The impact of a Sovereign Wealth Fund on the economy of the host nation

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ABSTRACT

Sovereign Wealth Funds (SWFs) have enjoyed a great deal of public debate among scholars and policy makers alike in recent times. This increased attention can be associated with the swelling size and number of SWFs. In the last decade, there has been a sharp increase in the number of SWFs and they have become notable players in the world financial markets due to the soaring commodity prices and global imbalances. Currently, SWFs have more assets under management (in USD) than hedge funds. Buoyed on by the recent discoveries of natural resources in Africa and relatively high commodity prices, Africa has joined the international trend of SWF establishment and is home to nine SWFs, three of which were established between 2011 and 2012 alone.

There is limited evidence and theory around the impact of SWFs on the economy of the host nation, mainly due to lack of transparency associated with SWFs. Supporters of SWFs claim that they have a positive effect on their host nation's economies. Employing selected macroeconomic variables, this study looks at the impact of the introduction of a SWF on the host nation's economy. Evidence shows a positive impact.

Key words:

Sovereign Wealth Fund, Economic Growth, Commodity Funds.

DECLARATION

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

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Potsi Mochebelele   11 November 2013

ACKNOWLEDGMENTS

DEDICATION

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Dedicated to the loving memory of my grandmother, Eunice 'Mathakane Monaheng, who encouraged me to read. My love for you burns deep.

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ABBREVIATIONS AND ACRONYMS

GDP	Gross Domestic Product
GNI	Gross National Income
HDI	Human Development Index
IMF	International Monetary Fund
OECD	Organisation for Economic Co-operation and Development
SWF	Sovereign Wealth Fund
SWF	Sovereign Wealth Fund Institute
UNDP	United Nations Development Programme

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CHAPTER 1: DEFINITION OF THE RESEARCH PROBLEM

1.1 INTRODUCTION

1.1.1 RESEARCH TITLE AND SCOPE

The title and focus of the research is "The impact of a Sovereign Wealth Fund on the economy of the host nation".

Sovereign Wealth Funds (SWFs) are attracting growing attention as they continue to grow in size and number (Allen, M. & Caruana, 2008). A better understanding of the impact of the introduction of a SWF on the economy of the host nation is thus critical. It is further important to understand the conditions under which the broad objectives of the fund are met.

1.1.2 RESEARCH PROBLEM AND OBJECTIVE

This research report attempts to establish the impact of the introduction of a SWF on the economy of the host nation.

The relevance of this research to business in South Africa is that the South African Government has debated the establishment of a SWF in response to the nationalisation debate, as contained in the official Industrial Action Policy Action Plan (IPAP) policy document (Wait, 2011). Furthermore, the prominence of SWFs is increasing, and many SWFs have made investments in South Africa (Allen & Caruana, 2008).

SWFs have progressively increased their investments in developing countries. On the African continent, these investments are concentrated in North Africa (Tunisia, Algeria and Egypt) and South Africa. Until recently, SWFs' investments in Africa were focused on securing energy supplies and investments were mainly in natural resources and/or related infrastructure projects largely targeted at the extraction of the natural resources (Turkisch, 2011).

The growth of SWFs has attracted popular attention recently in asset markets. The literature reveals several reasons for this growth (Avendaño & Santiso, 2009).

It is asserted that as this asset pool continues to expand in size and importance, so does its potential impact on various asset markets (Griffith-Jones & Ocampo, 2008). Some countries are concerned that foreign investment by SWFs raises national security concerns because the purpose of the investment might be to secure control of strategically important industries for political rather than financial gain (Allen & Caruana, 2008; Avendaño & Santiso, 2009). In other countries, inadequate transparency in the management of SWFs is a concern for investors and regulators (Zagdbazar, 2012). For example, size and source of funds, investment goals, internal checks and balances, disclosure of relationships, and holdings in private equity funds have been some of the issues of unease. In Nigeria, there were controversies around the country's SWF in 2011, which led to court cases regarding non-transparency of the nation's SWF (Zagdbazar, 2012). Concerns like these have been addressed by the IMF and the Santiago Principles, which established common standards regarding transparency, independence, and governance of SWFs (Lu, Das, Mulder, & Sy, 2009).

As part of their own corporate and ethical governance, countries targeted by the SWFs need to be certain that the returns from the SWFs investments are not being used for destructive purposes in their host countries. Many SWFs exist in nations with low scores of transparency (see Appendix A). There is, therefore, a possibility that a SWF can also be used as a tool for governments to control the internal policies of nations (Davis, 2008).

SWFs have grown multi-fold over the last decade due to the commodity boom of the first decade of the 21st century and the rise of the emerging markets with the likes of China, Russia and the United Arab Emirates (UAE) forming their own SWFs. Eight out of the nine African SWFs were created between 2000 and 2012 (SWFI, 2013). SWFs are funded in various ways through entities such as central bank reserves in the case of China; the taxation of exports when examining Russia and receipts from oil when analysing areas in the UAE, such as Dubai (Balin, 2009). Before the financial crises of 2008, some scholars estimated that SWFs would increase up to about US$10 trillion within seven years (Johnson, 2007; Jen, 2007), but the current size is estimated at over USD 5.5 trillion (SWFI, 2013). Broadly, SWFs are any government controlled savings, irrespective of the revenue source (Davidson, 2010). They are typically categorised based on their origin, that is commodity or non-commodity based SWFs. Commodity SWFs make up 59% (in terms of size) of all SWFs (SWFI, 2013).

Significant revenue generation from the commodities' boom over the last decade has led to the establishment of a number of SWFs in Africa (Triki & Faye, 2011). Resource rich emerging economies are searching for ways to face the challenge of the resource curse, and SWFs are increasingly viewed as a possible solution (Bahgat, 2008). The resource curse or Dutch disease refers to negative consequences arising from large increases in a country's income following the discovery and exploitation of natural resources (Davis & Tilton, 2005).

Makhan (2002 p.4) further discussed that African economies have been unable to generate growth in savings and export earnings. This hinders economic growth and the much needed attack on widespread poverty in the region. Despite its vast mineral wealth, Africa remains the poorest continent and home to some of the most impoverished countries in the world. Proponents of SWFs argued that SWFs may be used to turn the tide in fostering economic growth and improved governance by showcasing successful experiences, such as Norway (Triki Faye, 2011).

Although relatively new to Africa, SWFs have been around for longer than fifty years. Kuwait set up the first fund to be acknowledged as a SWF, namely the Kuwait Investment Agency, in 1953 (Selfin, Snook & Gupta, 2011). A number of SWFs commenced as central banks and overtime morphed into different types of entities (Winder, 2010 p.33). The oldest SWF in Africa is the Botswana Pula Fund (BPF), which was established in 1994 (Triki & Faye, 2011). Africa is currently home to nine SWFs with a total amount of circa USD135 billion in 2013, which represented 3% of the total global SWF value (SWFI, 2013). The number of African SWFs is expected to advance due to the recent resource discoveries on the continent. Between 2011 and 2012 alone, three new SWFs were launched in Angola, Ghana and Nigeria (Ncube, 2013). The average age of an African SWF is less than 10 years, where eight of the nine SWFs were established between 2000 and 2012 (SWFI, 2013), as *Table 1* demonstrates.

Table 1: *African SWFs*

	Country	Sovereign Wealth Fund Name	Est. Size (US)	Source	Linaburg-Maduell Transparency Index	Age of SWF
1	Botswana	Pula Fund	6.9	Diamonds & Minerals	6	19
2	Algeria	Revenue Regulation Fund	56.7	Oil & Gas	1	13
3	Angola	Fundo Soberano de Angola	5.0	Oil	n/a	13
4	Equatorial Guinea	Fund for Future Generations	0.08	Oil	n/a	11
5	Nigeria	Nigerian Sovereign Investment Authority	1.0	Oil	3	10
6	Gabon	Gabon Sovereign Wealth Fund	0.4	Oil	n/a	7
7	Libya	Libyan Investment Authority	65	Oil	1	7
8	Ghana	Ghana Petroleum Funds	0.07	Oil	n/a	2
9	Mauritiana	National Fund for Hydrocarbon Reserves	0.3	Oil & Gas	1	1
TOTAL			**135.15**	**Average age of SWF in years**		**9**

Fernandez and Eschweiler (2008) described the role of SWFs as one which is increasingly important for the future. They argued that resources controlled by SWFs have grown sharply over the past decade and will continue to do so (Winder, 2010). The following are the commonly stated objectives of SWFs (Fox *et al.*, 2008):

- Higher returns by countries seeking to maximise returns on the sale of their resources
- Savings for future generations
- Macroeconomic stabilisation
- Promotion of domestic industries

The investments that funds make are generally varied, depending on the primary objective of the fund. Griffith-Jones and Ocampo (2008) also stated that the objectives of SWFs that function as savings funds are to create a store of wealth for future generations so that they may benefit from the resources after their depletion. On the basis of the foregoing, it becomes important to ascertain whether countries experience better economic growth and stable macroeconomic variables following the establishment of SWFs.

1.2   AN OVERVIEW OF SOVEREIGN WEALTH FUNDS

Literature presents various definitions of SWFs. For instance, the IMF defined the SWFs as special investment funds that are created and owned by government with the intention to use them to hold foreign assets for long-term purposes (IMF, 2013). They are therefore government owned investment vehicles which may be created for a variety of macroeconomic purposes.

The most commonly accepted rationale for initiating a SWF is to save some revenues accruing from the sale of a nation's non-renewable resources for future generations (Bahgat, 2008). Funds therefore become a store of wealth and could have positive effects on the economic growth of the investing nation. Typically, SWFs are created when governments have budgetary surpluses and little international debt (Plotkin, 2008).

In this study, the definition of SWFs used by the Sovereign Wealth Fund Institute is adopted, which defined SWF as a state-owned investment fund or entity that is commonly established from balance of payments, fiscal surpluses and/or receipts resulting from resource exports. SWFs may have their origin in commodities (created through commodity exports, either taxed or owned by the government) or non-commodities (usually created through transfers of assets from official foreign exchange reserves) (SWFI, 2013) (See *Figure 1*).

Figure 1: The Source of SWFs
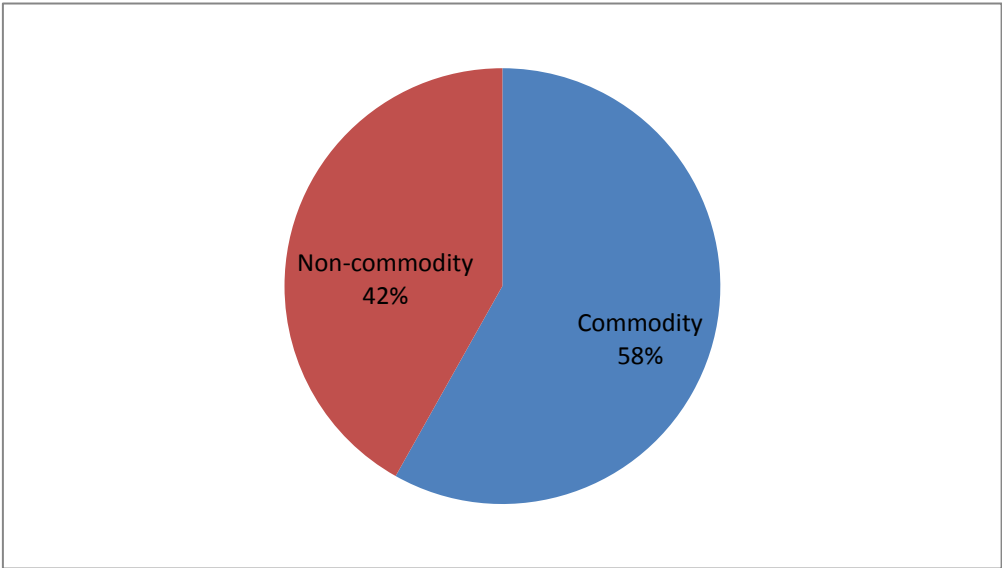
Source: SWFI, May 2013

When a SWF is arranged with the primary purpose of reducing the impact of volatile fiscal revenues and/or exchange receipts, they are often referred to as Stabilisation Funds (Griffith-Jones & Ocampo, 2008). Similarly, when its operational rules are explicitly designed to absorb a budget surplus or fund overall budget deficits, SWFs are referred to as Financing Funds (Davis *et al.*, 2003).

In the last decade, there has been an increase in the establishment of SWFs, and they have become notable players in the world financial markets mainly due to the soaring commodity prices and current global imbalances (Zagdbazar, 2012). According to the Sovereign Wealth Fund Institute (SWFI) (2013), as at May 2013, the total size of SWFs was estimated at USD 5.5 trillion. Of that, the commodity-based SWFs accounted for over 59%. The exact number of SWFs is difficult to estimate because of varying definitions and lack of information on some of the funds. According to same estimation by the SWFI, there are at least 68 SWFs. Out of these, 36 were created in the last decade. The most recent list of SWFs is shown in Appendix 1.

Currently, the three largest funds are Norway (USD 716 billion), the Abu Dhabi Investment Authority (USD 627 billion) and the Saudi Arabian Monetary Agency (USD 524 billion). Some countries have more than one SWF and in some cases, such as Russia, they have a combination of commodity and non-commodity SWFs. The 68 SWFs listed by the SWFI are hosted by 48 nations. *Figure 2* provides a pictorial summary of SWFs by region. As evident from this figure, most SWFs are located in Asia and the Middle East.

Figure 2: Distribution of SWFs by regions
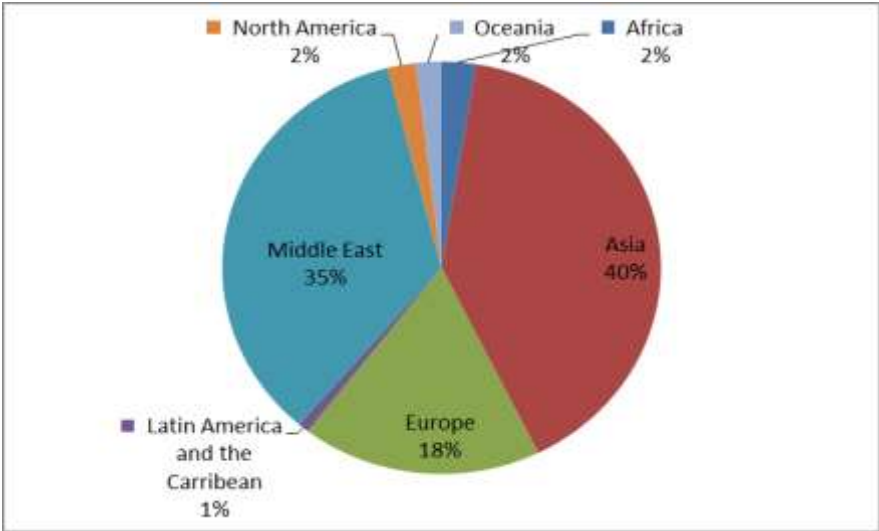
Source: SWFI, May 2013

According to Tsani, Ahmadov, & Aslanli (2010), almost half of existing SWFs operate as legal entities, and the balance are entities within the Ministry of Finance or the Central Bank of the host country. Despite being source of revenue for host countries, one of the concerns around SWFs is their relative lack of transparency around their governance and investment strategies (Zagdbazar, 2012).

