Sovereign Wealth Funds – Investments and market response
An event study analysis of the short term abnormal return to SWF equity investments

Aarhus School of Business, Aarhus University
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ABSTRACT

Investments from Sovereign Wealth Funds have attracted a high level of attention since the middle of the last decade. There has been a widespread concern that SWFs could potentially have a political and strategic incentive underlining their investments. By means of an event study analysis, it is documented that a statistically significant positive short-term abnormal result follows an investment by a SWF in publicly traded equities. The positive, abnormal return within a 3-day event window is estimated to be between 1.49% and 2.09% depending on the test and sample employed.

A regression analysis reveals that investments in financial firms have a negative effect on the abnormal return. The level of corporate governance is also negatively correlated with the abnormal return. The stake acquired in the target firm, as well as the level of transparency of the SWF are both found to be positively correlated with the abnormal return.

As a consequence of the scepticism surrounding SWF investments, the SWFs in coordination with the IMF have presented the Santiago Principles. These are argued to be a significant positive step in demystifying SWFs and justifying their investments. It is, however, argued that further work within this area is needed as compliance with the Santiago Principles is still lacking.
1 Introduction

Sovereign Wealth Funds (SWFs) have gained tremendously in importance as a market player in the financial markets over the last 10 years. From being widely regarded as hostile market participants with a political incentive underlining their investments, these funds have, in light of the financial crisis, seen a major image change and are now accepted on more equal terms with other investors in the financial markets. This is, to a large degree, due to the large-scale investments into western financial companies, such as Citigroup and Barclays, bringing a capital infusion that helped these major banks survive the financial crisis – suddenly the SWFs were a necessary player in the financial markets, acting as “white knights”, and the negative tone surrounding the discussion of the funds disappeared.

The fact that the funds are no longer as opaque as they used to be, has certainly also aided this change of reputation.

The funds have seen a massive growth in financial strength over the past decade, as budget surpluses in the home countries have soared following increased large export fuelled budgetary surpluses driven by increased commodity prices and subsequent commodity sales, particularly oil, or increased export activity from mainly the Asian emerging economies.

The SWFs saw, as did most investors, a large decline in the value of their investments as a consequence of the financial crisis. However, the return seen in the stock markets since 2009 and the current high commodity price level means that the funds are quickly returning to former size and capital strength, with a strong potential for growth heading into the future. Hence, these funds are, and will continue to be, important sources of liquidity, and an important participant within the financial markets.

Although the focus on the funds is nowhere near the pre-financial crisis level and the opacity of the funds is somewhat reduced, it is still important to analyze and discuss their investment patterns and effects on markets when SWF investments become known to the public, to fully understand the impact that these funds have to the global economic and financial landscape.
1.1 Problem Statement

In a response to the need for better understanding of the SWFs impact on the global economic and financial landscape, this thesis will examine the market reaction to SWF investments in publicly listed companies in the period between 2000-2011. The paper will examine whether abnormal returns are experienced upon the announcement of such investments, and will seek to analyze whether such abnormal return is a reflection of SWF-specific characteristics.

Hence, the problem statement for this research paper reads the following:

- Is there significant evidence of an abnormal return to the recipient company following the announcement of an investment from a SWF?

- Do the results from this event study depend upon the characteristics of the SWF, the geographical or sectoral nature or other idiosyncratic characteristics of the investment?

Finally this paper will give its input to the discussion that has been surrounding SWFs, namely:

- Is there validity to the concern that SWFs have a hidden agenda in their investments, i.e. is it plausible to believe the critics who fear that the investments from SWFs are underlined by a political incentive?

In answering this latter part of the problem statement, the following auxiliary question will be included to aid this discussion:

- What has been the effect of the introduction of the Santiago Principles and will these principles be sufficient to form a common ground for the inclusion of SWFs as a market participant on equal terms with other investors in the financial markets?
1.2 Motivation for the choice of subject

SWFs are a relatively new class of investors, at least under the definition SWF. The first SWF was established in 1953, but it was not until 2005 that the term SWF was coined.

The literature has been steadily growing on this new class of investors, but it is still not very broad based. Considering the large and growing size of SWFs and the concern of potential adverse, non-commercial incentives in their investments, it is important to broaden the field of research within SWFs. This will help ensuring that a proper evaluation and response to their investments can be made.

It is with this in mind that the subject for this thesis was chosen, as it offers the opportunity to give my own input and commentary to this discussion. In addition to this, the subject has had my focus, since my internship at the Royal Danish Consulate of Dubai, where I was responsible for the guidance in relation to issues of a financial character. During my time in Dubai, I had the chance to meet a Danish expatriate who was part of the management of the worlds largest SWF, the Abu Dhabi Investment Authority (ADIA), and I had several visits to the offices of ADIA. This further sparked my interest for the field of Sovereign Wealth Funds.

1.3 Delimitations

The thesis will only take deals of publicly traded equities into account. By the nature of the event study analysis, this is a necessary delimitation, as return data cannot be found for non-listed firms.

Furthermore, the thesis will only analyze deals that have been announced between 2000 and 2011. The thesis wishes to examine an up to date sample of investments from SWFs, at the same time ensuring that sufficient data is available. It was therefore decided to include this delimitation.
1.4 Definitions

The term SWF does not have a generally accepted definition. For the purpose of this thesis, the definition from the Monitor Group (Miracky, 2009) will be employed. This definition specifies a SWF as an investment vehicle that meets the following criteria:

- It is owned directly by a sovereign Government
- It is managed independently of other state financial institutions, hence central banks do not fit under the term SWF
- It does not have predominantly explicit pension obligations, hence pension funds such as Alaska’s Permanent Reserve Fund or Ireland’s National Pension Reserve Fund will also be excluded from the definition of a SWF
- It invests in a broad and diverse range of assets classes in pursuit of financial return
- It pursues a significant share of its investments internationally

The above mentioned definition would also rule out a number of funds from the United Arab Emirates, as these are controlled on an emirati level rather than a national level. However, as the individual Emirates have own jurisdiction and decision making power, these funds will be included. Norway’s Pension fund – Global, will also be included under the term SWF, as Norway is explicitly defining its pension fund as a SWF.

1.5 Research Approach and Methodology

In order to examine and answer the problem statement the thesis will employ the following research approach:

Initially the report will discuss the research that has been carried out within the subject of SWFs, their history, and the analysis of their impact to the financial markets. The first section will analyze the term SWF. What lies beneath the definition of a SWF; what purpose do they serve; how can they be defined; and how have they historically been engaging in the financial markets. Following this a more specific review of the empirical research of the abnormal return following SWF investments will be carried

out. This chapter will focus on previous empirical studies engaged in the analysis of the abnormal return of SWFs following investments in publicly listed equities.

As is evident from the problem statement, the main analysis of the report will be based on an event study of the investments made by SWFs into publicly listed companies. As the funds are opaque in nature, not all investments are known to the public. Public investments only make up a small part of the actual number of the equity investments that SWFs have entered\(^2\). However, delimiting the data basis to the investments in publicly listed companies, allows for access to a sufficient dataset, ensuring that the conclusions drawn from the event study will be valid and reliable in showing the market reaction following an equity investment by a SWF. The event study will examine the short term effect on returns of the target companies’ stocks. The event study analysis will initially discuss the selection criteria for the sampling followed by a review of the relevant theory for the event study as well as the subsequent regression analysis. This chapter will also discuss the hypotheses that the author puts forth for the results of the analysis.

Following the event study a multiple regression analysis will be performed on the data, in order to analyze for the effect of fund-specific measures, that will assist in explaining the results from the event study. The report will hence analyze whether idiosyncratic characteristics of the SWFs and target firms have an effect on the abnormal return following the announcement of an investment. This analysis will among other things take geographical, sector specific, and period specific measures into account. In addition to this, the analysis will make use of the scorecard presented by Truman (Truman 2007, Truman 2010), to take account for the effect of the level of accountability and transparency as well as the corporate governance of a given SWF.

Finally, the report will discuss the SWFs, their corporate governance and the fear and scepticism that has been surrounding SWF investments. The public attention and focus on SWF investment have to a large extent been on the fear that SWFs act on behalf of foreign governments seeking to use their investments in an adverse manner to gain knowledge about and influence in strategic sectors, posing a threat to the recipient

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\(^2\) Kern estimates that only 1/5 of the equity investments of SWFs are publicly reported (Udaibir et. al, chap 3)
country. The opponents of these investments has primarily stemmed from developed economies in the western part of the world. This discussion will be supported by the research and scoreboard from Truman (Truman 2007), the Santiago Principles, and the OECDs response to SWF investments. The discussion will analyze and discuss the current legislation and guidelines on SWFs, and conclude with the author’s own thoughts and reflections on the appropriateness of the current guidelines, legislature and improvements or changes that would benefit the way in which SWFs act in the financial markets.

2 Sovereign Wealth Funds – a “new” player in the financial markets

Having defined the term SWF, the following chapter will give a brief introduction to the actual characteristics of the funds who share the term SWF.

It was not until 2005 when Andrew Rozanov first used the term Sovereign Wealth Fund that the term was coined (Rozanov 2005). Until then, the funds had lived a quiet, retracted life with little attention from the surrounding world.

Sovereign Wealth Funds (SWFs) came into the attention of the markets, the target companies’ host countries, and not to forget the media from the middle of the last decade as fear of their investment incentives came about, following a number of large scale investments in core industries in among other places the US and Europe. Most prominent and discussed was the attempted acquisition in 2006 from Dubai Ports World\(^3\) of P&O Nedloyds port management of a number of ports on the US East Coast\(^4\).

This acquisition was led by massive political pressure to have it deemed illegal on grounds of the strategic nature of the US ports and the potential risk this posed to national security. Later the focus on the SWFs changed somewhat, as the financial crisis hit the global economy, and the assistance of SWFs was key in bailing out Western Banks. The scepticism surrounding the investments from SWFs is, however, still

\(^3\) Dubai Ports World is not a SWF, but the association to the United Arab Emirates (UAE), led to the belief that the acquisition was of a strategic nature, and an attempt from the UAE to gain access to strategic assets in the US. The relation to the government of the UAE led to the mistaken association between Dubai Ports and a SWF.

\(^4\) The Committee on Foreign Investment in the United States
present, albeit to a lesser degree, but the opaque nature of the funds, means that it is still difficult to get a complete insight into the fund management, behavior, investment strategies and corporate governance of these funds.

2.1 Characteristics and Purpose

Although the term SWF is new, the first sovereign wealth fund was established decades ago, when the Kuwait Investment Authority was created in 1953 with the intention of managing the surplus stemming from the Kuwaiti oil reserves. A number of funds were established prior to the 21st century among other Norway’s SWF, the Abu Dhabi Investment Authority (ADIA), Singapore’s Temasek etc., but the major rise in the number of SWFs came after the turn of the century, following the rise in surpluses stemming from high commodity prices or increases in global trade leading to large trade surpluses.

The fund’s financial resources stem from one of two sources; hence the funds can be divided into:

1) *Commodity funds*: These funds get their funding from the budget surpluses commodity exporting countries derive. The main funding source is oil, but basic- and precious-metals, phosphates and other commodities could also be the source. Middle Eastern funds such as the ADIA is an example of this type of fund. ADIA receives funding from the government when budget surpluses are run. In these instances, ADIA receives 70% of the surplus, and invests this for the Emirate of Abu Dhabi\(^5\).

2) *Non-commodity Funds*: These funds are typically established due to large balance of payment surpluses stemming from exports. Examples of these funds are the Chinese SWFs that have been established over the last decade. These funds manage part of the enormous foreign exchange surplus that China generates.

