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SOVEREIGN WEALTH FUNDS AND THEIR IMPACT ON INTERNATIONAL FINANCE

Diploma thesis

2012 **FICOVA ANTONIA, B.A.**

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Abstract:

Sovereign wealth funds have received much attention several years and criticism on the world stage. This thesis analyzes sovereign wealth funds, their impact and perspective on international finance. First, we describe their historical background, relative size, source of wealth. Second, we presents why countries create sovereign wealth funds, what is the best way to get management practices, regulation and the criticisms of these funds. Third, we focus on sovereign investing in times of crisis, their important role in the subprime crisis. Important question what the potential SWFs impact on global financial markets? We use available publicly data of funds, academic working papers, economic datasets. We presents SWOT analysis of these funds, we examine hypothesis that determinants in their allocation of capital, investment's return. In last section we represent what is the prospect of further development of the SWF's and future trends of SWF's.

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Signature

Date of Approval: 30 -01- 2012

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Zadanie záverečnej práce

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Názov práce: Štátne rezervné fondy a ich význam pre medzinárodné financie

Anotácia:

Štátne rezervné fondy vzbudili už niekoľko rokov veľkú pozornosť a kritiku na medzinárodnej scéne. Táto práca sa zaoberá štátnymi investičnými fondami, ich vplyv na medzinárodné financie. V práci sa budeme venovať ich histórii, veľkosti, zdrojom bohatstva. Po druhé, uvádzame prečo krajiny vytvárajú štátne fondy, aký je ich manažment, regulácia a kritika. Po tretie, zameriavame sa na štátne investovanie v čase krízy. Dôležitá otázka, aký potenciál majú štátne rezervné fondy na globálne finančné trhy? Ako zdroje využívame verejne prístupne údaje o fondoch, akademické dokumenty. Prezentujeme SWOT analýzu týchto fondov, skúmame hypotézy. V poslednej časti predstavujeme, aké sú možnosti a trendy na ďalší vývoj týchto fondov.

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Affidavit

I hereby declare that I wrote this thesis on my own and without the use of any other than the cited references and aids.

Bratislava, 05.04.2012 .....

Ficova Antonia

Acknowledgements

I especially dedicate this thesis to my grand father (In Memoriam). I am very grateful to my parents for their support and I am also thankful to Assoc. Prof. Sipko.

Abstract

Ficova, Antonia: Sovereign wealth funds and their impact on international finance [Diploma Thesis] / Antonia Ficova. - Pan-European University, Faculty of Economics and Business, Department of International Business. -Supervisor: Assoc. Prof. Juraj Sipko. - Level of qualifications: Inžinier (Ing.). - Bratislava: Pan-European University, 2012. 112 p.

This thesis focuses on examining the role that sovereign wealth funds (SWFs) play in international finance. First of all, we clarify new topic, SWFs, by available literature, working papers, reports. It has been done by summarizing the main ideas from top researchers on this topic. Second, we evaluate importance of SWFs as a stabilizer in international capital markets, as well as the active role they could play in future. Third, we explore their differences in rapidly growth, including the role of oil, gas, other commodities exports and ongoing current account surpluses, and large hoarding of international reserves. Fourth, we analyze current investment activities of funds, differences in investments across funds and their important role in subprime crisis. This is illustrated by comparing the asset allocations of observed funds and showing that the global crisis changed their strategies. Finally the discussion will focus upon SWOT analysis and testing hypothesis.

Keywords: Sovereign Wealth Funds, International Finance, Asset Alocation, Subprime crisis.

Abstrakt

FICOVÁ, Antónia: Štátne rezervné fondy a ich význam pre medzinárodné financie [Diplomová práca]/ Antónia Ficová. – Paneurópska Vysoká škola, Fakulta ekonómie a podnikania, Katedra medzinárodného obchodu. -Školiteľ: Doc. Ing. Juraj Sipko, PhD. MBA – Stupeň odbornej kvalifikácie: Inžinier. - Bratislava: Paneurópska Vysoká škola, 2012.112 s.

Táto práca skúma akú úlohu zohrávajú suverénny fondy v oblasti medzinárodných financií. Po prvé, objasňujeme danú tému podľa dostupnej literatúry od popredných akademikov. Po druhé, hodnotíme dôležitosť investičných fondov ako stabilizátora na medzinárodných kapitálových trhoch, zameriavame sa aj na ich budúci vývoj. Po tretie, skúmame rozdiely vo veľkosti fondov, ktoré závisia predovšetkým od účelu fondu a bohatstva daného štátu, vrátane vývozu ropy, ďalších komodít, prebytky bežného účtu, devízové rezervy. Po štvrté, analyzujeme súčasnú investičnú činnosť fondov, ich rozdiely v investíciách a ich dôležitú úlohu počas krízy. Na vyjadrenie zmien v portfóliách pozorovaných fondov používame ilustrácie, v dôsledku toho môžme povedať, že globálna kríza zmenila ich stratégiu. Na záver prezentujeme SWOT analýzu a testujeme predkladané hypotézy.