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Unlike other types of investment funds, such as pension funds, SWFs have no explicit liabilities to their owners and thus have less incentive to disclose their investment strategies and management practices. This may be the reason why SWFs generally have such low level of transparency. Sen (2010) and Fox *et al.* (2008) outline other general criticisms against SWFs as:

- Excessive government ownership and management.

- Establishment of SWFs before they are prepared for their management. It is posited that having an exportable commodity and sufficient amount of external reserves should not be the only reasons for establishing a SWF.

- SWF policy may conflict with central bank policy. For example, SWF policy on the stability of the exchange rate during excessive foreign currency inflow could lead to pressure of increasing the domestic price, which contradicts the policy of the central bank.

The evidence and theory around SWFs are limited thus far due to the many data restrictions and lack of transparency associated with SWFs (Bernstein, Lerner & Schoar, 2009). Furthermore, SWFs are unique institutions in that while they manage large pools of capital, their differing objective functions are often complex and focused beyond financial returns. Bernstein, Lerner and Schoar (2009) contended that the arguments regarding the involvement of government in the financial sector can also be relevant for the role of SWFs. This is because SWFs are wholly government owned.

Supporters of SWFs claim that they have a positive effect on their host nation's economies, as well as the world economy at large (Bremmer, 2009). This study is only concerned with the effect of SWFs on the economic growth, stability and human development of the host nation. A similar study titled "Do Sovereign Wealth Funds Best Serve the Interests of their Respective Citizens" was carried out by the University of Chicago (Fox et al., 2008). The study reviewed six SWFs and, after acknowledging that the analysis was complicated due to the inability to determine the exact objectives of the SWFs and the general lack of transparency, found that most SWFs do not benefit their citizens.

Because SWFs (as an area of study) are still a relatively new concept and one which is clouded with a general lack of transparency, literature and studies focused on the SWFs' impact on the host economy is limited.

Globally, governments are either facing recession induced fiscal constraints or reaching the limits of fiscal and monetary stimulus packages; they are searching for innovative ways and less traditional methods of investments with the hope for economic revival (Balin, 2009).

SWFs generally weathered the storm of the recession far better than other investment vehicles, such as private equity and pension funds (Bremmer, 2009). Developing nations that are in the midst of commodity booms are increasingly initiating SWFs in an effort to guard against the effects of commodity price fluctuations and to ensure sustained economic growth and stability (Griffith-Jones & Ocampo, 2008).

As previously stated, the study is relevant because of the current boom of SWFs on the African continent and South Africa's recent consideration of establishing a SWF. It is wise to bear in mind that all the countries on the continent that have created SWFs and those that intend creating them, such as Mozambique and South Africa (Dixon & Monk, 2011), are characterised as developing nations. The literature review on economic growth therefore focuses on developing economies.

1.3   TERMINOLOGY

1.3.1   ECONOMIC GROWTH AND DEVELOPMENT

Various definitions of "Economic Growth" and "Economic Development" can be found. The Business Dictionary ("www.businessdictionery.com," n.d.) defined economic growth as: "an increase in a country's productive capacity, as measured by comparing gross national product (GNP) in a year with the GNP in the previous year".

According to Colander (2010) economic growth is concerned with increased productivity that can be categorised as increases in total output and increases in per capita output. Per capita growth means that the country produces more goods and services per person. Economic development is a more qualitative measure and incorporates progress in providing livelihood on a sustainable basis, access to education and basic healthcare for the majority of the population (Allen et al., 2000). Economic growth is generally accepted to be a more quantitative measure that monitors a country's real output per capita over time. Malizia and Feser (1998) argued that growth and development are complimentary because one enables the other.

Growth is an increase in output, while development is an indicator of wellbeing. Overall, an improvement on both growth and development leads to a wider range of economic choices and possibilities.

Though other measures can be used, the most commonly accepted measure for output is gross national income (GNI), previously known as gross national product (GNP). Economic development can, therefore, be measured by the year-on-year change in a country's per capita GNI. Todaro and Smith (2003) defined GNI per capita as the measure of the wellbeing of the average citizen of the population. Todaro (1994), Allen *et al.* (2000) and Mohr and Fourie (2004) acknowledge the shortcomings of using GNI per capita as an index. The shortcomings include the index's inability to capture unrecorded economic transactions from the informal sector and externalities. Furthermore, it is difficult to accurately compare the GNI per capita of different countries.

In light of the above-mentioned shortcomings, Allen *et al.* (2000) argued that in the long-term, development should be viewed in terms of whatever is generally regarded as good for the society, *viz-a-viz* improved living standards and a reduction in poverty. A more recent study suggests that the Human Development Index (HDI) is a superior indicator of economic growth and development, as it encompasses broader and more indicative indices including the standard of living. The shortcomings of using HDI as a measure are that it is a relatively new index and not all countries are measured. In this study, the gross domestic product (GDP) and gross national income (GNI) per capita are used to measure economic growth and development.

CHAPTER 2: THEORY AND LITERATURE REVIEW

2.1   INTRODUCTION

Economic growth is essential for the attainment of socio-economic and political objectives of nations (Sarkar, 2012; Bayraktar & Fofack, 2007). The literature review is therefore focused on the determinants of economic growth, with the ultimate goal of investigating whether economic growth accelerates following the establishment of SWFs. The review was completed by assessing relevant theoretical economic perspectives and identifying various macroeconomic indicators that measure economic growth.

According to Samuelson and Nordhaus (1985), "economic growth is the most important factor in the success of nations in the long run". The science of economics arguably originates from the need to study the opportunities that people have for living well (Sen, S., 2010). The ultimate objective of economic development and state action is the enhancement of human capabilities and a better livelihood for all its citizens (Sen, A. & Nussbaum, 1993).

Economic growth, by its definition, is measured by the change in GDP over a given period (Colander, 2010). Contemporary economic literature is focused on identifying drivers for economic growth from multiple perspectives. GDP is the measure that is traditionally used and widely accepted for measuring a country or a region's level of economic growth and development (Boarini & d' Ercole, 2013).

Growth, even by as low as two percent, over a number of years can transform a poor country into a rich one, as has been the experiences of some Asian economies, including the People's Republic of China, South Korea and the Republic of China (Parkin *et al.*, 2006).

Literature provides several determinants of economic growth. These determinants range from those identified by Solow in 1956 in the traditional neoclassical school of thought and others by Romer (1986) and later Lucas (1988) under the endogenous growth theories. Over the last two decades, there has been a wide debate around the determinants of economic growth, yet there remains no unifying theory (Artelaris, Arvanitidis & Petrakos, 2007). Despite this lack of unity, there are several theories to consider in reviewing the determinants of economic growth.

2.2 THE ECONOMIC RATIONALE FOR SWFS

Countries with natural resources need to make important decisions about the extraction of their resources. These decisions are based on uncertain information regarding future reserves, future commodity prices and rates of return on exploration (Reisen, 2008). Essentially, the choice is between whether to extract and sell the resource at today's market price or preserve the exhaustible resources for sale at future market prices.

The Hotelling Rule and the Hartwick Rule provide useful insights into the optimal management of natural resources (Hamilton, 1995). Both are useful in making the decision about whether to extract the resource or not. Fox *et al.* (2008) explained that the Hotelling Rule suggests that in order to maximise the present value of returns of a non-renewable resource, producers should supply the resource to a point where the projected rate of increase in unit profits is equivalent to the rate of return that owners of the resource can earn from alternative investments. The relationship is mathematically represented as follows (Fox et al., 2008):

> **Hotelling Rule: P'(t) /P(t) = δ** where P(t) is resource profit (market price – extraction cost) at time t and δ is the discount rate.

The Hotelling Rule is concerned with efficient depletion and states that a country that exports any exhaustible commodity should be indifferent to whether it extracts the commodity or not. In which case, the return is the expected rise in future commodity prices and receiving a market rate of return on the sale. If the market return of reinvesting the proceeds of the commodity is depressed, i.e. if the price of the commodity is low, the country will either consume the proceeds or leave the commodity unutilised (Reisen, 2008).

According to Reisen (2008), The Hartwick Rule for intergenerational equity states that "extracting and selling oil amounts to running down capital, unless receipts are fully reinvested in financial, physical or human capital". The relevance for SWFs is that their objective is to aid economic growth through savings by transforming oil receipts into other forms of wealth if they are not consumed.

Recent research explains that nations with well governed and designed institutions are better suited to use their natural endowments to improve their economic and social outcomes than those with weak and poorly designed institutions (Dixon & Monk, 2011).

As such, assuming that the SWF is well governed and designed, we would expect a country to have better economic growth after the introduction of a SWF. The IMF strengthens this argument by contending that if sub-Saharan countries improved the quality of their institutions to be comparable to those of Asia, the region's per capita GDP would near double (Shankleman, 2009).

2.3   ECONOMIC GROWTH MODELS

The review of the literature emphasises different economic growth models, with each focusing on different variables that impact on economic growth and development. The core literature on the relevant economic models is reviewed below.

2.3.1   THE HARROD-DOMAR GROWTH MODEL

This is one of the earlier post-Keynesian theories of economic growth (King & Levine, 1994). It is used in developing economies to explain an economy's growth rate in terms of the level of saving and productivity of capital. It suggests that there is no natural reason for an economy to have balanced growth (Levine, 1997).

The Harrod-Domar model suggests that increasing the savings rate; increasing the marginal product of capital; or decreasing the depreciation rate will increase the growth rate of output and therefore achieve growth (Howard, 2001). This means economic growth can be realised by increasing the savings rate of a country. The Harrod-Domar growth model and its implications for SWFs is that it relates more closely to problems faced by developing economies. This model emphasises economic growth based on increased levels of savings and investment.

2.3.2   THE SOLOW GROWTH MODEL

The limitations with the Harrod-Domar growth model led to the development of the Solow model, also known as exogenous growth model or the neoclassical growth model (Solow, 1988). The distinguishing feature of the neoclassical economic growth model from the Harrod-Domar model is that it adds labour as a factor of production. It focuses on four variables, namely; output, capital, labour and knowledge or the effectiveness of labour (Solow, 1956).

Another distinguishing feature of the model is that it implies that regardless of its starting point, the economy converges to a balanced growth path (Quah, 1996).

This refers to a situation where each variable in the model develops at a constant rate (Solow, 1988, p.11). According to Petrakos (2001) the model holds four assumptions; (i) constant return to scale, (ii) diminishing marginal productivity of capital, (iii) exogenously determined technical progress and; (iv) substitutability between capital and labour. Similar to the Harrod-Domar model, the Solow model emphasises savings and investment ratios as important determinants of economic growth.

The other assumption of this model is concerned with the change in stocks of labour, capital and knowledge over time (Solow, 1956). Given that nations with SWFs aspire to save part of their natural resource wealth for the future, this model is relevant to an economy with a SWF because one of the considerations when creating a commodity-based SWF is whether, in the long run, it is better to extract the natural resource now and invest the earnings from that for future generations or leave the resource in the ground for sale at future prices (Fox *et al.*, 2008). Most importantly, this model best explains why some investment is needed to prevent capital from declining. Because existing capital is being depleted, it must be replaced to keep the overall capital stock from falling. In other words, a store of wealth (savings) must be created.

The model predicts convergence in growth rates on the basis of poor economies that develop more rapidly when compared to rich ones (Petrakos, 2001). This would be of interest to countries with SWFs, as they would need to benchmark themselves before and after the establishment of SWF.

2.3.3   ENDOGENOUS GROWTH THEORIES

Endogenous growth theory holds that investment in human capital, innovation, and knowledge are significant contributors to economic growth (Barro, 1991). In recent studies, there has been debate around the role of technology as a driver of long run economic growth. These studies are founded on endogenous growth theories which argue against convergence. The model differs from the exogenous growth model by emphasising that economic growth is an endogenous result of an economic system and not the result of forces that have bearing on the economy from outside the system (Barbier, 1999). The endogenous growth models emphasise the role of non-economic factors such as legal, political and social factors as determinants of economic growth.

Scholars of these models (Romer, 1986; Rebelo, 1992; Lucas, 1988) identified the various determinants of economic growth which can be summarised as follows:

- Human capital (measured by workers' acquisition of skills through education and training)

- Openness to trade (measured by the ratio of exports to GDP)

- Foreign Direct Investment (FDI)

- Infrastructure development

- Technological processes (innovation)

- Others (*viz.* legal, political and social factors)

There is on-going research and debate into the respective roles of each of the various determinants and the list is by no means exhaustive.

2.4   INFLATION AND THE STABILITY OF AN ECONOMY

The World Bank identified a stable business environment as one of the pillars and strategic components of good economic policy (Collier & Dollar, 2001). An economy with low, stable inflation is regarded as being complementary to the growth and development of such economies. Instability causes uncertainty and deters investors' perceptions of the future profitability of the country (Erramilli & D'Souza, 1995).

Erramilli and D'Souza (1995) found that exchange rate volatility and high inflation are the main contributors to uncertainty and instability in an economy. Similar findings were made in a study in Ghana by Kyereboah-Coleman and Agyire-Tettey (2008).

This research study employs inflation as a measure of economic stability. This is concurrent with Akinboade, Siebrits and Roussot's (2006, p.190-191) assertions that "low inflation is taken to be a sign of internal economic stability in the host country. High inflation indicates the inability of governments to balance their budget and failure of central banks to conduct appropriate monetary policy". Typically, there are three main frameworks that central banks use to define monetary policy. These are inflation targeting, fixed exchange rate and monetary aggregate (Ortiz & Sturgenegger, 2007).

Akinboade et al. (2006) found that in comparison to the other two frameworks, inflation targeting provides the most effective and transparent tool for achieving economic stability.

Each country has its own policy regarding inflation targeting, therefore the difference between "high" and "low" inflation is indistinct (Ahn, Adji & Willett, 1998). Some literature offers some distinction between low and high inflation. Reinhart and Rogoff (2009) assert that high inflation does not happen in isolation to other macroeconomic problems.

Inflation above 40% is considered to be detrimental to the growth of the economy, as it erodes the value of the currency. Lipsey and Chrystal (2006, p. 578) offered the following definition for hyperinflation: "inflation so rapid that money ceases to be useful as a medium of exchange and a store of value". The comparative figures used for the study were 10% compared to 5% (p. 30).

Glaister and Atanasova (1998) also found that the effect of high inflation on economic growth was negative. Their study was focused on the effect of high inflation on employment in Bulgaria. They concluded that high inflation can cause various problems within the country. Wint and Williams (2002) also demonstrated that a stable economy attracts more foreign direct investment (FDI). Thus low inflation is desirable in countries that wish to attract FDI. The literature stresses that unstable high inflation has a negative impact on economic growth. In this study, inflation becomes important since it is used to check stability of the economy after the establishment of SWFs.

2.5   EMPIRICAL LITERATURE REVIEW

Literature on the relationship between SWFs and economic growth is comparatively limited albeit steadily increasing. Evidence presents contradicting conclusions regarding the relationship between SWFs existence and economic growth. This is because some studies found SWFs to have positive effects on economic growth, while others found the opposite (Ncube, 2013). In this section, the empirical literature on the determinants of economic growth is reviewed from the perspective of later investigating whether these determinants improve, following the establishment of SWFs.

