabwe only accounted for 1.3 per cent of total SADC inward FDI in 2007, 0.7 per cent in 2008, 1.2 per cent in 2009 and 1.9 per cent in 2010.

The DRC appears to be an outlier within this group. The DRC shows substantial overall increases from 2003 to 2010, with a 651 per cent increase in inward FDI flows during the period. Reasons for the DRC's inward FDI growth figures may be attributed to the DRC having commodity wealth and the country's recovering from years of political unrest and civil wars. Namibia, Madagascar, Mozambique, Tanzania and Zambia also show strong inward FDI growth from 2005 onwards. Botswana appears to have seen a jump in inward FDI growth in 2005. However, after 2005 its flow of inward FDI has remained constant through to 2010. It can be noted that Botswana is a relatively small economy within the SADC. Seychelles and Mauritius show positive growth trends from 2005 to 2010.

3.3 BRIC FDI outflows to the world

Section 3.3 will analyse the FDI outflows of BRIC to the world, in order to give the study a perspective of BRIC's major outward FDI trends. Table 3.3 represents the outward FDI flows from the BRIC countries to the world, covering the period 2003 to 2010.

Table 3.3: BRIC FDI outflows¹⁶ compared to world FDI outflows, 2003-2010 (USD millions)

Country/Year	2003	2004	2005	2006	2007	2008	2009	2010
Brazil	249	9 807	2 517	28 202	7 067	20 457	-10 084	11 519
China	2 855	5 498	12 261	21 160	22 469	52 150	56 530	68 000
India	1 876	2 175	2 985	14 285	17 234	19 397	15 929	14 626
Russia	9 727	13 782	12 767	23 151	45 916	55 594	43 665	51 697
Total BRIC	14 707	31 262	30 531	86 798	92 685	147 598	106 040	145 842
Total world	573 792	930 105	882 132	1 405 389	2 174 803	1 910 509	1 170 527	1 323 337

Source: UNCTADstat (2012)

From Table 3.3, it is evident that from 2003 to 2010 the world's outward FDI have increased by approximately 131 per cent, despite the decline after 2007. It is furthermore evident that in total the BRIC countries saw an increase in outward FDI from 2003 to 2008, whereafter they experienced a decrease in 2009. This is mainly due to the global financial crisis from 2008 onward, however BRIC outward FDI seems to have started to recover in 2010. Despite the 2008 decrease in outward FDI values, BRIC's share in the world outward FDI doubled from 4 per cent in 2007 to 8 per cent in 2008, increasing further to approximately 11 per cent in 2010, from an initial 3 per cent in 2003. The BRIC countries have seen an overall outward FDI growth rate of approximately 892 per cent from 2003 to 2010.

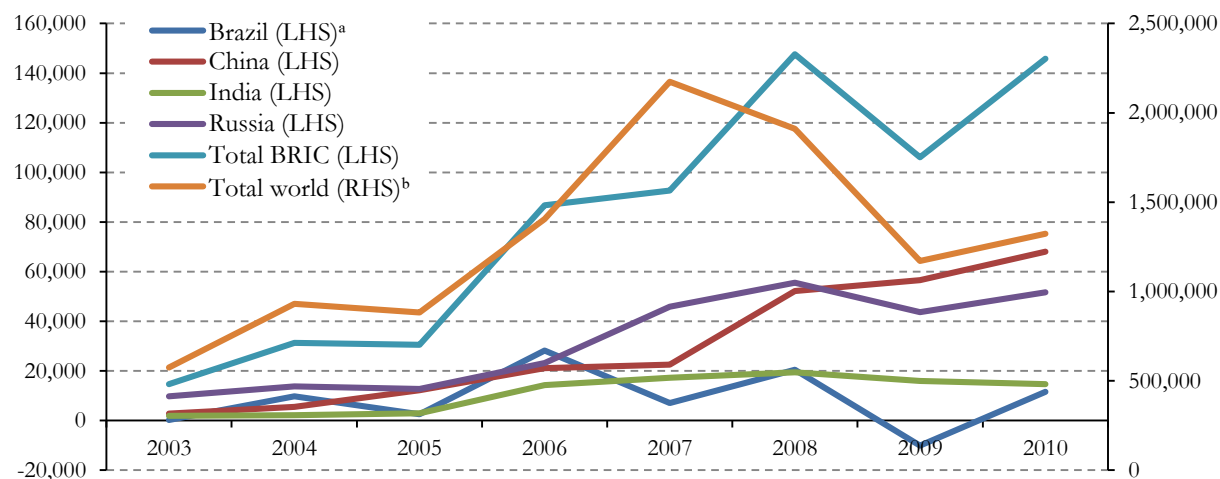
From Table 3.3, it is also evident that China has seen major outward FDI flows during the 2003 to 2010 period. China's FDI outflows more than doubled from 2004 to 2005, nearly doubling again from 2005 to 2006, and doubling again from 2007 to 2008. Thereafter, China's FDI outflows only gradually increased until 2010. China's contribution to BRIC FDI outflow has increased from approximately 19 per cent in 2003 to approximately 47 per cent in 2010. It appears that China took over the 'driving' role behind the BRIC's outward FDI flows in 2008, unseating Russia who was the main role-player from 2003 to 2007. Within this time frame, China's outward investment in sectors outside of the financial sector continued to expand, e.g. sectors that do not deal with financial or investment-related goods and services, driven by a continued search for mineral resources (UNCTAD, 2010:xx). However, Yongding (2012:34), who is part of the BRICS research group, noted that in the future the world would see more Chinese FDI in the manufacturing sectors. In the meantime, Russia's outward FDI has also increased significantly from 2003 to 2008, decreasing in 2009, but recovering in 2010. Brazil's outward FDI flows were volatile in the 2003 to 2010 period; outward FDI appears to have decreased from 2008 to 2010, with a major decrease experienced in 2009. This is mainly due to cross-border M&As in the region collapsing, because of sales of foreign affiliates to domestic

¹⁶ Outward foreign direct investment flows contain information on FDI outflows by individual country expressed in millions of dollars per year (UNCTADstat, 2012).

companies (UNCTAD, 2010:xx). India's outward FDI has increased significantly since 2006, but shows a fluctuating pattern.

Figure 3.4 provides an illustration of the BRIC countries' outward FDI flows to the world.

Figure 3.4: BRIC and the world, outward FDI flows, 2003-2010 (USD millions)



Notes: ^a LHS refers to left-hand side or axis. ^b RHS refers to right-hand side or axis.

Source: Compiled by the author based on UNCTADstat (2012)

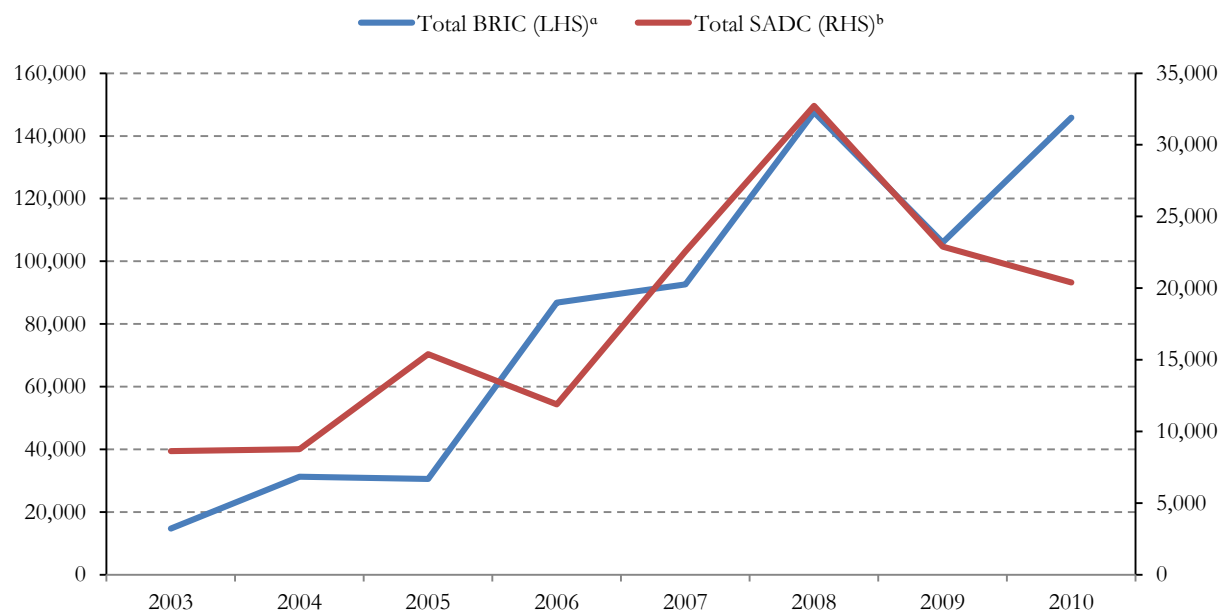
From Figure 3.4, it is evident that from 2003 to 2006 and from 2008 to 2010, BRIC and the world had a similar outward FDI pattern, with BRIC experiencing a stronger positive trend compared to the world. The BRIC countries have experienced overall positive strong growth in outward FDI, with China and Russia being the major drivers in the latter. Brazil has a flat slope while India has a slight positive slope.

3.4 BRIC's outward FDI flows compared to SADC's inward FDI flows

After illustrating the general SADC inward FDI trends as well as the BRIC outward FDI trends, Section 3.4 will compare the patterns/trends of BRIC's outward FDI flows against the SADC's inward FDI flows, in order to determine whether there is any tentative evidence of a possible similar trend between the two.

Figure 3.5 illustrates whether tentative evidence of a similar trend between BRIC's outward FDI and SADC's inward FDI exists.

Figure 3.5: BRIC's outward FDI compared to SADC's inward FDI, 2003-2010 (USD millions)



Notes: ^a) LHS refers to left-hand side or axis. ^b) RHS refers to right-hand side or axis.

Source: Compiled by the author based on UNCTADstat (2012)

From Figure 3.5, it can be seen that from the end of 2007 to 2009, SADC experienced a similar trend in inward FDI from the world than that of BRIC's outward FDI to the world. Both trends are strongly positive. This may illustrate that during the 2008 to 2009 period, more BRIC FDI outflows went to the SADC countries. However, in order to determine whether BRIC's FDI flows went more to SADC, country-specific data will have to be disaggregated in order to confirm this (see Chapter 4 for the quantitative analysis).

3.5 BRIC Greenfield and M&A FDI outflows to SADC

Table 3.4 represents the outward FDI flows from the BRIC countries to the SADC, from 2003 to 2010.

Table 3.4: BRIC FDI outflows¹⁷ to the SADC, 2003-2010 (USD millions)

	2003	2004	2005	2006	2007	2008	2009	2010
BRIC M&A FDI to SADC	1	2 463	200	73	543	4 942	27	535
BRIC Greenfield FDI to SADC	3 142	649	812	2 566	5 384	13 700	3 345	2 483
Total BRIC FDI to SADC	3 143	3 112	1 012	2 639	5 927	18 642	3 372	3 019
Total World FDI to SADC¹⁸	8 635	8 754	15 407	11 900	22 570	32 725	22 906	20 403
Total BRIC FDI to SADC as a % of total SADC FDI inflows	36.4%	35.5%	6.6%	22.2%	26%	57%	14.7%	14.8%

Source: Compiled by the author based on Zephyr (2012); FDImarkets® (2012); UNCTADstat (2012)

From Table 3.4 it is clear that BRIC FDI inflows to the SADC are dominated by Greenfield FDI. Both Greenfield and M&A demonstrate a very volatile pattern (UNCTAD, 2012). It is furthermore interesting to note the significantly low M&A investments in the SADC in 2003. This can be ascribed to a universal drop in overall M&A investments in this year (UNCTAD, 2003). It is furthermore evident that Greenfield investments have grown substantially from 2004 to 2008, outshining M&A within this time period, whereafter Greenfield investments experienced a major slump in investments in 2009 and decreasing further up to 2010, primarily due to the aftermath of the 2008 financial crisis. UNCTAD reported in their 2010 World Investment Report that M&As have experienced a faster recovery, while Greenfield investments have been less during the 2008 economic crisis. However, most of the drop in total FDI in 2008 and 2009 was due to a substantial decrease in M&A deals rather than Greenfield operations. This is supported by van Marrewijk (2007), who noted that from 2005 Greenfield investments have been hosted more often by developing and transition economies than developed economies.

It appears as if the total BRIC FDI to the SADC as a per centage of total SADC FDI inflows, was relatively high at 36 per cent in 2003 and 2004, however, BRIC drastically reduced their outward investments to the SADC in 2005, whereafter it slowly recovered in 2006 from 22 per cent to 57 per cent in 2008, thereafter decreasing again to the 15 per cent level in 2009 and 2010. A reason for total BRIC FDI to the SADC as a percentage of total SADC FDI inflows being so low in 2005 (approximately 7 per cent) can be attributed to South Africa, the largest recipient of FDI in Africa in 2005, receiving an acquisition for the Amalgamated Banks of South Africa (ABSA) by Barclays Bank (United Kingdom) for USD 5 billion (UNCTAD, 2006:40-41), this transaction distorted the total SADC flows.

¹⁷ Outward FDI flows contain the aggregated FDI outflows by individual countries.

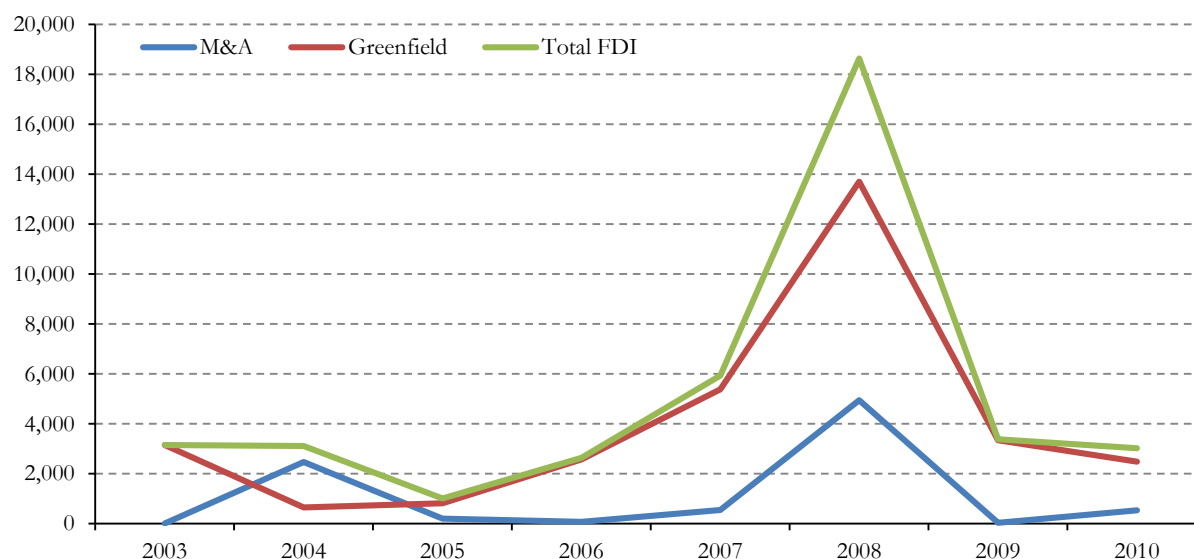
¹⁸ Detailed Total World FDI to SADC as illustrated in Table 3.1.

The major decrease in BRIC FDI to the SADC in 2005 can be attributed to Brazil, the largest world BRIC investor in 2004, decreasing its overall outward world FDI, from USD 9807 million to USD 2517 million (UNCTADstat, 2012), in order to focus on acquisitions in the home market, e.g. Brazilian banks Bradesco and Itaú, both of which have led the consolidation of the Brazilian banking system by actively purchasing assets sold by the State and by local and foreign companies (UNCTAD, 2006:73).

From Table 3.4, it is further evident that M&A deals from BRIC exceeded the amount of Greenfield deals from BRIC to the SADC in 2004. Within the 2005 to 2010 time frame, Greenfield investments strongly exceeded the M&A deals. The M&A investments steered the total FDI trend from 2003 to 2005, whereafter Greenfield investments steered the total FDI trend. It is interesting to note that from 2007 to 2010, M&A and Greenfield investments had the same trend — a positive slope from 2005 to 2008, thereafter seeing a major dip that can be accounted for by the 2008 financial crisis.

Figure 3.6 illustrates the BRIC M&A and Greenfield FDI outflows to the SADC, as presented in Table 3.4.

Figure 3.6: M&A, Greenfield and total BRIC outward FDI to the SADC, 2003-2010 (USD millions)



Source: Compiled by the author based on Zephyr (2012) and FDImarkets® (2012)

FDImarkets® (2012) indicated that between January 2003 and December 2010 a total of 187 Greenfield FDI projects were recorded from BRIC to the SADC, equating to a 0.2 per cent share of global Greenfield FDI within this time period. Out of these 187 Greenfield FDI projects, 100 came from India and 50 came from China. The BRIC countries Greenfield projects represent a total capital investment of USD 32.08 billion in the SADC from 2003 to 2010. India's projects represent a total capital investment of USD 11.40 billion and China's projects represent a total capital investment of USD 12.06 billion. Although India had the largest

number of projects in the SADC from 2003 to 2010, the value of the Chinese projects in the SADC exceeded that of India. It should, however, be noted that the SADC still only makes up a fraction of China and India's total outward FDI (UNCTAD, 2010:xix).