IMF (2008) makes an additional distinction between five different objectives that could be the reason for the establishment of a SWF:

1) *Stabilization Funds* – with the aim to insulate the national budget from price swings ensuring that the budget can still be funded should prices see an adverse movement.

2) *Savings Funds* – these funds help transfer the wealth stemming from e.g. oil or other commodities into savings that can be used for the future generations. This would help reduce the risk of “dutch disease” that could follow if the funds were directed straight into the national budget.

3) *Reserve investments funds* – these funds are intended to increase the return on the forex reserves generated from exports.

4) *Development funds* – intended to fund socio-economic projects that would be beneficial to a country’s future growth prospects.

5) *Contingent pension reserve funds* – related to future unspecified pension liabilities in the government’s balance sheet.

The investment behavior of the various types of funds will differ depending on the type of fund classification. A Savings Fund will typically have a longer investment perspective than that of a stabilization fund. This is argued to be the case, as the savings fund invests the funds for the future generations without specific near-term liabilities while stabilization funds will typically invest on a shorter horizon as they could see a need for the funds, should the source of funding see a significant drop. Hence, the savings fund will typically have a more diverse investment portfolio including equities,

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6 Dutch Disease is the term for the potential negative impact of a sudden large increase in a country’s wealth, and the risk of a negative growth spiral following this sudden wealth creation. This could be in terms of higher exchange rates making the country’s producers less competitive; it could be that the resource is not sustainable and hence the wealth is temporary, etc. (The Economist, 2007)
bonds, real estate and private equity, while the stabilization fund typically invests in relatively liquid assets and has a lower risk profile compared to the savings fund.

On an overall level the commodity funds are typically either a savings fund or a stabilization fund, Non-commodity funds can typically be characterized as reserve investment funds. It is not possible to make a generalization of the development funds or the contingent pension reserve funds, these can be both commodity or non-commodity funds (Curzio et. al, 2010)

2.2 Assets under Management

It is clear from the above, that the term SWF covers a heterogeneous group of investors. The key trait is that the funds serve as an independent investment arm of their government. They seek financial return, by investing in a diversified market portfolio in the international (and potentially domestic) financial markets, as was discussed in the definition in chapter 1.4.
Table 1—SWFs and the sum of assets under management (AuM)

<table>
<thead>
<tr>
<th>Country</th>
<th>Fund/Institution Name</th>
<th>Year of Incorporation</th>
<th>Source of Funding</th>
<th>AuM (USD Billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>Revenue Regulation Fund</td>
<td>2000</td>
<td>Oil</td>
<td>56.7</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>State Oil Fund of Azerbaijan</td>
<td>1990</td>
<td>Oil</td>
<td>30.2</td>
</tr>
<tr>
<td>Australia</td>
<td>Australian Future Fund</td>
<td>2006</td>
<td>Non-Commodity</td>
<td>75.2</td>
</tr>
<tr>
<td>Bahrain</td>
<td>Manama Investment Company</td>
<td>1993</td>
<td>Non-Commodity</td>
<td>3.1</td>
</tr>
<tr>
<td>Botswana</td>
<td>Pula Fund</td>
<td>1994</td>
<td>Diamonds</td>
<td>6.9</td>
</tr>
<tr>
<td>Brazil</td>
<td>Sovereign Fund of Brazil</td>
<td>2008</td>
<td>Non-Commodity</td>
<td>11.9</td>
</tr>
<tr>
<td>Brussels</td>
<td>Belgian Investment Agency</td>
<td>1983</td>
<td>Oil</td>
<td>36.0</td>
</tr>
<tr>
<td>China</td>
<td>China Investment Corporation</td>
<td>2000</td>
<td>Non-Commodity</td>
<td>407.1</td>
</tr>
<tr>
<td>China</td>
<td>National Social Security Fund</td>
<td>2000</td>
<td>Non-Commodity</td>
<td>146.5</td>
</tr>
<tr>
<td>China</td>
<td>SIFEC Investment Company</td>
<td>1997</td>
<td>Non-Commodity</td>
<td>567.9</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>Hong Kong Monetary Authority Investment Portfolio</td>
<td>1995</td>
<td>Non-Commodity</td>
<td>252.0</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Government Investment Unit of Indonesia</td>
<td>2006</td>
<td>Non-Commodity</td>
<td>0.34</td>
</tr>
<tr>
<td>Iran</td>
<td>Iran Oil Stabilisation Fund</td>
<td>1999</td>
<td>Oil</td>
<td>23.8</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>Kazakhstan National Fund</td>
<td>2000</td>
<td>Oil, Gas, Metals</td>
<td>36.6</td>
</tr>
<tr>
<td>Kuwait</td>
<td>Revenue Equivalence Reserve Fund</td>
<td>1998</td>
<td>Oil</td>
<td>0.4</td>
</tr>
<tr>
<td>South Korea</td>
<td>Korea Investment Corporation</td>
<td>2005</td>
<td>Non-Commodity</td>
<td>37.0</td>
</tr>
<tr>
<td>Kuwait</td>
<td>Kuwait Investment Authority</td>
<td>1993</td>
<td>Oil</td>
<td>206.0</td>
</tr>
<tr>
<td>Libya</td>
<td>Libyan Investment Authority</td>
<td>2006</td>
<td>Oil</td>
<td>64.9</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Khazaran National</td>
<td>1999</td>
<td>Non-Commodity</td>
<td>36.9</td>
</tr>
<tr>
<td>Mauritania</td>
<td>National Fund for Hydrocarbon Reserves</td>
<td>2006</td>
<td>Oil, Gas</td>
<td>0.3</td>
</tr>
<tr>
<td>Mexico</td>
<td>Oil Revenue Stabilization Fund of Mexico</td>
<td>2000</td>
<td>Oil</td>
<td>6.3</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Nigerian Sovereign Investment Authority</td>
<td>2011</td>
<td>Oil</td>
<td>15.5</td>
</tr>
<tr>
<td>Norway</td>
<td>Government Pension Fund - Global</td>
<td>1994</td>
<td>Oil</td>
<td>571.5</td>
</tr>
<tr>
<td>Oman</td>
<td>Oman Investment Fund</td>
<td>2000</td>
<td>Oil</td>
<td>14.5</td>
</tr>
<tr>
<td>Oman</td>
<td>Oman State General Reserve Fund</td>
<td>1980</td>
<td>Oil, Gas</td>
<td>8.2</td>
</tr>
<tr>
<td>Qatar</td>
<td>Qatar Investment Authority</td>
<td>2005</td>
<td>Oil</td>
<td>95.3</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>Public Investment Fund</td>
<td>2006</td>
<td>Oil</td>
<td>475.3</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>SAMA (Saudi Arabia Monetary Agency)</td>
<td>1981</td>
<td>N/A</td>
<td>247.5</td>
</tr>
<tr>
<td>Singapore</td>
<td>GIC (Govt of Singapore Investment Corp.)</td>
<td>1981</td>
<td>Non-Commodity</td>
<td>247.5</td>
</tr>
<tr>
<td>Singapore</td>
<td>Temasek Holdings</td>
<td>1974</td>
<td>Non-Commodity</td>
<td>157.2</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>Abu Dhabi Investment Authority (ADIA)</td>
<td>1976</td>
<td>Oil</td>
<td>627.0</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>Abu Dhabi Investment Council (ADIC)</td>
<td>2007</td>
<td>Oil</td>
<td>N/A</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>Emirates Investment Authority</td>
<td>2007</td>
<td>Oil</td>
<td>N/A</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>International Petroleum Investment Company (IPIC)</td>
<td>1984</td>
<td>Oil</td>
<td>99.9</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>Investment Corporation of Dubai</td>
<td>2000</td>
<td>Oil</td>
<td>19.6</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>Mubadala</td>
<td>2002</td>
<td>Oil</td>
<td>13.3</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>Ras Al Khaimah Investment Authority</td>
<td>2004</td>
<td>Oil</td>
<td>1.2</td>
</tr>
<tr>
<td>Vietnam</td>
<td>State Capital Investment Corporation</td>
<td>2006</td>
<td>Non-Commodity</td>
<td>0.6</td>
</tr>
</tbody>
</table>

| Source: SWFinstitute.org |

Table 1 shows the SWFs that have been included in this thesis\(^7\), their year of establishment, source of funding as well as the estimated Assets under Management (AuM). As the table shows, the AuM of the SWFs are estimated at 4.422 trillion USD\(^8\). The largest fund is ADIA with estimated AuM of USD 627 billion. The lack of transparency does, however, mean that this is an estimate, and widely different estimates of ADIA’s AuM have been made. Kern (2009) for instance does not give a specific AuM estimate for ADIA, rather he provides a range within the AuM of Adia is expected to lie – between USD 290 and 850 billion. Hence, the above mentioned tables estimate is not meant as a definite answer to the AuM of SWFs, but rather as an input to

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\(^7\) The funds in italics are funds for which it has not been possible to find observations of investments in publicly listed equities within the criteria of the data collection process.

\(^8\) This estimate is as per www.swfinstitute.org. The site was accessed on November 1, 2011, where the estimates were gathered. The data is their latest estimate of the AuM for the individual funds, but still the reference period for the estimates may differ across the funds. The reference period is 2010-2011.
the approximate size of their holdings. The lack of transparency of SWFs does not allow for a complete and precise picture of the AuM.

Kern (2009) made an estimate as of July 2009, where he estimated the AuM of the SWF to amount to more than USD 3 trillion. This was compared to the assets in the global capital markets, as can be seen in figure 1. The magnitude of the assets held by SWFs is still relatively small when compared to the total size of the assets in the financial markets, but one can compare to e.g. the size of hedge funds and see that SWFs are indeed an important player in the markets, and will continue to be so.

Figure 1: SWF Assets in Comparison (Trillion USD)

![SWF Assets in Comparison](image)

Source: Steffen Kern, Deutsche Bank, 2009

The rise of the SWFs has been amplified by the change in wealth distribution from the western industrialized countries to the emerging economies as has been experienced over the last decade and in particular since the financial crisis hit the global economy. Even though significant losses were incurred during the financial crisis and the plummeting of the asset markets in 2008 and 2009, the funds have returned to growth. Financial returns have once again returned to positive territory and the high commodity prices that have been prevailing in the recent past with oil hitting record prices of USD

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9 These losses would count both realized and unrealized losses. With the typical longer term investment horizon of many of the SWFs the unrealized losses would have been somewhat reduced as equity markets have returned to levels relatively close to the levels seen prior to the financial crisis.
147 per barrel in July 2008, and now trading around the USD 100-120 mark per barrel and with the budget surpluses of exporting Asian countries at high levels ensures that both financial return as well as funding from host countries will increase the AuM of the SWFs. Furthermore a number of small (and large\textsuperscript{10}) funds have been announced within the last few years, adding further to the total size of the assets that are managed under the funds that carry the definition SWF.

Kern (2009) estimates that SWF will reach a size of USD 6-7 trillion by 2015, while Jen (Udaibir, 2010, Chapter 10) estimates that the funds will reach USD 11 trillion by the same time.

2.3 Investment strategies of SWFs

SWFs differ in many ways from the likes of hedge funds and other equally opaque investment vehicles. When comparing the SWFs to hedge funds, a clear difference is the amount of leverage that is used in the investments. SWFs carry only little leverage in their debt structure while hedge funds have a highly leveraged structure, and carry a higher risk in their investments, than do SWFs. That being said, parts of the assets of SWFs are put into investments via external money managers as well as hedge funds and hence the risk and leverage is introduced, albeit in an indirect manner (Curzio, 2010).