2.5.1   TERMS OF TRADE AND GLOBAL INTEGRATION

Proponents of Exports Led Growth hypothesis (ELG) (the Neo-classical school of economists) postulated that exports contribute significantly to economic growth. They argued that exports can provide foreign exchange that allows for increased imports of intermediate goods, which in turn increases capital formation and thus stimulates

output growth in developing countries. Though trade theory is not definitive on the causal relationship between trade and economic growth, extensive empirical evidence points to a positive link between export growth and GDP. For instance, Awokuse (2008) cited the research of Balassa (1985), Sharma, Norris and Cheung (1991) and that of Dar and Amirkhalkhali (2003), whose results revealed that exports growth and GDP are correlated. More recent studies of Dar, Bhanja, Samantaraya and Tiwari (2013), Rangasamy (2009) and Mishra (2011) supported the existence of a long-term relationship between economic growth and exports.

According to Awokuse (2008), the relationship between exports and economic growth is attributed to the potential positive externalities derived from exposure to foreign markets, and exports make a contribution to growth in three ways. Firstly, an increase in foreign demand for domestic exportable products can induce an overall growth in output via an increase in employment and income in the exportable sector.

Secondly, and also supported by Helpman and Krugman (1985), export growth can indirectly affect economic growth through various routes such as efficient resource allocation, greater capacity utilisation, exploitation of economies of scale and stimulation of technological improvement due to foreign market competition. Thirdly, export growth enables firms to take advantage of economies of scale that are external to firms in the non-export sector, but internal to the overall economy.

2.5.2   HUMAN DEVELOPMENT INDEX

Increasing national wealth may lead to expanding people's choices (Barro, 1991). However, the UNDP argues that it may not because "the manner in which countries spend their wealth, not the wealth itself, is decisive". The advantage of the HDI is that it is a single statistic that includes both social and economic development as a frame of reference (UNDP).

Whilst endogenous growth models are a standard and accepted method to analyse a country's long-term development, recent research (Stiglitz, Sen & Fitoussi, 2009; OECD, 2011) emphasises the importance of non-monetary measures such as education and health in addition to the traditional measures of economic growth such as the growth read of GDP.

The HDI model uses life expectancy at birth, mean years of schooling, expected years of schooling and gross national income per capita to compare development levels in different countries (Wiebe, 2012). The economic growth rate is positively related to the health and education of the workforce (Wiebe, 2012)

2.6   SWFS AS A SOLUTION TO THE RESOURCE CURSE

Although not the main focus of this paper, it would be remiss not to include a discussion on the debate of SWFs as possible solution to the resource curse. This debate has split researchers into two groups, with some arguing for and other arguing against the effectiveness of SWFs in addressing the threat of the resource curse. Zagdbazar (2012, p.2) stated that "to avoid wasting non-renewable resource revenue in inefficient ways, many resource rich countries have developed (or tried to develop) institutions that aim to improve public finance, manage windfall revenue wisely and help high-quality growth. Of these institutions, SWFs are supposed to be important in resolving the 'curse'".

Many countries, especially those in Africa, such as Angola, Nigeria, Sudan and the Congo, are rich in oil, diamonds and other minerals, yet their citizens continue to experience some of the worst per capita incomes and quality of life in the world (Frankel, 2010). By contrast, East Asian economies of Japan, Korea, Taiwan, Singapore and Hong Kong achieved western-level standards of human development despite possessing virtually no exportable natural resources. Auty (2001) coined the term "natural resource curse" to describe this phenomenon.

The resource curse, also known as the Dutch disease or the paradox of plenty, refers to the tendency of countries with oil or other natural resource wealth that have failed to grow more rapidly than those without (Frankel, 2010).

Not all resource rich economies have been successful in managing the threat of the resource curse. The key questions are (Auty, 2001):

- Why resource rich economies such as Botswana or Norway are more successful, while others perform badly despite their immense natural wealth?

- Do the riches of a resource boom induce a shift from profit-making entrepreneurship towards socially inefficient rent seeking?

- How much of this depends on the quality of institutions, the rule of law and the degree of financial development?

- Is resource wealth plundered by corruption, rent grabbing and civil war at the expense of widespread inequality and poverty?

- Does a resource boom maintain unsustainable, bad policies for too long?

- Is depleting natural wealth sufficiently reinvested in other productive assets?

2.7   STATE CAPITALISM

State capitalism is also not the main focus of this paper. However, in light of the rise of SWFs and increasing interest on state capitalism, a brief discussion is warranted. SWFs, by virtue of being government owned, are seen as a form of state capitalism. In recent years, states have used SWFs to invest in the global financial market. The involvement of the public sector in corporate activity is on the incline and this new phenomenon has been labelled "New Mercantilism" (Gilson & Milhaupt, 2007).

Bortolotti, Fotak, Megginson and Miracky (2009) argued that because SWFs are operated by national government, they are essentially a form of state capitalism. Because politics is one of the factors that determine whether SWFs benefit their citizens (Fox et al., 2008) the rise of state capitalism cannot be ignored when analysing SWFs. SWFs have become the single most important category of state owned investors, and have attracted increased attention from academics, policy makers and investors in recent years (Bortolotti et al., 2009).

The recent global financial crisis has led to the need for a deeper understanding around why some economies weathered the storm better than others (Lyons, 2008).

It is widely accepted that those following a free market, such as the United States and most of Europe, fared the worst. This has led to a renewed interest in alternatives for market capitalism (Wooldridge, 2012).

In the 1990s, most state owned firms were little more than government departments. The *status quo* was that as the economy matured, the government would then privatise those companies (The Economist, 2012).

Yet a closer look at the increasing number and size of SWFs is an indication that state capitalism is in fact increasing. State-backed firms accounted for over a third of the emerging markets' foreign direct investment between 2003 and 2010.

The Chinese are the champions of state capitalism (Wooldridge, 2012). China is home to the world's largest SWF (SWFI, 2013). The Chinese government is the single major shareholder in the country's 150 biggest companies. The Chinese no longer regard state directed firms as transitory towards privatisation, rather they view these as a sustainable model (The Economist, 2012). This is a trend worth inspecting, considering the impressive growth rates that China has posted over the past 30 years.

2.8   CONCLUSION AND SYNTHESIS OF LITERATURE REVIEW

The literature review sought to explore the rational around how the economic performance of a country is influenced by the introduction of a SWF. Existing literature is unanimous on the objectives of SWFs. There is, however, less agreement on whether these objectives are being met.

At a very basic level, it is accepted that SWFs exist to improve living standards within their host nations. There is a cost associated with improving living standards. This cost cannot be borne by an economy that is not growing or stable. As such, economic growth is critical for the attainment of the socio-economic objectives of nations.

Especially in recent times, there has been growing interest in the role of SWFs on the financial markets. Because SWFs are essentially government owned investment vehicles, this growing interest in SWFs can further be reviewed under the broader topics of the role of political institutions in promoting economic growth and state capitalism.

The widely held view is that the public sector is inefficient at administering resources. This notion is ignored by the host countries of SWFs (Rios-Morales & Brennan, 2009). While the nations with SWFs seem to regard the funds as being complimentary to economic growth, macroeconomic stabilisation and human development, it is important to realise that those objectives can also be achieved through other policies. The long-term effect of SWFs, especially in Africa, also remains uncertain due to the relatively low age of SWFs on the African continent.

Commodity-based SWFs make investment decisions with the primary objective of maximising their returns. This can only be achieved through sound and sustained economic growth. Because of the uncertain nature of commodity markets, the SWF takes into account various factors before deciding on whether to extract the natural resource and also what investment to make with the proceeds. There are various economic models that explain the behaviour of different variables that impact on which investment to make and the resultant economic growth and human development. Consequently, the results based on models tend to be different.

The knowledge of the influence and impact of the determinants of economic growth is important, as it assists policy makers in formulating appropriate policies that yield the required returns. The results arising from the literature present non-conclusive views between the growth of an economy and the existence of a SWF.

CHAPTER 3:   RESEARCH HYPOTHESIS

From the literature review, a number of possible hypotheses were identified. This study tests the following:

3.1   HYPOTHESIS ONE:

Null Hypothesis (Ho$_1$): The introduction of a SWF has a positive impact on the economic growth of a host country.

Alternative Hypothesis (Ha$_1$): The introduction of a SWF does not have a positive impact on the economic growth of the host country.

Thus:

$$H_{o1}\ \mu_0 > 0$$

$$H_{a1}\ \mu_0 \neq 0$$

Economic growth was measured using GGDP and GNI per capita.

3.2   HYPOTHESIS TWO:

Null Hypothesis (Ho$_2$): The introduction of a SWF contributes to the macroeconomic stability of the host country.

Alternative Hypothesis (Ha$_2$): The introduction of a SWF does not contribute to the macroeconomic stability of the host country.

Thus:

$$H_{o2:}\ \mu_0 > 0$$

$$H_{a2:}\ \mu_0 \neq 0$$

Stability was measured using inflation.

3.3   HYPOTHESIS THREE:

Null Hypothesis (Ho$_3$): The introduction of a SWF contributes to the terms of trade of the host country.

Alternative Hypothesis (Ha$_3$): The introduction of a SWF does not contribute to the terms of trade of the host country.

Thus:

$$H_{o3} \ \mu_0 \geq 0$$

$$H_{a3} \ \mu_0 < 0$$

3.4   HYPOTHESIS FOUR:

Null Hypothesis (Ho$_4$): The introduction of a SWF does have a positive impact on the human development of the host country.

Alternative Hypothesis (Ha$_4$): The introduction of a SWF does not have a positive impact on the human development of the host country.

Thus:

$$H_{o4} \ \mu_0 \geq 0$$

$$H_{a4} \ \mu_0 < 0$$

Human Development Index (HDI) was used to measure human development.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 OVERVIEW

The aim of the study was to determine whether nations that have SWFs have stable macroeconomic variables following the introduction of these SWFs. In this regard, economic growth (measured by GDP growth and GNI) and its determinants as stipulated by the literature were considered. These determinants of economic growth included GNI per capita, inflation, terms of trade, as well as human development index (HDI). This chapter outlines the method followed to achieve the stated objectives.

4.2 RESEARCH DESIGN

The methodology employed a quantitative, descriptive approach to examine the effect of the introduction of a SWF on the economy of the sponsor nation. Saunders and Lewis (2012, p. 85) defined quantitative data as "data consisting of numbers or data that have been quantified, such as tables of figures". Quantitative research, as expected, produced numerical scores which were submitted to statistical analysis for summary and interpretation.

4.3 UNIT OF ANALYSIS

The unit of analysis describes the level at which the research was performed and which objects were researched (Blumberg, Cooper & Schindler, 2008). The unit of analysis for this study was countries with SWFs.

4.4 POPULATION

A population is the total collection of elements about which inferences are made (Blumberg et al., 2008). The population for this study included all the countries with SWFs as per the SWFI list of March 2013 contained in Appendix B. These countries, with respect to their funds, range across different sizes of (in billion dollars), inception year, origin (commodity and non-commodity funded) and levels of transparency.

4.5   SAMPLING METHOD AND SAMPLE SIZE

Saunders and Lewis (2012, p.132) defined a sample as "a subgroup of the whole population. The subgroup need not necessarily be a subset of people or employees; it can, for example, be a subset of organisations". Researchers usually collect data from a sample rather than the whole population because of the cost associated with collecting data from the entire population. To make inferences from the sample, it has to be representative of the population (Zikmund, 2003).

Blumberg *et al.* (2008) described a purposive sample as a non-probability sample that conforms to certain criteria. Since the sample in this study had to conform to the criterion of being a country, purposive sampling was utilised as the appropriate sampling for this study.

A purposive sampling method is defined as a type of non-probability sampling in which a researcher's judgement is used to select the sample members based on a range of possible reasons and premises (Saunders & Lewis, 2012, p.138).

Purposively, this study analysed eleven countries. The criteria was to select countries with the largest commodity SWFs; not more than one SWF; and the SWF had to be older than five years in order to obtain an adequate number of data points for inference. The selected countries with their respective SWFs are contained in *Table 2* below. The countries which fell within the sampling criteria were Algeria, Botswana, Azerbaijan, Norway, Brunei, Canada, Oman, Mexico, Kiribati and Equatorial Guinea.

Table 2: *Countries Included in the Sample*

Country		Fund Name	Est. Size (USD Bln)	Inception	Origin	SWF as a % of GDP(2012)
1 Norway		Government Pension Fund - Global	715.9	1990	Oil	143%
2 Algeria		Revenue Regulation Fund	56.7	2000	Oil & Gas	5%
3 Azerbaijan		State Oil Fund	32.7	1999	Oil	49%
4 Brunei		Brunei Investment Agency	30	1983	Oil	177%
5 Canada		Alberta's Heritage Fund	16.4	1976	Oil	1%
6 Oman*		State General Reserve Fund	8.2	1980	Oil & Gas	11%
7 Botswana		Pula Fund	6.9	1994	Diamonds & Minerals	48%
8 Mexico		Oil Revenues Stabilization Fund of Mexico	6.0	2000	Oil	1%
9 Angola		Fundo Soberano de Angola	5	2000	Oil	4%
10 Trinidad & Tobago		Heritage and Stabilization Fund	2.9	1985	Oil & Gas	12%
11 Kiribati		Revenue Equalization Reserve Fund	0.4	1998	Oil	228%
12 Equatorial Guinea		Fund for Future Generations	0.08	2002	Oil	0.5%
TOTAL			**881.18**			

*2012 GDP was unavailable. 2011 GDP figure was used to compute SWF as a percentage of GDP.

4.6   DATA AND SOURCE OF DATA

Time series data for the period between 1960 and 2012 were used for the analysis. The first phase in data collection was obtaining a list of SWFs from the SWF Institute. This constituted secondary data. Secondary data were defined as data which were originally compiled for some other purpose, while time series data are defined as data recorded over time, usually at regular intervals (Saunders & Lewis, 2012, p. 84 & 90).

The data in respect of the macroeconomic variables were obtained from the World Bank 2013 year book. The World Bank has developed a host of indices that can be used to measure and benchmark different aspects of the world economy and national economies. Four of the five indicators used in this study fall under the "economic policy and external debt" category of the World Bank that measures the economic health of countries. GDP growth (GGDP), GNI per capita, terms of trade (ToT), and inflation are included in this category. Data for Human Development Index (HDI) was obtained from the UNDP website.

Economic growth is normally reported on a quarterly basis and compares the current quarter's figure to the same quarter of the previous year. For longer periods, a year-on-year comparison is also acceptable. This study uses year-on-year comparisons for all variables. The currency used was the US Dollar for all countries to allow for more accurate inter-country comparisons and is also the currency the data are presented in by all databases, i.e. SWF Institute and the World Bank. The HDI data are only available annually from 2005. Prior to that, there is disjointed data for 1980, 1990 and 2000.

4.7   DATA ANALYSIS

According to Zikmund (2003, p.473), "the process of data analysis entails summarising large quantities of raw data so that the results can be interpreted. The aim of data analysis is to reveal any consistent patterns in the data so the results may be studied and interpreted in a meaningful manner".