Kľúčové slová: Suverénne fondy, Medzinárodné financie, Investičné portfólio, Kríza.

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List of Abbreviations and Acronyms

ADIA	Abu Dhabi Investment Authority
ANOVA	Analysis of Variance
AUM	Assets Under Management
BN	Billion
CalPERS	California Public Employees Retirement System
CDC	Caisse des Dépôts et Consignations
CDO	Collateralized debt obligation
CDS	Credit default swap
CEO	Chief Executive Officier
CFIUS	Committee on Foreign Investment in the United States
CIC	China Investment Corporation
FDI	Foreign Direct Investment
FED	The U.S. Federal Reserve Board's Open Market Committee
FEEM	Fondazione Eni Enrico Mattei
GAPP	Generally Accepted Principles and Practices
GDP	Gross Domestic Product
GIC	Government of Singapore Investment Corporation
GPF	Government Pension Funds
GSEs	Government Supported Enterprises
HF	Hedge Funds
HKMA	Hong Kong Monetary Authority Investment Portfolio
IPIC	Abu Dhabi's International Petroleum Investment Company
IWG	International Working Group of Sovereign Wealth Funds
KIA	Kuwait Investment Authority
M&A	Mergers and Acquisitions
MENA	Middle East North Africa
MLS	Method Least Squares
MMF	International Monetary Fund
NBIM	Norges Bank Investment Management
NSSF	National Social Security Fund
OECD	Organization for Economic Cooperation and Development
OPEC	The Organization of the Petroleum Exporting Countries
PE	Private Equity
PWC	PricewaterhouseCoopers
QIA	Qatar Investment Authority
RERF	Revenue Equalization Reserve Fund
RNWF	Russian National Wealth Fund
SAA	Strategic Asset Alocation
SAFE	State Administration of Foreign Exchange
SAMA	Saudi Arabian Monetary Agency
SDDS	Special Data Dissemination Standard
SEC	The Securities and Exchange Commission
SOE	State-Owned Enterprise
SWF	Sovereign Wealth Fund
TN	Trillion
TNCs	Transnational Corporations
UNCTAD	United Nations Conference on Trade and Development
USD	United States Dollar

1 INTRODUCTION

Topic Sovereign wealth funds ("SWFs") has generated recent attention in the literature, what we summarize below.

Vidhi, Luc (2008) conclude investment strategies and performance of SWFs, Grennes (2009) presents the volatility of SWFs, Miracky et. al. (2009) find investment patterns and performance of SWFs. Fernandes (2009) focuses on SWF holdings (rather than transactions) for the period 2002-2007, finding that firms with higher SWF ownership have higher valuations and better operating performances. Dewenter, Han, and Malatesta (2010) find positive announcement returns and conclude that SWF investment is generally beneficial for target firms. Chhaochharia and Laeven (2008) find that SWFs invest to diversify away from industries at home but do so in countries with cultural closeness, their paper in 2009 shows that other institutional investors also invest in countries with common cultural traits. Kotter, Lel (2008) evaluate the stock price impact of swf investments. Berstein *et al.* (2009) examine SWFs' equity investment strategies and their relationship to organisational structure, they find that SWFs where politicians are involved are more likely to invest at home than those where external managers participate. At the same time, SWFs with external managers tend to invest in industries with lower Price-to-Earnings levels. Bortolotti *et al.* (2009) assesses the financial impact of SWF investments on stock markets, they find a significantly positive mean abnormal return upon SWF acquisitions of equity stakes in publicly traded companies.

Our paper differs from theirs in that we complex focus on current investment activities of funds, differences in investments across funds and their important role in subprime crisis.

Recently, in February 10, 2012 Bob Rice, general managing partner with Tangent Capital Partners LLC, explained term "*Sovereign Wealth Funds*" mainly derived from excess liquidity, on interview in Money Moves (ABC Channel): Buzzword of the Day, according to Bloomberg.

Mainly Ashby Monk, a research director at Stanford University and a senior research associate at the University of Oxford, has been blogging about sovereign and pension funds since 2008 at website Oxford SWF Project and currently at Institutional Investor. We recommend this websites for essential readings on SWFs.

However, many research papers in this relatively new subject, Sovereign wealth funds, have not been published yet, but we obtained some available papers online. An

extensive literature search was conducted through Research Papers in Economics, Science Direct, Jstor, IDEA. We find some downloadable papers (with restrictions), available at http://ideas.repec.org/ and Social Science Research Network. For example on website Idea Search we found just 180 papers by relevance of these subject, mostly during period from 2008-2011.

Literature concerning these funds is contained mostly in financial institutions research and macroeconomic publications of countries. Multinational banks such as Deutsch Bank, Citi, Morgan Stanley, consulting groups like PWC, McKinsey, TheCityUK, Monitor Group, Sovereign Wealth Fund Institute have global research departments to analyze markets. We use financial transaction database Bloomberg, fund disclosures, including annual reports, press releases and other information from their websites, numerous respected publications, including: The Wall Street Journal, Financial Times. Other on-line news providers, including Yahoo! Finance etc.