SWFs invests in a multitude of asset classes. Klitzing et. al (Udaibir, 2010) argue that the funds can be categorized as either 1) Conservative, passive funds, 2) Yield seeking passive funds or 3) strategic active funds. This distinction is based on the asset allocations of the funds. Where fund type 1 holds a large part of its portfolio in liquid asset, cash and some equities, fund type 2 allows for more risk in its portfolio, holding less risky assets and allowing for investments in private equity and real estate. Fund type 3 holds few liquid assets and takes on a more aggressive market strategy with high proportions of its portfolio in private equity and real estate investments. Of the 3 types, fund type 2 make up the majority of the SWFs; funds such as ADIA, Kuwait Investment Authority and GIC are included hereunder.

\textsuperscript{10} Reuters, \textit{China Central Bank to create $300 bln FX investment vehicle},
Analyses of the potential for SWFs to be market destabilizing have also been produced. The argument has been that the large size of the SWFs could potentially dislocate asset prices and exchange rates. Most researchers do, however, not see this as an imminent risk. Nystedt (Udaibir, 2010) argues that unless SWFs were to allocate a more significant part of their assets into emerging markets, where liquidity is not geared for such large scale investments, the investments are not likely to destabilize markets. Knill et al. (2009) does however find some evidence that SWF investments could potentially be destabilizing, but further research into this subject is necessary to conclude that this is actually the case.

Miracky et al. (Monitor Group, 2008) find evidence that a large share of SWF investments are directed towards either their domestic markets or towards emerging markets. This is corroborated by Nystedt (Udaibir, 2010) who presents evidence that an increasing share of the investments, made by emerging market SWFs, are carried out in emerging markets as compared to OECD countries\textsuperscript{11}.

Finally Bortolotti (2009) and Dewenter (2009) discuss the notion of SWFs being passive or active investors. From a sample of 318 investments, Bortolotti find evidence of SWFs acquiring seats in the board of directors in 28,6% of the target firms, while Dewenter, Han & Malatesta only find evidence of this in 15% of the investments. Excluding non-Norwegian funds, Bortolotti find evidence that SWFs are more inclined to take up board seats in domestic investments compared to cross-border investments.

\textsuperscript{11} Given that the funds themself stem from an emerging market, these emerging market investments are comprised of both domestic as well as foreign domestic markets.
3 Literature review

The following chapter will carry out a review of other studies that have made use of event studies in examining the market reaction following an investment by a SWF.

Kotter & Lel (2008) examine the stock market response to 168 investments by SWFs into publicly traded equities and find significant documentation of a positive response to such investment. For a 3-day event window they document an abnormal return of 2% adding up to a mean market value increase of USD 327 million to the target firm. They conclude that SWF investment sends a positive signal to the financial markets. When examining the main criteria for a SWF investment to get a positive response from investors, they find that the transparency of the acquiring SWF has a positive and significant impact on the abnormal return for a given investment. They therefore argue that a screening criteria used by investors to evaluate SWF investments is the degree of transparency that the funds allow for.

They further analyze the long run performance of target firms following a SWF investment and find that the target firm value is not positively affected on a 3-year horizon.

In their 2010 research paper, Kotter and Lel further find evidence that the positive signal of a SWF investment in the 3-day event surrounding the announcement date, is further amplified for firms facing financial distress.

Sun and Hesse (Udaibir, 2010) use a sample of 166 investments and divestments and carry out a short term event study using an event window of the 5 days surrounding the announcement date. They conclude that SWF investments are followed by a positive abnormal return while divestments have a negative effect on the target firm value. The findings further show that investments in the financial sector have a higher abnormal return than do investments in the non-financial sector.

Bortolotti and Miracky (2009) find that SWFs tend to invest heavily in large, levered and profitable firms that are usually headquartered in a foreign country. They include a large number of investments from the Norway Government Pension Fund – Global, who tend to invest openly in minority stakes in publicly listed companies. The inclusion of Norway’s SWF investments has likely skewed their analysis towards this conclusion.
They find an abnormal positive return of 1.25% over a 3-day event window; however, they find that the long run buy-and-hold performance of SWF investments yield statistically significant, negative returns. A regression analysis leads to the conclusion that investments by Norway’s fund yield a significantly higher abnormal return, than do investments from other SWFs. Furthermore, they find that investments in large stakes of the target firm gives rise to a higher abnormal return. For investments into OECD countries, the picture changes, as these are significantly more negative as compared to investments in non-OECD countries. Hence they argue that investments in emerging market economies are received better, and further argue that better financing options in OECD countries could mean that the impact of SWF investments is thus not led by the same positive investor reaction.

Dewenter, Han & Malatesta (2009) reach similar results to that of Sun and Hesse (Udaibir 2010) and find significant positive abnormal returns following SWF investments, while significant negative returns follow announcements of divestments. With regards to long-run performance of SWF investments, the results found are mixed. Their findings are argued to be consistent with that of Kotter and Lel (2008) but inconsistent with Bortolotti et. al (2009).

In conclusion the general conclusion is that the short term abnormal returns following a SWF investment are statistically significant and positive, while the conclusion of long run performance is mixed.

This thesis will add to the literature on short term abnormal returns following a SWF investment, by including an up to date sample of investments carried out by SWFs. With the increasing size and activity of SWFs in mind, as well as the improved transparency and concurrence to a common set of rules\textsuperscript{12}, the findings and conclusions of the report will be a valid contribution to the current research within this field.

\textsuperscript{12} The GAAP (Generally Accepted Principles and Practices of SWFs) and the International Working Group of SWFs. These will be discussed and analyzed in detail in chapter 8
4 Theoretical Framework

As discussed in chapter 1.5, the thesis will employ an event study followed by a multiple regression analysis. The following chapter will present the relevant theory for these analyses.

4.1 Event Studies

An event study is a frequently used and commonly accepted method for measuring the economic effect of a given event or change where the specific date of such event can be defined. The event study seeks to define whether the event has a statistically significant abnormal impact to the subject in question. In this case we wish to examine whether the announcement of an investment from a SWF will lead to a significant change in the return to the target company’s stock in a short-term event window. Hence, the following framework will allow for a test as to whether the announcement of an investment by a SWF will have an effect on the wealth of the shareholders through a change in the stock price given that the announcement was unexpected.

![Figure 2 – Defining the estimation period and event window](source: Mackinlay et al. 1997, Cuthbertson 2007)

The event study is carried out over an event window. As figure 2 shows, the event study includes an estimation period and an event window. Some studies would also consider the post-event period, this will, however, not be part of this analysis.

The estimation period for this study will be 260 trading days (roughly equivalent to a year prior to the announcement date, day 0. This corresponds with the recommendations by Brown and Warner (1985) & Mackinlay et al. (1997). An adequately long estimation period will allow for the calculation of the expected returns to yield precise information. The estimation period ends 2 days prior to the announcement ensuring that the event
will not influence the calculation of the expected return\textsuperscript{13}. The event window will have a duration of +/- 1 day prior to and after the announcement date. The event window is hence 3 days.

4.1.1 The Efficient Market Hypothesis

In order for the event study method to give a meaningful result, allowing us to draw conclusions on the market impact of a given transaction, it is necessary to make assumptions on the market efficiency. The Efficient Market Hypothesis (EMH), as presented by e.g. Fama (1970), assumes that the market is efficient in processing information about relevant events and reacts swiftly to this. In this context we must, hence, assume that the semi-strong form of the EMH holds.

The semi-strong form of the EMH specifies that prices will adjust immediately to public information such as announcement of SWF investments in a given company stock\textsuperscript{14}. Hence, no investor can earn excess returns from trading rules based on publicly available information (Copeland, Weston & Shastri, 2005). This in turn means that the identification of abnormal returns in the event window, will reveal the market sentiment and reaction to such investments, which is indeed what we are looking to confirm.

4.1.2 The definition of abnormal return

An abnormal change in the stock price will lead to a change in return on the stock that is abnormal. This abnormal return, \( A_{\mu} \), is measured as the difference between actual return on the announcement day, \( r_{\mu} \), and the expected return, \( E(r_{\mu}) \).

\[
A_{\mu} = r_{\mu} - E(r_{\mu}),
\]

where the expected return is estimated based on the daily returns in the previous period, the estimation period, where no announcement was expected. Hence, it shows the return

\textsuperscript{13} Mackinlay, et al, 1997
\textsuperscript{14} Brealey, Meyers and Allen, 2006
one would expect with no announcement made, which will demonstrate if the stock prices show abnormal performance around the announcement day.

To estimate the expected return the market model, that Brown et al (1980) has found to perform well when calculating the abnormal return, will be used. The market model is a linear regression of the market return on the return of the stock “j”

\[ r_{jt} = \alpha_j + \beta_j r_{mt} + \varepsilon_{jt} \]

where \( r_{jt} \) is the return on stock “j” and \( r_{mt} \) is the return on the market. To estimate the market return a relevant index is used as a proxy. \( \alpha_j \) and \( \beta_j \) are the OLS parameters of the model and \( \varepsilon_{jt} \) is the error term with an expected mean of zero. The abnormal return in the estimation period is the residuals of the OLS estimation. The property of OLS is to minimize the residuals in the estimation of the parameters leading to the assumption that the expected value of the error terms is zero. This implies that an error-term value different from zero indicates an excess return that is unexplained by the market model.

The event window includes the event day and one day prior and one day subsequent to the event day. Including the day subsequent to the event day will capture any price change happening after the closing of the stock exchange. Likewise including the day prior to the event day will capture possible leaks of information and also mitigates problems where the true event day might deviate from the day where the announcement is recorded in the financial databases. If the event day, was announced a day prior to or after the event day, the 3 day event window will still capture the effect. There is, however, a trade off between including enough days to capture the event and including too many days, thereby diluting the data and hence decreasing the possibility of discovering an abnormal return.

The market model estimates the abnormal returns in the event window as:

\[ A_{jt} = r_{jt} - (\alpha_j + \beta_j r_{mt}) \]

\( A_{jt} \) across the sample is tested for a significantly difference from zero. If this is the case the announcement has an effect on the wealth of the shareholders.
The thesis will employ 2 types of testing to test for the presence of an abnormal return. These will be a parametric and a non-parametric test. This will allow for a robust conclusion to the presence of abnormal returns, as these tests have different properties which will be presented in the following two sections.

4.1.3 Parametric Test – Mean Standardized Excess Returns
The test statistic employed in this event study is the T3 t-test\(^{15}\). This test assumes independence between the abnormal returns of the individual stocks in the sample. Furthermore, the test incorporates a standardization, where the abnormal return for each stock is divided by its standard deviation to ensure that the abnormal returns follow the same distribution.

\[
A_p' = \frac{A_p}{S(A_p)}
\]

Where \(A_p'\) is the standardized abnormal return for stock \(j\) at time \(t\), \(A_p\) is the abnormal return for stock \(j\) at time \(t\), and \(S(A_p)\) is the standard deviation of the abnormal return of stock \(j\) at time \(t\):

\[
S(A_p) = \sqrt{\frac{1}{T_j - 1} \sum_{i=1}^{T_j} (A_p - \bar{A}_p)^2}
\]

Where \(T_j\) is the total number of observations over the estimation period.\(^{16}\)

\(^{15}\) Brown and Warner (1985) argues that this test is well specified and provides the most powerful results. \(^{16}\) Often a correction proposed by Salinger (1992) is included. The mean and variance of the abnormal return of stock \(j\) is estimated over the estimation period. However, these estimates might not be representative of the mean and standard error in the event window, and it is therefore necessary to correct for any error in these estimates when used in the event window. The longer the estimation period, the smaller the correction. This indicates that a long estimation period will leave this correction trivial. This correction has been left out of the analysis. The correction is specified as:

\[
1 + \frac{1}{T_j} + \left(\left(\frac{R_{m,0} - \bar{R}_m}{\sum_{i} (R_{m,i} - \bar{R}_m)}\right)^2\right)
\]
The test-statistic is then given by:

\[ T_3 = \frac{\sum_{j=1}^{N} A_{jt}}{\sqrt{N}} \sim N(0,1) \]

Where \( N \) = number of firms. For large samples, \( N \), the test statistic follows the standard normal distribution, with a mean of 0 and a variance of 1.