As previously stated, theory lists all possible determinants of a phenomenon, in this case economic growth. The literature provides several determinants of economic growth, ranging from those identified by Solow in the neo-classical school of thought in 1956 to those later identified by Romer (1986) and Lucas (1988) under the endogenous growth theories. However, empirically there are variants to these models due to certain constraints, such as availability of data and measurement issues.

For this study, the variables for which data were available were included. These are tabled below.

Table 3*: List of Variables and Description*

Variable	Description
Economic Growth	GDP growth
Terms of Trade (ToT)	Exports of goods and services as a percentage of GDP as a measure of openness of the economy
Human Capital	Human Development Index
Income	Gross National Income (GNI) per capita
Inflation	Consumer Price Index

4.7.1   DESCRIPTIVE STATISTICS

To test the hypotheses of this study, graphical analysis and descriptive statistics were used to assess the patterns before and after the introduction of SWFs. Descriptive statistics provide simple summaries of the data to quantitatively describe the main features of the data. It allows researchers to meaningfully define many pieces of the

data with few indices. The commonly used descriptive statistics include measures of central tendency (mean, mode and median) and measures of variability (standard deviation, kurtosis and skewness) (Weiers, 2010).

Descriptive statistics may also be used to describe the relationship between variables. In this case, measures of dependence (correlation and covariance), cross-tabulations, scatterplots and conditional distributions were used.

The descriptive statistics discussed below were used in the analysis:

- **The Mean**, sometimes called the average, is computed by summing up the values of a variable for all observations and then dividing by the number of observations (Bland et al., 2000). It therefore represents the central value for a given set of data. The mean is the mostly used and preferred measure of central tendency over median and mode (Weiers, 2010). This is because it takes into consideration every unit in the sample. However, if there are extreme values in the sample, the mean could be affected by such, in which case the median may be preferred. In this study, it was analysed whether the means of the chosen macroeconomic variables are the same before and after the establishment of the SWFs.

  To do this, the T-test for independent samples was utilised to determine whether there was a significant difference between the mean of the before-establishment and the mean of the after-establishment. Such that if the sample t-statistic falls within the critical area, the null hypothesis was rejected at a 5% significance level (Bland, 2000; Weiss & Weiss, 2012). The two tailed T-test was calculated as follows:

  $$t = \frac{(\bar{X}_1 - \bar{X}_2)}{S_{\bar{X}_1 - \bar{X}_2}}$$

  Where $S_{\bar{X}_1 - \bar{X}_2} = \left(\frac{S_1}{n_1} + \frac{S_2}{n_2}\right)$.

  S_1 is the standard deviation for sample one

  S_2 is the standard deviation for sample two

  N_1 is the degrees of freedom in sample one

  N_2 is the degrees of freedom in sample two

$$\overline{X} \text{ is the mean}$$

- **Standard Deviation** as a measure of dispersion describes the location of the data with respect to the mean. It is calculated as the square root of the variance (Weiers, 2010). Standard deviations were an input in the calculation of the t-statistic.

- Skewness is a measure of symmetry of a distribution; in most instances the comparison is made to a normal distribution. In a skewed distribution, there are more extreme values at one end than the other. Such that if the extreme values are at the lower end of the distribution, the distribution is said to be negatively skewed, otherwise it is positively skewed. Since the relationship between the mean and median has been proved to be constant, if the mean is greater than the median, the distribution is positively skewed, but if the mean is less than the median, the distribution is negatively skewed (Hair, 2009; Weiss & Weiss, 2012).

- **Kurtosis** is a measure of the peak or flatness of a distribution when compared with the normal distribution. Indices of about seven are somewhat extreme and indicate low reliabilities (Hair, 2009).

4.8   RESEARCH LIMITATIONS

Research, by nature, has limitations. Limitations identify potential weaknesses of the research (Collis & Hussey, 2009, p.129). According to the SWF Institute, there are 68 registered SWFs. They vary in size, origin (commodity and non-commodity), level of transparency and investment activity. The study analysed countries with only one commodity-based SWF not older than five years. Also, constraints on data allowed usage of fewer variables as determinants of economic growth, and hence the study does not consider other factors that could affect the economic growth of the countries under review, such as political, legal and social factors.

The following are identified as specific limitations of this study:

- The results obtained from the data made it difficult to generalise for the entire population of countries with SWFs. The sample only includes a few countries.

- The study did not take into account the investment strategies of the SWFs.

- The study did not take into account the presence of other operational or market forces that may have an effect on economic growth.

- The time scale for this research was quoted annually. Therefore, the minimum time that a lag could take place was one year. Any correlation that has less than one year could therefore not be detected by this research.

- The study used four variables to determine economic growth and as such, direct inferences have not been made about technological progress, which is an important indicator of economic development, according to the literature. Similarly, the research used only inflation as a measure of economic stability. It is possible that if a different variable was used, such as exchange rate volatility, the results would have varied.

- SWFs are characterised by low levels of transparency. This adds to the complexity in analysing them. Official holdings managed by SWFs are difficult to estimate because of limitations of information and general lack of transparency (Turkisch, 2011).

- The selected sample only represented 12 of the 48 countries with SWFs.

- Furthermore, the sample only accounted for 28% (in terms of size of funds) of total size of commodity SWFs.

- Results need to be interpreted with caution, given that most macroeconomic variables around the world experienced depression following the financial crisis of 2008.

CHAPTER 5: RESEARCH RESULTS

5.1   INTRODUCTION

In the preceding chapter, the research methodology regarding how the hypotheses would be tested was outlined. This chapter presents the descriptive statistics on each variable based on the research hypotheses presented in Chapter 3. The data collected from secondary sources were exported to Microsoft Excel for statistical analysis.

5.2   ESTIMATION OF RESULTS

Descriptive statistics and graphical analysis were applied to assess the impact of the introduction of an SWF on the host economy using five variables, namely; the growth rate of the gross domestic product (GDP), gross national Product (GNI), inflation, terms of trade (ToT) and human development index (HDI). The results are presented according to the four hypotheses outlined in Chapter 3.

5.3   DESCRIPTIVE STATISTICS PER SCALE DIMENSION

5.3.1   THE FIRST NULL HYPOTHESIS

The first null hypothesis (Ho_1) stated that the introduction of a SWF has a positive impact on the economic growth of the host country, meaning that there is a significant difference between the means before and after the establishment of SWFs. The alternative hypothesis (Ha1) stated that the introduction of a SWF has no impact on the economic growth of the host country. This hypothesis was tested using GDP growth rate and GNI per capita variables. *Tables 4* and *Table 5* present descriptive statistics for GDP growth and GNI per capita respectively. Graphical representations are included in *Appendix B* and *C.*

Table 4: *Descriptive statistics for GGDP per country (at 95% confidence level)*

		Mean	Std Dev	Kurtosis	Skewness	Count	Combined Count
Algeria	*Before*	3.81	8.86	4.72	0.76	40	
	After	3.46	1.53	0.38	1.15	13	53
Angola	*Before*	1.78	8.78	5.75	-2.09	15	
	After	(9.78)	7.45	-1.29	0.58	13	28
Azerbaijan	*Before*	-6.76	12.73	-1.77	-0.23	9	
	After	(12.64)	9.39	1.12	1.32	14	23
Botswana	*Before*	9.55	4.51	0.73	0.31	14	
	After	5.46	4.03	6.32	-1.99	19	33
Brunei	*Before*	4.21	13.13	0.21	-0.35	9	39
	After	1.36	2.09	-0.95	-0.25	30	
Canada	*Before*	4.59	2.09	-0.24	-0.65	16	53
	After	2.69	2.09	1.46	-1.11	37	
E.Guinea	*Before*	14.69	20.61	3.63	1.89	14	27
	After	14.31	19.74	2.52	1.21	13	
Norway	*Before*	3.74	1.88	-0.40	-0.74	30	
	After	2.53	1.68	0.53	-0.40	23	53
Mexico	*Before*	4.55	3.81	1.23	-0.85	40	53
	After	2.51	3.21	3.37	-1.54	13	
Oman	*Before*	13.69	23.10	4.12	2.01	20	53
	After	6.00	5.18	0.03	0.71	33	
Kiribati	*Before*	1.06	15.16	4.54	-0.20	28	43
	After	(1.81)	4.02	0.41	0.87	15	
Trinidad and Tobago	*Before*	3.81	4.80	1.89	-0.56	25	
	After	2.62	5.06	0.11	0.53	28	53

The circled means represent those which are higher after the introduction of a SWF.

Table 5: *Descriptive statistics for GNI per capita (at 95% confidence level)*

		Mean	Std Dev	Kurtosis	Skewness	Count	Total Count
Algeria	*Before*	8.95	2047.50	-1.67	-0.02	40	
	After	6107.69	54379794158.71	-1.26	0.28	13	53
Angola	*Before*	1552	356.31	0.63092434	-1.2644746	15	
	After	3568.46	1398.38	-1.87	0.04	13	28
Azerbaijan	*Before*	1137.78	871.00	-1.66	-0.69	9	
	After	5361.43	2971.97	-1.84	0.24	14	23
Botswana	*Before*	3507.86	1500.18	-1.25	0.52	14	
	After	10112.11	3393.50	-0.99	0.42	19	33
Brunei	*Before*						
	After						14
Canada	*Before*						
	After						40
E. Guinea	*Before*	2400.00	422.03	0.73	1.20	14	27
	After	3455.38	101.62	2.05	-1.38	13	
Kiribati	*Before*	1339.64	1055.60	-1.66	-0.40	28	43
	After	3424.00	133.30	1.31	-1.30	15	
Mexico	*Before*	2790.50	2959.07	-1.70	0.27	40	
	After	12249.23	2785.16	-1.23	-0.01	13	
Norway	*Before*	4388.00	6470.53	-1.07	0.90	30	
	After	38350.43	16085.32	-1.34	0.32	23	53
Oman	*Before*						0
	After						
Trinidad and Tobago	*Before*	1575.20	3228.13	0.76	1.63	25	
	After	13576.07	6986.71	-1.28	1.02	28	53

5.3.2 THE SECOND NULL HYPOTHESIS

The second null hypothesis (H_{o2}) stated that a SWF helps to stabilise the economy of the host country. For this, inflation was used as a proxy for macroeconomic stability. While the alternative hypothesis (H_{a2}) stated that the introduction of a SWF has no impact on the macroeconomic stability. In this case, both descriptive statistics and graphical analysis were used to deduce volatility of inflation before and after the introduction of SWFs, as shown in *Table 6* and *Appendix D*, being the graphical representations of inflation: The means which were higher after the introduction of a SWF are circled.

Table 6: *Descriptive statistics for Inflation per country (at 95% confidence level)*

		Mean	Std Dev	Kurtosis	Skewness	Count	Total Count
Algeria	*Before*	8.95	8.86	0.67	1.14	40	
	After	3.81	2.19	1.49	0.63	13	53
Angola	*Before*	673.50	1211.17	4.55	2.21	15	
	After	64.71	91.09	5.50	2.26	13	28
Azerbaijan	*Before*	363.43	614.28	1.60	1.65	13	
	After	5.58	7.18	1.20	0.44	9	22
Botswana	*Before*	11.55	2.70	-0.54	0.61	14	
	After	8.66	1.73	0.15	0.88	19	33
Brunei	*Before*	1.72	3.49	1.86	1.79	9	
	After	1.40	1.47	3.33	0.67	30	39
Canada	*Before*	4.01	3.22	0.92	1.22	16	
	After	4.00	3.12	0.64	1.21	37	53
E. Guinea	*Before*	3.15	12.26	1.69	0.70	14	
	After	5.51	2.39	0.96	-0.89	13	27
Kiribati	*Before*	0.00	0.00			28	
	After	0.00	0.00			15	43
Mexico	*Before*	26.59	32.30	3.21	1.92	40	
	After	4.91	1.59	-1.23	-0.01	13	53
Norway	*Before*	6.72	3.20	-0.39	0.14	30	
	After	2.16	0.96	-0.40	0.09	23	53
Oman	*Before*	0.00	0.00			20	
	After	1.12	2.54	10.59	2.98	33	53
Trinidad and Tobago	*Before*	8.65	6.39	-1.14	0.29	25	
	After	6.97	2.82	-1.20	0.29	28	53

5.3.3   THE THIRD NULL HYPOTHESIS

The third null hypothesis (H_{o3}) stated that the establishment of SWFs has a positive effect of terms of trade for the host country, meaning that there is a significant difference in means for terms of trade before and after the introduction of SWFs for host countries. The alternative hypothesis (H_{a3}) stated that following the introduction of SWFs there is no significance in means for terms of trade of the host countries. Descriptive statistics for terms of trade is shown in *Table 7*.

Table 7: *Descriptive statistics for ToT per country (at 95% confidence level)*

		Mean	Std Dev	Kurtosis	Skewness	Count	Total Count
Algeria	*Before*	26.25	6.83	0.94	0.61	40	
	After	33.86	16.24	1.55	-1.54	13	53
Angola	*Before*	49.68	24.77	-0.44	15.00	15	
	After	72.66	9.86	-0.44	-0.02	13	28
Azerbaijan	*Before*	40.78	20.58	2.25	1.53	9	
	After	52.33	12.46	-0.88	-0.39	14	23
Botswana	*Before*	58.79	8.76	-0.87	0.44	14	
	After	48.07	5.76	0.05	-0.77	19	33
Brunei	*Before*	92.70	3.49	-1.58	-0.56	9	
	After	55.75	26.95	0.79	-1.40	30	39
Canada	*Before*	20.38	2.20	-0.95	0.13	16	
	After	31.06	8.39	3.89	-1.05	37	53
E. Guinea	*Before*	3.15	12.26	1.69	0.70	14	
	After	5.51	2.39	0.96	-0.89	13	27
Kiribati	*Before*	27.46	21.52	-0.91	0.70	28	
	After	5.08	6.97	3.10	1.63	15	43
Mexico	*Before*	26.59	32.30	3.21	1.92	40	
	After	4.91	1.59	-1.23	-0.01	13	53
Norway	*Before*	37.35	3.16	-0.59	0.66	30	
	After	41.29	2.85	-0.60	0.64	23	53
Oman	*Before*	41.32	32.26	-1.77	-0.49	20	
	After	44.67	18.04	2.55	-1.83	33	53
Trinidad and Tobago	*Before*	49.12	11.13	-0.84	0.36	25	
	After	47.05	17.17	2.87	-1.20	28	53

5.3.4 THE FOURTH NULL HYPOTHESIS

The fourth null hypothesis (H_{o4}) stated that the introduction of a SWF has a positive impact on the human development of the host county, as measured by the human development index (HDI), and the alternative hypothesis (H_{a4}) stated that the introduction of a SWF has no influence on the human development of the host country. *Table 8* presents descriptive statistics for HDI and it is worth noting that data for many countries are disjointed and no meaningful conclusions could be drawn from the existing figures. The circled means are those which were lower following the introduction of a SWF.