Combined with macroeconomic data from the sovereign governments, either from the Ministry of finance or central banks, and multilateral organizations, such as the IMF, World Bank, European Commision, United Nations, OECD, these thesis are of high value for the debate regarding SWFs.

1.1 The Objectives

The research objectives of this paper are: 1. What is the impact of growth of SWFs to financial markets, to companies? What is the impact SWF´s for the development of national economies and host countries?

2. Where are SWFs investing? Can governance structures help to explain the differences in investments across SWFs?

3. Did SWFs play an important role in the subprime crisis? To what extent, are SWFs accountable for contributing to global imbalances?

1.2 Methodology

The thesis is descriptive and uses investigative data. Our research methodology focuses on two main objectives: first, comprehensiveness of research and second accuracy of information.

To ensure comprehensiveness, we survey multiple sources, primarily relying on established business and financial databases but employing also press-releases, published

news, fund annual reports and many other data sources, as we mentioned earlier in introduction. To ensure accuracy, we follow a strict process for capturing deal information and we establish a clear hierarchy of sources, based on our estimate of reliability.

The methods to be deployed in this thesis are qualitative and quantitative analysis, comparative research, that requires active intervention by the researcher, and it is necesary for exclusive answers of asked questions. We also use analytic, statistical methods, regression analysis, SWOT analysis. Testing hypothesis we examine through The 'Student' t-test, Chi-test, Pearson´s coeficient, Cramerovo V, method of least squares MLS, analysis of variance ANOVA.

1.3 Structure of the Study

The rest of thesis is structured as follows: The second chapter includes a few sections. Section 2.1 is a review of the literature from authors well versed on this subject. An introductory review of main definitions of SWFs helps to categorize existing funds into a typology and to explain heterogeneity among them. These section also presents briefly the historical overview. Section 2.2 explains differences in the size of SWFs, what determines the amount of foreign exchange reserves. How successful have been investments of SWF´s? That is focus in section 2.3. Sections 2.4 and 2.5 present key issues in sovereign wealth management, impact political factors, federal regulations to funds. Section 2.6 describes their role during subprime crisis, impact on financial markets.

Chapter 3 provides in detailes investigative evaluation of observed asset alocations of funds, their returns in 2007 and in present, their investment styles finally implications for their SAA. SWOT analysis is presented in Chapter 4.

The main contribution of this thesis is contained in Chapter 5, that includes hypothesis. Testing hypothesis 1 examines whether is increase of return of funds a statistically significant, Testing hypothesis 2 determines mean the reliability of proportion equity in asset allocation in SWFs, Testing hypothesis 3 examines correlation between exports and SWFs, Testing hypothesis 4 examines whether the size of observed funds is closely related to size of investments during the crisis, rate of growth of the countries, or both variables together, Testing hypothesis 5 examines dependence of the value of observed funds on, inflation rate (quantitatively variables) and year of established, price of crude oil (qualitatively variables). Chapter 6 concludes the paper.

2 LITERATURE REVIEW

2.1 What are a Sovereign Wealth Funds?

For better understanding how a sovereign wealth fund (SWF) may impact to foreign economic policy it helps to understand what is a sovereign wealth fund. In this section we focus on origin of SWF´s and variety of definition of a SWF´s.

Andrew Rozanov, managing Director, Head of Sovereign Advisory (London) of State Street Corporation and the person who first coined the term „Sovereign wealth funds" in 2005 said "*neither traditional public pension funds nor reserve assets supporting currencies, but a different type of entity altogether*".

SWF´s have been originally created as stabilization funds to reduce the boom and boost tendency of commodity dependent economies, states created clear rules of fund savings, investment strategies, and scenarios under which the government could access fund capital to smooth out economic downturns. SWF´s may have two basic types of origin as they can be seen in Table 1.

Table 1: SWF´s of origin

Commodities	Non Commodities
Created through commodity exports, either taxed or owned by the government.	Usually created through transfers of assets from official foreign exchange reserves.

Source: Author´s comparison, according to information from SWF´s Institute, last updated Oct 20, 2011

SWF´s normally derive their capital base from natural *resource earnings*, include intended *exporting countries*, such as Norway, Abu Dhabi, Kuwajt, Russia, Qatar, Libya, Azerbaijan, Kazakhstan and Oman. They are among the nations that channel funds from *commodity royalties* into SWF's. Countries such as Australia, Malaysia, France, Ireland built theirs from continued *fiscal surpluses*.[1] And trough the transfer of assets from *foreign exchange reserves* finance their SWF´s countries like Singapore, China, Republic of Korea.