Furthermore the T-3 test will be applied to the cumulative abnormal returns, CAR’s. The CAR is calculated by means of the following formula:

\[ CAR_j = \sum_{t=-1}^{1} A_{jt} \]

This is used to calculate the test statistic, which is given by:

\[ T_{3CAR} = \sum_{j=1}^{N} \frac{CAR_j}{\sqrt{3N}} \sim N(0,1) \]

This test statistic is very similar to the aforementioned test-statistic, except for the fact that it uses the aggregate measure of abnormal return, CAR, to test if there is a significant abnormal return in the event window. It further assumes that the excess returns are independent and the variance of the CAR is the sum of the variances.\(^{17}\)

4.1.4 Non-Parametric Test – Corrado’s Rank Test

In addition to the T3 t-test, the Corrado rank-test is employed to overcome the potential difficulties of less than perfectly normally distributed residual series. The Corrado rank test is chosen based on the power of this test compared to other non-parametric tests\(^{18}\). Initially the residuals for each firm, \( j \), are ranked over the entire period (i.e. estimation- and event period) according to the magnitude of the residual. The smaller residuals are given the lower ranks and vice versa.

\(^{18}\) Bartholdy, 2007, Advanced Corporate Finance, Lecture notes 10, page 19, 26
The test statistic can then be calculated using the following formula:

\[
z = \frac{1}{\sqrt{N}} \sum_{j=1}^{N} (U_{jt} - \bar{U}) \sum_{t=1}^{N} \frac{1}{N_{t}} \frac{1}{N} (U_{it} - \bar{U})^2, \text{ where } \bar{U} = (0.5 + T / 2), \text{ Serra (2002), Corrado (1989)}
\]

Where \( T \) is the total number of observations over the estimation period + the event window.

And

\[
S(K) = \sqrt{\frac{1}{T_i} \sum_{i=250}^{1} \frac{1}{N_i} \sum_{t=1}^{N} (U_{it} - \bar{U})^2}
\]

Where \( U_{it} \) is the rank over the estimation period, whereas \( U_{jt} \) is the rank in the event window.

This test statistic can also be modified to test for a significant abnormal return over the entire event window, using the CAR’s. The test statistic is then given by the following:

\[
z_{\text{CAR}} = \sum_{i=1}^{1} \frac{1}{\sqrt{N}} \sum_{j=1}^{N} (U_{jt} - \bar{U}) \frac{1}{\sqrt{3} \times S(K)}
\]

Employing a parametric as well as a non-parametric will ensure that this paper does not rely solely on a single test and the conclusions that will be drawn can be contrasted and compared over the various tests. This is in line with the argument that a high number of tests should be run when conducting an event study (Bartholdy et al., 2007).
4.2 Regression Analysis

The following section will briefly comment on the assumptions for a multiple regression analysis after which the variables of the analysis will be presented and discussed.

Multiple Regression analysis allows for a ceteris paribus analysis of a number of variables of interest when trying to explain the dependent variable. The multiple regression employed here, will include a number of independent variables in predicting the dependent variable CAR.

The assumptions for the multiple regression are (Wooldridge, 2006)

1) The residuals must be normally distributed
2) The residuals must not show signs of heteroscedasticity, hence the variance of the residuals must be constant
3) The expected value of the residuals must be 0
4) The residuals must not show signs of autocorrelation
5) The model does not suffer from multicollinearity, i.e. no two variables must be perfect linear combinations of each other.

These assumptions will be discussed in further detail under the analysis of the results for the final model.

4.2.1 The Regression Model

The following section will present the model and the variables that will be employed in the multiple regression. A brief description of each variable and a discussion of the predicted impact of the independent variable on the dependent variable will be included. Ultimately, the regression model will be presented.

The dependent variable in the regression analysis is the cumulative average residual, CAR. By means of the multiple regression, we wish to predict the impact of the following independent variables on the CAR. The variables are:
1) **MarketValue** – a measure of the Market value of the target firm. This variable is included to control for the effect of the size of the target firm. In effect, is the market value of the target firm significant in explaining the CAR following the announcement. This variable is collected from Datastream.

2) **StakeAcquired** – a measure of the size of the stake acquired by the SWF. This discussion has been one of the most prominent with regards to SWF investments. Do SWFs take up majority shares in their target companies, and are they active shareholders? With respect to the scepticism surrounding SWF investments and their incentives, one could argue that this variable would be negatively correlated with CAR. A different argument would be that the signalling effect of an institutional market participant acquiring a large share in a target firm, would signal that the institutional investors’ screening has shown a potential for further value creation in the company, which in turn should have a positive effect on the CAR. SWFs are also widely regarded as long-term investors with a strong liquidity base, which would be an added positive for such investments. Shleifer and Vishny (1986) argue that large shareholders have an added incentive in monitoring the target firm activities performance and activities, hence mitigating the free-rider problem of a large number of smaller investors (Rose, 2005). It could be argued that a liquidity effect could also be present, following the large scale investments that SWFs make. The liquidity effect would lead to an upward price pressure on the equity price. However, Kotter and Lel (2008) find that this effect is insignificant. In accordance with the above, the hypothesis for this variable is that it will have a positive impact on the CAR.

This variable is collected from the data set from Zephyr.

3) **DomesticFirm** – This variable is a dummy variable. The variable takes on the value 1 if the investment is made in the domestic market of the acquiring SWF, and 0 otherwise. This variable will be included to control for the difference in CAR for domestic vs. International investments. Bortolotti (2010) argue that SWF will be in a better position to exert influence on companies headquartered in the funds home country, the monitoring effect. This variable is thus expected to be positively correlated with higher abnormal returns.
4) *TrumanTransparency* – Truman (2007, 2010) presents a scoreboard measuring among other things the level of Transparency and Corporate Governance. The Scoreboard will be presented and discussed in more detail in chapter 8. The variable is a measure of the level of transparency of the individual SWF. The variable has a value between 0 and 100, with 0 being low transparency and 100 being full transparency and disclosure of the SWF operations, strategy, size, etc. This measure is expected to be positively correlated with the CAR, as it is argued that the investors will have a higher level of confidence in the investment from a highly transparent SWF. This is in line with the findings of Kotter and LeL (2008).

5) *TrumanCorporateGovernance* – This variable, on a similar note as the variable above, controls for the effect of the level of Corporate Governance of the individual SWF. It is measured by a number of factors including the role of the fund managers compared to the government in the SWF home country, the internal and external ethical standards, corporate responsibility guidelines etc. As is the case for the *TrumanTransparency* this variable is measured on a scale from 1-100 with 100 being given to a fund with strong corporate governance. It is argued that this variable will be positively correlated with the CAR, which is in line with the findings of Bortolotti (2009).

6) *MiddleEastFund* – This variable is a dummy variable taking the value 1 if the fund is based in the Middle East, and 0 otherwise. This variable is meant to control for the possible impact of the scepticism that has been surrounding the Middle Eastern SWFs. The hypothesis is that Middle Eastern Funds will be associated with a lower CAR for the target firms equity compared to a non-Middle Eastern SWF.

7) *OECDTarget* – This variable is a dummy variable controlling for the impact of the home country of the target firm. If the target firm is based in an OECD country the variable will take a value of 1 and 0 otherwise. It is hypothesized that this variable will have a negative effect on CAR. A reason for this, could be that it is more difficult for emerging markets firms to obtain access to
funding/capital compared to a company headquartered and listed in the more liquid OECD stock markets. This would then imply that the signalling effect to emerging market investors would have a much larger effect than would be the case in an OECD market. Bortolotti (2010) further comment that the rules and regulation in OECD countries will make it less necessary to have large investors monitoring management in OECD countries compared to non-OECD countries where legislation is not as developed. Hence, the variable is expected to be negatively correlated to the CAR of the target firm upon the announcement of a SWF investment.

8) Financial Company – this variable is a dummy variable used to control for the difference in CAR between investments in financial and non-financial target firms. This variable is expected to be positively correlated to the CAR. The reasoning for this is the fact that a large number of investments in financial firms followed in the aftermath of the financial crisis. The effect was in essence a bailout of these financial firms, which is expected to have been well received by investors.

9) Y2000_2005 & Y2006_2008 – These two variables are dummy variables accounting for the difference in the abnormal return over time. Y2000_2005 has the value 1 for investments from year 2000 – 2005 and 0 otherwise, Y2006_2008 has the value 1 for investments from year 2006 -2008. If neither of the variables have the value 1, the year of investment is between 2009 and 2011. The variable 2000-2005 is not expected to be significant in explaining the CAR due to the low level of focus from the public on SWFs. For the variable Y2006_2008 it is expected that a negative effect will be found, in accordance with the negative public opinion surrounding SWFs in this period. The base case, from 2009-2011, is thus expected to be associated with higher returns than the period from 2006-2008.
10) No. of analysts covering the target company – this variable is thought as a measure of the focus that a given firm receives from the financial markets. As the hypothesis is that the CAR following a SWF investment will show a positive abnormal return, it is also expected that a large number of analysts following this stock will lead to more investment recommendations for the given stock following a SWF investment, compared to a stock with little analyst coverage. This variable is estimated by the number of analysts who release an Earnings per Share estimate for the next Financial Year for the target firm. This is measured on the last day of the previous financial year. It is expected that a large analyst coverage will be a positive, in line with the expectation that SWF investments are well received, with a positive abnormal return. The hypothesis being that the more analyst following a firms equities, the larger the “media-effect” once a SWF investment is announced. This data is collected in Datastream.

The final model is therefore the following regression model, which explains the cumulative abnormal return, \(\text{CAR}_t\), as a function of \(\text{MarketValue}\), \(\text{StakeAcquired}\), \(\text{Domesticfirm}\), \(\text{TrumanTransparency}\), \(\text{TrumanCorporateGovernance}\), \(\text{MiddleEastFund}\), \(\text{OECD_Target}\), \(\text{FinancialTarget}\), \(\text{Y2000_2005}\), \(\text{Y2006_2008}\) and \(\text{AnalystCoverage}\):

\[
\text{CAR}_t = \alpha + \beta_1 \cdot \text{MarketValue}_t + \beta_2 \cdot \text{StakeAcquired}_t + \delta_1 \cdot \text{DomesticFirm}_t + \\
\delta_2 \cdot \text{TrumanTransparency}_t + \delta_3 \cdot \text{TrumanCorporateGovernance}_t + \delta_4 \cdot \text{MiddleEastFund}_t + \\
\delta_5 \cdot \text{OECD_Target}_t + \delta_6 \cdot \text{FinancialTarget}_t + \delta_7 \cdot \text{Y2000_2005}_t + \delta_8 \cdot \text{Y2006_2008}_t + \\
\beta_3 \cdot \text{AnalystCoverage}_t + \epsilon_t
\]

Where \(\text{CAR}\) is the dependent variable, \(\alpha\) is the constant in the model, \(\beta_i\) are the independent variables in the model and \(\delta_i\) identify the dummy variables. \(\epsilon_t\) is the residual or error term in the model.
5 Data Selection

The main sample for this research consists of 200 investments from SWFs. The data has initially been hand collected from Zephyr, after which Datastream has been used to collect the return of the individual equities and the corresponding market indices. In addition to this Datastream has been used in collecting firm level data for the independent variables in the regression analysis. Data has further been collected on the MSCI Global equity index, which will be used as a proxy of the global stock market return. In addition to this local market index return data has been collected, here the main index of the given market will be employed in the analysis. The event study will be carried out for both the world market index and for the local market index. This data has been collected from Datastream.