Table 8: *Descriptive statistics for HDI per country (at 95% confidence level)*

		Mean	Std Dev	Kurtosis	Skewness	Count	Total Count
Algeria	*Before*	0.51	0.07			2	
	After	0.69	0.70	4.52	-1.98	9	11
Angola	*Before*						
	After	0.46	0.05	-0.93	-0.81	9	9
Azerbaijan	*Before*					0	
	After	0.73	0.01		-1.67	3	3
Botswana	*Before*	0.52	0.10			2	
	After	0.62	0.02	0.58	-1.13	9	11
Canada	*Before*					0	
	After	0.90	0.03	4.36	-2.15	11	11
Mexico	*Before*	0.63	0.04			2	
	After		0.00				2
Oman	*Before*	0.76	0.02	1.75	-1.31	9	
	After	0.90	0.03	4.36	-2.15	11	20
Kiribati	*Before*					0	
	After	0.63	0.00		0.00	3	3
Brunei	*Before*	0.77				1	
	After	0.84	0.02	7.22	-2.65	10	11
E. Guinea	*Before*					0	
	After	0.54	0.02	1.14	-1.19	9	9
Norway	*Before*	0.80				1	
	After	0.94	0.03	7.65	-2.73	10	1
Trinidad and Tobago	*Before*	0.68				1	
	After	0.74	0.03	2.09	-1.75	10	11

The results are analysed and discussed in Chapter 6.

CHAPTER 6: ANALYSIS OF RESULTS

6.1   INTRODUCTION

The purpose of this chapter is to analyse and discuss the results presented in Chapter 5, in relation to the literature review (Chapter 2) and the hypotheses explained in Chapter 3, in order to obtain insight into the impact of SWFs.

Each hypothesis is attended to against the findings and in relation to the postulates of theory and empirical literature to provide insights into the findings in terms of the context of this study. A summary of the findings and discussions is presented in the following sections. The highlighted countries in *Tables 9, 10 and 11* represents those whose T – tests were not significant at 5%.

6.2   HYPOTHESIS ONE – ECONOMIC GROWTH

To determine whether the establishment of SWFs in the sample countries had effects on GDP growth, the descriptive statistics presented in Chapter 5 were utilised to calculate independent t-statistic to assess whether there are any significant differences between means of GDP growth before and after the establishment of SWFs. The results are shown in *Table 9*.

Table 9: *Independent Sample T-Test for GGDP (at 95% confidence level)*

Country	Period	Mean	Std Dev	t-Stats
Algeria	Before After	3.81 3.46	8.86 1.53	1.03
Angola	Before After	1.78 9.78	8.78 7.45	6.91
Azerbaijan	Before After	-6.76 12.64	12.73 9.39	9.30
Botswana	Before After	9.55 5.46	4.51 4.03	7.66
Brunei	Before After	4.21 1.36	13.13 2.09	1.86
Canada	Before After	4.59 2.69	2.09 2.09	10.15
E.Guinea	Before After	14.69 14.31	20.61 19.74	0.13
Norway	Before After	3.74 2.53	1.88 1.68	8.92
Mexico	Before After	4.55 2.51	3.81 3.21	5.96
Oman	Before After	13.69 6	23.1 5.18	5.86
Kiribati	Before After	1.06 1.81	15.16 4.02	0.93
Trinidad & Tobago	Before After	3.81 2.62	4.8 5.06	3.19

As is evident from *Table 9*, the null hypothesis of similar means for four countries, namely Algeria, Brunei, Equatorial Guinea, and Kiribati failed to be rejected. This implies that for these countries, the average growth of GDP before the establishment of the SWFs was not statistically and significantly different from the mean growth rate after the establishment of fund. For the remainder of the countries, the calculated t-statistics were significant at the 5% level, suggesting that the differences between the means of GDP growth of these countries before and after the establishment are significant.

Based on these findings, holding other factors constant, it can be concluded that SWFs have a positive effect on GDP growth. The disparities in the relative levels of welfare between wealthy and poor nations highlight the importance of understanding the effect of financial institutions on the economy (Bahgat, 2008). According to Dixon and Monk (2011, p.4) the existence of well governed and designed institutions can have a doubling effect on economic growth.

In light of the fact that this study has found a positive relationship between the introduction of a SWF and economic growth, it is also evident that Barro's (1991) findings, that increasing national wealth may lead to expanding people's choices, are supported.

6.3   HYPOTHESIS TWO – STABILITY

In the preceding sections, it was mentioned that inflation would be used as a proxy for stability. In other words, the null hypothesis tests whether the difference in means of inflation before and after the establishment of SWFs is significant. For the effect of the introduction of a SWF to be positive, the expectation is that the means and standard deviations for inflation would be lower, following the establishment of the SWF. Whilst it is accepted that each nation will have its own policy regarding inflation targeting, there is unanimous agreement on the positive effect of low, stable inflation on the economy in the literature (Collier & Dollar, 2001; Kyereboah-Coleman & Agyire-Tettey, 2008; Erramilli & D'Souza, 1995; *Akinboade et al.*, 2006).

Table 10: *Independent Sample T-Test for Inflation (at 95% confidence level)*

Country	Period	Mean	Std Dev	t-Stats
Algeria	Before	8.95	8.86	13.18
	After	3.81	2.19	
Angola	Before	673.50	1211.17	6.94
	After	64.71	91.09	
Azerbaijan	Before	363.43	614.28	5.20
	After	5.58	7.18	
Botswana	Before	11.55	2.7	10.17
	After	8.66	1.73	
Brunei	Before	1.72	3.49	0.73
	After	1.4	1.47	
Canada	Before	4.01	3.22	0.035
	After	4	3.12	
E. Guinea	Before	3.15	12.26	2.22
	After	5.51	2.39	
Norway	Before	6.72	3.2	30.72
	After	2.16	0.96	
Mexico	Before	26.59	32.3	23.31
	After	4.91	1.59	
Trinidad & Tobago	Before	8.65	6.39	4.71
	After	6.97	2.82	

Note: Oman & Kiribati did not have enough data for inflation to allow T-tests

In line with expectations, for all countries, except Equatorial Guinea, the mean of inflation was lower after the establishment of the SWFs. These findings are in line with literature (for instance; Collier & Dollar, (2001), Kyereboah-Coleman & Agyire-Tettey, (2008), Erramilli & D'Souza, (1995), Akinboade et al., 2006). Results in *Table 11* further reveal that the null hypothesis of similar means cannot be rejected only for two countries (Canada and Brunei) out of ten. In this case, it is concluded that for Canada and Brunei, inflation was not volatile following establishment of SWFs.

6.4   HYPOTHESIS THREE - TERMS OF TRADE

For terms of trade, *Table 11* reveals that the null hypothesis of similar means could not be rejected only for two countries, Oman and Trinidad and Tobago. These findings posit that the establishment of SWFs has clear effect on terms of trade because 81% of the countries in the sample showed mean differences of the before and after the establishment of SWFs significant at 5%. These findings are consistent with logic, given that most countries that create SWFs do so from the sale of commodities, mostly oil, and therefore it is expected that trade openness would improve.

The findings of this study are consistent with recent empirical evidence (Dar et al., 2013; Rangasamy, 2009; Mishra, 2011) which supports the existence of a long-term relationship between economic growth and exports.

Table 11: *Independent Sample T-Test for ToT (at 95% confidence level)*

Country	Period	Mean	Std Dev	t-Stats
Algeria	Before	26.25	6.83	5.36
	After	33.86	16.24	
Angola	Before	49.68	24.77	9.54
	After	72.66	9.86	
Azerbaijan	Before	40.78	20.58	3.64
	After	52.33	12.46	
Botswana	Before	58.79	8.76	11.54
	After	48.07	5.76	
Brunei	Before	92.7	3.49	28.73
	After	55.75	26.95	
Canada	Before	20.38	2.2	29.32
	After	31.06	8.39	
E.Guinea	Before	3.15	12.26	2.23
	After	5.51	2.39	
Norway	Before	37.35	3.16	17.19
	After	41.29	2.85	
Mexico	Before	26.59	32.3	23.32
	After	4.91	1.59	
Oman	Before	41.32	32.26	1.55
	After	44.67	18.04	
Kiribati	Before	27.46	21.52	18.15
	After	5.08	6.97	
Trinidad & Tobago	Before	49.12	11.13	1.96
	After	47.05	17.17	

6.5   HYPOTHESIS FOUR- HDI

Although the T-tests for the HDI were not computed due to limited data on HDI, it is, however, clear from the nominal figures that the introduction of the SWFs led to the improvement of the HDI score. Countries that had no HDI rating, such as Azerbaijan and Equatorial Guinea commenced with such a rating, following the introduction of the fund. Virtually all those that already had HDI ratings showed significant improvement post the introduction of the fund. On the basis of this, it can be argued that countries with SWFs make better investment of their resources. It may also mean that these funds made superior investments that yielded enhanced returns. Such returns enable the funds to invest in human development activities alongside government.

In light of the fact that this study has found a positive relationship between the introduction of a SWF and economic growth, it is also evident that Barro's (1991) findings, that increasing national wealth may lead to expanding people's choices, are supported.

6.6   SUMMARY OF RESULTS

Table 12 shows summary of results in terms of the stated hypothesis and the findings of the study. It shows that, in general, the study has rejected null hypotheses of similar means of macroeconomic variables before and after the establishment of SWFs for the selected countries. It can, therefore, be concluded that the introduction of a SWF has a positive impact on the economic growth of a host nation; it improves exports of host nations and leads to lower inflation.   This conclusion is based on the respective hypotheses that were included in this study.

Table 12: *Summary of Results*

Hypotheses		Reject	Fail to Reject
H_{01}	The introduction of a SWF has a positive impact on the economic growth of a host country.		✓
H_{02}	The introduction of a SWF contributes to the macroeconomic stability of the host country.		✓
H_{03}	The introduction of a SWF contributes to the terms of trade of the host country		✓
H_{04}	The introduction of a SWF does have positive impact on the human development of the host country		✓

CHAPTER 7:   CONCLUSIONS AND RECOMMENDATIONS

7.1   CONCLUDING REMARKS

The intention of this research was to understand the influence that the establishment of a SWF has on the economy of the host nation. This was achieved through utilisation of descriptive statistics in order to analyse the behaviour of selected macroeconomic variables before and after the establishment of the SWF. In this regard, the study compared the sample means before and after the establishment of SWFs to deduce whether there are any significant differences. T-tests for independent samples were employed. This methodology is similar to the one used by Bland *et al.* (2000, p. 162).

Using the means of GDP growth for the twelve countries in the sample before and after the establishment of a SWF, 67% of the countries showed that there was a significant difference between the means before and after the establishment of SWFs. For most countries, the means seem to be lower after the establishment of funds, implying lower average GDP growth. However, given that the period after the establishment of SWFs for all countries include the years 2006 - 2008, when most countries were hard hit by the financial crisis, and the fact that descriptive statistics display a true behaviour of data, these findings are interpreted with caution.

The results further revealed that 83% of the countries experienced lower inflation after the establishment of the fund, while only 17% (i.e. the two countries circled in *Table 6*) had stable inflation. The findings also posit that the establishment of SWFs seem to have a clear effect on terms of trade, as shown by 81% of the countries in the sample whose means were higher and significant, following establishment of SWFs. The results are consistent with contemporary growth theory, which identifies openness and international trade as one of the drivers of economic growth.

The findings also posit that the establishment of a SWF has a clear effect on terms of trade for 81% of the countries in the sample, since the mean differences before and after the establishment of SWFs are significant at 5%. The results are consistent with contemporary growth theory, which identifies openness and international trade as one of the drivers of economic growth. The establishment of the SWFs was following by the significant opening of the host nation to rest of the world.

Terms of trade improved post the establishment of the funds. Such improved openness could have been due to the need to invest SWFs resources in the foreign territories, which is the basic business model of the SWFs.

Beyond assessing economic growth, modern economists place significance on measuring human welfare and progress. The thinking is that economic growth should result in better standards of living for the citizens of the country and expand their choices (Barro, 1991). This study employed HDI to assess human development. Being a relatively new measure, the limited data did not allow for T-Tests. However, it is conclusive from the descriptive statistics and the ranking by UNDP that the introduction of SWFs led to an improvement of the HDI scores for the relative countries. Some countries, such as Azerbaijan and Equatorial Guinea, had no HDI rating prior to the establishment of the funds, and virtually all those that were ranked showed significant improvements on their HDI scores subsequent to the introduction of the fund. The results were in line with existing literature (Wiebe, 2012; Stiglitz et al., 2009).

The results for this study are useful for South African policy makers as the debate around nationalisation rages on. Furthermore, it is critical for the other countries on the continent that are considering setting up SWFs to understand the benefits and perils of such decisions. The results suggest that SWFs are a potentially good tool for managing resource revenues. For many resource rich countries, especially on the African continent, the discovery of natural resources has not been accompanied by the expected economic growth and better living standards, despite recorded high growths during commodity price booms. SWFs may be the answer to this curse. Notwithstanding their recent popularity, it must be stressed that SWFs are neither a one-size-fits all solution to the resource curse, nor a remedy for economic growth.

Of course a country's economic growth does not occur in isolation to domestic policies and prevailing overall global economic trends. The price that the country is paid for the sale of its resources is often outside of the control of the country itself. Despite the findings of this research, it is critical to bear in mind that countries differ in terms of the state of economic development, government type, market structure and institutions, amongst others.

SWFs are sizeable, exceeding the size of hedge funds, and are projected to grow further with new resource discoveries and rising prices of commodities.

There have been mixed results in terms of attainment of their objectives in the different host nations.

For example, the Norwegian fund has been heralded as a successful experience, which has achieved and exceeded its objective of fostering economic growth and prosperity for current and future generations (Triki & Faye, 2011), while most of the SWFs have been criticised for lack of transparency and politicised objectives.

In the right circumstances, SWFs can be potent tools in achieving economic growth objectives. Based on the literature and findings of this study, this paper concludes by recommending the following:

- SWFs objectives must be clearly articulated and measurable to avoid misuse at a later stage. This is because the objectives of SWF can be sabotaged by macroeconomic policies that are contradictory to those of the fund. For example, a country that incurs high external debt could jeopardise the achievement of the fund's objective. As such, the overarching macroeconomic policies should be in support of the objectives of the SWFs. These policies and objectives create a fine balancing act for governments, as any policy actions taken often have unintended consequences.

- Governments must be clear about why they wish to establish SWFs. The discovery of natural resources is not reason enough to establish a SWF. Even in the absence of a SWF, all countries should encourage domestic savings that can be used as a buffer in unfavourable economic climates.

7.2   RECOMMENDATIONS FOR FURTHER STUDIES

This study has presented an avenue for further studies to investigate the purported impact of SWFs on the domestic, regional and global economies in which they operate. Future studies can possibly analyse the effect of SWFs under normal economic conditions (i.e. without the effect of the 2008-2009 global financial crisis) to ascertain whether different conclusions could be drawn pertaining to the effect of SWFs. The econometric approach may be one such approach, as opposed to purely descriptive statistics. Other studies could be conducted utilising non-commodity SWFs in the sample.

The present study selected four macroeconomic variables, namely; GGDP, Inflation, Terms of Trade, as well as HDI due to data limitations. Further studies can be conducted using other macroeconomic variables and the OECD Better Life Index or Genuine Progress indicator as a possible alternative to HDI.