All SWF´s are at least partly financed by the disbursement of sovereign debt on international markets. Typically, if a sovereign does not spend all the capital it raised

[1] TRUMAN, E. M., *A Blueprint for Sovereign Wealth Fund Best Practices*, (2008), p. 2, available at: <http://www.petersoninstitute.org/publications/pb/pb08-3.pdf>, last updated 20 Oct, 2011

from international sources, the remaining funds are given to its foreign reserve or sovereign wealth fund holdings.[2]

SWF's work with investment banks, hedge funds, private equity firms, and internal staff to seek out higher yielding investment opportunities. Countries with high levels of foreign exchange reserves include countries such as People's Republic of China $3,201bn, Japan $1,138bn, Russia $516bn, Saudi Arabia $484bn, Republic of China (Taiwan) $400bn, Brazil $352 bn, India $318bn, South Korea $311bn, Switzerland $289bn, Hong Kong $277bn[3], are no longer content to accept money market returns offered from large international banks, but seek to increase their returns.

The **Sovereign Wealth Funds Institute**, an organization that studies sovereign wealth funds based in Las Vegas, estimated the total value of SWF assets at $4,76tn (Sept, 2011), AuM rose by 48,28 percent more compared with same month of 2007. The six largest SWF´s account for 75 percent of all assets held by such funds worldwide like United Arab Emirates, Norway, China, Saudi Arabia, Kuwait and Singapore.

Moreover the formation of new funds such as Nigerian Sovereign Investment Authority (2011), Italian Strategic Fund (2011) and Sovereign Fund of Brazil (2008) see an opportunity for additional foreign direct investment (FDI), capital formation, and ultimately, growth, while others see sovereign wealth funds as threats.

At this point we look at the difficult definition of SWF. For example are defined by the **U.S. Treasury Department** as "*a government investment vehicle which is funded by foreign exchange assets, and which manages those assets separately from the official reserves of the monetary authorities*"[4]. On the other hand while foreign reserves have historically invested in sovereign fixed income notes for the purpose of intervention on the foreign exchange market SWF´s take a longer-term approach[5].

Deutsche Bank, fifth of a leading financial institution[6], describes SWF´s as "*government-owned investment funds which are commonly funded by the transfer of*

[2] BALIN, B. J., *Sovereign Wealth Funds: A Critical Analysis*, 2008, p. 5

[3] According data from International Monetary Fund, (IMF), accessed Sep, 2011, last updated Oct 10, 2011

[4] Department of U.S.Treasury, Report to congress in International economic and axchange rate policies: *Appendix sovereign wealth funds*. (June 2007), available at: <http://www.ustreas.gov/offices/international-affairs/economic-exchange-rates/pdf/2007_ Appendix-3.pdf>

[5] Note: Long term aprroach means that they want to achieve the long-run strategic and financial goals of a sovereign through international equities, commodities, and private fixed income securities.

[6] Thomson Reuters, *Top 10 investment banks in Q1 2011*, **1**. JP Morgan 1,390, **2**. Bank of America Merrill Lynch 1,364, **3**. Morgan Stanley 1,206, **4**. Goldman Sachs 1,197, **5**. Deutsche Bank 1,015 (US$m in fees), last updated 19 Oct, 2011

foreign exchange assets, and which are set up to serve [their] objectives . . . by investing the funds on a long-term basis, often overseas."[7]

In the view of **The Sovereign Wealth Fund Institute** (SWF Institute), SWF can be defined as "*a state-owned investment fund composed of financial assets such as stocks, bonds, real estate, or other financial instruments funded by foreign exchange assets*."[8]

SWF´s are mainly created when countries have surplus revenues, reserves and their governments feel it would be advantageous to manage these assets with a view to future liquidity requirements and as a way of stabilising irregular revenue streams.[9]

Technical definition of SWF´s is that they are government-owned and controlled (directly or indirectly), have no outside beneficiaries or liabilities and that invest their assets, either in the short or long term, according to the interests and objectives of the sovereign sponsor (Monk, 2009, p.11).

The EU Commission describes SWFs as state owned investment vehicles, which manage a diversified portfolio of domestic and international financial assets.[10]

In other words, on top of being state-owned certainly a peculiar but not exclusive feature of SWFs – SWFs assets are:[11]

- operationally and legally ring-fenced from other state's assets and source of wealth (primarily official reserve),
- in order to serve public objectives and interests, defined by political bodies, other than those directly related to the conduct of monetary and exchange rate policies,
- against liabilities just broadly defined (SWFs may include reserve assets, but not all reserve assets are to be regarded as SWFs).

McKinsey & Company (2007) describes that SWFs are funded by the Central Bank's reserves, aimed to maximize the returns within manageable risk bands.[12]

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[7] KERN, S. (2008) *SWF´s and Foreign Investment Policies*: An Update, Deutsche Bank, Oct. 22, 2008, at 2.