The majority of SADC's total per centage Greenfield investments inflows from the BRIC countries, during the 2003 to 2010 period, went to the following countries and specific industries:

- 30 per cent to Angola in the coal, oil and natural gas industry
- 19 per cent to South Africa in the metals industry
- 19 per cent to Mozambique in the coal, oil and natural gas industry
- 16 per cent to Zambia in the coal, oil and natural gas industry
- The remaining 16 per cent were accounted for by the other 11 SADC countries (FDImarkets®, 2012).

With regard to the M&A investments from the BRIC countries to the SADC, the majority of M&A investments (86 per cent) went to South Africa during the 2003 to 2010 period, followed by Mauritius (6.6 per cent) during the same time period. The remaining 7.4 per cent were accounted for and thinly distributed between the remaining 11 SADC countries. The South African M&A deals included major deals such as Industrial and Commercial Bank of China Ltd. that obtained a 20 per cent minority stake in Standard Bank (in 2008); Gorno-Metallurgicheskaya Kompaniya Norilskii Nikel OAO (Russia) obtained a 40 per cent minority stake in Gold Fields Ltd.; Videsh Sanchar Nigam Ltd. (India) acquired a 51 per cent stake in SEPCO (telecommunications); and Borrachas Vipal SA (Brazil) acquired a 50 per cent share in Leader Rubber Company SA (PTY) Ltd.

3.6 SADC exports to the world

Following the analysis of FDI flows it is imperative to provide an overview of the export trends of the individual SADC countries and the total SADC exports to the world. This analysis will form the basis for the empirical analysis of the influence of BRIC's FDI on the SADC's exports in Chapter 4.

Table 3.5: SADC exports to the world, per country, 2003-2011 (USD thousands)

Country/Year	2003	2004	2005	2006	2007	2008	2009	2010	2011
Angola	9 319	12 767	22 086	31 981	40 880	68 260	40 142	53 446	59 349
Botswana	3 802	3 511	4 431	4 506	5 073	4 951	3 456	4 693	5 882
DRC	1 089	1 220	1 507	1 476	2 080	3 758	2 779	5 628	6 379
Lesotho	438	540	515	544	669	669	481	542	787

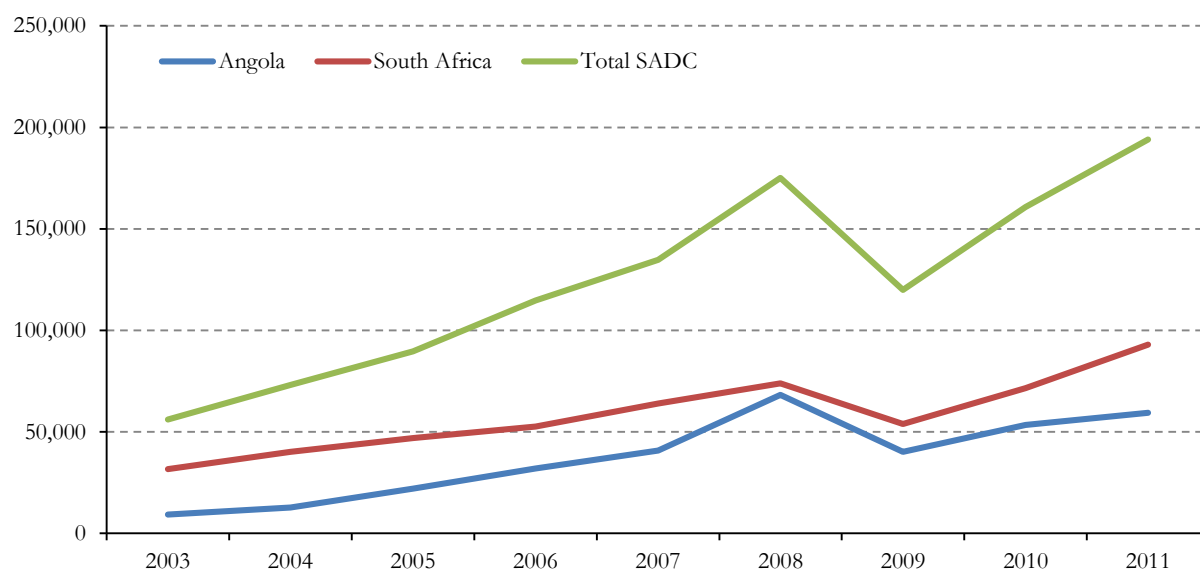
Madagascar	979	971	836	1 008	1 343	1 667	1 096	1 082	1 481
Malawi	502	459	495	666	869	879	1 188	1 066	1 055
Mauritius	1 862	2 005	2 144	2 333	2 229	2 401	1 766	1 850	2 255
Mozambique	1 044	1 504	1 745	2 381	2 412	2 653	2 147	2 243	3 729
Namibia	1 304	2 440	2 504	3 376	4 040	4 729	2 195	3 008	3 369
Seychelles	274	291	340	380	-	246	356	397	372
South Africa	31 636	40 264	46 991	52 602	64 027	73 966	53 864	71 484	92 976
Swaziland	1 655	2 139	1 278	1 463	1 113	1 063	851	897	639
Tanzania	1 218	1 466	1 672	1 865	2 139	3 121	2 982	4 051	4 735
Zambia	980	1 576	1 810	3 770	4 619	5 099	4 312	7 200	8 954
Zimbabwe	-	1 926	1 394	6 427	3 308	1 694	2 269	3 199	2 088
Total SADC	56 102	73 077	89 746	114 779	134 800	175 156	119 884	160 786	194 050

Source: Compiled by the author based on the ITC (2012)

From Table 3.5 it is evident that there is a positive export trend in the export figures from 2003 to 2011, it is further evident that Angola and South Africa are the major exporters within the SADC. South Africa contributed 49 per cent to the total SADC exports throughout the period, and Angola contributed 28 per cent to total SADC exports. Most of the SADC countries' (i.e. Angola, the DRC, Mozambique, Namibia, South Africa, Tanzania and Zambia) exports grew remarkably from 2003 to 2008, but seeing a downturn in 2009 due to the 2008 financial crisis, only to return to its normal and higher levels in 2010 and 2011.

Figure 3.7 indicates the individual SADC countries' exports to the world, in order to understand the export trends.

Figure 3.7: Total SADC, Angola and South Africa exports, 2003-2011¹⁹ (USD thousands)



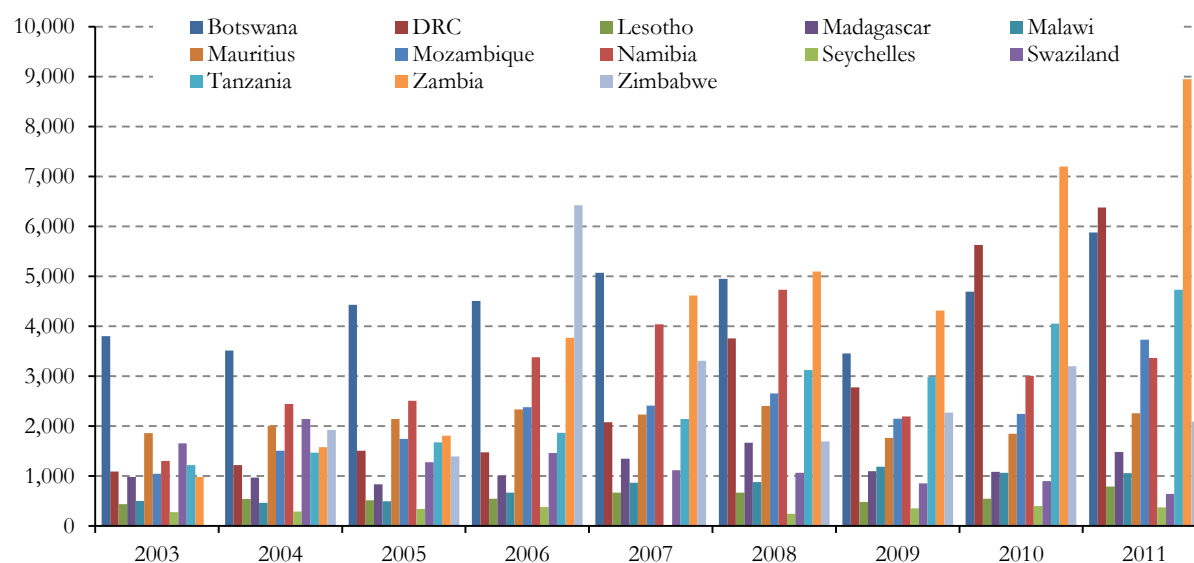
Source: Compiled by the author based on the ITC (2012)

The SADC's total major exports to the world are dominated by exports in the coal, oil and natural gas industry. South Africa's major exports to the world are within the metals industry, while Angola's major export products to the world are within the coal, oil and natural gas industry (ITC, 2012).

The major importing countries for a product exported by the total SADC within the 2003 to 2011 time period include China, the US, the UK, Germany and Japan. South Africa's major exporting markets from 2003 to 2011 include China, the US, Japan, Germany and the UK. Angola's major export markets have been unchanged since 2003; they include two major world role-players, namely China and the US (ITC, 2012).

¹⁹ SADC's total value in 2003 excludes the export value of Zimbabwe in that same year, and SADC's value in 2007 excludes the export value of the Seychelles in that same year, as the data for the specific countries were unavailable for these time periods.

Figure 3.8: SADC countries (excluding South Africa and Angola) exports, 2003-2011 (USD thousands)



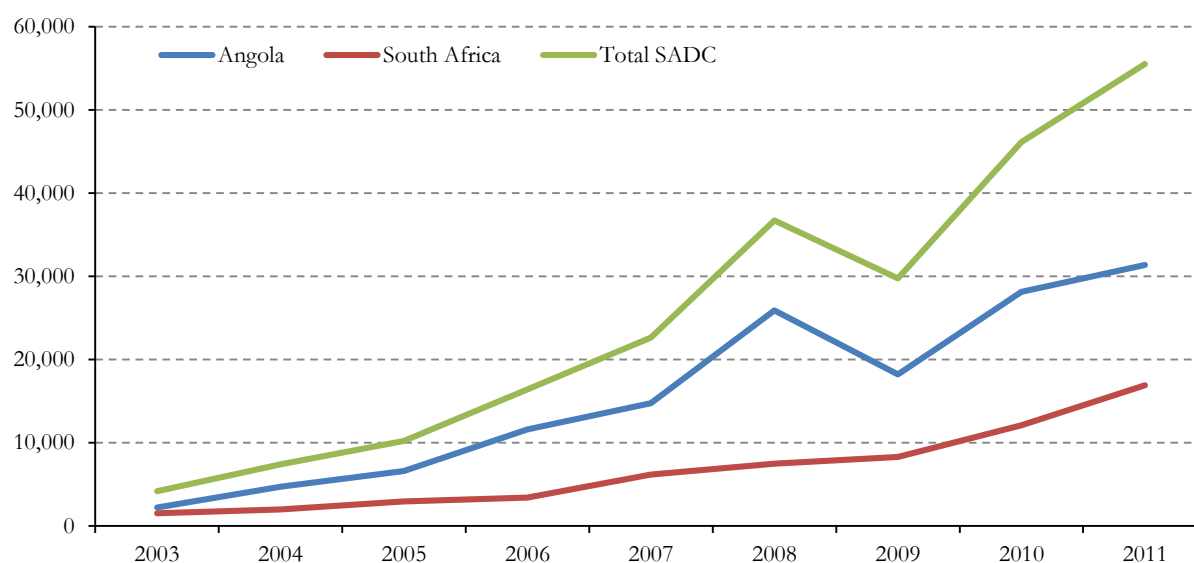
Source: Compiled by the author based on the ITC (2012)

From Figure 3.8, it is evident that the DRC, Tanzania and Zambia are the countries within the SADC (apart from South Africa and Angola) that have experienced the most significant export growth to the world from 2003 to 2011, namely 486 per cent (DRC), 289 per cent (Tanzania) and 813 per cent (Zambia). It is interesting to note that from 2003 to 2011, the DRC's main export partner has been China, Tanzania's main export partners have been Switzerland, South Africa and China, and Zambia's main export partners have been Switzerland and China.

3.7 SADC exports to BRIC

It is relevant to have an overview of the export trends of the individual SADC countries and the total SADC exports to BRIC. This analysis will form the basis of exploring the influence of BRIC's FDI on the SADC's exports to BRIC in Chapter 4.

Figure 3.9: Total SADC, Angola and South Africa exports to BRIC, 2003-2011 (USD thousands)



Source: Compiled by the author based on the ITC (2012)

From Figure 3.9, it is evident that Angola is the main exporter and trendsetter within the SADC to the BRIC countries, followed by South Africa. Angola represented approximately 63 per cent and South Africa approximately 27 per cent of the SADC's total exports to the BRIC countries over the 2003 to 2010 time period.

Angola's main export products to the BRIC countries are within the coal, oil and natural gas industry. These products exported greatly exceed all the country's other export products. South Africa's main export products to the BRIC countries are within the metals industry, e.g. iron, steel, ores and aluminium.

Figure 3.10 indicates the export performance of the SADC countries, excluding South Africa and Angola, to BRIC from 2003 to 2011.

Country	2003	2004	2005	2006	2007	2008	2009	2010	2011
Botswana	10	20	30	40	50	60	70	80	90
DRC	100	200	300	400	500	600	700	800	900
Lesotho	10	20	30	40	50	60	70	80	90
Madagascar	10	20	30	40	50	60	70	80	90
Malawi	100	200	300	400	500	600	700	800	900
Mauritius	10	20	30	40	50	60	70	80	90
Mozambique	10	20	30	40	50	60	70	80	90
Namibia	10	20	30	40	50	60	70	80	90
Namibia	10	20	30	40	50	60	70	80	90
Seychelles	10	20	30	40	50	60	70	80	90
Swaziland	10	20	30	40	50	60	70	80	90
Tanzania	100	200	300	400	500	600	700	800	900
Zambia	100	200	300	400	500	600	700	800	900
Zimbabwe	10	20	30	40	50	60	70	80	90

From Figure 3.10, it is evident that out of the remaining 13 African countries in the SADC, the DRC, Zambia and Tanzania have seen the majority of export outflows to the BRIC countries. These countries also have the most significant export growth averages per annum to BRIC between 2003 and 2011, with the DRC approximately 104 per cent, Zambia with approximately 97 per cent and Tanzania approximately 40 per cent per annum. The major exports to the BRIC countries for all three these countries are within the metals industry. The rest of the SADC countries have relative positive to flat trends, indicating no significance in export growth to the BRIC countries during the 2003 to 2011 period.

It is important to understand whether there exists some kind of tentative relationship between BRIC's outward FDI to the SADC and the SADC's exports to BRIC and the world, as this may form part of understanding what influence FDI and exports may have on one another.

²⁰ The export data for Swaziland are not available from 2008-2011, the data for Seychelles are not available for 2007 and 2009-2011.

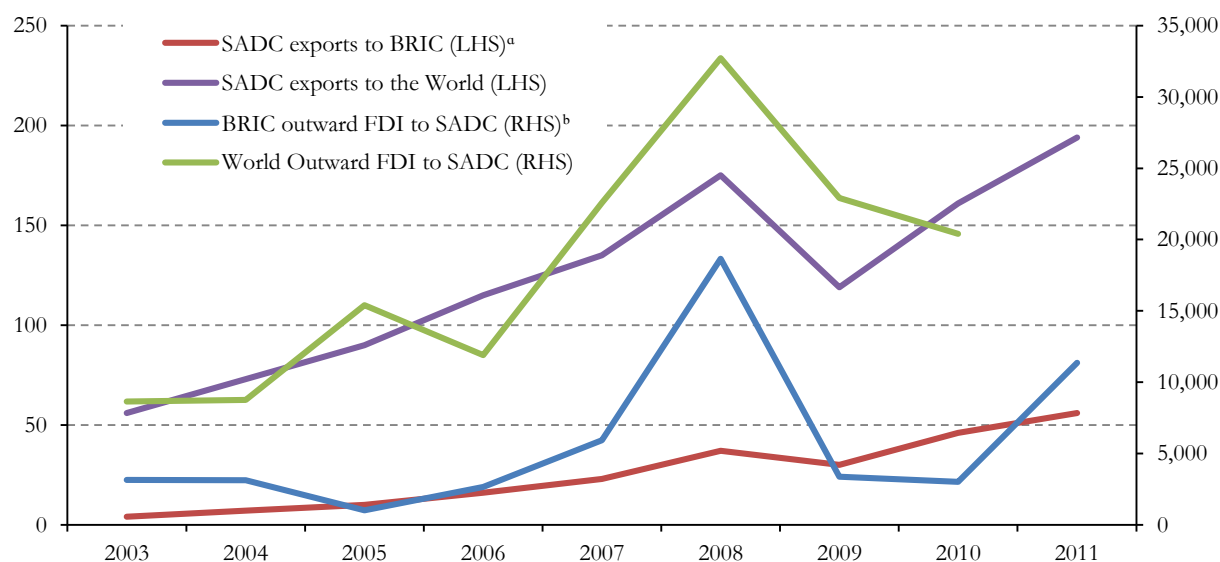
rise in FDI inflows (specifically from the BRIC countries) from approximately USD 3 million in 2003 to almost USD 11 million in 2011. The FDI inflows from BRIC countries experienced their highest levels in 2008, reaching USD 19 million. However, the accumulated FDI declined to its 2003 value of approximately USD 3 million (mainly due to the global financial crisis of 2008-09) by the end of 2010 and finally recovering to approximately USD 11 million in 2011 (see Figure 3.11 and Table 3.6). Exports from the SADC region to the world rose much faster than the exports of the SADC region to the BRIC countries (though from a lower base), resulting in the BRIC's share of 29 per cent in the SADC's total exports in 2011 growing from a mere 7 per cent in 2003.