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APPENDICES

APPENDIX A: LIST OF SWFS AS AT MAY 2013

	Country	Sovereign Wealth Fund Name	Assets $ Billion	Inception	Origin	Linaburg-Maduell Transparency Index
1	UAE - Federal	Emirates Investment Authority	n/a	2007	Oil	3
2	UAE - Abu Dhabi	Abu Dhabi Investment Council	n/a	2007	Oil	n/a
3	Papua New Guinea	Papua New Guinea Sovereign Wealth Fund	n/a	2011	Gas	n/a
4	Oman	Oman Investment Fund	n/a	2006	Oil	n/a
5	Mongolia	Fiscal Stability Fund	n/a	2011	Minerals	n/a
6	Kazakhstan	National Investment Corporation	n/a	2012	Oil	n/a
7	Norway	Government Pension Fund - Global	715.9	1990	Oil	10
8	UAE - Abu Dhabi	Abu Dhabi Investment Authority	627	1976	Oil	
9	China	SAFE Investment Company	567.99	1997	Non-commodity	4
10	Saudi Arabia	SAMA Foreign Holdings	523.8	n/a	Oil	4
11	China	China Investment Corporation	482	2007	Non-commodity	7
12	Kuwait	Kuwait Investment Authority	342	1953	Oil	6
13	China - Hong Kong	Hong Kong Monetary Authority Investment Portfolio	298.7	1993	Non-commodity	8
14	Singapore	Government of Singapore Investment Corporation	247.5	1981	Non-commodity	6
15	Russia	National Welfare Fund	175.5	2008	Oil	5
16	China	National Security Fund	160.6	200	Non-commodity	5
17	Singapore	Temasek Holdings	157.5	1974	Non-commodity	10
18	Qatar	Qatar Investment Authority	115	2005	Oil	5
19	Austalia	Australian Future Fund	83	2006	Non-commodity	10
20	UAE - Dubai	Investment Corporation of Dubai	70	2006	Oil	4
21	UAE - Abu Dhabi	International Petroleum Investment Company	65.3	1984	Oil	9
22	Libya	Libyan Investment Authority	65	2006	Oil	1
23	Kazakhstan	Kazakhtsan National Fund	61.8	2000	Oil	8
24	Algeria	Revenue Regulation Fund	56.7	2000	Oil & Gas	1
25	South Korea	Korea Investment Corporation	56.6	2005	Non-commodity	9
26	UAE - Abu Dhabi	Mubadala Development Company	53.1	2002	Oil	10
27	US - Alaska	Alaska Permanent Fund	45	1976	Oil	10
28	Iran	National Development Fund of Iran	42	2011	Oil & Gas	5
29	Malaysia	Khazanah Nasional	39.1	1993	Non-commodity	5
30	Azerbaijan	State Oil Fund	32.7	1999	Oil	10
31	Brunei	Brunei Investment Agency	30	1983	Oil	1
32	US - Texas	Texas Permanent School Fund	25.5	1854	Oil & Other	9
33	France	Strategic Investment Fund	25.5	2008	Non-commodity	9
34	Ireland	National Pensions Reserve Fund	19.4	2001	Non-commodity	10
35	New Zealand	New Zealand Superannuation Fund	16.6	2003	Non-commodity	10
36	Canada	Alberta's Heritage Fund	16.4	1976	Oil	9
37	US - New Mexico	New Mexico State Investment Council	16.3	1958	Non-commodity	9
38	Chile	Social and Ecomonic Stabilization Fund	15	2007	Copper	10
39	East Timor	Timor-Leste Petroleum Fund	11.8	2005	Oil & Gas	8
40	Russia	Russian Direct Investment Fund	11.5	2011	Non-commodity	n/a
41	Oman	State General Reserve Fund	8.2	1980	Oil & Gas	1
42	Peru	Fiscal Stabilization Fund	7.1	1999	Non-commodity	n/a
43	Bahrain	Mumtalakat Holding Company	7.1	2006	Non-commodity	9
44	Botswana	Pula Fund	6.9	1994	Diamonds & Miner	6
45	Mexico	Oil Revenues Stabilization Fund of Mexico	6.0	2000	Oil	n/a
46	Chile	Pension Reserve Fund	5.9	2006	Copper	10
47	US - Wyoming	Permanent Wyoming Mineral Trust Fund	5.6	1974	Minerals	9
48	Saudi Arabia	Public Investment Fund	5.3	2007	Oil	4
49	Brazil	Sovereign Fund of Brazil	5.3	2008	Non-commodity	9
50	China	China-Africa Development Fund	5.0	2012	Non-commodity	4

51	Angola	Fundo Soberano de Angola	5.0	2000	Oil	n/a
52	Trinidad & Tobago	Heritage and Stabilization Fund	2.9	1985	Oil & Gas	8
53	US - Alabama	Alabama Trust Fund	2.5	2011	Non-commodity	n/a
54	Italy	Italian Strategic Fund	1.4	2005	Oil	n/a
55	UAE - Ras Al Khaimah	RAK Investment Authority	1.2	2011	Oil	n/a
56	Nigeria	Nigerian Sovereign Investment Authority	1.0	2003	Oil	3
57	Venezuela	FEM	0.8	2011	Oil	1
58	Palestine	Palestine Investment Fund	0.8	1998	Non-commodity	n/a
59	US - North Dakota	North Dakota Legacy Fund	0.7	2006	Oil & Gas	n/a
60	Vietnam	State Capital Investment Corporation	0.5	1956	Non-commodity	4
61	Kiribati	Revenue Equalization Reserve Fund	0.4	1998	Oil	1
62	Gabon	Gabon Sovereign Wealth Fund	0.4	2006	Oil	n/a
63	Panama	Fondo de Ahorro de Panama	0.3	2012	Non-commodity	n/a
64	Mauritiana	National Fund for Hydrocarbon Reserves	0.3	2012	Oil & Gas	1
65	Indonesia	Government Investment Unit	0.3	2006	Non-commodity	n/a
66	Australia	Western Australian Future Fund	0.3	2012	Minerals	n/a
67	Equatorial Guinea	Fund for Future Generations	0.08	2002	Oil	n/a
68	Ghana	Ghana Petroleum Funds	0.07	2011	Oil	n/a
Total Oil and Gas Related			3,118			
Total Other			2,244			
TOTAL			5,362			

Source: SWFI, May 2013.

APPENDIX B: GRAPHICAL REPRESENTATION OF GGDP

Period to the left of the line is before the introduction of a SWF.

Algeria

Angola

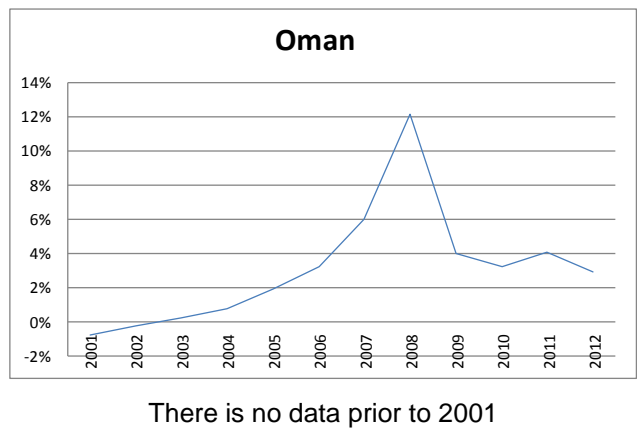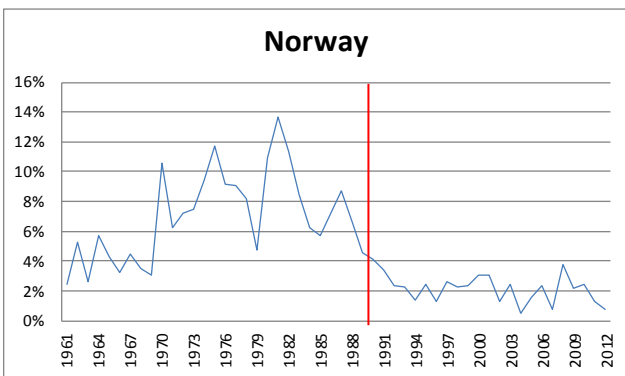Azerbeijan