[8] Sovereign Wealth Fund Institute, *What is a Sovereign Wealth Fund*, available at: http://www.swfinstitute.org/swf.php (last updated Oct 10, 2011)

[9] GUGLER, P. - CHAISSE, J. (2009), *Sovereign Wealth Funds in the European Union General trust despite concerns*, p. 5

[10] European Commission (2008), "*A common European approach to Sovereign Wealth Funds*", (2008), p. 115

[11] MEZZACAPO, S. (2009), *The so-called "Sovereign Wealth Funds": regulatory issues, financial stability and prudential supervision*, European Commission, p. 11

[12] McKinsey, 2007, "*Sovereign Wealth Funds*", Global Institute, October.

According to the **Organisation for Economic Cooperation and Development** (OECD – August 2008) SWFs are essentially: foreign exchange reserves; the sale of scarce resources such as oil, or from general tax and other revenue.[13]

Morgan Stanley (2007) believed that a SWF needed to have five ingredients: 1., sovereign - totally owned by the government; 2., high foreign currency exposure – mostly in foreign currency; 3., no explicit liabilities – different from pension funds that are bound by specific liabilities; 4., high risk tolerance – able to withstand significant fluctuations in short term; and 5., long investment horizon – usually longer than five years.

Monitor and FEEM look at a SWF´s on the basis of the essential characteristics that differentiate them from other government-owned investment vehicles. Specifically, a SWF must meet the following five criteria:[14] 1., It is owned directly by a sovereign government, 2., It is managed independently of other state financial institutions, 3., It does not have predominant explicit pension obligations, 4., It invests in a diverse set of financial asset classes in pursuit of commercial returns, 5., It has made a significant proportion of its publicly - reported investments internationally.

In 2010 several countries turned to public institutions for assistance in coping with the crisis-linked credit crunch. Some countries used the assets of SWFs or national pension funds to invest in bank deposits (Russia and Kazakhstan) or to support equity market liquidity (Kuwait). Others used the resources to directly recapitalise ailing banks (Ireland, Kazakhstan and Qatar). These clearly examples provided Bodie, Z. and Briere, M. (March 2011), and show a state facing a crisis, that it is possible to manage assets of SWF´s (such as deposit insurance agencies, pension funds) without worsening the fiscal deficit.

At this point we summarize what all the definitions reported. First, a SWF is controlled by a government or government linked entity similar in stature to an independent central bank, relationship between the government and SWF varies from country to country. = **ownership**.

[13] Blundell-Wignall, A., Yu-Wei Hu - Yermo, J., *Sovereign Wealth and Pension Fund Issues*, (August, 2008), p. 5

[14] Monitor Group, Q1/2009 *Annual Report* (2009), available at*:* http://www.monitor.com/Portals/0/MonitorContent/documents/Monitor_SWF_Q1_2009_Report.pdf.

Second, a SWF´s seek returns above the risk free rate of return. They exist to invest capital seeking a return in excess of the risk free rate of return, rather than purchasing a basket of currencies or risk free assets such as government securities. = **purpose and style of investment**.

Third, every single SWF depend by funding, mainly from exchange reserves or export revenues. On the one hand, source of funding is connected with size of SWF´s, trend of reserve surplus and on the other hand ivestment direction as funding stability and sustainability determine long-term investment, it means whether the SWF will be use active investment. = **source of funding**.

Balin, B. J. clearly describes why countries establish SWF´s. Shortly summary is that, when the country's natural *resources are exhausted*, therefore, future generations can continue to live prosperously using the earnings of their forefathers. It means when a country is faced with a competitiveness crisis, it can call on its sovereign wealth fund assets *to reinvest* in new sectors of the economy that can revive the country's competitive advantages.[15]

Finally, the following factors clearly describe main objectives of the SWF´s according information from SWF Institute:

- Protect & stabilize the budget and economy from excess volatility in revenues/exports,
- Diversify from non-renewable commodity exports,
- Earn greater returns than on foreign exchange reserves,
- Assist monetary authorities dissipate unwanted liquidity,
- Increase savings for future generations,
- Fund social and economical development,
- Sustainable long term capital growth for target countries,
- Political strategy.

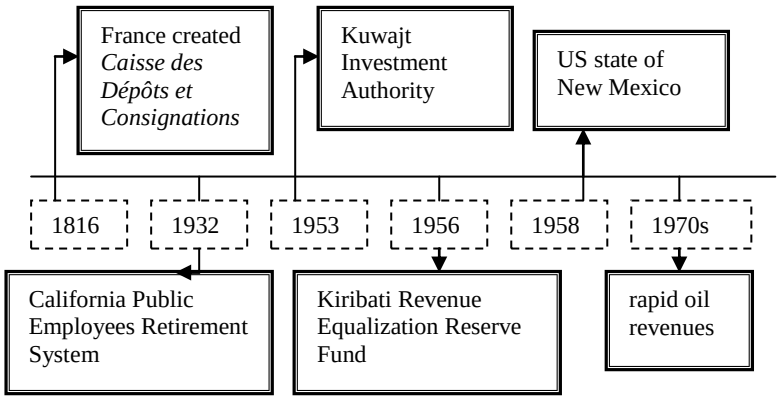
[15] BALIN, B. J., (2008) *Sovereign Wealth Funds: A Critical Analysis*, p. 4

2.1.1 Historical backround

Historically, Kuwajt Investment Authority (KIA), the first SWF was appeared in 1953 and the Kiribati Revenue Equalization Reserve Fund (RERF), which started in the 1956. The next five decades[16] we see the introduction of few more. The first SWFs were regarded to by terms descriptive of their purpose or origin, such as"stabilization funds," savings funds, pension reserve funds or simply "reserve investment funds."