The initial sample consisted of 922 individual investments, for which the following selection criteria were applied to identify the relevant sample for the analysis:

The SWFs for which the sampling is carried out, can be defined on the basis of the definition by the Monitor Group (Miracky, 2009)\(^\text{19}\). This yields a sample of 42 funds from 30 countries\(^\text{20}\). The data has been collected from the period starting January 1 2000 and the final sample was drawn on December 1 2011. Hence the sample spans over a period of almost 12 years, and includes investments that are fully up to date of this study. The period in question allows the thesis to give an up to date analysis of the problem statement. Collecting data back to year 2000 further ensures that the sample will yield a sufficiently large number of observations, allowing for reliable statistical inference.

The sample takes account of investments from the SWF and well-known subsidiaries of the SWFs. It is argued that the well known subsidiaries will be recognized as investment vehicles of the SWFs, and that the market reaction will thus be similar to that of a SWF investment.

\(^{19}\) See chapter 1.4  
\(^{20}\) The funds are presented in Table 1, chapter 2.2
The Sample only includes deals where the deal status is either announced or completed. This will exclude rumours from the sample. It cannot be excluded that a rumour will also lead to a change in the return structure of the target firms’ equity. It is, however, not possible to verify the trustworthiness of such rumour, the argument being that a less trustworthy rumour is not as likely to change the return structure, and to eliminate the risk of diluting the announcement effect, these rumoured deals are excluded. The sample will be further limited to only include investments that are not joint ventures. Furthermore, cases where the SWF purchased the asset outright will not be included, hence if Zephyr returns the deal status as a 100% acquisition, the deal will be removed from the dataset. This criteria excludes 488 observations, reducing the sample to 434 observations.

The sample will furthermore only include listed companies, as this is a prerequisite for gathering the necessary return data for the event study. This excludes an additional 246 observations, with the sample now at 242 observations.

Furthermore, the sample will exclude observations for which stock prices are not available 1 year prior to the investment, the estimation period. This will ensure the properties of the expected return calculated on the basis of the estimation period, as discussed in chapter 4.1. These exclusions could e.g. be due to the investment being related to an IPO. This reduces the sample by 46 observations.

The sample, following the application of the abovementioned selection criteria, is thus comprised of 200 investments ranging from 2000-2011, performed by 22 different SWFs, on target firms in 33 different countries.

Furthermore a sub-sample based on the value of the investment is made. This sub-sample only includes deals with a value surpassing 10 million Euro. The inclusion of this sample allows for a robustness check of the conclusions drawn from the overall sample of 200 investments. The deal value limitation excludes 51 investments for a sample size of 149 investments.

With regards to the multiple regression analysis, the full sample of 200 investments is used. However, only investments for which all independent variables can be estimated
and/or measured, will be included in the regression sample. This eliminates 35 observations primarily due to missing information on the stake acquired in the target firm; which excludes 31 observations. Furthermore, the availability of data on Truman’s Transparency and Corporate Governance measures is not available for the Libyan SWF as well as the Saudi Public Fund, and it has been decided to exclude these investments. This excludes another 4 investments, and the total regression sample consists of 165 observations.

5.1 Data Validity

As discussed in the previous sections Zephyr and Datastream has been used to collect the data for the thesis. Both databases are frequently used in studies of market investments. The data can, however, still have erroneous measurements/observations. The collected data has been visually inspected to check for potential outliers, without any such outliers being found. This does not rule out outliers, but does eliminate the immediate risk of large scale outliers in e.g. the return series of the securities and/or market indices. The sources are, all in all, deemed to be of a sufficiently precise nature to allow for valid conclusions to be drawn.

As argued by Kotter and Lel (2008), the fact that the thesis is only comprised of investments that have been made publicly available, through media, data gatherers such as Reuters, Bloomberg etc, and other news sources, is a constraint to the conclusions of the thesis. It cannot be concluded, whether SWFs act in one specific manner for investments that have been made publicly available, while engaging a different strategy and behavior towards non-publicly available investments. The deals that are typically made publicly available are larger deals or deals where a significant stake has been taken. Hence, the lack of investments that have not been announced to the public is seen as less problematic, in so far that the SWFs will not have as large an incentive nor be as influential in acting in a potentially adverse manner as would be the case if the SWF has a large stake in the target firm.
5.2 Descriptives of the dataset

The following section will give a brief descriptive analysis of the data comprised within the dataset.

Figure 3 shows that the majority of investments from SWFs are made internationally, and further shows that the majority of SWF investments are made in non-OECD markets.

The data further reveal that the majority of investments stem from the Singaporean SWFs Temasek and Government of Singapore Investment Corporation with the Middle Eastern funds following. The Singaporean funds are well established and have a relatively open and transparent structure compared to the Middle Eastern funds, who, despite being larger in both size and number,
make up a smaller part of the sample compared to the Singaporean Funds. China’s funds are still in a developing stage, and it can be expected that these funds will have a larger share of the samples for research over the coming years.

The investments are for the major part minority stake acquisitions with most of the acquisitions being for less than 5% of the target firms equity. Investments above 30% are almost non-present in the sample. It should of course be considered that the selection criteria excludes complete acquisitions. These are therefore not represented in the below table, and not relevant in the event study.

Figure 5 – The Magnitude of the Stake acquired by SWFs

Decomposing the data based on the sector of the target firm, the data reveals, as can be seen in figure 6 that the majority of the SWF investments are within the financial sector, with the industrial sector and commodity sector following.
Finally, the number of investments per year have increased from year 2000-2008, with the largest number of investments made in 2008. The number of investments was reduced dramatically from 2008 to 2009 and dropped further in 2010. This was likely caused by the significant negative market development in the aftermath of the financial crisis. SWFs experienced large losses on their investments. The critique from domestic side due to the negative performance of their investments as well as a frozen financial market could be the key reasons for the reduction in investment activity. So far the number of investments in 2011 (until 1/12-2011) has surpassed the low of 2010, and is closing in on the level from 2009. Hence the investing activity has far from returned to pre-financial crisis levels.
In conclusion, the sample shows that the publicly available investments from SWFs are typically international investments, with the majority going to non-OECD markets. The Singaporean funds’ investments have the largest share, with Middle Eastern fund investments following close behind. The SWFs typically take minority shares in the companies in which they invest, with the majority of the investments being between 0 and 5% and only few investments are larger than 30%. The fact that the majority of investments are below 5% could be the reason for large parts of investments from SWFs being non-disclosed, as investments below 5%, will not need to be reported to the financial authorities. Furthermore the sample shows a clear overweight of investments into financial firms, with industrials and commodity firms following. The investment activity of the SWFs peaked in 2008, and has declined markedly throughout the crisis. There are however signs that the investment activity is slowly picking up again.

6 Event Study – Analysis of the Results

As discussed in chapter 4.1, two tests were employed in the event study; a parametric t-test and the non-parametric Corrado Rank test. The following chapter will present the results of the event study. Initially the result for the event study using the MSCI Global market index as a proxy will be presented. After this, the event study using the market indices corresponding to the country where the target firm is listed will be presented. Finally the event study for the sample excluding smaller investments below 10 million Euro in size will be presented.

Initially the data was plotted to examine if any outliers were present in the data, hence, each residual series was plotted in a histogram. Some of the companies did show one or two outliers, which could bias the regression estimates. It is however difficult to tell if these outliers are caused by a market reaction to new information, or if the data reported in Datastream is flawed. Nonetheless, it has been decided to include the data in this report; however, the potential bias must be taken into consideration when concluding on the results.
Furthermore, the distribution of each of the residual series was examined. The main assumption for the parametric test to be valid is that the residuals must be normally distributed. This was tested by means of the Jarque-Bera test reported by Eviews. It was experienced that a large number of the residuals did show signs of non-normality\textsuperscript{21}. This can introduce a bias in the results of the parametric test, however as discussed by Campbell, Lo And Mackinlay (1997), inferences are robust to breaches of this assumption. In order for the conclusions of the thesis to be valid and reliable in the presence of non-normal residuals, it was decided to also carry out the non-parametric Corrado Rank test. The non-parametric test does not need the assumption of normally distributed residuals to hold, for the results to be valid. Hence, the combination of the parametric and the non-parametric test will ensure the robustness and validity of the results, as these can be compared and cross-checked for congruence and comparability.

The tests have been performed for the 3 days in the event window as well as for the CAR.

The hypothesis is that the event study will reveal a positive and significant abnormal return to the target firm. This is in line with previous empirical studies, and follows the reasoning by among other Shleifer and Vishny (1986) that institutional ownership has a positive impact on target firms.

6.1 World Index

The results of the statistical tests are presented in Table 2. It is evident that the CAR is statistically significant at a 1% alpha level. This means that it can be strongly concluded that the target firm has a positive abnormal return upon the announcement of a SWF investment for the 3 day event window. Decomposing this data slightly by looking at the 3 days in the event window on an individual basis, it is seen that the date prior to the announcement, T1, does not show a significant abnormal return. The return is positive, but insignificant. For the announcement date, 0, the event date, the parametric test shows a statistically significant CAR at a 1% alpha. For the Corrado’s rank test this result can only be concluded at a 5% alpha level.

\textsuperscript{21} See appendix 2 + 3. In the appendices the minimum, maximum and mean values for each residual series is listed. Furthermore it is possible to see the test statistic and P-value for the Jarque-Bera test.
The post announcement date, T2, also reveal a statistically significant result at a 1% alpha level. This is true for both tests.

Table 2 – Results – World Index

<table>
<thead>
<tr>
<th></th>
<th>Parametric T3</th>
<th>Non-Parametric Corrado's Rank Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Index</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1</td>
<td>0.45561</td>
<td>0.72408</td>
</tr>
<tr>
<td></td>
<td>(0.32434)</td>
<td>(0.23450)</td>
</tr>
<tr>
<td>0</td>
<td>5.85185**</td>
<td>2.24716*</td>
</tr>
<tr>
<td></td>
<td>(0.00000)</td>
<td>(0.01231)</td>
</tr>
<tr>
<td>T2</td>
<td>4.947**</td>
<td>4.4962**</td>
</tr>
<tr>
<td></td>
<td>(0.00000)</td>
<td>(0.00000)</td>
</tr>
<tr>
<td>CAR</td>
<td>6.49777**</td>
<td>4.31133**</td>
</tr>
<tr>
<td></td>
<td>(0.00000)</td>
<td>(0.00000)</td>
</tr>
</tbody>
</table>

* Significant at 5% alpha

* *Significant at 1% alpha

Figure 8 is a graph showing the abnormal returns for the 200 observations in the sample. The graph shows a dispersion of mainly positive and abnormal returns, with the majority of the returns close to zero. However, a number of the observations show a high positive CAR for the event period.