Botswana

Brunei Darussalam
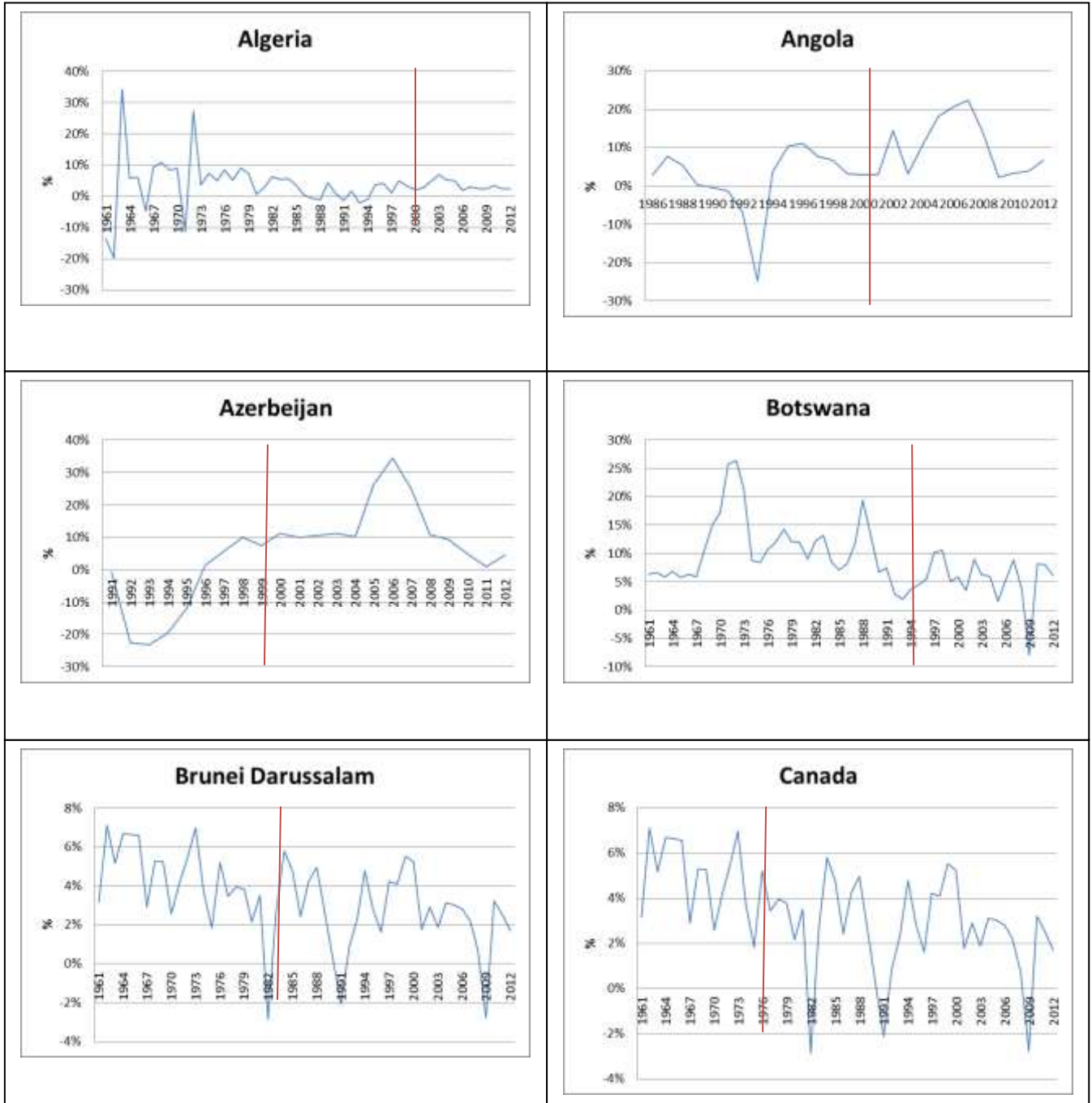
Canada

Equitorial Guinea
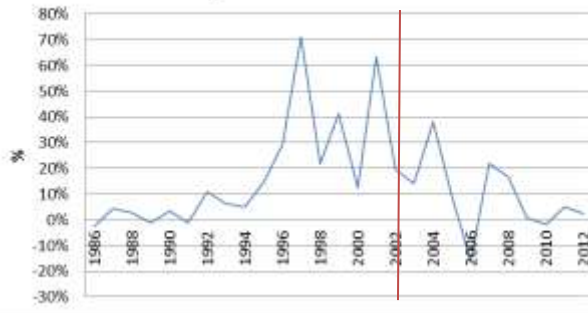
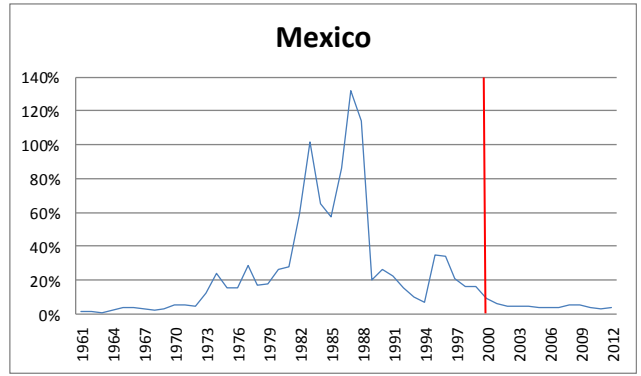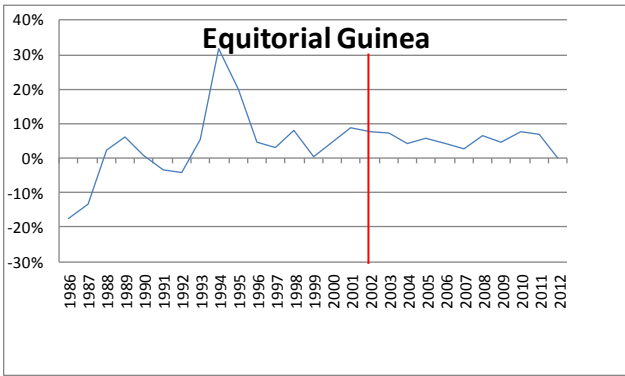Kiribati
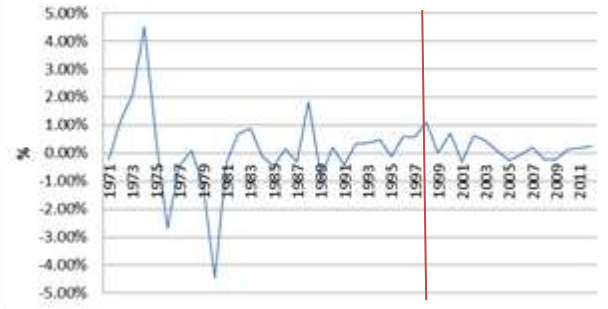
Mexico
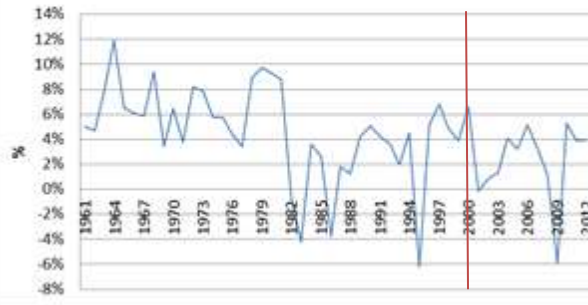
Norway
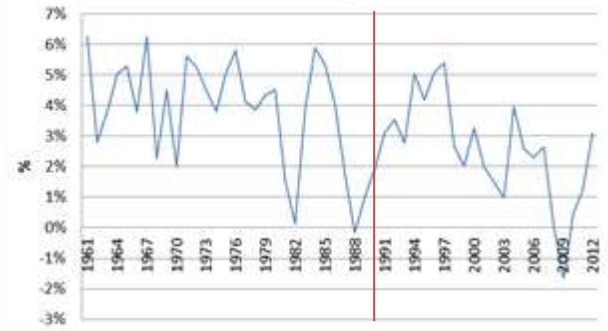
Oman
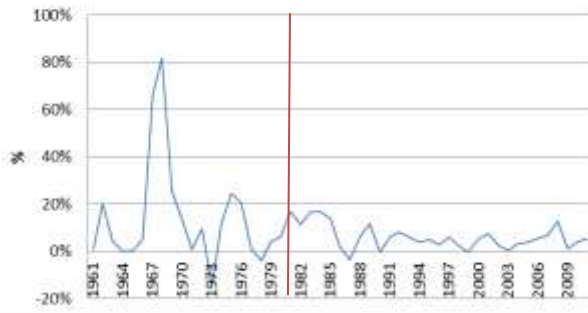
Trinidad & Tobago
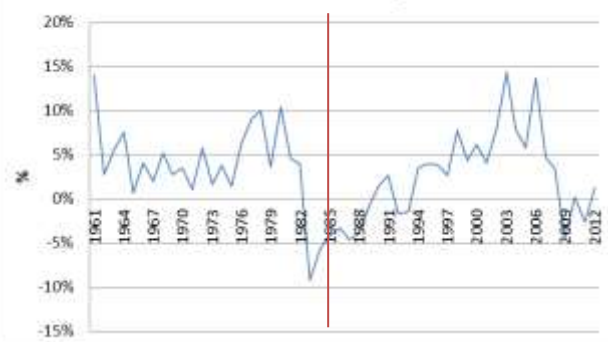
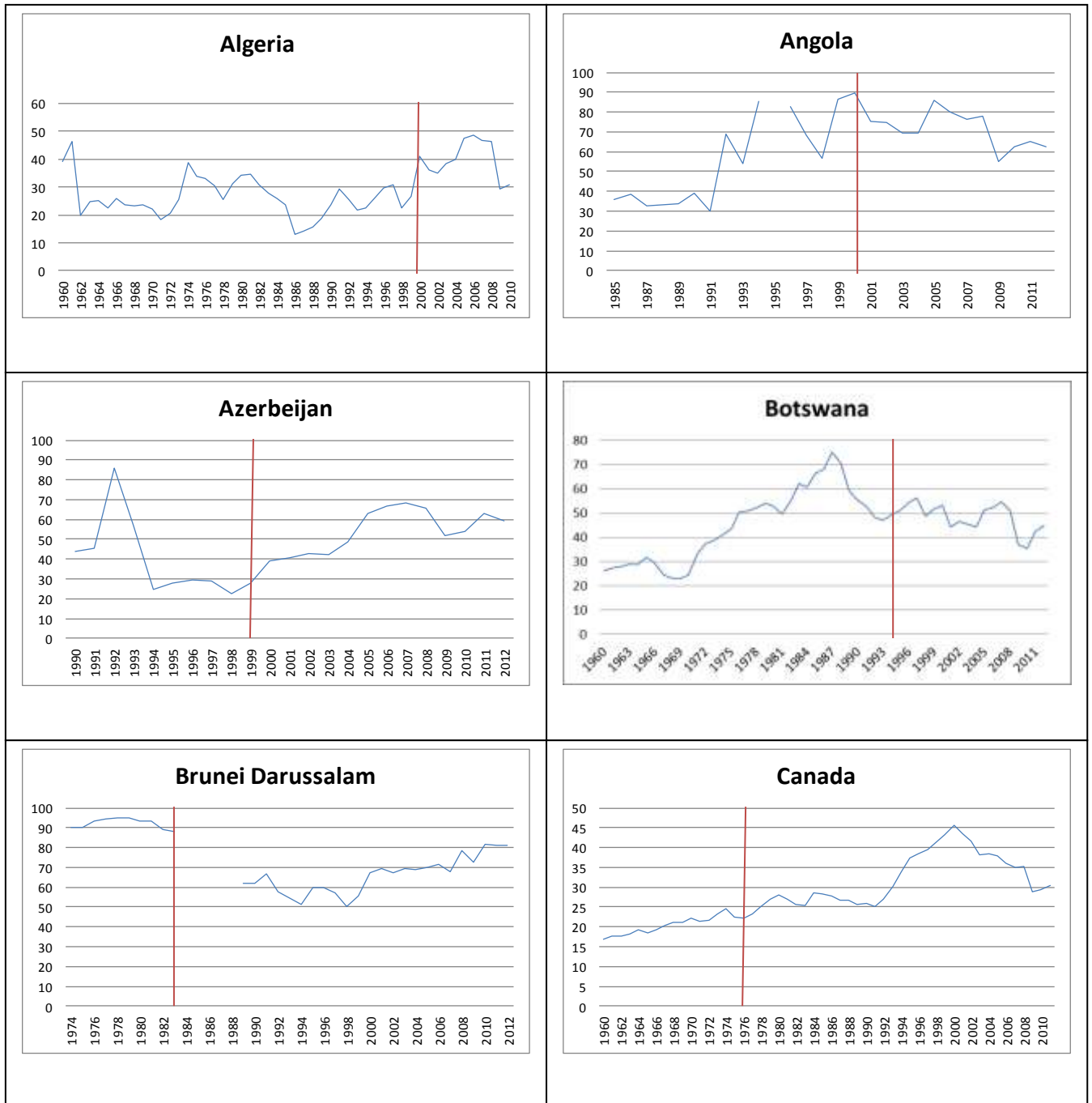# APPENDIX C: GRAPHICAL REPRESENTATION OF GNI PER CAPITA

Period to the left of the line is before the introduction of a SWF.
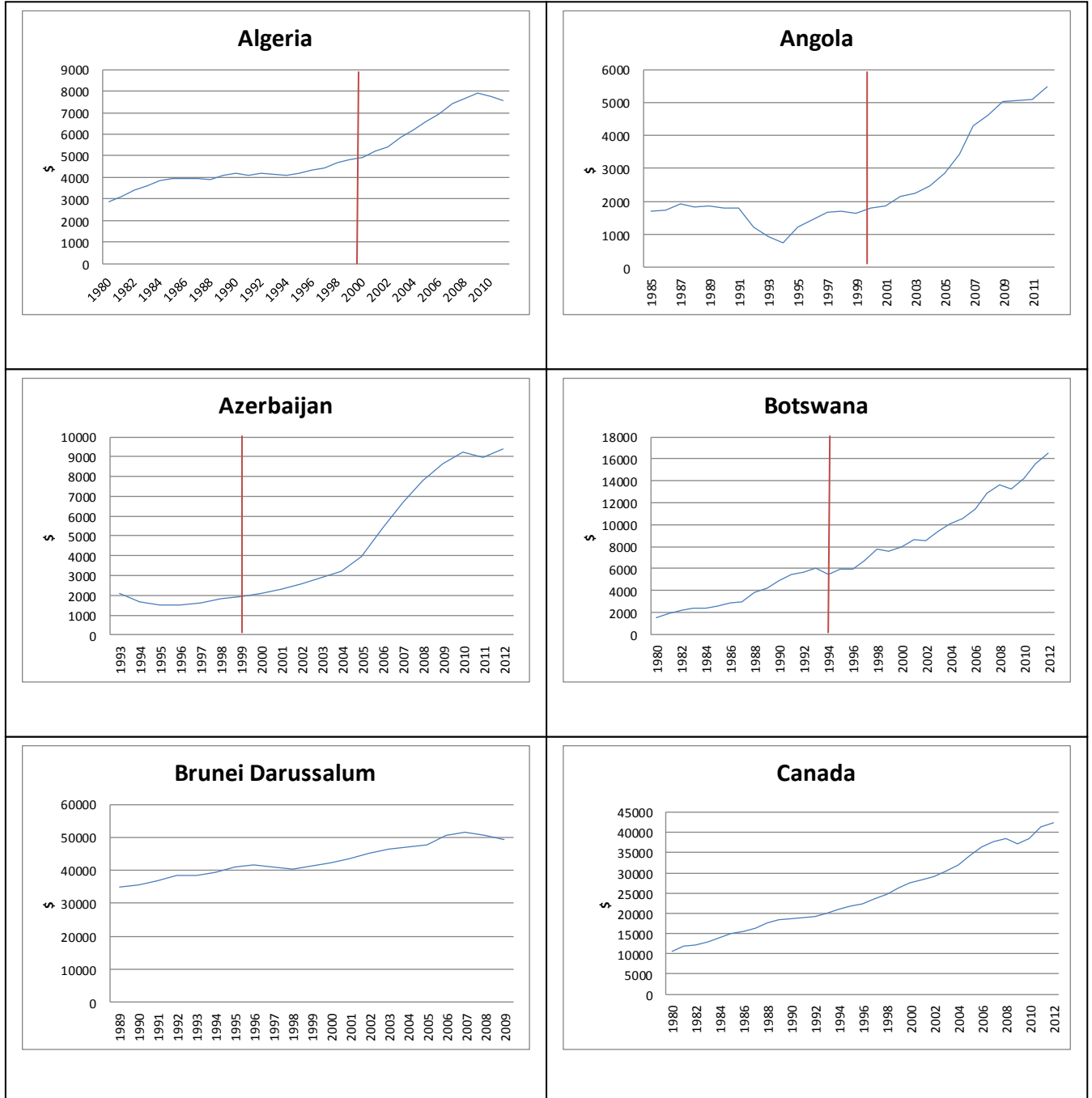

There is no data for Brunei Darussalum, Canada prior to the inception of the SWF in 1983, 1976.

Equitorial Guinea

Kiribati

Mexico

Norway

**Oman**

Trinidad & Tobago

58
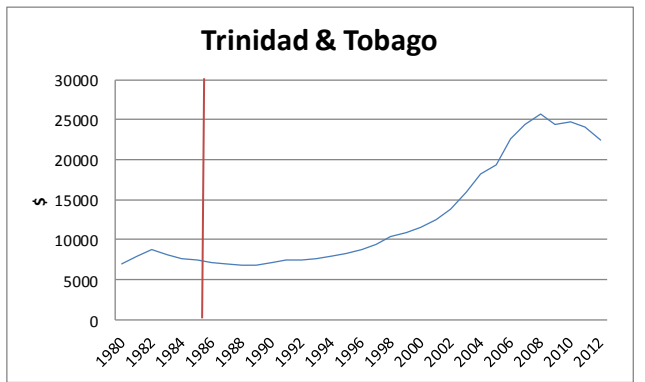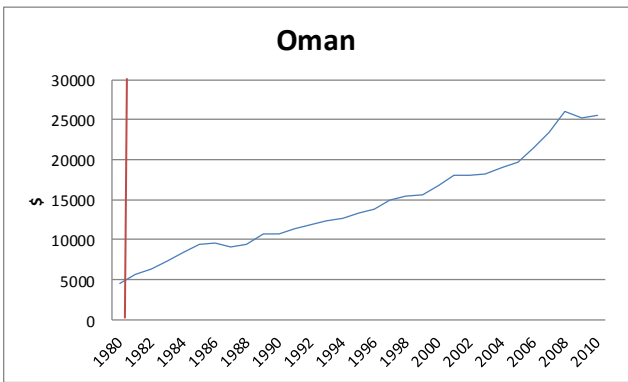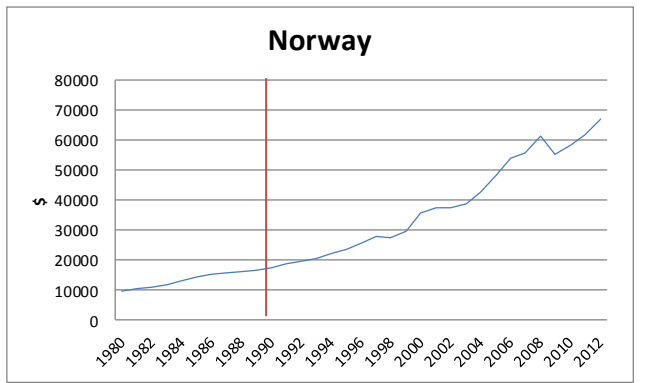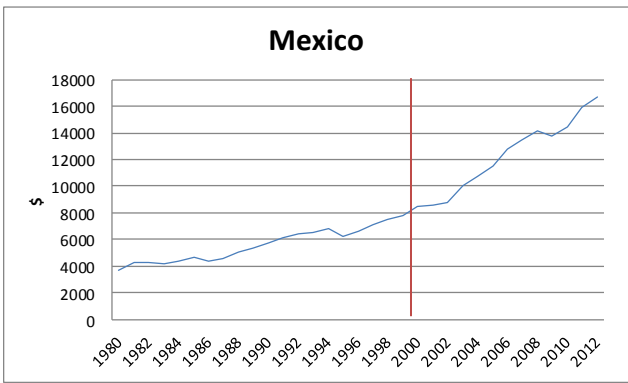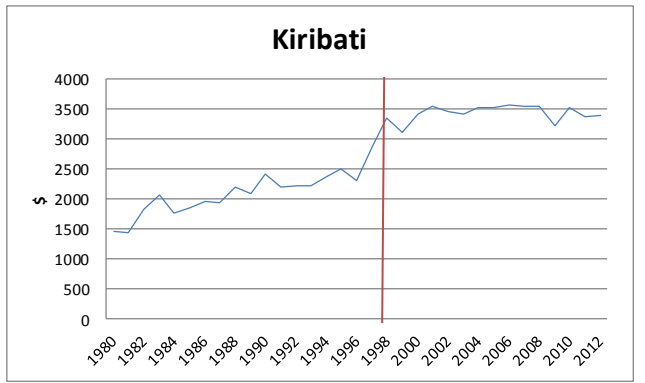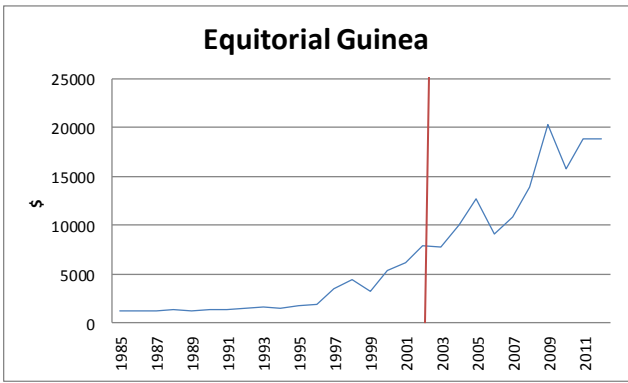
APPENDIX D: GRAPHICAL REPRESENTATION OF INFLATION

Period to the left of the line is before the introduction of a SWF.