Some history (see Figure 1 below) is needed to understand the role SWFs have come to play in addressing that task. By the early 1970s, rise of oil prices in 1973 posed a dilemma for Western economies as well as for the newly flush Gulf ruling families. Put simply, the massive and rapid oil revenues of the 1970s posed a *dangerous imbalance to the global financial system*. Oil producing countries could not import fast enough to offset the massive capital inflows. This meant that other developed countries, particularly the United States, would be forced to run massive trade deficits. In other words the financial crisis of 2008, central bankers in the *United States feared* this imbalance could dry up the domestic American banking system bringing lending to a halt. Then as now, the standard policy response would have been *to buy less, save more, and endure a general decline in public welfare*.

Figure 1: Historical overview



Source: Author´s comparison.

Briefly explanation of two oldest SWF provided Xie Ping-Chao Chen. They presented that *The Kuwait Investment Board* has been created from oil revenue surplus and to reduce Kuwait's dependence on oil resources. Because Sheikh Abdullah decided

[16] Note: The third country to set up a SWF, in 1958, was the United States via the US state of New Mexico, then the US state of Wyoming in 1974, which was in turn followed by Alaska and the Canadian Province of Alberta in 1976.

that the state's money should be set aside for the long-term welfare of the people of Kuwait. Otherwise in 1965, the KIA, was officially set up to manage 10 percent of Kuwait's annual oil revenue and to make long-term global investment across asset classes and across regions. In 1956, the then British[17] colony Gilbert Islands (later becoming independent in 1979 as the Republic of Kiribati) established *Revenue Equalization Reserve Fund* originated from its phosphates revenue.[18] This fund was established to capture proceeds from the export of a finite resource (guano for fertilizer) to create wealth for future generations, savings fund.[19]

The KIA claims to be the oldest SWF, but the oldest significantly sized fund meeting by views from the IMF, Edwin Truman Institute for International Economics, and Balding[20] definitions for an SWF is the *California Public Employees Retirement System* (CalPERS). The fund differs from traditional conception of an SWF. CalPERS was created by California in 1932 during the great depression. Asset´s fund was just a bonds, later through by legislative modifications allowed for real estate in 1953 and stocks in 1967. CalPERS to begin making foreign-equity investments, the desire to preserve wealth even if domestic economies lose their competitive advantage and are supplanted by foreign economies. CalPERS's portfolio now holds 20 percent in foreign equities and 26 percent in foreign and offshore fixed income.

Another point of view of Xu Yi-chong - Gawdat Bahgat[21], that the origin of SWFs can be traced back to *1816*, when France created *Caisse des Dépôts et Consignations* (CDC) to manage government and overseas tax-exempt funds collected by French savings banks and post offices. So today CDC invests its deposits to finance public housing, universities and other sustainable development projects.

If we focus on pension reserve funds, like *Australia's Future Fund*, this fund have been established to make provision for the unfunded superannuation liabilities of employees that will become payable during a period when an ageing population is likely to place significant pressure on the public finances.

[17] Note: UK played a crucial role in conceptualizing and *designing SWFs* in these early years. These funds were based on pensions (that offered income smoothing and precautionary saving), which had become popular in Canada, the United Kingdom, and the United States. The British had also some influence in that decision for establishing Abu Dhabi Investment Authority, because the UAE had a special treaty with the UK until 1971. This point has been made by Monk, March 2011, p. 4.

[18] Xie Ping - Chao Chen, (2009) *The Theoretical Logic of Sovereign Wealth Funds*, p. 2

[19] Afyonoglu, G., *et. al*. (2010) *The Brave New World of Sovereign Wealth Funds*, p. 13

[20] Ibidem *In* Afyonoglu, *et. al.* (2010), p. 9-10

[21] Yi-chong, X., Bahgat, G., (2010) *The Political Economy of Sovereign Wealth Funds*, p. 1

Canada´s fund, *Alberta Heritage Savings Trust Fund* throughout its 35-year history, the fund has generated more than $32 billion in investment income that has improved the quality of life in the province. As a opposite from oldest funds we should look at on possible new funds like South Australia´s SWF, The Falkland Islands SWF, Papua New Guinea's Parliament SWF, for more details see *Appendix A.*

At this point, we will look at the history of four largest SWF´s, SWF´s by founding source. First, *Abu Dhabi Investment Authority* (ADIA), savings fund, was established in 1976 by Sheikh Zayed bin Sultan Al Nahyan, the founder of the United Arab Emirates. According to Pregin[22] while ADIA is internationally focused, its sister company, Abu Dhabi Investment Council, is focused more on local and regional investments, and holds stakes in the National Bank of Abu Dhabi and Abu Dhabi Commercial Bank.