Figure 8 – Graphical Representation of Individual CARs – World Index

It can further be seen that observation 119 shows a positive abnormal return of 88.2% in the event period. It has not been possible to find evidence concluding that this should be
an outlier, and hence it has been kept in the sample. The results have, as a robustness check been calculated without this transaction, and still yield a result that is statistically significant at a 1% alpha level.

For the event period, the magnitude of the abnormal return is 2.09%. Excluding observation 119 reduces this to an abnormal return of 1.657%.

6.2 Market Index

Using the market indices instead of the MSCI Global market index leads to the same conclusion

The CAR is statistically significant at a 1% alpha level for both tests. For the individual days, it is again concluded that the pre-event day, T1, does not show a statistically significant abnormal return. However, the return using the market indices show a negative abnormal return on the pre-event day, compared to the positive return experienced using the global index as a proxy.

For day 0 and day T2, the results show a statistically significant return at 1% alpha for both models. The results can be seen in table 3.

<table>
<thead>
<tr>
<th>Table 3 – Results – Market Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Market Index</strong></td>
</tr>
<tr>
<td>T1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>T2</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>CAR</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

* Significant at 5% alpha

* *Significant at 1% alpha

Figure 9 shows the abnormal returns for the individual firms in the sample. Once again observation 119 shows a very large positive abnormal return. The robustness check conducted by removing the observation from the sample does not change the conclusions above.
For the event period, the magnitude of the abnormal return is 1.66%. Excluding observation 119 reduces this to an abnormal return of 1.22%.

6.3 Large Investments by SWFs

The final sample for which the event studies were performed, excludes all investments below a value of 10 million Euro. This leads to a sample of 149 observations.

Table 4 shows the results from the 2 statistical tests. The conclusions are similar to the first two tests. Both CARs show a positive, and statistically significant abnormal return at 1% alpha. Day T1 shows a negative, but statistically insignificant abnormal return, while day 0 and T2 both show positive abnormal returns. These are statistically significant at 1% alpha, except for day T2 in the Corrado Rank Test.
### Table 4 – Results – Market Index

<table>
<thead>
<tr>
<th></th>
<th>Parametric T3</th>
<th>Non-Parametric Corrado's Rank Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Market Index</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Less Small</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transactions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>T1</strong></td>
<td>-0.38623</td>
<td>-0.11125</td>
</tr>
<tr>
<td>(0.65033)</td>
<td>(0.54429)</td>
<td></td>
</tr>
<tr>
<td><strong>T2</strong></td>
<td>5.49370**</td>
<td>2.43946**</td>
</tr>
<tr>
<td>(0.00000)</td>
<td>(0.007356)</td>
<td></td>
</tr>
<tr>
<td><strong>CAR</strong></td>
<td>2.84400**</td>
<td>2.17462*</td>
</tr>
<tr>
<td>(0.00000)</td>
<td>(0.014829)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.59079**</td>
<td>2.599708**</td>
</tr>
<tr>
<td>(0.00000)</td>
<td>(0.00466)</td>
<td></td>
</tr>
</tbody>
</table>

* Significant at 5% alpha

* *Significant at 1% alpha

Examining the graphical representation in figure 10 of the abnormal returns for the individual observations, it is clear that observation 119 is no longer part of the sample, as it has been screened out on the basis of the criteria that only investments larger than 10 million Euro are taken into account.

For the event period, the magnitude of the abnormal return is 1.45%.

![Graphical Representation of Individual CARs–Market Index above 10 mio EUR](image)

In conclusion, all 3 tests show that a positive cumulative abnormal return, CAR, is present for the investments from SWFs.
The magnitude of the CARs range from 2.09\% when using the MSCI Global index as a proxy to calculate the market return. Using the market index for country in which the individual securities are listed reduces the CAR to 1.66\% while excluding the investments, that do not meet the criteria of a minimum value of 10 million EUR, reduces the CAR even further to 1.45\%.

Analyzing the results for the 3 days in the event window individually reveal that the day prior to the event does not give rise to a statistically significant abnormal return, while the event day and the day following the event day both show statistically significant abnormal returns.

The results are statistically significant at a 1\% alpha level, for both the parametric and the non-parametric test, and we therefore strongly conclude that a short run abnormal positive return follow the investment from a SWF when considering a 3-day event window.

The results correspond to the findings in other empirical literature, in which evidence is also found for positive short run abnormal returns. For further on this, please refer to chapter 3.

7 Regression analysis – Analysis of Results

The following section will present the results from the regression analysis. As discussed in chapter 4.2.1, the regression will be based on the following model:

\[
\text{CAR}_i = \alpha_i + \beta_1 \cdot \text{MarketValue}_i + \beta_2 \cdot \text{StakeAcquired}_i + \delta_1 \cdot \text{DomesticFirm}_i + \beta_3 \cdot \text{TrumanTransparency}_i + \beta_4 \cdot \text{TrumanCorporateGovernance}_i + \delta_2 \cdot \text{MiddleEastFund}_i + \delta_3 \cdot \text{OECD}_i \cdot \text{arg} \cdot \text{et}_i + \delta_4 \cdot \text{FinancialT} \cdot \text{arg} \cdot \text{et}_i + \delta_5 \cdot \text{Y}2000 \cdot \text{arg} \cdot \text{et}_i + \delta_6 \cdot \text{Y}2006 \cdot \text{arg} \cdot \text{et}_i + \beta_5 \cdot \text{AnalystCoverage}_i + \epsilon_i
\]
Where CAR is the dependent variable, \( \alpha_i \) is the constant in the model, \( \beta_i \) are the independent variables in the model and \( \delta \) identify the dummy variables. \( \varepsilon_i \) is the residual or error term in the model.

The model has been estimated by means of Ordinary Least Squares, OLS. In the following, the models assumptions will be commented upon, after which the results of the model will be discussed\(^{22}\).

1) **The residuals must be normally distributed**
   Under the central limit theorem, we would expect this to hold given the large sample size of 200 observations. Plotting the error-terms in a histogram, and performing a Jarque Bera test for normality shows that the distribution of the error-terms is non-normal. This can lead to a biased result of the regression analysis, but the OLS model is robust to a breach of this assumption (Wooldridge, 2006) and we thus continue the analysis. It must, however, be noted that this could potentially bias the t-statistics, wherefore conclusions drawn from the analysis must be taken with care.

2) **The residuals must not show signs of heteroscedasticity**
   This was tested by means of the White Test for Heteroscedasticity, as provided by E-views. The test shows that heteroscedasticity is not a problem in the model.

3) The expected value of the residuals must be 0
   In so far that the model is well specified, this will be true, however if e.g. a variable is missing from the model, the assumption could be breached. For the purpose of this analysis, it is assumed that this assumption holds.

4) **The residuals must not show signs of autocorrelation**
   This assumption is mainly critical when analyzing time series data. For the purpose of this analysis it is not relevant. However, it can be tested by means of a Durbin Watson test, in which a value of approximately 2 indicates that this

\(^{22}\) For further documentation of the analysis of the assumptions of the regression analysis, the reader is referred to appendix 4-6.
assumption holds (Wooldridge, 2006). Testing this for the model, we get a Durbin Watson test statistic of 2.28, and it is thus argued that auto-correlation is not an issue.

5) No multicollinearity
This was examined by a correlation matrix of the independent variables. From this, it was apparent that the variable MiddleEastFund and the two Truman-variables were highly correlated. This is due to the fact that a large share of the Middle Eastern based SWFs get a low Truman score on Transparency and Corporate Governance. MiddleEastFund is therefore removed from the model, as it would otherwise be difficult to perform a distinct evaluation of the individual independent variables’ effect on CAR.

The model will therefore be specified as follows:

\[
\text{CAR}_i = \alpha + \beta_1 \cdot \text{MarketValue}_i + \beta_2 \cdot \text{StakeAcquired}_i + \delta_1 \cdot \text{DomesticFirm}_i + \\
\beta_3 \cdot \text{TrumanTransparency}_i + \beta_4 \cdot \text{TrumanCorporateGovernance}_i + \delta_2 \cdot \text{OECD}_T \text{arg}_i + \\
\delta_3 \cdot \text{FinancialTarg}_i + \delta_4 \cdot Y2000\_2005_i + \delta_5 \cdot Y2006\_2008_i + \beta_5 \cdot \text{AnalystCoverage}_i + \varepsilon_i
\]
7.1 Results

The estimation of the model can be seen in Table 5.

Table 5 – Results from the Regression Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.016174</td>
<td>0.017457</td>
<td>0.92510</td>
<td>0.3556</td>
</tr>
<tr>
<td>MARKET_VALUE</td>
<td>4.63E-06</td>
<td>1.63E-07</td>
<td>0.296794</td>
<td>0.7570</td>
</tr>
<tr>
<td>STAKE_ACQUIRED</td>
<td>0.077055</td>
<td>0.047652</td>
<td>1.615672</td>
<td>0.1062</td>
</tr>
<tr>
<td>DOMESTIC</td>
<td>0.011363</td>
<td>0.014259</td>
<td>0.797319</td>
<td>0.4265</td>
</tr>
<tr>
<td>CORP_GOV_TRUMAN</td>
<td>-0.000489</td>
<td>0.000374</td>
<td>-1.307644</td>
<td>0.1939</td>
</tr>
<tr>
<td>TRANSPARENCY_TRUMAN</td>
<td>0.000436</td>
<td>0.000345</td>
<td>1.262738</td>
<td>0.2066</td>
</tr>
<tr>
<td>TARGET_IN_OECD</td>
<td>0.015522</td>
<td>0.012466</td>
<td>1.245038</td>
<td>0.2146</td>
</tr>
<tr>
<td>FINANCIALS</td>
<td>-0.022716</td>
<td>0.011480</td>
<td>-1.978338</td>
<td>0.0496</td>
</tr>
<tr>
<td>Y2000_2005</td>
<td>-0.006710</td>
<td>0.015963</td>
<td>-0.421571</td>
<td>0.6736</td>
</tr>
<tr>
<td>Y2005_2008</td>
<td>-0.001283</td>
<td>0.011517</td>
<td>-0.111431</td>
<td>0.9114</td>
</tr>
<tr>
<td>ANALYSTS</td>
<td>-0.000468</td>
<td>0.000644</td>
<td>-0.710841</td>
<td>0.4763</td>
</tr>
</tbody>
</table>

From the table, it can be seen that only Financials is significant when considering a 5% significance level. The variable StakeAcquired is almost significant at a 10% significance level. The rest of the variables are not significant in explaining the model as per Table 5.

The following will briefly touch upon the results of the individual independent variables in the model, their effect on CAR, and evaluate this with the expected outcome as discussed in chapter 4.2.1.

MarketValue has a small, but insignificant positive effect on the CAR.
StakeAcquired has a positive impact on the CAR of the target firm. The variable is close to being significant at a 10% significance level. This corresponds with the argumentation that a large stake taken by an institutional investor in a target firm will have a positive impact on the target firms future performance. A 1 percentage point change in the stake acquired will lead to an increase of CAR by 0,077 percentage points, ceteris paribus.

Domestic has a positive but insignificant impact on CAR. This corresponds with the expectation, and as discussed could be due to the added potential for monitoring and influencing the target firm.

TrumanTransparency is positively correlated with CAR. The variable is however insignificant. This is in line with the expectation, and could be explained by the added trust a high level of transparency will give other investors.

TrumanCorporateGovernance has a negative but insignificant impact on CAR. This is not in agreement with the expectation that an improved corporate governance of the SWF will have a beneficial impact when the SWF carries out an investment.