Table 3.6: BRIC and world outward FDI flows to SADC; SADC's total exports to the world and to BRIC, 2003-2011 (USD millions)

Country/Year	2003	2004	2005	2006	2007	2008	2009	2010	2011
BRIC outward FDI to SADC	3 143	3 112	1 012	2 639	5 927	18 642	3 372	3 019	11 363
SADC exports to BRIC	4.1	7.4	10.2	16.4	22.6	36.7	29.8	46.1	55.5
World outward FDI to SADC	8 635	8 754	15 407	11 900	22 570	32 725	22 906	20 403	n/a
SADC exports to the world	56.1	73.1	89.7	114.8	134.8	175.2	119.9	160.8	194.1

Source: Compiled by author based on FDImarkets® (2012); ITC (2012); UNCTADstat (2012); Zephyr (2012)

Figure 3.11: BRIC and the world outward FDI to the SADC compared to the SADC exports to BRIC and the world, 2003-2010 (USD millions)



Notes: ^a) LHS refers to left-hand side or axis. ^b) RHS refers to right-hand side or axis.

Source: Compiled by author based on FDImarkets® (2012); ITC (2012); UNCTADstat (2012); Zephyr (2012)

When comparing the graph of BRIC and the world's outward FDI to SADC and SADC's exports to BRIC and the world in Figure 3.11, it appears that a similar trend exists, especially during the period 2006 to 2009. SADC exports, together with world and BRIC outward FDI to SADC, have a similar positive slope from 2006 to 2008, and thereafter a similar negative slope from 2008 to 2009. However, SADC's exports to the world take a strong positive turn from 2009 to 2011, while the world and BRIC's FDI experiences a downturn. BRIC, however, showed a strong recovery in outward FDI to SADC in 2011.

3.9 Industry comparison between BRIC FDI to SADC and SADC exports to BRIC

In Chapter 1, Sharma (2000:3) emphasised the fact that the kind of inward FDI received, whether it will lead to export-led growth or not, is important. If, for instance, the motive is to take advantage of the country's comparative advantage, then FDI can add to the country's export growth. Africa's comparative advantage is in resources and commodities. The two industries that will be analysed are the main industries of investment within the SADC, i.e. the coal, oil and natural gas industry (see Table 3.7), followed by the metals industry (see Table 3.8). Angola is the main recipient of inward FDI in the coal, oil and natural gas industry, while South Africa represented the largest inward FDI received in the metals industry during the 2003 to 2010 period. The period under review ends in 2010 as no FDI took place in the latter industries within SADC during 2011. No other industries were taken into consideration, as the number of countries participating within other sectors, and the number of deals that actually took place within other sectors were no more than 14 deals altogether.

Table 3.7: BRIC FDI and the selected SADC countries' exports in the coal, oil and natural gas industry²¹, 2003-2010 (USD millions)

Home country	Host country	2003	2004	2005	2006	2007	2008	2009	2010
Brazil	Angola	2 500	-	-	-	-	-	-	-
China						2 500			
Brazil	Mozambique	-	-	-	-	1 200	250	799	-
India		-	-	-	-	100	1 819		
India	Mauritius	-	79	-	-	-		-	-
India	SA	-	-	-	30	-	1 849	-	-
India	Zambia	-	-	-	-	-	1 800	-	108
Russia	Namibia	-	-	-	-	-	-	1 030	-

²¹ FDI industry-based in Zephyr (2012) and FDImarkets® (2012) refer to the coal, oil and natural gas industry. The Harmonised Commodity Description and Coding System (HS) 2-digit level classifies the sector of the goods. At HS 2-digit level, HS 27, ITC (2012) refers to the coal, oil and natural gas industry as mineral fuels, oils, distillation products, etc.

Total FDI	2 500	79	-	30	3 800	5 718	1 829	108
Total SADC exports to world	-	16.5	26.9	39.6	-	74.3	45.4	60.8
Total specified countries exports to world	12.3	16.5	26.5	36.7	46.4	74.3	45.1	60.0
Total SADC exports to BRIC	2.3	4.8	6.8	12.2	16.6	26.8	19.8	30.6
Total selected countries exports to BRIC	2.3	4.8	6.8	12.0	16.5	26.7	19.6	30.6

Source: Compiled by author based on ITC (2012); FDImarkets® (2012); Zephyr (2012)

From Table 3.7, it is evident that within the coal, oil and natural gas industry, only six out of the 15 SADC countries received investments, namely Angola, Mozambique, Mauritius, South Africa, Zambia and Namibia. The exports in these countries comprise approximately 98 to 100 per cent of the total SADC exports of these products to the world and to BRIC throughout the 2003 to 2010 period. In the BRIC countries India appears to have been the largest and most frequent investor, in the relevant industry, within the period under discussion (see Section 3.5).

Table 3.8: BRIC FDI and selected SADC countries' exports in the metals industry²², 2003-2010 (USD millions)

Home country	Host country	2003	2004	2005	2006	2007	2008	2009	2010
Brazil	DRC	-	-	-	-	-	2	4	-
China		-	-	-	-	548	100	-	-
Brazil	Zambia	-	-	-	-	-	-	722	400
China		150	-	-	-	-	-	-	-
China	Madagascar	-	-	-	-	-	272	-	-
China	Mauritius	-	-	-	-	368	-	-	-
India		-	-	-	-	-	2	-	-
China,	South Africa	-	2	-	-	-	440	222	-
India		53	-	-	-	-	-	261	-
Russia		-	2457	-	1 000	261	-	-	2
China	Zimbabwe	300	-	-	-	-	-	-	-
India	Botswana	-	-	-	-	2	-	-	-
Russia		-	-	-	-	272	-	-	2

²² FDI industry-based in Zephyr (2012) and FDImarkets® (2012) refer to the metals industry. Within the ITC (2012) the exports within the metals industry are combined, as a variety of HS codes fall into the metals industry classification; Ores Slag and Ash (HS 26), Pearls, precious stones, metals, coins, etc. (HS 71), Iron and Steel (HS 72), Articles of iron or steel (HS 73), Copper and articles thereof (HS 74), Nickel and articles thereof (HS 75), Aluminum and articles thereof (HS 76), Zinc and articles thereof (HS 79), Tin and articles thereof (HS 80), Other base metals, cermets, articles thereof (HS 81), and Miscellaneous articles of base metal (HS 83).

Russia	Angola	-	30	-	-	-	-	-	-
India	Namibia	-	-	-	-	-	5	-	-
Total FDI		503	2489	20	1291	1550	821	1208	404
Total SADC exports to world		-	26.0	30.5	38.2	-	52.4	36.7	57.1
Total specified countries exports to world		17.8	24.3	28.6	35.8	43.8	49.3	35.0	53.5
Total SADC exports to BRIC		0.9	1.3	1.9	2.9	4.3	7.4	7.9	12.8
Total selected countries exports to BRIC		0.9	1.2	1.8	2.7	4.2	7.1	7.6	12.2

Source: Compiled by author based on ITC (2012); FDImarkets® (2012); Zephyr (2012)

Notwithstanding the fact that limited data is available, the analysis shows that nine out of the 15 SADC countries have received inward FDI within the metals industry. These countries include the DRC, Zambia, Madagascar, Mauritius, South Africa, Botswana, Angola and Namibia. These countries' exports represent approximately 94 per cent of the total SADC exports within the industry to the world, and 95 to 99 per cent of the exports within the industry to BRIC throughout the specified time period (See Sections 3.6 and 3.7). Of the BRIC countries, China appears to have been the largest and most frequent investor, and South Africa appears to be the largest recipient of FDI in the metals industry within the specified time period (See Section 3.5).

From Tables 3.7 and 3.8, it is evident that there are too few observations to do a meaningful econometric analysis. It is, however, interesting to note the dominance of a few industries — the coal, oil and natural gas industry and metals industry within the SADC.

3.10 Summary and concluding remarks

This chapter set out to put the current outward FDI from BRIC to the SADC and exports from SADC to the world into context, and to provide some tentative evidence of possible similar trends. A descriptive analysis of available data on SADC inward FDI from the world and BRIC, BRIC outward FDI to the world and SADC, and SADC exports to BRIC and the world was provided.

It is apparent that the SADC's inward FDI flows have similar slopes to that of the world's inward FDI flows. However, the SADC appears to receive a minority of the total world inward FDI. Within the SADC, Angola and South Africa received the majority of inward FDI from the world throughout 2003 to 2010. The major recipient industries within the SADC are the coal, oil and natural gas industry (led by Angola), and the metals industry (led by South Africa). The DRC showed substantial inward FDI growth, while Lesotho, Malawi, Swaziland and Zimbabwe were indicated as the minor participants within the SADC's inward FDI recipient

group. There did not seem to be any trends between the countries, as the inward investment increase in one country did not necessarily illustrate the increase of inward investment in its neighbouring country or any other SADC member country within the same year. Consequently, this illustrates that the SADC countries are not integrated and that these countries differ significantly.

Further consideration is given to the FDI outflows of BRIC to the world, in order to give the study a perspective of what the BRIC countries' major outward FDI trends were from 2003 to 2010. From 2003 to 2010, the BRIC countries have seen an overall outward FDI growth rate of approximately 892 per cent, with China and Russia being the 'drivers' of the significant growth within the 2003 to 2010 period. BRIC's share in the world FDI outflows also increased from 3 per cent in 2003 to approximately 11 per cent in 2010.

It was furthermore noted that the SADC followed the same inward FDI trend as the BRIC's outward FDI trend to the world from 2007 to 2009, with both trends also being strongly positive. This may possibly illustrate that within the same period, more BRIC FDI outflows went to the SADC countries. China, in particular, has become one of the most significant foreign investors in some sub-Saharan African countries, while India was also a substantial source of FDI to the region. When measured in value, most of the investments in the region from developing countries were resource seeking, and often involved state-owned enterprises.

BRIC Greenfield and M&A outward FDI to the SADC were thereafter compared, in order to determine what kind of investment carried the majority weight in total BRIC FDI to the SADC. It is evident that Greenfield investments grew substantially from 2004 to 2008, outperforming M&A during this period. It was furthermore indicated that China and India were the major Greenfield investors in SADC. India had the most projects into the SADC from 2003 to 2010. However, the value of the projects that China had to the SADC exceeded that of India during the same period. The majority of the Greenfield investments from BRIC went to Angola, Mozambique and Zambia in the coal, oil and natural gas industry, and South Africa in the metals industry.

With regard to the M&A investments from BRIC to the SADC, the majority of M&A investments (86 per cent) went to South Africa, followed by Mauritius (6.6 per cent). The remaining 7.4 per cent were accounted for and thinly distributed between the remaining 11 SADC countries. The largest deal came from China in 2008 — the Industrial and Commercial Bank of China Ltd. taking a 20 per cent minority stake in Standard Bank, South Africa.

In order to put in perspective the possible effect that inward FDI received by SADC has on their exports, the exports from the SADC to the world were investigated. It was evident that South Africa and Angola were the major exporters and drivers of exports within the SADC and clearly setting the SADC export trend to the world. The other 13 SADC countries lagged behind. Within the other 13 SADC countries, it was evident that the DRC, Tanzania and Zambia were the countries within the SADC that have experienced the most significant export growth from 2003 to 2011. The SADC's major exports to the world were within the coal, oil and natural gas industry. South Africa's major exports to the world were within the metals industry and Angola's major export products to the world were also within the coal, oil and natural gas industry (ITC, 2012).

With regard to the DRC, it was noted that this country has experienced significant inward FDI from the world, and the DRC's exports have also seen significant growth, and therefore a similar trend may exist between world outward FDI to the DRC and the DRC's exports to the world during the 2003 to 2010 time frame. However, BRIC outward FDI to the DRC does not appear to be significant. It is, however, interesting to note that South Africa and Angola were indicated as the major SADC receivers of world outward FDI.

The majority of outward FDI from the BRIC countries also went to Angola (in the coal, oil and natural gas industry) and South Africa (in the metals industry). It was noted that the majority of exports from the SADC to the world and to BRIC also came from Angola and South Africa, also exporting from the same industries that received the majority of inward FDI. Due to Angola and South Africa being the major players within the SADC, and the latter tendencies existing, it can be considered that a similar trend may therefore exist between BRIC outward FDI to the SADC and the SADC's exports to the world.

The two major SADC FDI and export industries (coal, oil and natural gas, and metals), were evaluated and compared to one another and did not appear to be remarkable, as only a few of the SADC countries received FDI from BRIC within these specific industries. Therefore, an analysis of these sectors will not be representative of the entire SADC region. It is, however, interesting to note the dominance of a few industries, such as the coal, oil and natural gas and metals industries within the SADC.

It is important to understand whether there exists some kind of tentative trend between SADC's inward FDI received from BRIC and the SADC's exports to the world and BRIC, as this may help form part of the basis in understanding what influence BRIC's outward FDI might have on SADC's exports. It was illustrated that a possible relationship may exist between BRIC and the world's outward FDI to SADC and SADC's exports to the world, especially during the period 2006 to 2009. The SADC's exports, together with world and

BRIC's outward FDI to SADC, appear to have a similar positive slope from 2006 to 2008, and thereafter a similar negative slope from 2008 to 2009. However, the SADC's exports take a strong positive turn from 2009 to 2011, while the world and BRIC's FDI to SADC takes a downward slope. It is furthermore apparent that SADC exports to the world increased faster than the exports of the SADC to the BRIC countries, resulting in the BRIC's share of 29 per cent in the SADC's total exports from a mere 7 per cent in 2003.

Chapter 4 will take the latter statement forward with a quantitative empirical analysis of BRIC's FDI relationship with SADC exports to both BRIC and the world, and thereafter discussing the results and the implications thereof.

Chapter 4: FDI and export performance: Empirical evidence for the SADC economies

4.1 Introduction

The descriptive background to the possible relationship between FDI and exports between the SADC and BRIC was investigated in Chapter 3. The majority of the reviews studied and analyses completed suggested that inward FDI may have a positive effect on exports. This could, however, not be indicated on an industry level.

The main purpose of this chapter is therefore to provide estimates of the potential effects of FDI inflows on exports in the 13 SADC economies (excluding Swaziland and Lesotho²³), within all industries for the period between 2003 and 2011. More specifically, the empirical work involves an analysis of the BRIC countries' combined outward Greenfield and M&A (i.e. FDI outflows) specific data on SADC's exports, using a correlation analysis, regression model, Granger causality test and panel data analysis, to explain whether a relationship may exist between SADC's inward FDI received from the BRIC countries, and SADC's exports to the world and to BRIC, respectively.

This chapter is divided into five sections. In Section 4.2, the theoretical argument to motivate the empirical investigation and to elaborate on the possible relationship between FDI and exports is presented. The econometric analysis is covered in Section 4.3. This includes a description of the data, unit root tests performed, a stability test of the FDI-export model and the specification of the model. Section 4.4 covers the empirical results by providing a discussion of the correlation and covariance analysis (Section 4.4.1), regression estimation (Section 4.4.2), the Granger causality test (Section 4.4.3) and the panel data analysis (Section 4.4.4). Some concluding remarks are presented in Section 4.5.

4.2 The relationship between FDI and exports

This section starts with a brief overview of the background literature that explained the relationship between exports and FDI flows, and this section concludes with a model that describes the linkages between FDI inflows and exports of goods by focusing on the impact of FDI on future patterns of exports.

²³ These two SADC member countries were excluded from the analyses due to no inward FDI flows from the BRIC group being recorded during the period under review.

It is expected that the BRIC countries will increase their FDI to South Africa, as South Africa was invited to join the BRIC group at the end of 2010. Furthermore, South Africa is viewed as the 'gateway' into Africa, therefore, South Africa is the link between BRIC and SADC. Chapter 2 discussed this important link in more detail.

The literature abounds with information on the full range of factors that are likely to induce the flow of FDI into and exports from countries. The AERC (2006), however, indicates that there is no general accepted single factor determining the flow of investment. Results from various authors accord that key factors determining exports and FDI inflow in Sub-Saharan African countries include factors such as openness to trade, country growth, good economic policies, real effective exchange rate, market size, political stability, infrastructural development and skilled labour (Alemu, 2008; Bende-Nabende, 2002; Bhattacharya, Montiel & Sharma, 1997:5; Bezuidenhout, 2008:58; Campos & Kinoshita, 2003; Edwards & Alves, 2005:4; Fugazza, 2004; Loots & Kabundi, 2012; Naudé and Krugell, 2007:1223). From the latter, it is evident that the determinants of exports and FDI are similar; therefore, in the case where FDI does not necessarily lead to exports, similar factors may lead to FDI and exports having similar trends. Table 3.6 and Figure 3.11 in Chapter 3 may be a possible illustration of this.

From the literature overview in Chapter 2, it is evident that most of the developed, developing and African countries reviewed from 2000 to 2011 experienced a positive relationship between inward FDI and exports (See Table 2.1, Table 2.2 and Table 2.3). The main channel explaining the performance of exports is inward FDI.

In order to run the analysis and have more data points, the analysis is broken up per deal basis. Per deal basis refers to a measure used to illustrate the quantity of an aspect for one deal of a company. An example includes Barclay's Bank (UK) acquiring a stake in ABSA Bank (South Africa) (see Chapter 3, Section 3.5).