There is no data for Kiribati

Algeria

Angola

Azerbaijan

Botswana

Brunei Darussalam

Canada

Equitorial Guinea

Mexico

Norway

Oman

There is no data prior to 2001

Trinidad & Tobago
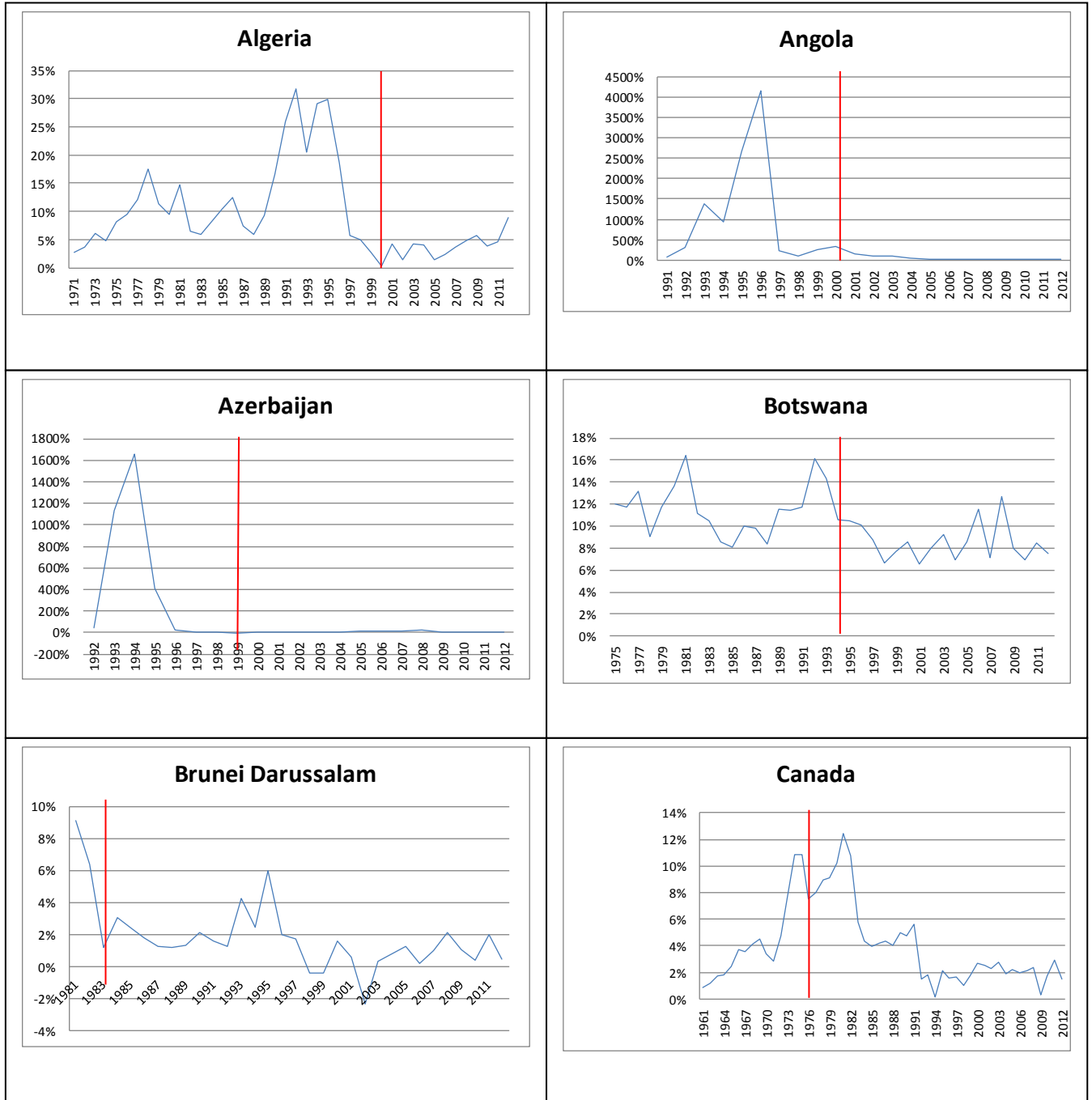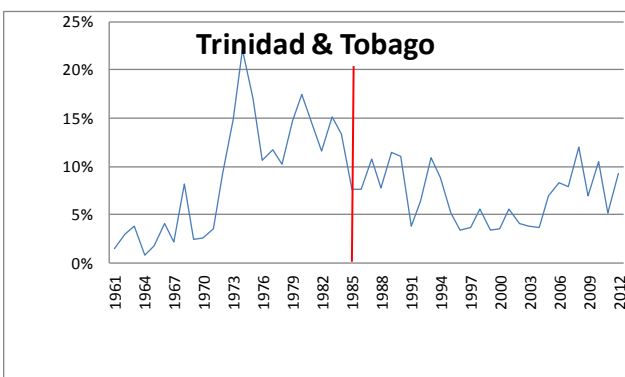
APPENDIX E: GRAPHICAL REPRESENTATION OF TOT

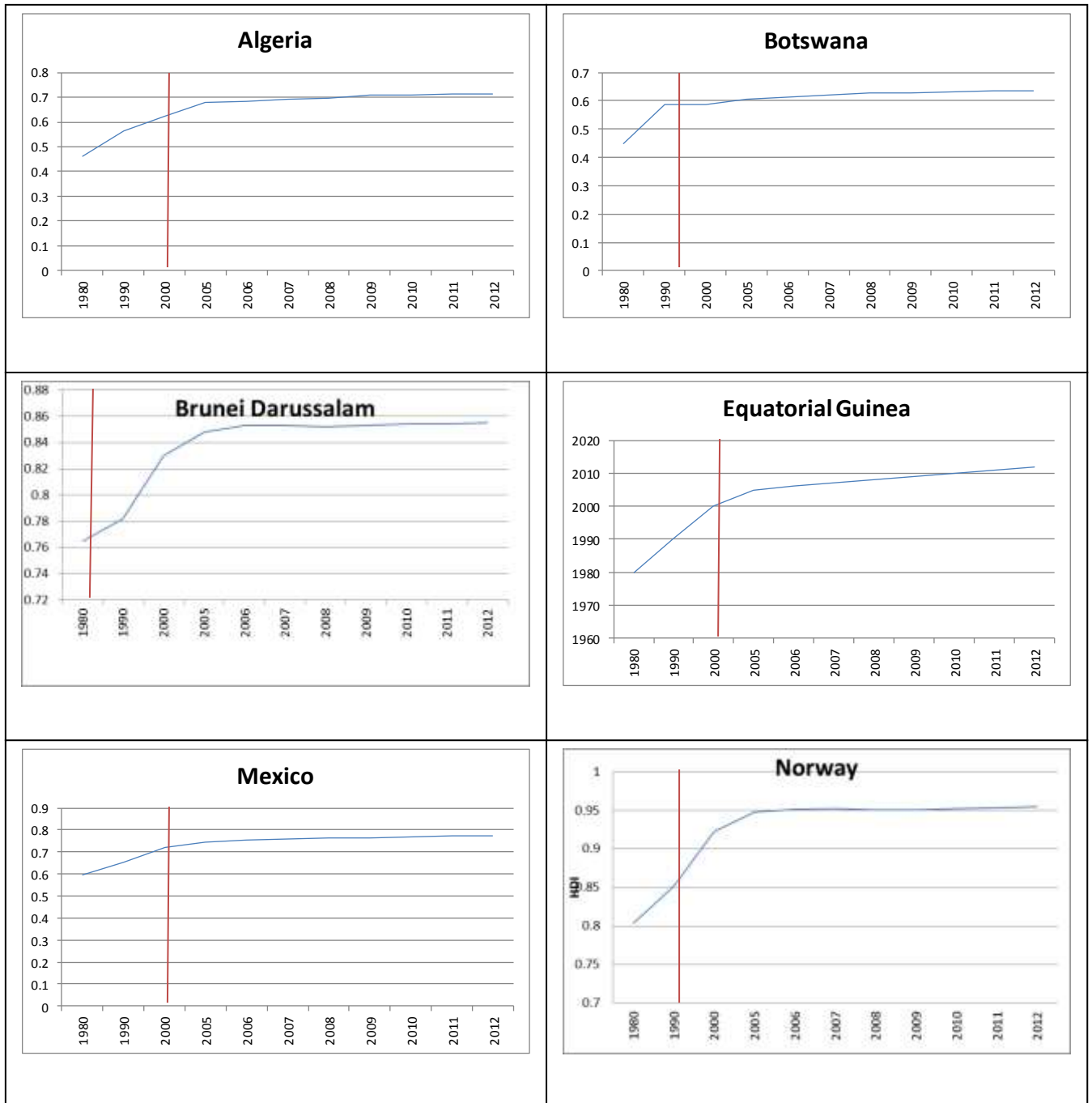Period to the left of the line is before the introduction of a SWF.

Algeria

Angola

Azerbeijan

Botswana

Brunei Darussalam

Canada

Equitorial Guinea

Kiribati

Mexico

Norway

Oman

Trinidad and Tobago
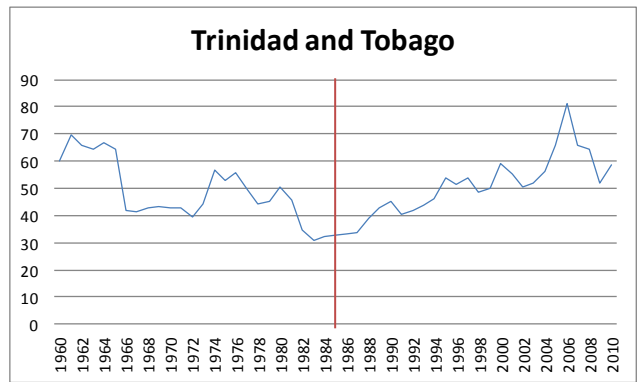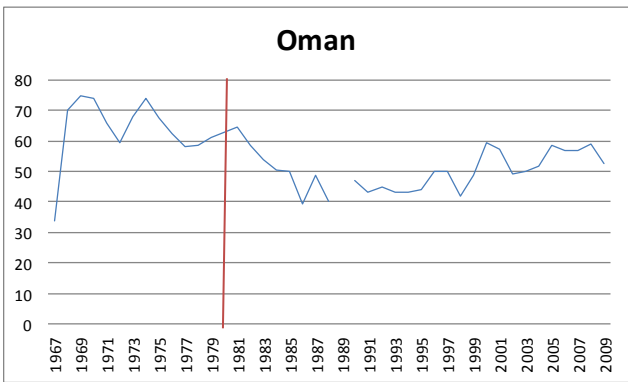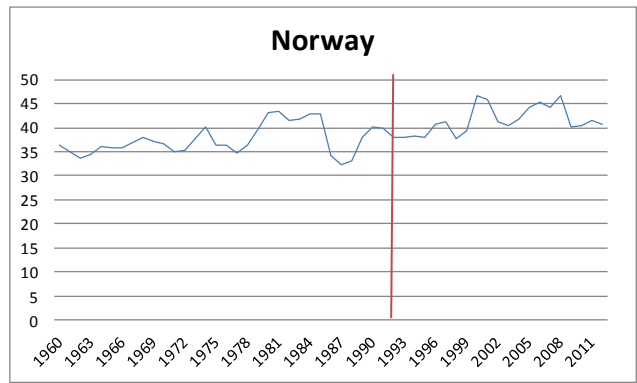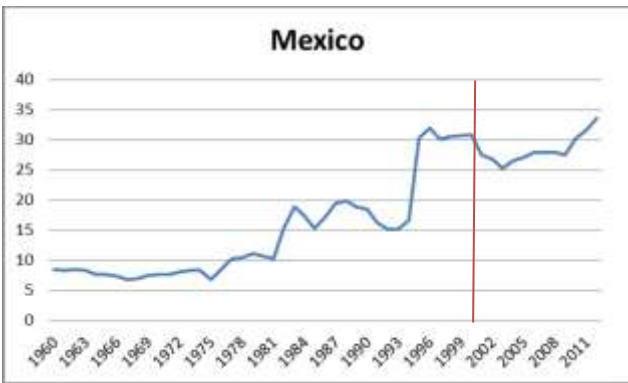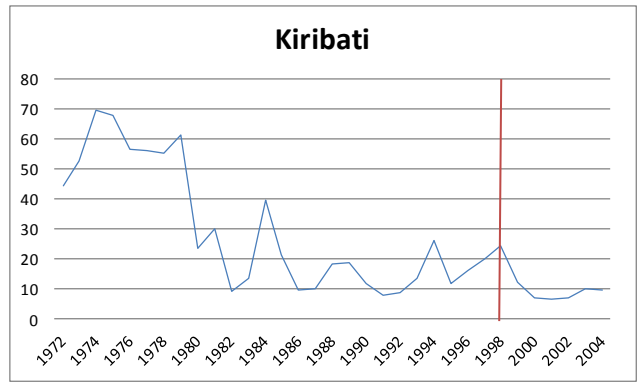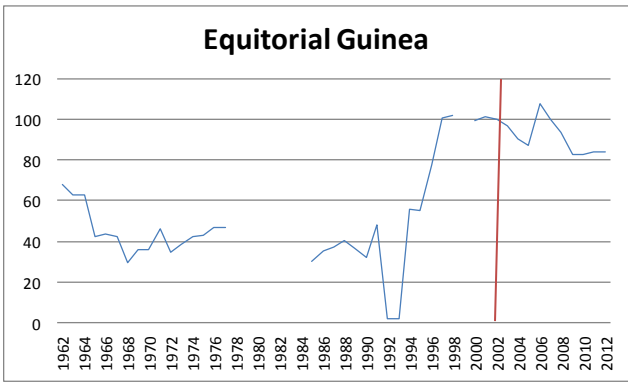
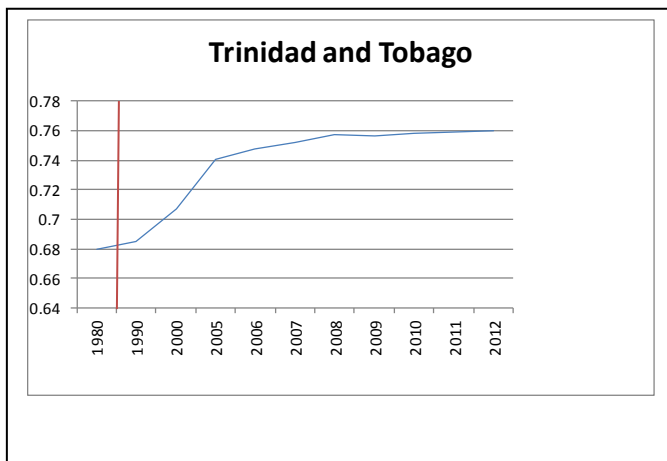# APPENDIX F GRAPHICAL REPRESENTATION OF HDI

Period to the left of the line is before the introduction of a SWF.

63

Trinidad and Tobago

The following countries are excluded from the HDI graphical representations:

Angola - no data prior to the inception of the SWF

Azerbaijan – no data before 2010

Canada – no data prior to the inception of the SWF

Kiribati - no data before 2010

Oman – no data before 2008