Second, *The Government Pension Fund – Global* founded in 1990, fund is managed by Norges Bank Investment Management (NBIM), part of Norwegian Central Bank.[23]

Third, *SAFE Investment Company* is third largest funds and it is a subsidiary of The State Administration of Foreign Exchange (SAFE), which manages China's foreign exchange reserves.

Fourth, *SAMA Foreign Holdings*. This fund is a abreviation of Saudi Arabian Monetary Agency. SAMA manages Saudi Arabia's foreign reserves according information from SWF News.

Briefly summary from this section: Macro stabilization/ saving funds include Kuwajt Investment Authority, source oil revenue. Saving funds Kiribati - Revenue Equalization Reserve Fund, source phosphates revenue, Alberta Heritage Savings Trust Fund, source non-renewable resource revenue, Abu Dhabi Investment Authority, source oil revenue, The Government Pension Fund – Global[24], source oil revenue. Pension reserve fund, California Public Employees Retirement System, Australia’s Future Fund source fiscal surplus. Reserve investment funds SAFE Investment Company, source FX reserves.

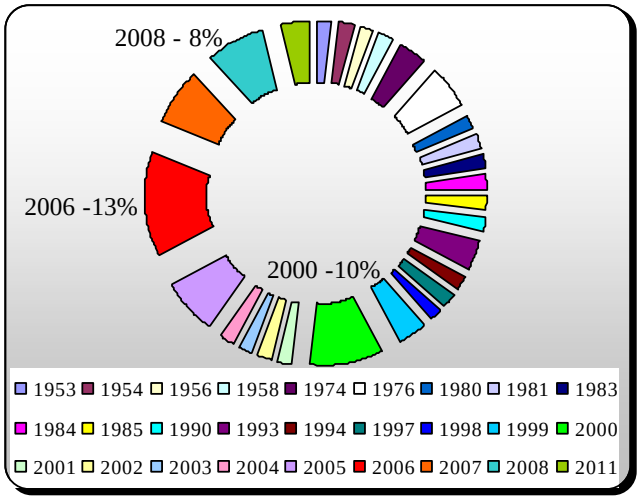
[22] Preqin Sovereign Wealth Fund Review, 2011, p. 6
[23] Available at: http://www.sovereignwealthfundsnews.com/, last updated 12 Oct, 2011
[24] We classified Norway´s fund as savings fund.

Finally historical overview

Kuwajt Investment Authority, New Mexico State Investment Council, Revenue Equalization Reserve Fund, Texas Permanent School Fund were established in the 1950s.

Following those, five were established during the 1970s, such as Abu Dhabi Investment Authority, Temasek Holdings, Alaska Permanent Fund, Alberta´s Heritage Fund, Permanent Wyoming Mineral Trust Fund. Five SWF´s have been created in the 1980s, Government of Singapore Investment Corporation, International Petroleum Investment Company, Brunei Investment School Fund, State general Reserve Fund, Social and Economic Stabilization Fund.

Figure 2: SWF´s by founding of years



Source: Author´s estimation, according to data from SWF Institute Oct 2011

The number of new SWF has increased significantly, thirteen SWF´s were established during the five years beginning with 2000 and ending in 2005, and after 2006 till 2011 were established seventeen, presented in Figure 2.

Main reasons for creating SWF summarized Monk, as can be seen in Table 2 below.

Table 2: Reasons to create new SWF (continued on next page)

Fund	Country	Impetus for creation
Abu Dhadi Investment Authority	United Arab Emirates	Secure and maintain current and future prosperity of the Emirate through prudent management of assets
Government Pension Fund-Global	Norway	Support long-term management of oil revenues and facilitate savings to meet future pension expenditures
China Investment Corporation	China	Diversify foreign reserves and increase risk-adjusted returns, facilitating macroeconomic objectives
Kuwait Investment Authority	Kuwait	Manage to future and reduce country´s reliance on non-renewable resources
Government of Singapore Investment Corp.	Singapore	Invest reserves in long-term and high-yielding assets
Reserve Fund	Russia	Ensure financing of the federal budget expenses and maintain budget balance
Qatar Investment Authority	Qatar	Strengthen the country´s economy by diversifying into new asset classes
Future Fund	Australia	Assist future governments meet the cost of public sector superannuation liabilities
Libyan Investment Authority	Libya	Protect and develop the value of national wealth and diversify the income away from natural resources

Kazakhstan National Fund	Kazakhstan	Ensures economy is stable during price swings of oil, gas and metals