OECD_Target has a positive but insignificant effect on CAR. This is also not in agreement with the expectation to this variables effect on CAR. An explanation could be that e.g. the large capital infusions into western banks and other OECD investments in the aftermath of the crisis has had a positive signalling effect to the markets.

Financials is significant in explaining the CAR. The dummy has a negative sign and indicates that an investment in a financial firm is followed by a negative effect on CAR by 0,0227 percentage points, compared to an investment in a non-financial firm. This is surprising and not in agreement with the expectation for this dummy, as it was expected that the large scale “white knight bailouts” of a number of banks during the financial crisis would have meant that this variable had a positive effect on CAR. This is further in direct disagreement with the findings of Sun and Hesse (Udaibir, 2010).

The dummy’s Y2000_2005 and Y2006_2008 are both negative and highly insignificant. The sign of the variables indicate that the effect of investments in the base case – year
2009-2011 have a higher CAR than do investments in the periods specified by the dummies. This follows the expected outcome for these dummies, but they are, as mentioned, highly insignificant.

*AnalystCoverage* has a negative, but insignificant, impact on the CAR of the target firm. This is not in agreement with the expectation, and it thus seems that the hypothesized “media effect” is not present.

In conclusion, the model has only few significant variables, *Financials* being significant at a 5% significance level and *StakeAcquired* almost significant at a 10% significance level. The effect of the variables is only partly in accordance with the hypothesized effects as discussed in chapter 4.2.1.

### 7.2 Reduced Model – Elimination of Insignificant Independent Variables

As most of the variables in the original model were insignificant, a decision was made to reduce the model by means of backward elimination, eliminating the insignificant variables in a stepwise approach. The end result from this is the following model.

\[
\text{CAR}_i = \alpha + \beta_1 \cdot \text{StakeAcquired}_i + \beta_2 \cdot \text{TrumanTransparency}_i + \\
\beta_3 \cdot \text{TrumanCorporateGovernance}_i + \delta_i \cdot \text{FinancialTarget}_i + \epsilon_i
\]

Analyzing the assumptions of the model reveals that the model still suffers from non-normality of the error terms. Furthermore, the model suffers from heteroscedasticity, which will bias the model and potentially render the test statistics invalid. As this is a vital breach of the assumptions, the model must be corrected for this. In order to correct for this, the White heteroscedasticity correction provided by E-views is applied, ensuring that the test statistics are valid.

Table 6 shows the model estimation:
Table 6 - Results from the Reduced Regression Model

Dependent Variable: CAR
Method: Least Squares
Date: 01/01/12  Time: 21:13
Sample: 1 165
Included observations: 165
White Heteroskedasticity-Consistent Standard Errors & Covariance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.023248</td>
<td>0.013303</td>
<td>1.747621</td>
<td>0.0824</td>
</tr>
<tr>
<td>STAKE ACQUIRED</td>
<td>0.071848</td>
<td>0.048296</td>
<td>1.487649</td>
<td>0.1388</td>
</tr>
<tr>
<td>CORP GOV TRUMAN</td>
<td>-0.000592</td>
<td>0.000273</td>
<td>-2.123017</td>
<td>0.0353</td>
</tr>
<tr>
<td>TRANSPARENCY TRUMAN</td>
<td>0.000459</td>
<td>0.000245</td>
<td>1.673999</td>
<td>0.0629</td>
</tr>
<tr>
<td>FINANCIALS</td>
<td>-0.019965</td>
<td>0.009409</td>
<td>-2.103150</td>
<td>0.0370</td>
</tr>
</tbody>
</table>

R-squared: 0.051194  Mean dependent var: 0.011825
Adjusted R-squared: 0.027474  S.D. dependent var: 0.062462
S.E. of regression: 0.061598  Akaike info criterion: -2.706556
Sum squared resid: 0.607081  Schwarz criterion: -2.612436
Log likelihood: 228.2909  F-statistic: 2.168266
Durbin-Watson stat: 2.281615  Prob(F-statistic): 0.076098

The independent variables are now all significant with a 10% significance level, except for the variable StakeAcquired. This variable, however, is kept in the model, as the exclusion has a negative impact on the specification of the model, as measured by the F-test. The adjusted R-squared of the model is 2,7474% a markedly improvement of the adjusted R-squared of 0.4745% from the original model.

The variables have the same sign as was the case for the original model, however, the magnitude of the variables effect on CAR has changed. This can be explained by the reduction on the collinearity due to the reduction of the number of variables as compared to the original model.

StakeAcquired, albeit insignificant, has a positive effect on CAR, with a 1 percentage point change in the stake acquired by a SWF leading to an increase in CAR of 0.0718 percentage points. TrumanCorporateGovernance, has a small significant effect on CAR, with a 1 percentage point change in the corporate governance measure reducing the CAR by 0.000592 percentage points. The opposite is the case for
TransparencyTruman that has a positive effect of 0.000459 percentage point. Finally Financials has a negative effect on CAR with a with an investment in a financial firm leaving CAR 0.01995 percentage points lower, when comparing to an investment in a non-financial firm.

8 The Fear of SWFs - The Risk of a Protectionistic Backlash

The final part of the thesis will discuss and analyze one of the key discussions that has surrounded the SWFs since they were coined as such back in 2005 - namely are the investments by SWFs induced by other factors than the search for financial return. In essence; is there a risk that SWFs have a political/strategic incentive when they decide on the target companies that will be pursued. In effect, the argument goes that they are not purely investing with an optimization of financial returns in mind, rather they invest in the target firms, to e.g. gain insight into the intellectual property of the firm, potentially expropriating this knowledge to firms in the SWFs home countries. Alternatively the incentive could be to gain strategic control of firms in industries that have a strategic importance to national security in the target firms’ home country. The response has been to discuss protectionistic measures in the recipient countries, which could have adverse effect on global economic collaboration and growth.

The following chapter will initially give a brief description of the measures, agreements and guidelines that SWFs and recipient countries have prepared in answering the problems surrounding these investments. After this the measures will be discussed, and finally the chapter will conclude on the appropriateness of the “fear” of SWF investments.

Lyons (2007) puts it well, when describing this fear: “in some ways SWFs are their own worst enemy. Their air of secrecy, including for some a lack of transparency has, in recent years, led to some concern. Although the funds may argue that there are others within the financial markets that are equally secretive, it is the suspicion about their intentions that makes this a problematic area”.

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Robert Kimmitt, US deputy Secretary (2008) on the other hand discusses this matter and brings forth the following argument: “SWFs have been around since the 1950’s and thus far their track record is very strong and positive. They are patient long term investors, and we have no evidence that any of their decisions have been made for political and not commercial reasons”. He does acknowledge the legitimacy of the discussion of the investments from SWFs, but warn that the fear has been largely exaggerated. Thus he acknowledges the SWFs place in the financial markets. Obrien (2008) agree that it is, considering historical evidence, only a hypothetical risk that SWFs has a political motive in their investments. He further reports that this is corroborated by investment bankers in London and New York, who speak positively of their dealings with the SWFs, ranking them as professional and skilled investors.

The discussion has in some periods been very loud, with news articles spinning a highly negative tale on the stories on the topic (Sorkin 2008, Weisman 2007). The news coverage has at times showed very little constructive analysis, peaking in 2006-2008. Truman (2008) reports that a survey conducted in February 2008 among a sample of US citizens showed that only 7% had recently heard or read about SWF’s in the media. However, 49% found that SWF investment in the US economy had an adverse effect, and 55% of the sample found the effect to be a potential threat to national security.

In the aftermath of the financial crisis, the sharp tongued, negative news coverage has, however, been reduced to a minimum. This is, to some extent, a consequence of the more positive perception that is now surrounding the funds. In addition to this, the focus of the media has been elsewhere, while the financial crisis has raged, leaving only little room for news coverage of the SWFs.

8.1 Recipient Country Response to SWF investments

As first mentioned in the introduction to this thesis, a number of high profiled investments by SWFs, or at least by state-owned companies, saw the light of day during the last century. This section will look at the recipient country responses towards SWF investment considering the role of the OECD, the EU and the US in the actions they have taken to adjust their policy frameworks to suit these new investors.
Marchick and Slaughter (2008) conclude that there has been a shift towards a more protectionistic view on Foreign Direct investment (FDI), when considering 11 major countries making up 40% of the global FDI inflows in 2006. The legitimacy from the recipient countries on these measures was sought in the argument that the investments had been made in strategic sectors or sectors related to national security. This is concerning, as protectionism has a direct negative effect on the growth in the global economy, restraining the free trade, in effect being an anti-globalizational force, and impairing the trade among nations.

Table 7 Presents the sectors that are categorized as strategic sectors by the governments in Australia, Canada, the United States and the EU.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Australia</th>
<th>Canada</th>
<th>US</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (Including Nuclear)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Information and communication technologies</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Finance</td>
<td>x</td>
<td>x</td>
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<td>Health Care</td>
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<td>Food</td>
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<td>Water</td>
<td>x</td>
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<tr>
<td>Safety</td>
<td>Emergency Services</td>
<td>x</td>
<td>Emergency Services</td>
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<td>Government</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Chemicals</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Defence industrial base</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Other</td>
<td>Public Gatherings, National Icons</td>
<td>Commerce Facilities, National</td>
<td>Space and Research Facilities</td>
<td></td>
</tr>
</tbody>
</table>

Source: OECD, 2008a

The table shows that the term strategic sector is widely defined. The abovementioned table and the sectors outlined are not to be interpreted as if SWF investments are not allowed in these sectors. However, it does mean that the recipient country government has the opportunity to block acquisitions within these sectors, should they be deemed potentially harmful to national security. Germany, as an example, has legislation that allows the German government to block acquisitions from outside the EU and the
countries within the European Free Trade Association. This is possible if the stake acquired surpasses 25% and if a test of national safety cannot be passed. Australia also apply a case by case discretionary review of investments, as discussed by Kern (Udaibir 2010)

In the case of the US, the Committee on Foreign Investment in the US (CFIUS), has the same role, and reviews foreign investments into the US, on the basis of the risk to national security. The CFIUS has a specific commitment to reviewing investments from entities owned by foreign governments, such as SWFs. Truman (2010) reports that the number of cases submitted to the CFIUS has increased dramatically since the Dubai Ports World case in 2006. This specific focus on state-owned investment companies has led to sharp critique of the CFIUS. Among others, the head of the Chinese Investment Corporation, CIC, stated: “if an economy, will use national security as a criteria for entry of SWFs, we will be reluctant to tap the market because you are not sure what will happen.” (Walet, 2010).

Kern (Udaibir, 2010) comments on the ongoing process of the establishment of an EU-wide legislation meant to establish a joint investment policy for the EU. Such agreement would mean that the individual investor would not need to rely on a large number of country specific trade agreements, rather the investor would be subject to a common set of rules and regulations, when investing in the EU. This would simplify the FDI into the EU and could be beneficial to the future growth of the region.

The OECD in 2008 adopted a set of guidelines that OECD members should follow when responding to SWF investments. These guidelines did not fare far from the current set of rules that the OECD members were expected to follow, but the guidelines did specify that the OECD welcomes SWF investments. The guidelines stated: “SWFs have become a key player in the financial landscape. Ministers welcome the benefits that SWFs bring to home and host countries and agree that protectionist barriers to FDI would hamper growth” (OECD, 2008)

OECD further argues that measures to protect national security can only be justified as long as the risk is real and the outcome is not merely a protectionistic response to the investments from SWFs.
In summary, the general national response to FDI allows the national governments to review investments from foreign investors, hereunder SWFs and if found to be contrary to the consideration for national security, the government has the option to block such investments. The rules are, however, not uniform across countries. The critique of such potential protectionism has been voiced, and in a response to the risk of a protectionistic backlash following large scale, high profile SWF investments, the OECD has released its guidelines that member-states must follow.