Therefore, the empirical analysis will focus on determining whether FDI influences exports, and aim to place a weight to the influence of BRIC FDI on the SADC's exports.

4.3 Empirical analysis

The following two sections (4.3 and 4.4) present a more formal analysis of the relationship between FDI and exports with specific reference to BRIC's outward FDI and the SADC's exports to the world and to BRIC. Section 4.3 discusses the data and descriptive statistics, and thereafter presents the results of the unit root tests for stationarity and the test for structural breaks.

All FDI data used in the estimation of the models are taken from the FDImarkets® (2012) and Zephyr (2012) databases. Data on the SADC exports to the world and to BRIC had to be sourced separately from the Trade Map data of the ITC (2012). For the purpose of this study, the period covered for FDI will be from 2003 to 2010, and for exports will be from 2003 to 2011. The reason for this is that FDI received in one year may only appear to have an impact on a specific country/region's exports a year or more thereafter, as described in Table 4.1 below. This study will specifically capture the lags for the same year, one-year lagging effect and finally the two-year lagging effect of FDI on exports. Net annual data for both FDI and exports are used, as monthly and quarterly data for the selected countries are not readily available. All estimations were done using the statistical estimation program, EViews version 7.1.

Table 4.1: Description of per deal basis

Variables	Description example
$BRIC/World\ Exports_t = f(FDI_t)$	Exports in 2012 to BRIC and the world is a function of the specific inward FDI deals conducted in that same year (i.e. 2012)
$BRIC/World\ Exports_{t+1} = f(FDI_t)$	Exports in 2012 to BRIC and the world is a function of the specific inward FDI deals conducted in the year before (i.e. 2011)
$BRIC/World\ Exports_{t+2} = f(FDI_t)$	Exports in 2012 to BRIC and the world is a function of the specific inward FDI deals conducted two years back (i.e., 2010)

The most significant problems that were encountered in the empirical analysis were data related. The empirical methods had to be adapted to the data that was available, and even in the estimation process, the limitation of data for the country specific inward FDI received by the SADC countries played a significant role. Therefore, it was decided that, because M&A and Greenfield investments are the two major elements that make up FDI, the country-specific investment data with regard to these two investments will be used to explain the influence of BRIC's outward FDI to the SADC on the SADC's exports. Each FDI inflow transaction was put against the SADC's exports to the world and to BRIC for that same year. Furthermore, an error term, ε_t is incorporated in the equation to cater for other factors that may influence exports, as this study solely focuses on the impact of FDI on exports.

The total SADC exports to the World (X_t^W) and to BRIC (X_t^{BRIC}) are measured by total export value in the SADC countries, and total aggregated BRIC FDI outflows (i.e. FDI_t) are calculated as the sum of the current value of M&A and Greenfield investments. Every SADC member country for which data for the relevant variables are available in the sources cited has been included. Therefore, there is no direct selection bias in the sample. The SADC countries included have been listed in Chapter 3 (see Table 3.2 and Table 3.5).

The SADC's exports (to the world and to BRIC) are therefore modelled as being dependent on aggregate FDI outflows (the sum of M&A and Greenfield investments) from BRIC to the SADC region. Table 4.2 lists the variables, their descriptions, start date, end date and source of the annual data used. All variables are taken in form of natural logarithm to reduce possible heteroskedasticity.

Table 4.2: Description of the raw data

Variables	Description	Start date	End date	Source
BRIC FDI outflows (FDI_t)	Total FDI outflows from BRIC to the SADC (Annual data in USD millions)	2003	2010	FDImarkets®, 2012 & Zephyr, 2012
SADC exports to the world (X_t^W)	Total SADC exports to the world (Annual data in USD millions)	2003	2011	ITC, 2012
SADC exports to BRIC (X_t^{BRIC})	Total SADC exports to BRIC (Annual data in USD millions)	2003	2011	ITC, 2012

A number of statistical inference procedures will first be presented before describing the empirical methods employed. The descriptive statistics for all variables used in the regressions are presented in Table 4.3. These include mean, minimum and maximum values, standard deviation, skewness and kurtosis.

Table 4.3: Descriptive statistics of the variables used in the study

Variable	Obs. ¹	Mean ²	Maximum ²	Minimum ²	Std. Dev. ²	Skewness	Kurtosis
Exports (World)	172	32320.86	92976.00	245.86	32895.61	0.50	1.64
Exports (BRIC)	172	2168.14	14675.83	0.00	3289.58	1.90	6.24
FDI	172	29425.98	73965.55	245.86	29406.73	0.39	1.39

Notes: ¹ Sample size (N=172); Obs. refers to the number of observations/sample size of a statistical illustration; ² USD millions.

Apparent from Table 4.3 is the relative volatility of exports and FDI in the various SADC countries. The maximum and minimum values, for example, highlight the level of instability in both exports and FDI. Under the period reviewed, the SADC exports to the world moved between an annual minimum value of approximately USD 246 thousands and a maximum value of USD 92 976 thousands. The same trend can be seen for the SADC's exports to BRIC, with a fluctuation between USD 0 and USD 14 676 thousands. A more formal statistic that is used to capture instability is the standard deviation. Under this notion, the SADC's exports and BRIC FDI exhibited its highest instability during the global financial crisis (2008-2009). The SADC export to the world and to BRIC and BRIC FDI are all right skewed (Skewness>0). Finally, all

the kurtosis statistics²⁴, with the exception of the SADC exports to BRIC, are smaller than 3.0, indicating that the SADC exports to the world and BRIC FDI are more widely spread around the mean, whereas the SADC exports to BRIC indicate a high probability for extreme values.

Unit root tests are performed as a preliminary step to provide some guidance on whether the variables in the analysis are stationary or not (i.e. to determine whether differenced or level form should be used).

An Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) unit root tests were utilised to test for stationarity of each data variable. Values of the test statistic that are less than the critical value (in absolute terms) indicate rejection of the null hypothesis that the variable is non-stationary (has a unit root). The ADF tests and the less powerful Phillips-Perron (PP) unit root tests of the variables, both with and without time trend, are presented in Table 4.4. The Akaike Information Criteria (AIC) was used to select the optimum lag lengths required in each case (see Section 4.4.2).

Table 4.4: Augmented Dickey Fuller (ADF) and Philips Perron (PP) tests for unit roots

Variables in level terms	Test for $I(0)$ levels			
	$T\mu$ (Without trend)		$T\tau$ (With trend)	
	ADF test statistic	Phillips-Perron (PP) test statistic	ADF test statistic	Phillips-Perron (PP) test statistic
$\ln(FDI_t)$	-11.68197***	-11.65030***	-11.65746***	-11.62448***
$\ln(X_t^W)$	-10.50797***	-10.50797***	-10.54586***	-10.55478***
$\ln(X_t^{BRIC})$	-8.503957***	-8.459246***	-9.368090***	-9.295098***

Notes: Values in the table are the t-statistics for testing the null hypothesis that the variables are non-stationary. The *, **, *** indicate the significance level of 10%, 5%, and 1%, respectively.

All variables are transformed to logarithms. According to both the ADF and PP tests, all variables are stationary in levels. Even the less powerful (under conditions of structural changes) PP test does reject the hypothesis of a unit root in variables. This confirms that no unit root is present in any of the datasets (at the 10% level of significance) and that the data is stationary. Accordingly, the datasets need not be differenced in order to induce stationarity. The data for interest sake was taken into difference form. This did, however, not make a difference to the data results. One advantage of the PP test over the ADF test is that the PP tests are robust to general forms of heteroskedasticity in the error term μ_t (Phillips & Perron, 1988). Taking this view for the results of stationarity collectively, greater reliance is placed on the PP results.

²⁴ The kurtosis indicator is used in distribution analysis as a sign of being either flat or pointy within a distribution. It is interpreted that a kurtosis > 3 indicates a high probability for extreme values. Kurtosis < 3 indicates that the values are more widely spread around the mean. Kurtosis = 2 indicates a normal distribution (Field, 2005).

Another important statistical inference measure is to test for the presence of heteroskedasticity, since it affects the distribution of the parameter estimators, and makes the estimators of the Ordinary Least Squares (OLS) inefficient (Asteriou & Hall, 2007:116). Heteroskedasticity also impacts hypothesis testing in that neither the t-statistics nor the F-statistics are reliable (Asteriou & Hall, 2007:116). After obtaining OLS results, White's test was used to test for heteroskedasticity. The null hypothesis of heteroskedasticity was not rejected as all of the p-values were significantly higher than the 0.05 per cent level of statistical significance. Accordingly, White's heteroskedasticity-corrected standard errors and t-statistics were used in the final estimations to correct for heteroskedasticity.

The quest for a well-determined, stable FDI-export relationship is a pragmatic consideration and is of significance for policy formulation. It should be borne in mind that the stability tests actually focus on the stability of the entire equation (i.e. stability of the parameters). A battery of stability test results is presented in Table 4.5 to determine the stability of the FDI-export relationship.

Table 4.5: Test for structural breaks

Model	Was structural stability observed with the following diagnostics/tests?			
	Chow test dates			Recursive tests
	2006	2008	2009	CUSUM
Model 1: SADC exports to the world	No	Yes (p=0,08)	Yes (p=0,07)	Yes (in 2006)
Model 2: SADC exports to the BRIC	Yes (p=0,00)	Yes (p=0,02)	Yes (p=0,01)	Yes (in 2008)

Note: The log-likelihood p-values of the Chow test are in brackets.

The Chow test for a sample break (2008) rejects the hypothesis of parameter constancy. The first break in 2006 could be the possible emergence of BRIC as a major role-player in the SADC region in terms of FDI. The second break coincides with the start of the global financial crisis (2008-2009). The CUSUM tests can be used to test the constancy of the coefficients in a model (in 2006 and 2008 the coefficients were unstable). Therefore, the sample breaks tested by the Chow test are supported by evidence obtained from the CUSUM test.

Test results of the quality of the data series indicates that the data is very volatile, no unit-root exists and structural breaks are evident.

4.4 Estimation of model and results

This section on the estimation of the model and results consist of Section 4.4.1 correlation and covariance of the SADC exports and FDI, Section 4.4.2 the regression estimation, Section 4.4.3 the Granger causality tests, and finally, Section 4.4.4 the panel data analysis

4.4.1 Correlation and covariance of the SADC exports and FDI

Whether a possible correlation exists between BRIC FDI flows on SADC exports to both BRIC and the world, will be investigated, whereafter the regression equations to be estimated will be determined. Individual time series regressions are performed based on the econometric specifications using the data in levels form. The estimations are robust with respect to heteroskedasticity. The section further discusses the estimation results, results from the Granger causality tests, and provides some results on the stability of the FDI-export model.

Table 4.6: Correlation and covariance (indicated in brackets) of the SADC exports and FDI

Variables	SADC exports to the world		SADC exports to the BRIC	
	Exports	FDI	Exports	FDI
Exports	1 (1080000000)	0.96 (926000000)	1 (10758392)	0.59 (56842056)
FDI		1 (860000000)		1 (860000000)

Table 4.6 presents correlation coefficients between the SADC export destinations and BRIC FDI. There are notable and significant correlations in both cases, with a very strong positive relationship²⁵ of BRIC FDI flow with the SADC's exports to the world (at 96 per cent), and also strong positive correlation²⁶ of BRIC FDI flow with the SADC's exports to BRIC (at 59 per cent). This implies that 96 per cent of the variation in SADC exports to the world is explained by BRIC FDI, while 59 per cent of variation in SADC exports to BRIC is explained by BRIC FDI. It should, however, be noted that correlation does not necessarily imply causation. This statement should, however, not be taken to mean that correlation cannot indicate the potential existence of causal relations (Weinberg & Abramowitz, 2002:136). Whether this correlation is significant will be determined with the help of the Granger causality test in Table 4.8. A statistical problem that might be expected is the possibility that both FDI and exports, especially regarding SADC exports to the world, are jointly increasing and decreasing due to an exogenous factor (not accounted for in the estimations performed). Figure 3.11 in Chapter 3 supports this notion.

²⁵ If $R = 0.70$ or higher it means that there is a very strong positive relationship (Weinberg & Abramowitz, 2002:136).

²⁶ If $R = 0.40$ to 0.69 it means that there is a strong positive relationship (Weinberg & Abramowitz, 2002:136).

It is interesting to note that the positive correlation is contradicting to the study conducted by Samake and Yang (2011) (Section 2.4.2), which indicated that the correlation between outward FDI from BRIC, and LIC trade with BRIC is insignificant, where the outward FDI from BRIC, and SADC exports with BRIC is significant in Table 4.6. This may be due to only three of the 15 SADC countries being classified as LIC, as well as the different periods of analysis compared to Samake and Yang's study (See footnote 13).

The preceding discussions suggest that FDI may have an impact on exports. FDI may contribute directly to increased domestic supply and it may strengthen other producers even in related sectors in the host economy or region. To this end, FDI is no different than domestic investment, which increases supply and potentially changes the demand and supply conditions in related domestic industries (Kutan & Vukšić, 2007). Moreover, if one finds that there are FDI-specific positive effects on exports, then countries' efforts in attracting FDI are warranted.

4.4.2 *The regression estimation*

In this section, the study further attempts to capture the above effects by using an empirical model of exports. The premise is to determine whether BRIC-specific FDI has contributed to the SADC's export increase. In any study of the determinants of a country or region's export performance a number of empirical specifications can be considered. Since this study's focus is on the role of FDI in exports, however, a simple model is required that could capture and isolate the basics of this relationship. Hence, BRIC outward FDI data is used to capture the FDI-specific effects on the SADC's exports.

To undertake these estimations, the following two basic formulations of a model are put forward:

$$X_{t+2}^W = f(FDI_t, D_t) \quad (1)$$

and

$$X_{t+2}^{BRIC} = f(FDI_t, D_t) \quad (2)$$

where X_{t+2}^W and X_{t+2}^{BRIC} are export values (USD millions) to the world (W) and the BRIC countries ($BRIC$), respectively with lags $t + 2$ to capture the two-year lagging effect of FDI on exports (i.e. it is postulated that the effect of FDI on exports will take time to manifest — output first needs to change before any change in exports can be realised), the lags were also tested for the same year t , and the year after base year $t + 1$, lags $t + 2$, however, gave the best fit (For another explanation see Table 4.1). FDI_t represents foreign capital

(i.e., FDI) in the SADC countries originating from BRIC, and D_t is a dummy to compensate for structural breaks.

The addition of a constant term and a stochastic component to equations (1) and (2) yields the econometric specifications:

$$X_{t+2}^W = \beta_0 + \beta_1 FDI_t + \varepsilon_t \quad (3)$$

and

$$X_{t+2}^{BRIC} = \beta_0 + \beta_1 FDI_t + \varepsilon_t \quad (4)$$

where β_1 is the value (USD millions) change in exports with respect to FDI and ε_t represents the ‘noise’ or error term; β_0 and β_1 represent the intercept and coefficient of the regression. The coefficient of β_1 indicates how a unit change in the independent variable (BRIC FDI) affects the dependent variable (SADC exports). Equations (3) and (4) constitute the basis for the time series analysis of the FDI and export data on the 13 SADC countries for 2003 to 2011. For all variables, natural logarithms are taken. In both specifications, the dependent variable is the natural logarithm of real exports (X_t).

The error term, ε_t , is included in equations (3) and (4) to cater for other factors that may influence exports. Moreover, the power of the OLS method is determined by the accuracy of assumptions. In this study, the Gauss-Markov assumptions are used. These are: 1) that the dependent (exports) and independent (FDI) variables are linearly co-related, and 2) that the estimators (β_0, β_1) are unbiased with an expected value of zero ($E(\varepsilon_t) = 0$). The latter suggests that on average the errors cancel each other out. Execution of the procedure includes specifying the dependent and independent variables (exports and FDI respectively). However, given the aforementioned assumptions, the OLS results can be adversely affected by outliers. Also although OLS can establish the reliance of either exports on FDI or *vice versa*, this does not infer direction of causation. Therefore, a different method, the Granger causality test, is used to further test for the direction of causality.

For the purpose of comparison, two variants of the model (see basic formulation 1 and 2) for the full sample (13 SADC countries) were estimated: the one with dummy (to control for structural breaks) and the other without dummy variables (Table 4.7). In each case, a regression is run (Models 1-4 in Table 4.7), which includes FDI as the sole explanatory variable to show how important FDI is to a region’s export performance. The main regression results are presented in Table 4.7, from which the following points are easily discerned.

After experimentation with several lag lengths, the following estimated versions of Equations 3 and 4 were found to fit the data sufficiently (see Table 4.7). All variables are in logarithms. Finally, the significance of the error-correction term suggests that exports and FDI are cointegrated.

The relationship underlying Equations 3 and 4 (reflected in Table 4.7) are:

$$\ln(X_{t+2}^{BRIC}) = -9.31 + 1.31 FDI_t + 2.83 D_t$$

and

$$\ln(X_{t+2}^W) = 0.12 + 1.00 FDI_t - 0.48 D_t$$

Table 4.7: Estimates of the FDI-Export link for all the SADC countries

Dependent Variable Independent Variables	Without Dummy		With Dummy	
	Model 1: SADC exports to the world $\ln(X_{t+2}^W)$	Model 2: SADC exports to BRIC $\ln(X_{t+2}^{BRIC})$	Model 3: SADC exports to the world $\ln(X_{t+2}^W)$	Model 4: SADC exports to BRIC $\ln(X_{t+2}^{BRIC})$
Constant (C)	0.07 (0.92)	-7.20*** (6.05)	0.12 (1.04)	-9.31*** (-6.74)
BRIC FDI [$\ln(FDI_t)$]	1.00*** (154.36)	1.34*** (10.93)	1.00*** (145.00)	1.31*** (10.06)
Dummy (D_t)	-	-	-0.48 (-0.10)	2.83* (1.82)
R-squared	0.99	0.50	0.99	0.54
Adjusted R-squared	0.99	0.50	0.99	0.53
F-statistic	9433.22**	76.44***	6283.166**	57.16***
No. observations	166	153	160	153

Notes: The dependent variable is exports (X). Figures in parentheses are t-statistics. The asterisks *, **, and *** indicate significant levels at 10%, 5%, and 1%.

Firstly, the overall performance of the econometric models gave mixed results. The fit of the regressions in Models 2 and 4 are good with significant F-statistics at the 1% level. The explanatory power of the regressions is reasonably high, adjusted R-squared 0.53 for the dummy sample and 0.50 for the non-dummy sample.

It is suspicious that the R-squared, adjusted R-squared and t- and F-statistics are exceptionally high for models 1 and 3. This gives the idea that BRIC FDI's on SADC exports to the world may be serially correlated²⁷. Therefore, the rest of models 1 and 3 will not be further interpreted.

Secondly, BRIC FDI seems to have a predominant influence on the SADC's export performance to BRIC (see models 2 and 4). In all cases, the FDI variable has relatively large and statistically significant coefficients. In the dummy sample regressions (model 4 in Table 4.7), the coefficient of BRIC FDI is 1.31. The t-statistics for BRIC FDI for the SADC exports to BRIC is 10.06. Moreover, the adjusted R-squared (0.53) of model 4 in Table 4.7 suggests that approximately 53 per cent of the variance in the SADC exports to the BRIC is explained by BRIC FDI only.

Thirdly, the effect of BRIC FDI on the SADC exports is more significant in the case of exports to BRIC compared to the world. This could have been expected, as a country investing in a host country would expect some form of return on their investment (e.g. MNE export growth). The coefficient of the dummy in model 4 is statistically significant and has the expected sign (Table 4.7), suggesting some differences in BRIC FDI effects on the two export destinations (BRIC and world) before and after the break. The estimates of model 4 in Table 4.7 show that not only are the impact of BRIC FDI on SADC exports significant (1.31), but also the regression accounts for 53 per cent exports to BRIC.

Fourthly, the estimates of the independent variable (i.e. BRIC FDI) are consistent with the theoretical prediction and widely held belief. The coefficients of BRIC FDI are statistically significant and have correct signs (Table 4.6). Therefore, the SADC countries with more BRIC FDI inflows tend to export more to the BRIC countries.

It should be noted that at least two aspects of the estimates reported here might seem troublesome. One is the possibility of heteroskedasticity in the disturbance term. This, however, has been compensated for by using White's heteroskedasticity-corrected standard errors and t-statistics in the final estimations. The other is the feedback from the dependent variable. This can be addressed through causality tests, which will be discussed in the next section.

²⁷ Serially correlated, also referred to as autocorrelation or lagged correlation, refers to the relationship between a specific variable and the variable itself over different time intervals. Serial correlations are often found in repeating patterns when the level of a variable influences its future level.

4.4.3 The Granger causality tests

From the theoretical argument as discussed in Chapter 2, it would seem that FDI and exports are, in fact, interlinked and correlated through various channels. However, as found in Chapters 2 and 3, there is no theoretical or empirical evidence that could conclusively indicate sequencing from either direction. Given this uncertainty, the question now asked is: What is the relationship between FDI inflows and exports? In other words, does FDI inflows matter for exports of the recipient country/region, or do changes in exports from the recipient country/region drive changes in FDI received?

To answer this, Granger causality tests were performed on the relationship between FDI and recipient country/region exports using a panel of the SADC countries for the period 2003 to 2011. Given that the data is not strictly time-series, but rather a set of observations, it had to be restructured in the form of a panel in order to successfully perform the Granger causality test. A (panel) time series X is said to Granger-cause Y , if it can be shown that those X values provide statistically significant information about future values of Y . This entailed running the following two regression equations using FDI and exports panel:

$$X_t = a_0 + b_i \sum_{i=1}^n X_{t-i} + c_i \sum_{i=1}^n Y_{t-i} + e_t \quad (5)$$

and

$$Y_t = d_0 + \delta_i \sum_{i=1}^n Y_{t-i} + \gamma_i \sum_{i=1}^n X_{t-i} + \varepsilon_t \quad (6)$$

where X_t = total SADC exports, alternatively total exports to the world (X_t^W) and total exports to the BRIC (X_t^{BRIC}) countries, and Y_t = total FDI inflows from BRIC to the SADC, and e_t and ε_t random errors. To test whether Y ‘Granger-causes’ X or *vice versa* we test for the joint significance of the c_i and γ_i coefficients in (5) and (6) under the null of no causality. In each case, the null hypothesis is that FDI does not Granger-cause exports and *vice versa*. Therefore, the ideal for this study would be to reject the null hypothesis that FDI does not Granger-cause exports, the hypothesis would be rejected if the probability is < 0.05 (5% level) or < 0.10 (10% level). The results of these tests, with n (the lag length) equal to 1, 2 and 3 for both the SADC exports to the world and to BRIC, are contained in Table 4.8. Observations are lost due to lags and therefore longer lag lengths (e.g. 4 or more) could not be tested using the Granger causality test.

Table 4.8: Granger causality test results: SADC exports and BRIC FDI, 2003-2011 (USD millions)

SADC exports to the world					
Null Hypothesis ¹	Lag (n)	Obs. ²	F-Statistic	Prob.	Decision
$H_1: FDI_t \nrightarrow X_t^W$	1	53	16.04130	0.00020***	Reject (at 1%)
	2	40	6.32168	0.00450***	Reject (at 1%)
	3	30	3.70924	0.02600**	Reject (at 5%)
$H_2: X_t^W \nrightarrow FDI_t$	1	53	6.11710	0.01680**	Reject (at 5%)
	2	40	2.83930	0.07200**	Reject (at 5%)
	3	30	1.47047	0.24870	Do not reject
SADC exports to BRIC					
Null Hypothesis ¹	Lag (n)	Obs. ²	F-Statistic	Prob.	Decision
$H_1: FDI_t \nrightarrow X_t^{BRIC}$	1	53	0.67787	0.41420	Do not reject
	2	40	0.24218	0.78620	Do not reject
	3	30	0.26981	0.84650	Do not reject
$H_2: X_t^{BRIC} \nrightarrow FDI_t$	1	53	0.67248	0.41610	Do not reject
	2	40	0.92163	0.40730	Do not reject
	3	30	0.43934	0.72700	Do not reject

Notes: ¹ The arrow ($\nrightarrow$) within the first column points to the direction of causality. ² Observations after lag. The asterisks *, **, and *** indicate significant levels at 10%, 5%, and 1%.

The results in Table 4.8 indicate that the hypothesis (H_1), that BRIC FDI inflows cause changes in SADC exports, is strongly rejected for the SADC exports to the world, but cannot be rejected for the SADC exports to BRIC, thereby indicating that BRIC FDI inflows Granger cause SADC exports to the world but not to BRIC. Furthermore, the hypothesis (H_2) that the SADC exports to the world Granger cause BRIC FDI changes is rejected for lag lengths of 1 and 2 years, but in the third year it cannot be rejected, thereby indicating that SADC exports to the world do seem to cause BRIC inward FDI to the SADC in the short-run. The opposite is true for the SADC export to BRIC, where the null hypothesis of no causality cannot be rejected. These results, together with the previous estimation results, provide tentative evidence of a strong bi-directional relationship between BRIC FDI and the SADC's exports to the world. These results should, however, be viewed with caution since, as indicated in Table 4.7, the SADC's exports to the world has a suspiciously high R-squared, adjusted R-squared and t and F-statistics, which might indicate that BRIC FDI and SADC exports to the world are serially correlated.

Therefore, to conclude that FDI inflows matter for exports, it is necessary to find unidirectional causality, i.e. to reject the non-causality of one to the other and at the same time fail to reject the non-causality of the other to the one (Thurman & Fisher, 1988). Using lag lengths from one to three years, there is a clear rejection of the hypothesis that the SADC exports to the world cause BRIC FDI, but one cannot reject the hypothesis

that BRIC FDI causes SADC exports to the world after two years. Therefore, it can be tentatively concluded that BRIC FDI inflows cause (i.e. matter for) the SADC exports to the world, as well as that SADC exports to the world cause (i.e. matter for) BRIC FDI to SADC (at least in the short-run).

4.4.4 Panel data analysis on FDI and exports

This section aims to build on the Granger causality results by analysing the empirical relationship between BRIC outward FDI and the SADC's exports to the world and to BRIC by restructuring the FDI and export data in the form of a panel and then applying a panel data causality testing method. In particular, the panel data causality testing method developed by Holtz-Eakin, Newey and Rosen (1989) (see also Anderson and Hsiao (1981) for a similar discussion) is used and estimated by applying the system Generalized Method of Moments (GMM) technique. The test involves an estimation of the following error correction equations:

$$\Delta \ln y_{it} = \lambda_1 (\ln y_{i,t-1} - \alpha_1 \ln x_{i,t-1}) + \beta_1 \ln x_{it} + \varepsilon_{1it} \quad (7)$$

and

$$\Delta \ln x_{it} = \lambda_2 (\ln x_{i,t-1} - \alpha_2 \ln y_{i,t-1}) + \beta_2 \ln y_{it} + \varepsilon_{2it} \quad (8)$$

where x denotes exports, y denotes the outward FDI flows and λ the time effects or alternatively the time trend. The parameters α_1 and α_2 denote the error-correction term. The error-correction term and the long-run coefficient are used to test long-run Granger-causality. In particular, the question of whether or not x causes y can be tested with the hypothesis:

$$\alpha_1 = \beta_1 = 0 \quad H_0^{(1)}: x \text{ does not Granger cause } y \text{ in the long run}$$

$$\alpha_2 = \beta_2 = 0 \quad H_0^{(2)}: y \text{ does not Granger cause } x \text{ in the long run}$$

Rejection of $H_0^{(1)}$ and acceptance of $H_0^{(2)}$ are interpreted as causality from x to y , while the rejection of $H_0^{(2)}$ and acceptance of $H_0^{(1)}$ are interpreted as causality in the reverse direction. Rejection of both hypotheses indicates that there is no feedback between the two variables. The key parameter of interest is the long-run impact of exports on FDI and *vice versa*.

Assuming that the residuals of the level equation are not serially correlated, the values of y lagging two periods or more can be used as instruments in the first-differenced equation. Consistent with the technique developed by Arellano and Bond (1991) the estimation equation and moment conditions can be estimated by

first-differenced GMM. However, conventional GMM estimation exhibits a major drawback if the explanatory variables display persistence over time, which is often the case for variables such as FDI inflows. In this instance, their lagged levels may be rather poor instruments for their differences. Therefore, the system GMM estimator introduced by Blundell and Bond (1998) is used, which combines the regression equation in first differences, instrumented with lagged levels of the regressors, with the regression equation in levels, instrumented with lagged differences of the regressors.

With this it is possible to explore Granger causality relationships between the SADC's exports to the world and to BRIC and BRIC FDI inflows into the SADC in a bivariate setting. Tables 4.9, 4.10 and 4.11 summarise the results of the estimation of aggregated data (not differentiated by SADC partner country) of the BRIC FDI – SADC exports relationship and *vice versa*. Table 4.9 shows the estimated coefficients from the fixed-effects regression. As expected, the logarithm of the SADC exports to both the world and to BRIC is highly significant and positive (0.69 and 0.63 respectively). It should be noted that no lagged endogenous variables of FDI on exports and *vice versa* are included, therefore, the static equation should represent a long-run relationship.

Table 4.9: Fixed effects results (dependent variable: BRIC FDI [$\ln(FDI_t)$])

Variable	Coefficient	t-value	Coefficient	t-value
$\ln(X_t^W)$	0.69***	8.09	-	-
$\ln(X_t^{BRIC})$	-	-	0.63***	9.60
Year (y)	-0.73	-1.14	-0.72	-1.23
Constant (C)	1468.24	1.15	1466.81	1.24
No. observations	117		117	
Groups (countries)	13		13	
R-squared	0.40		0.48	

Notes: The asterisks *, **, and *** indicate significant levels at 10%, 5%, and 1%.

As the fixed effects estimator tends to be biased and inconsistent when estimating dynamic models, the system GMM-estimator is used instead. Tables 4.10 and 4.11 show the results from the dynamic panel data models are shown. The equations are estimated using the one-step system GMM method with t-values and test statistics that are asymptotically robust to general heteroskedasticity and corrected for a small sample bias (Falk & Hake, 2008). The system GMM results use 104 observations on 13 SADC countries from 2003 to 2011. Two types of diagnostic tests were conducted for the empirical models (Tables 4.10 and 4.11). Firstly, tests of first- and second-order serial correlations in the residuals were conducted. The AR (2) test statistics of the residuals do not reject the specification of the error term. Secondly, in looking at the Sargan tests, one can see that the p-values of the regressions relating SADC exports to the world on BRIC FDI, as well as

BRIC FDI on SADC exports to the world, do not indicate a decisive rejection of the models' over identifying restrictions. In contrast, for the impact of BRIC FDI on SADC exports to BRIC and SADC export to BRIC on BRIC FDI, it is found that the instruments are invalid.

Table 4.10: Dynamic panel data estimates of the link between SADC exports to the world and BRIC FDI

Variable	dep. var.: $\Delta \ln(X_t^W)$		dep. var.: $\Delta \ln(FDI_t)$	
	Coefficient	t-value	Coefficient	t-value
$\ln(X_{t-1}^W)$	-0.137	-0.99	-	-
$\ln(FDI_{t-1})$	0.383**	2.65	-	-
$\Delta \ln(FDI_{t-1})$	0.211**	2.31	-	-
$\ln(FDI_{t-1})$	-	-	-0.244**	-2.67
$\ln(X_{t-1}^W)$	-	-	0.340**	2.64
$\Delta \ln(X_{t-1}^W)$	-	-	0.492***	3.74
Year (y)	-1.248**	-2.30	0.489	0.72
Constant (C)	2498.190**	2.29	-986.777	-0.73
Long run coefficient $\ln(FDI_t)$	-	-	0.699***	6.55
No. observations	104		104	
Wald test (p-value)	0.000		0.000	
AR 1 test p value	0.015		0.007	
AR 2 test p value	0.061		0.067	
Sargan test of overid. restrictions	0.315		0.207	
Difference-in-Sargan tests	0.920		0.999	

Notes: ***, ** and * denote significance at the 1%, 5% and 10% level. The table gives the results of (one-step) system GMM estimators. t-values are robust to heteroskedasticity and are corrected for small sample bias using Windmeijer's correction.

The results of the dynamic panel data estimations in Table 4.10 show that SADC exports to the world have a strong positive effect on BRIC FDI flows. This implies that BRIC FDI Granger-cause SADC exports to the world in the long run. The long-run elasticity is around 0.70, while the short-run elasticity is 0.49. The error correction coefficient is negative (-0.244) and statistically significant at the 5% level, indicating that there is an equilibrium relationship in the long run. Yet, the speed of adjustment is quite low, indicating a large degree of perseverance. In contrast, no statistically significant long-run impact of BRIC FDI on SADC exports to the world is found. These results imply bi-directional causality between BRIC FDI and SADC exports to the world.

Table 4.11: Dynamic panel data estimates of the link between SADC exports to BRIC and BRIC FDI

Variable	dep. var.: $\Delta \ln(X_t^{BRIC})$		dep. var.: $\Delta \ln(FDI_t)$	
	Coefficient	t-value	Coefficient	t-value
$\ln(X_t^{BRIC})$	-0.235	-1.41	-	-
$\ln(FDI_{t-1})$	0.486***	4.77	-	-
$\Delta \ln(FDI_{t-1})$	0.238	1.64	-	-
$\ln(FDI_{t-1})$	-	-	-0.490***	-3.70
$\ln(X_t^{BRIC})$	-	-	0.370**	1.93
$\Delta \ln(X_t^{BRIC})$	-	-	0.220	1.73
Year (y)	-0.309	-0.40	-0.353	-0.44
Constant (C)	615.687	0.40	704.486	0.43
Long run coefficient $\ln(FDI_t)$	-	-	0.724***	4.59
No. observations	104		104	
Wald test (p-value)	0.000		0.000	
AR 1 test p value	0.014		0.025	
AR 2 test p value	0.068		0.095	
Sargan test of overid. restrictions	0.017		0.005	
Difference-in-Sargan tests	0.793		0.975	

Notes: ***, ** and * denote significance at the 1%, 5% and 10% level. The table gives the results of (one-step) system GMM estimators. t-values are robust to heteroskedasticity and are corrected for small sample bias using Windmeijer's correction.

The results of the dynamic panel data estimations in Table 4.11 show that SADC exports to BRIC do not have a significant short-run impact, but do show a strong positive effect on BRIC FDI inflows in the long run. The long-run elasticity is around 0.72, while the short-run elasticity is 0.22. The error correction coefficient is negative (-0.490) and statistically significant at the 1% level indicating that there is an equilibrium relationship in the long run. Similarly (and in contrast to the results in Table 4.10), we find a statistically significant long-run impact of BRIC FDI on SADC exports to BRIC. However, in looking at the Sargan test results, one can see that the p-values of the regressions relating SADC exports to BRIC on BRIC FDI, as well as BRIC FDI on SADC exports to BRIC, indicate a decisive rejection of the models' over identifying restrictions, signifying that the instruments are invalid.