8.2 The Truman Scoreboard– a predecessor to the Santiago Principles

Having analyzed the recipient country response to SWF investments, the following section will review and analyze the steps taken by the home countries of the SWFs. In 2007, Truman proposed the establishment of a scoreboard for the evaluation of SWF practices. This would allow the SWFs to be ranked based on their current operational practices, and was intended to form the foundation from which an internationally agreed standard for SWFs could be developed (Truman, 2010).

The Scoreboard was divided into 4 areas:

1) **Structure** – outlining whether the objectives and organizational structure of a SWF is clearly defined.

2) **Governance** – describing the role of government and the internal decision processes surrounding the investments of SWFs. Do managers of the SWFs have the liberty to invest at arms length of the government, or are the ties between the SWF and the government closer.

3) **Accountability and Transparency** - This area covers the transparency of the SWFs investment decisions, its size and investment portfolio, and whether audits are held and published.
4) **Behavior** – The final area covers the behavior of the SWF, considering whether policies are in place regarding the use of leverage, whether derivatives can be included in the investment portfolio and if a publicly available risk management policy is available.

The scoreboard has been a strong help in defining and analyzing the individual SWFs practices, and to understand how and where, further policies should be developed, in a response to the increasing size and activity of SWFs.

In a response to the increased discussion and mistrust surrounding the investments from SWFs, the SWFs themselves in cooperation with the IMF proposed a voluntary set of guidelines of Generally Accepted Principles and Practices, GAAP, also coined as the Santiago Principles (International Working Group of Sovereign Wealth Funds, 2008). These guidelines follow the suggestions put forth by Truman in his Scoreboard closely, and it is clear that Truman’s Scoreboard has been a valued input to the process of defining the Santiago Principles.

The Santiago Principles were presented in October 2008, and represent a 4 month process in which the SWFs, have been coordinating the appropriate guidelines that they should follow in order to continue to be able to invest internationally, at the same time ensuring that cross-border investments are carried out in a fair, transparent and open manner. The principles sought to reassure the recipient country, without losing the autonomy or competitive edge of the SWF.

The Santiago principles are built upon 3 pillars\(^\text{23}\); 1) The legal Framework, objectives and coordination with macroeconomic policies, 2) Institutional framework and governance structure, 3) Investment and risk management framework.

The principles are an important first step towards a commonly accepted set of guidelines that the SWF should follow in their operations. Evidence also show that the compliance with the principles is continuously improving, although there is still quite a long way to go, and plenty of improvements in compliance to be made (Udaibir, 2010).

\(^\text{23}\) Udaibir, 2010
The Santiago Principles were followed by the introduction of the International Forum of Sovereign Wealth Funds (IFSWF). The forum, consisting of SWF members who have accepted the use of the Santiago Principles, meets 1-2 times a year, to discuss current operational practices, the implementation of the Santiago Principles and exchange views and ideas. The IFSWF will disclose the discussions of the meetings, and it is the hope that this can improve the accountability of the funds, while at the same time ensuring access to and agreement with recipient countries when investing in these countries.

Critique of the principles has, however, been uttered, with reason, and the following section will discuss this.

8.3 Critique of the Santiago Principles

Truman (2010) is in general quite positive in his review of the Santiago Principles. They are, to a large extent, comparable to his scoreboard. However, Truman opposes the lack of requirements surrounding the public disclosure of a number of the elements in the principles, among other the investment decisions for which the principles state: *If investment decisions are subject to other than economic and financial considerations, these should be clearly set out in the investment policy and clearly stated (IWG – 2008).*

This is a very good intention, in ascertaining the recipient country that no adverse motive lies behind the investment, the problem is, however, that the proof of the compliance can only be measured ex-post.

Gelpern (2011) comment on the fact that the principles are purely voluntary, and further adds to the concern and critique voiced by Truman of issue that ex-ante evaluations of a number of the principles.

It will be interesting to follow the progress in the adaptation of this set of principles. There is definite validity to the measures, however, given the relatively weak and voluntary nature of at least some of the principles; it is of great interest to see whether they will suffice in ensuring a stable equilibrium, between the interests of the countries receiving SWF investments and the home countries of the SWF. It is the hope of the author, that further adherence to the principles will be experienced over the coming
years, and that the introduction of the IFSWF will be beneficial to the understanding of the practices of SWFs; ensuring that protectionistic behavior is kept at bay.

8.4 Conclusion

The Santiago Principles, and in effect the SWF scoreboard as proposed by Truman have definitely been a step in the right direction in establishing a more open and transparent behavior from the SWFs. This is helpful in “calming the nerves” of the recipient countries, who have over the last few years acknowledged the legitimacy of the SWFs as investors. Furthermore, the improved transparency with regards to the corporate governance, behavior and investment practice of the SWFs has improved the understanding of their characteristics and behaviour in recipient countries.

That being said, there is still room for improvement, with a number of the funds still being highly opaque. However, as argued by among others Kimmitt (2008), history has not proven that SWFs should have an alternative and adverse alterior motive in their investments other than their prime commercial objective.

It is the opinion of the author, that recipient countries should acknowledge the historic evidence of SWF investments being commercially driven. However, ample room is left for improvements from the side of the SWFs in ensuring that this is indeed the case, and it would be prudent to continue the discussion of the appropriate legislative frameworks in guiding and evaluating the investments from SWFs. The increase in size and number of funds will certainly mean that the importance of this class of investors will only increase, and it is imperative to find an appropriate compromise between the protections of domestic interests in the recipient countries, while ensuring that protectionism does not take over in an excessive manner. This could be extremely harmful to the global economic and financial landscape. In light of the financial difficulties faced by Western economies, it is imperative that the ample funds from SWFs are not “scared away” from making investments in these economies, by overly restrictive legislation. It is thus argued that the Santiago Principles are only part in the process of including SWFs as a market player in the financial markets on equal terms with other financial players.
9 Critical Perspective

The thesis gives a valid input to the discussion of SWFs as investors in the financial markets. The event study concurs with previous empirical literature on the presence of a statistically significant abnormal short term return to the target firm following a SWF investment.

Future research could be made in this area, with a higher attention to the long run implications of the investments by SWFs. This would allow for an analysis of the efficiency and effects from having SWFs as investors. Furthermore the research could put further emphasis on the SWFs role as investors. Are they purely passive investors, or do they take an active role in the companies in which they invest. This has, however, been out of the scope of this research, due to the significant difficulty in obtaining reliable estimates of this information.

Considering the regression analysis, further variables of interest to include, would be measures of the financial performance of the target firm. This would allow for an analysis of the characteristics of the target firms that SWFs deem to be fit for investments. As an example, it would be of interest to see if SWFs target companies in financial distress, companies with a specific leverage, etc.

The literature, albeit growing, is still only in its early stages, and with the increasing importance of SWFs as financial market players, given their growth in both size and numbers, it is imperative to gain a strong understanding of the operations of the funds as well as the incentives underlining their investments.

10 Conclusion

This thesis considers the response from investors upon the investment from Sovereign Wealth Funds. The thesis aims at analyzing whether an abnormal return is present following an announcement of a SWF investment in a publicly traded equity. Furthermore the thesis analysis the idiosyncratic factors that effect the abnormal return. Finally the thesis makes an analysis of the discussion of the fear of the SWFs as investors, due to the potential political and adverse incentives in their investments.
The thesis is based on a sample of 200 SWF investments between year 2000 and 2011. The dataset shows that the publicly available investments from SWFs are typically international investments, with the majority going to Non-OECD markets. The Singaporean SWFs’ investments have the largest share, with Middle Eastern fund investments following close behind. The SWFs typically take minority shares in the companies in which they invest, with the majority of the investment being between 0 and 5% and only few investments are larger than 30%. Furthermore the sample shows a clear overweight of investments into financial firms, with industrials and commodity firms following. The investment activity of the SWFs peaked in 2008, and has declined markedly throughout the crisis. There are however signs that the investment activity is slowly picking up again.

The thesis conducts 3 event studies. The first study uses the MSCI global equity index as a proxy for calculating the market return, the second study uses the market index corresponding to the country where the individual stock is listed. The last study also uses the market indices, however, the sample only takes account of investments surpassing 10 million Euro.

In conclusion, all 3 tests show that a positive cumulative abnormal return, CAR, is present for the investments from SWFs.

The magnitude of the CARs range from 2.09% when using the MSCI Global index as a proxy to calculate the market return. Using the market index for country in which the individual securities are listed reduces the CAR to 1.66% while excluding the investments, that do not meet the criteria of a minimum value of 10 million EUR, reduces the CAR even further to 1.45%.

Analyzing the results for the 3 days in the event window individually reveal that the day prior to the event does not give rise to a statistically significant abnormal return, while the event day and the day following the event day both show statistically significant abnormal returns.

The results are statistically significant at a 1% alpha level, for both the parametric and the non-parametric test, and we therefore strongly conclude that a short run abnormal positive return follow the investment from a SWF when considering the CARs over a 3-day event window.
The results correspond to the findings in other empirical literature, in which evidence is also found for positive short run abnormal returns.

The regression analysis of a number of variables regressed on the individual CARs, show that only a few of the 10 variables are significant in explaining the magnitude of CAR. Financials is significant at a 5% significance level and StakeAcquired is almost significant at a 10% significance level. Investments in Financial firms have a negative effect on CAR, while the size of the stake acquired is positively correlated with CAR. The effect of the variables is only partly in accordance with the hypothesized effects.

Reducing the model by means of backwards, stepwise elimination leaves a model with 4 independent variables: StakeAcquired, TrumanCorporateGovernance, TransparencyTruman, and Financials. The results show that StakeAcquired, albeit insignificant, has a positive effect on CAR, with a 1 percentage point change in the stake acquired by a SWF leading to an increase in CAR of 0.0718 percentage points. TrumanCorporateGovernance, has a small significant effect on CAR, with a 1 percentage point change in the corporate governance measure reducing the CAR by 0.000592 percentage points. The opposite is the case for TransparencyTruman that has a positive effect of 0.000459 percentage point. Finally Financials has a negative effect on CAR, Investments in financial firms reduces CAR by 0.01995 compared to investments in non-financial firms.

The discussion surrounding the fear of SWFs as investors has in some ways been exaggerated. There is no historic evidence of investments that have been politically motivated. The discussion of the potential negative impact of the investments from SWFs has died down over the last years. This is argued to be due to the focus in the media being elsewhere in the aftermath of the financial crisis, but also due to the improved governance and transparency of SWFs.

Truman (2007) has proposed a scoreboard used to evaluate the individual funds’ adherence to measures of structure, corporate governance, accountability & transparency, and behavior. This scoreboard has to a large extent formed the basis for a set of Generally Accepted Principles and Practices, GAPP, agreed by the SWFs in
coordination with IMF. These principles, the Santiago Principles, have been an important first step in establishing a more open and transparent behavior from the SWFs. This is helpful in “calming the nerves” of the recipient countries, who have over the last few years acknowledged the legitimacy of the SWFs as investors. Furthermore, the improved transparency with regards to the corporate governance, behavior and investment practice of the SWFs has improved the understanding of their characteristics and behaviour in recipient countries.

That being said, there is still room for improvement, with a number of the funds still being highly opaque. However, as argued by among others Kimmitt (2008), history has not proven that SWFs should have an alternative and adverse alterior motive in their investments other than their prime commercial objective.
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