To summarise, this section examined the link between BRIC FDI and SADC exports to the world and to BRIC by using the Holtz-Eakin panel causality tests. For that purpose, export data and data on FDI were regarded for a sample of 13 SADC countries for the period 2003 to 2011. Estimates using system GMM

estimators show that SADC exports to the world cause FDI and *vice versa*. These results are to some extent consistent with recent empirical studies (see Tables 2.1, 2.2 and 2.3) that find a bi-directional relationship meaning that FDI and exports tend to be complements rather than substitutes. Conversely, Table 4.11 shows that the results of the causality tests between SADC exports to BRIC and BRIC FDI are not reliable.

4.5 Summary and concluding remarks

In this chapter, the impact of BRIC FDI inflows on the SADC's export performance to BRIC and to the world was estimated. FDI has been viewed as an accelerator of recipient countries or regions' economic growth. One of its major potential growth contributions is to promote host countries or regions' exports by increasing supply capacity. This chapter attempted to empirically investigate the issue by using the SADC export data to the world, as well as to BRIC.

All FDI data used in the estimation of the models were taken from the FDImarkets® (2012) and Zephyr (2012) databases. Data on the SADC exports to the world and to BRIC had to be sourced separately from the Trade Map data of the ITC (2012). The period covered for FDI was from 2003 to 2010, and for the exports from 2003 to 2011. The reason for this is that FDI received in one year, may only appear to have an impact on a specific country/region's exports a year or more thereafter. Net annual data for both FDI and exports was used, as monthly and quarterly data for the selected countries are not always available. All estimations were run with the statistical estimation program, EViews version 7.1.

The most significant problems that were encountered in the empirical analysis were data related. An error term, ε_t was incorporated in the equation to cater for other factors that may influence exports, as this study solely focuses on the impact of FDI on exports.

All variables were transformed to logarithms and according to both the ADF and PP tests, all variables were stationary in levels. Thereafter the null hypothesis of heteroskedasticity was not rejected as all of the p-values were significantly higher than the 0.05 per cent level of statistical significance. Accordingly, White's heteroskedasticity-corrected standard errors and t-statistics were used in the final estimations to correct for heteroskedasticity.

The Chow test for a sample break in 2008 rejects the hypothesis of parameter constancy. The possible entrance of BRIC as a major role-player in the SADC region in 2006 may also have resulted in the break in that specific year. The second break coincides with the start of the global financial crisis (2008-2009). The CUSUM tests can be used to test the constancy of the coefficients in a model (in 2006 and 2008 the

coefficients were unstable), therefore, the sample breaks tested by the Chow test are supported by evidence obtained from the CUSUM test.

Running the correlation, there were notable and significant correlations in both cases, with is a very strong positive relationship of BRIC FDI flow with the SADC's exports to the world (at 96 per cent), and also strong positive correlation of BRIC FDI flow with the SADC's exports to BRIC (at 59 per cent).

Thereafter, a regression was run, and the overall performance of the econometric model gave mixed results. The model gave the idea that BRIC FDI's on SADC exports to the world may be serially correlated. Therefore, the rest of the models for exports to the world were not further interpreted. Moreover, it was suggested that approximately 53 per cent of the variance in the SADC exports to the BRIC was explained by BRIC FDI only. Thirdly, the estimates of the independent variable (i.e. BRIC FDI) are consistent with the theoretical prediction and widely held belief that the SADC countries with more BRIC FDI inflows tend to export more to the BRIC countries.

From the Granger causality results it was found that a bi-directional relationship between BRIC FDI and the SADC exports to the world exists while the opposite is true for the SADC exports to BRIC, where the null hypothesis of no causality could not be rejected. These results should, however, be viewed with caution since as indicated in previous estimations, the SADC exports to the world has a suspiciously high R-squared, adjusted R-squared and t and F-statistics. This might indicate that there are other factors not accounted for in the current analyses that might be driving both BRIC FDI and SADC exports to the world (e.g. market factors, global business cycles, etc.).

The panel data estimation was built on the Granger causality results, by analysing the empirical relationship between BRIC outward FDI and SADC exports to the world and to BRIC, by restructuring the FDI and export data in the form of a panel and then applying a panel data causality testing method. The section examined the link between BRIC FDI and SADC exports to the world and to BRIC by using the Holtz-Eakin panel causality tests. Estimates using system GMM estimators showed that SADC exports to the world cause FDI and *vice versa*. These results are to some extent consistent with recent empirical studies that find a bi-directional relationship between inward FDI and exports, meaning that FDI and exports tend to be complements rather than substitutes. Conversely, the results of the causality tests between SADC exports to BRIC and BRIC FDI were not reliable. These findings are also consistent with the Granger causality results discussed earlier.

Chapter 5 will follow with a summary of the study results, the main findings and key recommendations for future research.

Chapter 5: Conclusions and recommendations

5.1 Introduction

The BRIC countries invited South Africa to join the BRIC group at the end of 2010. One of the possible reasons for this inclusion is because South Africa is viewed as the 'gateway' to Africa, and therefore South Africa is also a link between BRIC and the SADC. It is perceived that because South Africa is now part of the so-called BRICS, this will increase the amount of FDI from the BRIC countries to South Africa/SADC. This inflow of BRIC FDI may lead to the advantages of boosting SADC exports, which is important as it may lead to the SADC countries experiencing expanded market opportunities, and exports have for a long time been viewed as an engine of economic growth.

The main objectives for this study was to provide a literature overview of the relationship and causality between inward FDI and exports in developed, developing and African countries. The secondary research aim was to determine the specific influence/relationship of the BRIC's FDI on SADC's exports to the world and BRIC.

The research methods used included a literature review, descriptive study and an empirical study. The literature overview provided the theoretical foundation, which in combination with the empirical findings would help to determine what influence BRIC's FDI has on SADC's exports to the world and BRIC, respectively.

The descriptive and empirical study investigated, measured and compared BRIC's outward FDI to SADC's exports to the world and BRIC. The most significant problems that were encountered in these studies were data related. The methods had to be adapted to the data that were available and even in the empirical estimation study process, the limitation of data for the country-specific inward FDI received by SADC countries played a significant role. Therefore, it was decided that because M&A and Greenfield investments are the two major elements that make up FDI, the country-specific investment data with regard to these two investments would be used to explain the influence of BRIC's outward FDI to the SADC on the SADC's exports. The M&A and Greenfield data obtained from Zephyr and FDImarkets® were only available from 2003; the FDI for 2011 would not be seen in 2012's export data, as that was not yet available at the time of print. Therefore, the FDI data stretched from 2003 to 2010.

In Chapter 1, an overview of BRIC, BRICS, South Africa as part of SADC, COMESA-EAC-SADC Tripartite and Africa, the relationship between FDI and trade, as well as a problem statement, motivation, description

of the research method used and outline of the study were presented. A theoretical perspective on the studies conducted with regard to the relationship between FDI and trade in developed, developing and African countries was presented in Chapter 2. Chapter 3 provided a descriptive analysis of the trade and FDI data of BRIC and the SADC countries, thereafter Chapter 4 focused on the empirical evidence whether FDI and exports have any relation, and thereafter whether FDI has had an influence on exports, focusing specifically on the BRIC's FDI influence on the SADC's exports to both the world and to BRIC.

5.2 Summary of the results and conclusions of the study

The main research aim of determining the relationship of inward FDI on exports was investigated by means of a literature overview of research conducted on specifically developed, developing and African countries. This was to help provide a foundation to help answer the research question of what the potential influence of BRIC's FDI may have on SADC's exports to the world.

It is first of all important to understand what FDI and exports are. FDI referring to investment in which a firm in one country directly controls or owns a subsidiary in another country, divided into either Greenfield investments or M&As. Greenfield investments refer to the investing company starting a new enterprise in the host country from scratch. M&As refer to a parent company acquiring existing enterprises as either a merger or an acquisition. International trade exists because of production factors not being evenly spread over the world and when countries sell goods and services to one another, this exchange is almost always beneficial to both parties. Understanding the meaning of both FDI and exports led to the classifications of countries in order to better understand how regions/countries/development groups work.

Recent studies conducted on the relationship between FDI and exports in developed, developing and African countries indicated that the majority of the studies conducted between 2000 and 2011 by various authors used causality tests and regression models to determine the relationships between FDI and exports. It also appeared as if bi-directional causality was most often found, thereby indicating that FDI has a positive influence on exports and exports also have a positive influence on FDI.

Surprisingly, the study done by Samake and Yang indicated that the correlation between outward FDI from BRICs to LIC, and LIC trade with BRICs is insignificant. One would have expected FDI to provide positive spill-over effects on host countries, most prominently through exports. The insignificant correlation is most likely to reflect the early stage of BRIC FDI in LICs and the dominance of BRIC economic growth (rather than FDI) in driving trade. However, the role of China and India is expected to change the trade and investment environment in the SADC. It is therefore furthermore evident that an assessment of the BRICS

partnership is further needed in order to determine whether this group will be able to encourage trade and FDI between them.

It should be noted that relatively few studies have been conducted with regard to SADC before 2007. Reasons may include the lack of inward FDI data that may have been available in previous years, the unreliable trade data available when it comes to the African continent, and the lack of interest in the region pre-2007. The situation regarding data for African countries is, however, changing. This includes data for the SADC and BRIC countries, and therefore this study will furthermore attempt to contribute to the literature on FDI in the SADC by investigating the relationship between BRIC FDI inflows on the SADC's trade outflows.

The overview of the studies still leave this study with the preconception that BRIC's FDI into SADC may lead to a positive influence on the SADC's exports.

A descriptive analysis of available data on SADC inward FDI from the world and BRIC, BRIC outward FDI to the world and SADC, and SADC exports to BRIC and the world was investigated in order to put into context the current outward FDI from BRIC to the SADC and exports from SADC to the world and BRIC, and to provide some tentative evidence of possible similar trends between the latter.

It is apparent that the SADC's inward FDI flows have a similar slope to that of the world's inward FDI flows, however, the SADC appears to receive a minority of the total world inward FDI. Within the SADC, Angola and South Africa received the majority of inward FDI from the world throughout 2003 to 2010. The major recipient industries within the SADC are the coal, oil and natural gas industry (led by Angola), and the metals industry (led by South Africa). The DRC showed substantial inward FDI growth, while Lesotho, Malawi, Swaziland and Zimbabwe were indicated as the minor participants within the SADC's inward FDI recipient group. There did not seem to be any fixed trends between the countries, as the inward investment increase in one country, did not necessarily illustrate the increase of inward investment in its neighbouring country or any other SADC member country within the same year, as would normally be expected. Consequently, this illustrates that the SADC countries are not integrated and that the SADC countries differ significantly.

From 2003 to 2010, the BRIC countries have seen an overall outward FDI growth rate of approximately 892 per cent, with China and Russia being the 'drivers' of the significant growth within the 2003 to 2010 period. BRIC's share in the World FDI outflows also went from 3 per cent in 2003 to approximately 11 per cent in 2010.

It was furthermore noted that the SADC followed the same inward FDI trend as the BRIC's outward FDI trend to the world from 2007 to 2009, with both trends also being strongly positive. This may possibly illustrate that within the same period, more BRIC FDI outflows went to the SADC countries. China, in particular, has become one of the most significant foreign investors in some sub-Saharan African countries, while India was also a substantial source of FDI to the region. When measured in value, most of the investments in the region from developing countries were resource-seeking, and often involved state-owned enterprises.

Taking into consideration BRIC Greenfield and M&A outward FDI to the SADC, in order to determine what kind of investment carries the majority weight in total BRIC FDI to the SADC, it is evident that Greenfield investments grew substantially from 2004 to 2008, outperforming M&A during this period. It was further indicated that China and India were the major Greenfield investors in SADC. India had the most projects into the SADC from 2003 to 2010, however, the value of the projects that China had to the SADC exceeded that of India during the same period. The majority of the Greenfield investments from BRIC went to Angola, Mozambique and Zambia in the coal, oil and natural gas industry, and South Africa in the metals industry.

With regard to the M&A investments from BRIC to the SADC, the majority of M&A investments (86 per cent) went to South Africa, followed by Mauritius (6.6 per cent). It was further interesting to note that from 2007 to 2010, M&A and Greenfield investments followed the same trend, however, experiencing a positive slope from 2005 to 2008, and thereafter seeing a major dip that can be accounted for due to the 2008 global financial crisis.

In order to put into perspective the possible effect that inward FDI received by SADC has on their exports, the exports from the SADC to the world were investigated. It was evident that South Africa and Angola were the major exporters and drivers of exports within the SADC and clearly setting the SADC export trend to the world. The other 13 SADC countries lag behind. Within the other 13 SADC countries, it was evident that the DRC, Tanzania and Zambia were the countries within the SADC that have experienced the most significant export growth from 2003 to 2010. The SADC's major exports to the world were within the coal, oil and natural gas industry. South Africa's major exports to the world were within the metals industry and Angola's major export products to the world were also within the coal, oil and natural gas industry (ITC, 2012).

With regard to the DRC, it was noted that this country has experienced significant inward FDI from the world, and the DRC's exports have also seen significant growth, and therefore a similar trend may exist

between world outward FDI to the DRC and the DRC's exports to the world during the 2003 to 2010 time frame. However, BRIC outward FDI to the DRC does not appear to be significant. It is, however, interesting to note that South Africa and Angola were indicated as the major receivers of world outward FDI.

The majority outward FDI from the BRIC countries also went to Angola (in the coal, oil and natural gas industry) and South Africa (in the metals industry). It was noted that the majority of exports from the SADC to the world and to BRIC also came from Angola and South Africa, also exporting from the same industries that received the majority of inward FDI. Due to Angola and South Africa being the major players within the SADC, and the latter tendencies existing, it can be considered that a similar trend may therefore exist between BRIC outward FDI to the SADC and the SADC's exports to the world.

It was illustrated that a possible relationship may exist between BRIC and the world's outward FDI to SADC and SADC's exports to the world, especially during the period 2006 to 2009. The SADC's exports, together with world and BRIC outward FDI to SADC, appear to have a similar positive slope from 2006 to 2008, and thereafter a similar negative slope from 2008 to 2009. However, the SADC's exports took a strong positive turn from 2009 to 2011, while the world and BRIC's FDI to SADC took downward slopes. It is furthermore apparent that SADC exports to the world rose faster than the exports of the SADC to the BRIC countries, resulting in the BRIC's share of 29 per cent in the SADC's total exports from a mere 7 per cent in 2003.

The two major SADC FDI and export industries (coal, oil and natural gas, and metals), evaluated and compared to one another, did not appear to be remarkable, as only a minority of the SADC countries received FDI from BRIC within the specific industries. Therefore, an analysis will not be representative of the entire SADC region. It is, however, interesting to note the dominance of a few industries, i.e. the coal, oil and natural gas industry and metals industry within the SADC.

The impact of BRIC FDI inflows on the SADC's export performance to BRIC and to the world was estimated. FDI has been viewed as an accelerator of recipient countries or regions' economic growth. One of its major potential growth contributions is to promote host countries or regions' exports by increasing supply capacity. It was attempted to empirically investigate the issue by using the SADC export data to the world, as well as to BRIC.

All FDI data used in the estimation of the models were taken from the Zephyr (2012) and FDImarkets® (2012) databases. Data on the SADC exports to the world and to BRIC had to be sourced separately from the Trade Map data of the ITC (2012). The period covered for FDI was from 2003 to 2010, and for the exports was from 2003 to 2011. The reason for this is that FDI received in one year, may only appear to have an

impact on a specific country/region's exports a year or more thereafter. Net annual data for both FDI and exports were used, as monthly and quarterly data for the selected countries are not always available. All estimations were run with the statistical estimation program, EViews version 7.1.

The most significant problems that were encountered in the empirical analysis were data related. An error term, ε_t was incorporated in the equation to cater for other factors that may influence exports, as this study solely focuses on the impact of FDI on exports.

All variables were transformed to logarithms and according to both the ADF and PP tests, all variables were stationary in levels. Thereafter the null hypothesis of heteroskedasticity was not rejected as all of the p-values were significantly higher than the 0.05 per cent level of statistical significance. Accordingly, White's heteroskedasticity-corrected standard errors and t-statistics were used in the final estimations to correct for heteroskedasticity.

The Chow test for a sample break in 2008 rejects the hypothesis of parameter constancy. The possible entrance of BRIC as a major role-player in the SADC region in 2006 may also have resulted in the break in that specific year. The second break coincides with the start of the global financial crisis (2008-2009). The CUSUM tests can be used to test the constancy of the coefficients in a model (in 2006 and 2008 the coefficients were unstable), and therefore the sample breaks tested by the Chow test are supported by evidence obtained from the CUSUM test.

Running the correlation, there were notable and significant correlations in both cases, with is a very strong positive relationship of BRIC FDI flow with the SADC's exports to the world (at 96 per cent), and also a strong positive correlation of BRIC FDI flow with the SADC's exports to BRIC (at 59 per cent).

Thereafter, a regression was run, and the overall performance of the econometric model gave mixed results. The model gave the idea that BRIC FDI's on SADC exports to the world may be serially correlated.

Therefore, the rest of the models for exports to the world were not further interpreted. Moreover, it was suggested that approximately 53 per cent of the variance in the SADC exports to the BRIC was explained by BRIC FDI only. Thirdly, the estimates of the independent variable (i.e. BRIC FDI) are consistent with the theoretical prediction and widely held belief that the SADC countries with more BRIC FDI inflows tend to export more to the BRIC countries.

From the Granger causality results it was found that a bi-directional relationship between BRIC FDI and the SADC exports to the world exists while the opposite is true for the SADC exports to BRIC, where the null hypothesis of no causality could not be rejected. These results should, however, be viewed with caution since as indicated in previous estimations, the SADC exports to the world has a suspiciously high R-squared, adjusted R-squared and t and F-statistics. This might indicate that there are other factors not accounted for in the current analyses that might be driving both BRIC FDI and SADC exports to the world (e.g. market factors, global business cycles, etc.).

The panel data estimation built on the Granger causality results, by analysing the empirical relationship between BRIC outward FDI and SADC exports to the world and to BRIC, by restructuring the FDI and export data in the form of a panel and then applying a panel data causality testing method. The section examined the link between BRIC FDI and SADC exports to the world and to BRIC by using the Holtz-Eakin panel causality tests. Estimates using system GMM estimators showed that SADC exports to the world cause FDI and *vice versa*. These results are to some extent consistent with recent empirical studies that find a bi-directional relationship between inward FDI and exports, meaning that FDI and exports tend to be complements rather than substitutes. Conversely, the results of the causality tests between SADC exports to BRIC and BRIC FDI were not reliable. These findings are also consistent with the Granger causality results discussed earlier.

Therefore, it should be noted that BRIC FDI on SADC exports to the world matter, despite the possibility of other factors existing that lead to FDI and exports having similar tendencies. Meanwhile, FDI inflows from BRIC to SADC on SADC exports to BRIC, at this stage and with the existing data, does not give a conclusive indication that FDI causes exports or *vice versa*, despite the regression results showing that 59 per cent of variation in SADC exports to BRIC is explained by BRIC FDI.

5.3 Recommendations

From this study, there are several recommendations to the South African export and investment promotion organisation agencies and industry associations.

Greater co-operation between the SADC countries may have to be motivated in order for SADC to appear more attractive to the BRIC countries for further investment, as one of the determinants of FDI is the ease to access of neighbouring borders. South Africa as the 'leader' of SADC should take a more controlling role, in a political sense, where the President should be motivated by government institutions to be more strict and

outright with neighbouring countries, such as Zimbabwe and Swaziland, in order to be more attractive to the BRIC countries for future investment.

The results from the Granger causality tests indicated that, during 2003 to 2011, BRIC FDI inflows contributed to higher exports in the SADC, specifically SADC exports to the world. Sufficient data regarding inward FDI at sectoral level and country level within the SADC was unavailable, as well as outward FDI data at sectoral and country level within the BRIC countries. Therefore a continuous review of the situation at country and sectoral level should be investigated in further studies, based on the availability of data, in order to better understand the role of BRIC/BRICS within the trade and investment environment of the SADC, as BRIC/BRICS is a major player in the current global arena which may bring possible future prosperity to the SADC region.

Finally, the BRIC FDI inflows on the SADC exports to the world being significant should be an incentive for the SADC group to further motivate co-integration, co-operation and participation within the BRICS. This collaboration may possibly lead to further inward FDI flows, which may further promote exports to the world, and possibly greater future exports to the BRIC countries.

Suggestions for future studies would include determining the exogenous factors that contribute to the simultaneous movement of BRIC FDI inflows with the SADC's exports to the world. Furthermore, future work should explore whether the FDI export relationship remains robust when further determinants such as GDP, country size, and the comparison between R&D-intensive industries and non-R&D-intensive industries are included. A further task could be to consider other variables of foreign activity before drawing definitive conclusions. The relationship between BRIC outward FDI to SADC and SADC imports from BRIC could also be investigated, the latter, however, fell outside the scope of the study. And finally, as previously mentioned, what impact do other world economies' inward FDI have on SADC exports?

Bibliography

AERC (African Economic Research Consortium). 2006. Foreign direct investment in Sub-Saharan Africa: origins, targets, impact and potential.

http://www.aercafrica.org/documents/books/fdi_papers_booklength_volume.pdf Date of access: 6 Sep. 2012.

African Development Bank & OECD. 2003. African Economic Outlook 2003. <http://www.oecd-ilibrary.org/docserver/download/4103021e.pdf?expires=1376488331&id=id&accname=oid010567&checksum=A6D79D7AD187EDCB7B724F1E0926C22B> Date of access: 14 Aug. 2013.

African Development Bank & OECD. 2011. African Economic Outlook 2011: Africa and its Emerging Partners. <http://www.undp.org/content/dam/undp/library/corporate/Reports/UNDP-Africa-2011-Economic-Outlook.pdf> Date of access: 14 Aug. 2013.

Ahmed, A., Cheng, E. & Messinis, G. 2007. Causal links between exports, FDI and output: evidence from Sub-Saharan African countries. Victoria University, Centre for Strategic Economic Studies Working paper no. 35. <http://www.cfses.com/documents/wp35.pdf> Date of access: 7 Feb. 2012.

Aizenmana, J. & Noy, I. 2006. FDI and trade – two-way linkages? *The quarterly review of economics and finance*, 46(3):317-337.

Alemu, A.M. 2008. Determinants of vertical and horizontal export diversification: evidences from Sub-Saharan Africa and East Asia. *Ethiopian journal of economics*, 17(2):1-56.

Alici, A.A. & Ucal, M.S. 2003. Foreign direct investment, exports and output growth of Turkey: causality analysis. Paper presented at the European Trade Study Group (ETSG) Fifth Annual Conference, Madrid, 11-13, Sept. <http://www.etsg.org/ETSG2003/papers/alici.pdf> Date of access: 19 Feb. 2013.

Alquacil, M.T., Cuadros, A. & Orts, V. 2002. Foreign direct investment, exports and domestic performance in Mexico: a causality analysis. *Economics letters*, 77(3):371-376.

Amos, S. 2010. The role of South Africa in SADC regional integration: the making or braking of the organization. *Journal of international commercial law and technology*, 5(3):126-130.

Anderson, T.W. & Hsiao, C. 1981. Estimation of dynamic models with error components. *Journal of the American Statistical Association*, 76(375):598-606.

Anon. 2010. South Africa's entry into BRIC to reshape world economy. *People's Daily Online*, 30 Dec. <http://english.peopledaily.com.cn/90001/90780/91421/7247209.html> Date of access: 15 Feb. 2012.

Anon. 2012. Exporting to Africa. http://www.uneca.org/crci/trade_facilitation.htm Date of access: 23 Jan. 2012.

Arellano, M. & Bond, S. 1991. Some Tests of Specification for Panel data: Monte Carlo evidence and an application to employment equations. *Review of economic studies*, 58(2):277-297.

Asteriou, D., & Hall, S.G. 2007. Applied econometrics: a modern approach. Revised ed. New York: Palgrave Macmillan.

AU (African Union). 2012. East African Community (EAC). <http://www.au.int/en/recs/eac> Date of access: 22 Mar. 2012.

Baliamoune-Lutz, M.N. 2004. Does FDI contributes to economic growth? Knowledge about the effects of FDI improves negotiating positions and reduces risk for firms investing in developing countries. *Business economics*, 39(2):49-56.

Barro, R.J. 1998. The East Asian tigers have plenty to roar about. *Business week*: 24, 27 Apr.

Battersby, J. & Lu, Y. 2011. More than just another BRIC in the wall. *South Africa Info*, 25 Jul. <http://www.southafrica.info/business/trade/relations/brics-220711.htm> Date of access: 16 Feb. 2012.

Bende–Nabende, A. 2002. Foreign direct investment determinants in Sub–Sahara Africa: a co–integration analysis. *Economics bulletin*, 6(4):1–19.

Bezuidenhout, H. 2007. Trade patterns and foreign direct investment in the Southern African Development Community. Potchefstroom: North-West University. (Thesis – PhD).

Bezuidenhout, H. & Naudé, W. 2008. Foreign direct investment and trade in the Southern African Development Community. (WIDER Research paper no. 2008/88). http://www.wider.unu.edu/publications/working-papers/research-papers/2008/en_GB/rp2008-88/ Date of access: 28 Feb. 2012.

Bezuidenhout, H. & Naudé, W. 2010. Foreign direct investment and trade in the Southern African Development Community. (In Santos-Paulino, A. & Wan, G., ed. Southern engines of global growth. New York: Oxford University Press. p. 263-282).

Bhattacharya, A., Montiel, P.J. & Sharma, S. 1997. How can Sub-Saharan Africa attract more private capital inflows? *Finance and development*, 34(2):3-6.

- Blundell, R. & Bond, S. 1999. GMM estimation with persistent panel data: an application to production functions. (The Institute for Fiscal Studies. Working Paper Series no. W99/4).
<http://discovery.ucl.ac.uk/14817/1/14817.pdf> Date of access: 2 Feb. 2013.
- BRICS Report. 2012. A Study of Brazil, Russia, India, China, and South Africa with special focus on synergies and complementarities. New Dehli: Oxford University Press.
- Campos, N.F., & Kinoshita, Y. 2003. Why does FDI go where it goes? New evidence from the transition economies. (IMF Working Paper no. WP/03/228).
<http://www.imf.org/external/pubs/ft/wp/2003/wp03228.pdf> Date of access: 14 Sep. 2012.
- Caves, R. 1996. Multinational enterprise and economic analysis. 2nd ed. Cambridge: Cambridge University Press.
- Chédor, S., Mucchielli, J.L. & Soubaya, I. 2002. Intra-firm trade and foreign direct investment: an empirical analysis of French firms. (In Mucchielli, J.L., & Lipsey, R.E., eds. Multinational firms and impacts on employment, trade and technology: new perspectives for a new century. London: Routledge. p. 84-100).
- Chun, Z. 2011. South Africa's "distinctiveness" in BRICS. *China-US Focus*, 25 Apr.
<http://chinausfocus.com/foreign-policy/south-africa%E2%80%99s-distinctiveness-in-brics/> Date of access: 16 Feb. 2012.
- Claassen, C. 2011. The state of Chinese foreign direct investment in South Africa. Potchefstroom: North-West University. (Dissertation – M.Com.).
- COMESA (Common Market for Eastern and Southern Africa). 2012. <http://www.comesa.int/> Date of access: 22 Mar. 2012.
- Cuyvers, L., Soeng, R., Plasmans, J. & Van Den Bulcke, D. 2008. The impact of inward foreign direct investment on international trade in Cambodia. (CAS Discussion Paper No. 65).
<http://webhost.ua.ac.be/cas/pdf/cas49.pdf> Date of access: 7 Jan. 2013.
- Davies, M. 2011. BRICS can grow to embrace the SADC region. Does SA deserve inclusion in the BRIC (Brazil, Russia, India, China) group? *Business day*, 14 Apr.
<http://www.businessday.co.za/articles/Content.aspx?id=140187> Date of access: 14 Feb. 2012.
- Denisia, V. 2010. Foreign direct investment theories: an overview of the main FDI theories. *European journal of interdisciplinary studies*, 3:53-59.

DTI (Department of Trade and Industry). 2013. Trade and investment South Africa.

http://www.thedti.gov.za/about_dti.jsp Date of access: 10 Jan. 2013.

Draper, P., Freytag, A. & Voll, S. 2009. Global financial crisis, protectionism and current account deficit: South Africa on the brink? Global Financial Markets (Working Papers on Global Financial Markets. no. 8).

<http://www.gfinm.de/images/stories/workingpaper8.pdf> Date of access: 20 Mar. 2012.

Driffield, N.L., Bissoondecal, R. & Pramadhani, M. 2007. FDI, trade and growth, a causal link? (Aston University. Birmingham, Working Paper, Unpublished). <http://eprints.aston.ac.uk/6959/> Date of access: 12 Apr. 2012.

Dritsaki, M., Dritsaki, C. & Adamopoulos, A. 2004. A causal relationship between trade, foreign direct investment and economic growth for Greece. *American journal of applied sciences*, 1(3):230-235.

Dubbelman, B. 2011. South Africa's role in BRICS: implications and effects. *Creamer media*, Jul.

http://uscdn.creamermedia.co.za/assets/articles/attachments/34069_sa_role_in_bricsreduced.pdf Date of access: 14 Feb. 2012.

Edwards, L. & Alves, P. 2005. South Africa's export performance: determinants of export supply. (Africa Region Working Paper Series no. 95). <http://www.worldbank.org/afr/wps/wp95.pdf> Date of access: 18. Apr. 2012.

Falk, M. & Hake, M. 2008. A Panel Data Analysis on FDI and Exports. FIW Research Reports series I-012, FIW.

http://www.wifo.ac.at/jart/prj3/wifo/resources/person_dokument/person_dokument.jart?publikationsid=34229&mime_type=application/pdf Date of access: 13 Jan. 2013.

FDImarkets®. 2012. FDImarkets®: crossborder investment monitor. <http://www.fdimarkets.com/> Date of access: 29 Jul. 2012.

Field, A. 2005. Discovering statistics using SPSS. 2nd ed. London: Sage.

Fontagné, L. 1999. Foreign direct investment and international trade, complements or substitutes? (OECD Science, Technology and Industry Working Papers 1999/03, OECD Publishing). <http://www.oecd-ilibrary.org/docserver/download/5lgsjhvj7n0r.pdf?expires=1361282932&id=id&accname=guest&checksum=CFF1701175744172CCF1C67ED6F3C262> Date of access: 18 Mar. 2012.

- Fugazza, M. 2004. Export performance and its determinants: supply and demand constraints. UNCTAD. (Policy issues in International Trade and Commodities Study Series no. 26).
http://unctad.org/en/Docs/itcdtab27_en.pdf Date of access: 16 Apr. 2012.
- Gordhan, P. 2011. An emerging new world order. *The Cairo review of global affairs*, 11 Jul.
<http://www.aucegypt.edu/gapp/caiorenview/pages/articleDetails.aspx?aid=75> Date of access: 16 Feb. 2012.
- Grobler, A., Warnich, S., Carrell, M.R., Elbert, N.F. & Hatfield, R.D. 2006. Human resource management in South Africa. 3rd ed. London: Thomson Learning.
- Hailu, Z.A. 2010. Impact of foreign direct investment on trade of African countries. *International journal of economics and finance*, 2(3):112-133.
- Harzing, W. & Van Ruysseveldt, J. 2004. International human resource management. 2nd ed. London: Sage.
- Holtz-Eakin, D., Newey, W.K. & Rosen, H.S. 1989. Implementing causality tests with panel data, with an example from local public finance. (NBER Technical Working Papers no. 0048)
<http://www.nber.org/papers/t0048> Date of access: 6 June. 2012.
- IECS Ltd. 2006. Review of the literature: casual links between innovation and international trade and investment. <http://www.ukti.gov.uk/download/file/108530.html> Date of access: 2 May. 2012.
- IMF (International Monetary Fund). 2012a. About the IMF. <http://www.imf.org/external/about.htm>
 Date of access: 21 May. 2012.
- IMF (International Monetary Fund). 2012b. World economic outlook April 2012: growth resuming, danger remain. <http://www.imf.org/external/pubs/ft/weo/2012/01/pdf/text.pdf> Date of access: 25 Jul. 2012.
- Iqbal, M., Shaikh, F.M. & Shar, A.H. 2010. Causality relationship between foreign direct investment, trade and economic growth in Pakistan. *Asian social science*, 6(9):82-89.
- ITC (International Trade Centre). 2011. National trade policy for export success.
http://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/National%20Trade%20Policy%20for%20Export%20Success_web.pdf Date of access: 24 Jul. 2012.
- ITC (International Trade Centre). 2012. Trademap. Trade statistics for international business development.
http://www.trademap.org/Bilateral_TS.aspx Date of access: Mar. – Dec. 2012.
- ITRISA (International Trade Institute of Southern Africa). 2006. International trade relations. (Unpublished study material). Johannesburg.

- Jayachandran, G. & Seilan, A. 2010. A causal relationship between trade, foreign direct investment and economic growth for India. *International research journal of finance and economics*, 42:74-87.
- Jensen, C. 2002. Foreign direct investment, industrial restructuring and the upgrading of Polish exports. *Applied economics*, 34(2):207-17.
- Jovanović, M.N. 2006. The economics of international integration. Cheltenham: Edward Elgar.
- Krugman, P.R. & Obstfeld, M. 2008. International economics: theory & policy. 8th ed. Boston: Pearson International Edition.
- Kutan, A.M. & Vukšić, G. 2007. Foreign direct investment and export performance: empirical evidence. *Comparative economic studies*, 49(3):430-445.
- Liu, X. & Zou, H. 2008. The impact of Greenfield FDI and mergers and acquisitions on innovation in Chinese high-tech industries. *Journal of world business*, 43(3):352-364.
- Liu, X.M., Wang, C.G. & Wei, Y.Q. 2001. Causal links between foreign direct investment and trade in China. *China economic review*, 12(2):190-202.
- Longo, R. & Sekkat, K. 2004. Economic obstacles to expanding intra-African trade. *World development*, 32(8):1309-1321.
- Loots, E. & Kabundi, A. 2012. Foreign direct investment to Africa: trends, dynamics and challenges. *South African journal of economic and management sciences*, 15(2):128-141.
- López Rodríguez, J. & García Rodríguez, R.M. 2005. Technology and export behavior: a resource-based view approach. *International business review*, 14(5):542.
- Mankiw, N.G. 2009. Principles of economics. 6th ed. Mason: South-Western Cengage Learning.
- Marchant, M.A., Cornell, D.N., & Koo, W. 2002. International trade and foreign direct investment: substitutes or complements? *Journal of agricultural and applied economics*, 34(2):389-302.
- Marchant, M.A., Manukyan, T. & Koo, W. 2000. International trade and foreign direct investment: a focus on the free trade area of the Americas. <http://cnas.tamu.edu/confsummaries/MARCHANT.pdf> Date of access: 14 May. 2012.
- Maringwa, J. 2009. Trade policy and trade flow analysis, SADC regional integration: what role has bilateral trade agreements played in promoting intra-regional trade? Trade and Industrial Policy Strategy (TIPS).5-7. <http://www.sadctrade.org/files/Maringwa.pdf> Date of access: 10 May. 2012.

Mbola, B. 2008. SADC launches free trade area. <http://www.southafrica.info/africa/sadc-fta.htm> Date of access: 12 Apr. 2012.

Metwally, M.M. 2004. Impact of EU FDI on economic growth in Middle Eastern Countries. *European business review*, 16(4):381-389.

Mohr, P. & Fourie, L. 2008. *Ekonomie vir Suid-Afrikaanse studente*. 4th ed. Pretoria: Van Schaik.

Mwilima, N. 2003. Foreign direct investment in Africa. African Labour Resource Unit (Final Draft Report) http://www.sarpn.org/documents/d0000883/P994-African_Social_Observatory_PilotProject_FDI.pdf Date of access: 8 Jun. 2012.

National Board of Trade. 2008. The relationship between international trade and foreign direct investments for Swedish multinational enterprises. (Kommerskollegium 3:9-26.) <http://www.kommers.se/Documents/dokumentarkiv/publikationer/2008/rapporter/report-the-relationship-between-international-trade-and-foreign-direct-investments-for-swedish-multinational-enterprises.pdf> Date of access: 1 Mar. 2012.

Naudé, W.A., & Krugell, W.F. 2007. Investigating geography and institutions as determinants of foreign direct investment in Africa using panel data. *Applied economics*, 39(10):1223-1332.

Ndlela, D. 2002. Determinants of exports from SADC and the role of market access. trade and industrial policy strategy (2002 Annual Forum). <http://www.tips.org.za/publication/determinants-exports-sadc-and-role-market-access> Date of access: 17 Feb. 2013.

Nielsen, L. 2011. Classifications of countries based on their level of development: how it is done and how it could be done. (IMF Working Paper no. WP/11/31). <http://www.imf.org/external/pubs/ft/wp/2011/wp1131.pdf> Date of access: 17 Oct. 2012.

NKC. 2012. Monitoring African sovereign risk. Zimbabwe country profile, December 2012.

O'Neil, J. 2001. Building better global economic BRICs. Goldman Sachs (Global Economic Paper no. 66). <http://www.goldmansachs.com/our-thinking/topics/brics/brics-reports-pdfs/build-better-brics.pdf> Date of access: 4 Jun. 2012.

OECD (Organisation for Economic Co-Operation and Development). 2002. Foreign direct investment for development: maximising benefits, minimizing costs. <http://www.oecd.org/investment/investmentfordevelopment/1959815.pdf> Date of access: 13 Sep. 2012.

Oehler-Sinca, I. M. 2011. The strategic character of the cooperation relationship between the

- EU and the BRIC. *Romanian journal of European affairs*, 11(2):31-33.
- Pacheco-Lopez, P. 2005. Foreign direct investment, exports and imports in Mexico. *The world economy*, 28(8):1157-1172.
- Pantulu, J. & Poon, J.P.H. 2003. Foreign direct investment and international trade: evidence from the US and Japan. *Journal of economic geography*, 3(3):241-259.
- Pearson, M. 2011. Trade facilitation in the COMESA-EAC-SADC Tripartite Free Trade Area. (TRALAC Working Paper no. SIIWP/2011). <http://www.tralac.org/files/2011/09/S11WP112011-Tripartite-Trade-Facilitation-20110921-final.pdf> Date of access: 6 Jan. 2013.
- Phillips, P.C. & Perron, P. 1988. Testing for a unit root in time series regression. *Biometrika*, 75(2):335-346.
- Reis, J.G., & Farole, T. 2012. Trade competitiveness diagnostic toolkit. Washington:World Bank Publications.
- SACU (Southern African Customs Union). 2012. What is SACU? <http://www.sacu.int/> Date of access: 23 Mar. 2012.
- SADC (Southern African Development Community). 2011. Regional indicative strategic development plan. http://www.sadc.int/files/5713/5292/8372/Regional_Indicative_Strategic_Development_Plan.pdf Date of access: 8 Jan. 2013.
- SADC (Southern African Development Community). 2012. Member states. <http://www.sadc.int/tifi/browse/page/316> Date of access: 20 Feb. 2012.
- Samake, I. & Yang, Y. 2011. Low-income countries' BRIC linkage: are there growth spillovers? (IMF Working Paper no. WP/11/267). <http://www.imf.org/external/pubs/ft/wp/2011/wp11267.pdf> Date of access: 6 Dec. 2012.
- Sharma, K. 2000. Export growth in India: has FDI played a role? (Centre Discussion Paper No. 816). http://www.econ.yale.edu/growth_pdf/cdp816.pdf Date of access: 21 Apr. 2012.
- Sithole, N.M. 2009. The export potential of South African edible nuts: the special case of macadamia nuts to Germany. Potchefstroom: North-West University. (Dissertation – MCom).
- Sun, H. 2001. Foreign direct investment and regional export performance in China. *Journal of regional science*, 41(2):317-336.

Thurman, W.N. & Fisher, M.E. 1988. Chickens, eggs, and causality, or which came first? *American journal of agricultural economics*, 70(2):237-238.

TRALAC (Trade Law Centre). 2012. The regional indicative strategic development plan: SADC's trade-led integration agenda: how is SADC doing? (TRALAC trade brief no. S12TB02/2012).

<http://www.tralac.org/files/2012/04/S12TB022012-SADC-RISDP-SADC-agenda-20120418.pdf> Date of access: 17 Feb. 2013.

UNCTAD (United Nations Congress on Trade and Development). 2000. World investment report 2000: cross border mergers and acquisitions and development. Geneva: United Nations Publications.

UNCTAD (United Nations Conference on Trade and Development). 2002. World investment report (2001 and 2002). Geneva: United Nations Publications.

UNCTAD (United Nations Congress on Trade and Development). 2006. World investment report 2006: FDI form developing and transition economies: implications for development. Geneva: United Nations Publications.

UNCTAD (United Nations Congress on Trade and Development). 2007. World investment report 2007: transnational corporations, extractive industries and development. Geneva: United Nations Publications.

UNCTAD (United Nations Congress on Trade and Development.) 2009. World investment report 2009: transnational corporations, agricultural production and development. Geneva: United Nations Publications.

UNCTAD (United Nations Congress on Trade and Development). 2010. World investment report 2010: investing in a low-carbon economy. Geneva: United Nations Publications.

UNCTAD (United Nations Conference on Trade and Development). 2011a. The least developed countries report 2011. The potential role of South-South cooperation for inclusive and sustainable development. Geneva: United Nations Publications.

UNCTAD (United Nations Congress on Trade and Development). 2011b. World investment report 2011: non-equity modes of international production and development. Geneva: United Nations Publications.

UNCTAD (United Nations Congress on Trade and Development). 2012. World investment report 2012: towards a new generation of investment policies. Geneva: United Nations Publications.

UNCTADstat. 2012. Inward and outward foreign direct investment flows, annual, 1970-2010. <http://unctadstat.unctad.org/TableViewer/tableView.aspx?ReportId=88> Date of access: 19 Jun. 2012.

UNDP (United Nations Development Programme). 2011. Human development index and its components. http://hdr.undp.org/en/media/HDR_2011_EN_Table1.pdf Date of access: 25 Jul. 2012.

UNDP (United Nations Development Programme). 2012. What we do. <http://www.undp.org/content/undp/en/home/ourwork/overview.html> Date of access: 21 May 2012.

UNECA (United Nations Economic Commission for Africa). 2005. Trade facilitation to promote Intra-African trade. http://www.uneca.org/crci/trade_facilitation.htm Date of access: 23 Jan. 2012.

USITC (United States International Trade Commission). 2005. Export opportunities and barriers in African growth and opportunity act-eligible countries. (Investigation no. 332-464. USITC Publication 3785). <http://www.usitc.gov/publications/docs/pubs/332/pub3785.pdf> Date of access: 6 Jan. 2013.

Van den Bosch, S. 2011. Non-tariff trade barriers springing up in Southern Africa. <http://www.tralac.org/2011/03/14/non-tariff-trade-barriers-springing-up-in-southern-africa/> Date of access: 22 Mar. 2012.

Van Marrewijk, C. 2007. International economics: theory, application, and policy. New York: Oxford University Press.

Vukšić, G. 2006. Impact of foreign direct investment on Croatian manufacturing exports. (Institute of Public Finance, Occasional Paper 27). <http://www.ijf.hr/OPS/27.pdf> Date of access: 12 Aug. 2012.

Weinberg, S.L. & Abramowitz, S.K. 2002. Data analysis for the behaviour sciences using SPSS. New York: Cambridge University Press.

Wenping, H. 2011. When BRIC becomes BRICS: the tightening relations between South Africa and China. *East Asia Forum*, 3 Mar. <http://www.eastasiaforum.org/2011/03/03/when-bric-becomes-brics-the-tightening-relations-between-south-africa-and-china/> Date of access: 7 Jul. 2012.

Wilson, N. & Cacho, J. 2007. Linkage between foreign direct investment, trade and trade policy: an economic analysis with application to the food sector in OECD countries and case studies in Ghana, Mozambique, Tunisia and Uganda. (OECD Trade Policy Working Papers No. 50). [http://search.oecd.org/officialdocuments/displaydocumentpdf/?doclanguage=en&cote=com/td/agr/wp\(2004\)45/final](http://search.oecd.org/officialdocuments/displaydocumentpdf/?doclanguage=en&cote=com/td/agr/wp(2004)45/final) Date of access: 1 May. 2012.

Wong, K.N. & Tang, T.C. 2007. Foreign direct investment and electronics exports: exploratory empirical evidence from Malaysia's top five electronics exports. *Economics bulletin*, 6(14):1-8.

World Bank. 2012a. What we do.

<http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/0,,contentMDK:20103838~menuPK:1696997~pagePK:51123644~piPK:329829~theSitePK:29708,00.html> Date of access: 24 May. 2012.

World Bank. 2012b. Country and lending groups. http://data.worldbank.org/about/country-classifications/country-and-lending-groups#Low_income Date of access: 21 Jun. 2012.

World Bank. 2013a. Data: GDP growth (annual percentage).

<http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG> Date of access: 9 Jan. 2013.

World Bank. 2013b. Data: current account balance (BoP, Current US\$).

<http://data.worldbank.org/indicator/BN.CAB.XOKA.CD> Date of access: 8 Jan. 2013.

Yongding, Y. 2012. China as a global economic power. (BRICS New Delhi Summit 2012).

<http://www.hse.ru/data/2012/03/12/1266179101/BRICS-2012.pdf> Date of access: 3 Oct. 2012.

Zephyr. 2012. Zephyr: comprehensive M&A data with integrated detailed company information.

<https://zephyr2.bvdep.com/version-2012628/Home.serv?product=zephyrneo> Date of access: 29 Jul. 2012.

Zhang, K.H. 2005. How does FDI affect a host country's export performance? the case of China.

<http://faculty.washington.edu/karyiu/confer/xian05/papers/zhang.pdf> Date of access: 23 May 2012.

Zhang, K.H. 2006. FDI and host countries exports: the case of China. *International economics*, 59(1):113-127.

Zhang, K.H. & Song, S. 2001. Promoting exports: the role of inward FDI in China. *China economic review*, 11(4):385-396.

Zhang, Q. & Felmingham, B. 2001. The relationship between inward direct foreign investment and China's provincial export trade. *China economic review*, 12(1):82-99.

Appendix A: Country classification systems

The IMF, World Bank and the UNDP all have different classifications and descriptions of ‘developed’ and ‘developing’ countries. In order to explain the relationship between FDI and trade of developed and developing countries, these countries first have to be classified according to the IMF, World Bank and UNDP classifications. Below, a brief description of all the latter organisations will be provided, whereafter Tables A.1 and A.2 will provide a brief overview of the classification systems employed by each of the selected international organisations.

The IMF is an organisation that consists of 188 member countries. These countries work together to motivate global monetary cooperation, secure financial stability, facilitate international trade, promote high employment and sustainable economic growth, and reduce world poverty (IMF, 2012a).

The World Bank consists of 188 member countries. It is not a bank in the normal sense, but a unique partnership with the view to reduce poverty and support development. The World Bank consists of two institutions: the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA). The IBRD aims to decrease poverty in middle-income and creditworthy poorer countries, while the IDA focuses exclusively on the world’s poorest countries (World Bank, 2012a).

The UNDP is the United Nations’ (UN) international development network. This organisation promotes change, and links countries to knowledge, experience and resources to help countries build better lives for people (UNDP, 2012).

Table A.1: Country classification systems in selected international organisations

Category	IMF	UNDP	World Bank
Term for ‘developed countries’	Advanced countries	Developed countries	High-income countries
Term for ‘developing countries’	Emerging and developing countries	Developing countries	Middle- and low-income countries
Development threshold – how the country term is determined	Not explicit	75 th percentile in the Human Development Index (HDI) distribution ²⁸ is classified as Developed countries, below the 75 th percentile mark is classified	USD 6,000 Gross National Income (GNI) per capita in 1987 prices are classified as high-income countries, below USD 6,000 are classified as middle- or low-

²⁸ The UNDP measures countries’ achievements in longevity (life expectancy at birth), education (actual and expected years of schooling) and income (GNI per capita) using the HDI (Nielsen, 2011).

		as developing countries	income countries
Type of development threshold	Most likely absolute ²⁹	Relative ³⁰	Absolute
Subcategories of 'developing countries'	(1) Low-income developing countries and (2) Emerging and other developing countries	(1) Low human development countries, (2) Medium human development countries, and (3) High human development countries	(1) Low-income countries and (2) Middle-income countries

Source: Nielsen (2011:19)

It is evident from Table A.1 that, across the different classification categories, i.e. the term 'developed countries', the term 'developing countries', the development threshold, the type of development threshold and the subcategories of 'developing countries', each of the classification systems of the three organisations differs to some extent.

In terms of similarities, both the IMF and UNDP agree as to the 'developing country' naming. The IMF and World Bank agree with regard to the type of development threshold and one of the two aspects of the subcategories of 'developing countries', namely LICs.

Table A.2 highlights the similarities across the different classification systems per country.

The countries with the check marks under each international organisation are considered to be 'developed' countries, whereas the countries with the cross marks are considered to be 'developing' countries, according to each of the classification systems.

Table A.2: Countries listed in the literature according to their categories

Country	IMF	UNDP	World Bank
Argentina	X	✓	X
Brazil	X	✓	X
Cambodia	X	X	X
Canada	✓	✓	✓
Chile	X	✓	X
China	X	X	X
Croatia	X	✓	✓

²⁹ Absolute — is a value that is fixed over time (Nielsen, 2011).

³⁰ Relative — outcomes occurring in the same period over time (Nielsen, 2011).

Egypt	X	X	X
France	✓	✓	✓
Ghana	X	X	X
Greece	✓	✓	✓
India	X	X	X
Indonesia	X	X	X
Japan	✓	✓	✓
Jordan	X	X	X
Kenya	X	X	X
LIC ³¹	X	X	X
Malaysia	X	✓	X
Morocco	X	X	X
Mozambique	X	X	X
Nigeria	X	X	X
Oman	X	No classification	X
Pakistan	X	X	X
Philippines	X	X	X
Poland	X	✓	✓
Singapore	✓	✓	✓
South Africa	X	X	X
South Korea	✓	✓	✓
Spain	✓	✓	✓
Sweden	✓	✓	✓
Taiwan	✓	No classification	✓
Thailand	X	X	X
Tunisia	X	X	X
Turkey	X	X	X
Uganda	X	X	X
UK	✓	✓	✓
US	✓	✓	✓
Zambia	X	X	X

Source: IMF (2012b); UNDP (2011); World Bank (2012b)

³¹ According to the World Bank (2012b) the LIC countries include Afghanistan, Gambia, The Myanmar, Bangladesh, Guinea, Nepal, Benin, Guinea-Bissau, Niger, Burkina Faso, Haiti, Rwanda, Burundi, Kenya, Sierra Leone, Cambodia Korea, Dem Rep., Somalia, Central African Republic, Kyrgyz, Republic, Tajikistan, Chad, Liberia, Tanzania, Comoros, Madagascar, Togo, Congo, Dem., Rep Malawi, Uganda, Eritrea, Mali, Zimbabwe, Ethiopia and Mozambique.

The IMF, World Bank and UNDP all have different descriptions and names for ‘developed’ and ‘developing’ countries. They are called advanced- and emerging/developing countries by the IMF, developed and developing countries by the UNDP and high- and middle-/low-income countries by the World Bank. The descriptions for this study will be according to the UNDP’s categorisation of developed and developing countries and the countries will be classified according to the IMF and the World Bank³², as the majority of the countries are categorised similar by these two institutes.

³² Croatia and Poland both fall into the ‘developed’ countries group for the UNDP and the World Bank. Due to the countries falling into two groups as ‘developed’ countries, these countries will be classified according to that.