Source: According to the MONK, A.H.B., *Sovereignty in the Era of Global Capitalism: The Rise of Sovereign Wealth Funds and the Power of Finance*, p.43

2.1.2 Sovereign Wealth Funds vs. Other Institutions

The SWFs may be grouped by Mezzacapo, S. (2009, p.15) in the following categories:

1. **Stabilisation Funds**: countries which are rich in natural resources want to reduce the impact to their the budget and economy from volatile commodity prices (usually oil). Otherwise funds build up this assets over the years of ample fiscal revenues in order to prepare for leaner years.
2. **Savings Funds:** these funds are mainly intended to share wealth across generations by transferring non-renewable assets into a diversified portfolio of (international) financial assets, to provide for future generations. Or other long-term objectives, for example to prevent the so-called "*Dutch disease*", it means a syndrome likely to occur where a large inflow of foreign currency, due to a sharp surge in prices of commodities exported. After that it is converted into local currency and spent on domestic non-traded goods, inducing a real exchange rate appreciation that weakens the competitiveness of the country's exports.
3. **Reserve Investment Corporations**: established vehicles a separate legal entity either to reduce the negative cost-of-carry of holding reserves or to pursue investment policies with higher returns. Often, the assets in such arrangements are still counted as reserves;
4. **Development Funds**: these funds provide resources for funding socio-economic projects, such as allocating for infrastructure;
5. **Pension Reserve Funds**: having identified pension and/or contingent type unspecified liabilities on government's balance sheet.

The SWF investment continuum like Official Reserves/ Central Bank, Stabilization Funds, Pension Funds, Domestic Sovereign Funds, Sovereign Wealth Funds, State-Owned Enterprices with examples what is illustrated in details in *Appendix B.*

SWFs, as we know, are owned by the government. It is necessary to define other institutions which can be often confused with traditional government. At this point, we will look at government pension funds (GPF), monetary authorities and state-owned

enterprises (SOE) by definitions from Xie Ping - Chao Chen (2009, p.6). Finally comparisom from types of Sovereign investments vehicles by owner, source of fund, investment purposes, government control, disclosure, investment portfolio can be seen in *Appendix C*.

Sovereign Wealth Fund vs. Government Pension Fund

On the one hand, a SWF is fully *owned* by the *central government*, assets are composed mainly of forex reserves and export revenues. The government has a complete holding stake. Information *disclosure is usually poor* with a few exceptions like the Norway and New Zealand.

On the other hand, a traditional GPF could be owned by a local government; composed of social security tax revenues, which features contribution from *community members*. In this case the government has a less say and the investment is made to secure pension for aged citizens, more of a conservative nature as well. Informations are *more open to the public*. For example California Public Employees' Retirement System (CalPERS).

Sovereign Wealth Fund vs. Monetary Authorities

A SWF has diversified investment portfolio which usually includes bonds, stocks and other high-risk assets (hedge funds and private equities). By the way SWFs have employed the external management model.

The monetary authorities are more "value preserving" oriented with *foreign bonds* (U.S. dollar bonds in particular), it means they have monotonous investment portfolios. Monetary authorities mainly using the traditional model of central bank direct administration, such as a currency stabilizer and macro economy regulator.

Sovereign Wealth Fund vs. State Owned Enterprises

As we know, first is the former is held by the central government and is funded by forex reserves and export revenues. SWF´s consist of three forms: a pool of assets, a legal entity under a specific public law, or a legal entity under the general company law. Most SWFs take the third form and act strictly as a business entity. Second, SOE is held by the *central or local government* and is funded by the government grants and

corporate profits. If we look at of legal structures, SOEs are corporations regulated by the general company law.

Sovereign Wealth Enterprises according to SWF Institute is a sovereign investment vehicle that is owned and controlled by a sovereign wealth fund. First reason why SWF create Sovereign Wealth Enterprises is for *flexibility*. In other words a SWF could have a strict investment mandate in place, however, the SOE has its own rules. A second reason could be *transparency*. If a SWF has hundreds of SWE, it is harder to track their holdings.

By the way a State-Owned Enterprise (SOE) *is not the same* as a Sovereign Wealth Enterprise because a SOE can be considered a SWE if it is directly under the control of a SWF.

Blundell-Wignall, Yu-Wei, Yermo (2008, p. 6) point out that Public Pension Reserve Funds (PPRFs) can be defined as funds set up by *governments* or *social security institutions*:[25] 1. *Social Security Reserve Funds* (SSRFs), Denmark‘s Social Security Fund, Japan‘s Government Pension Investment Fund, and USA‘s Social Security Trust Fund, 2. *Sovereign Pension Reserve Funds* (SPRFs), Australian Future Fund, the New Zealand Superannuation Fund, the Irish National Pension Reserve Fund, the Norwegian Government Pension Fund.[26]

This 21th century is characterized that in countries with increasing *long-term old age dependency ratios*, the costs of state pensions have become a serious concern for cash-strapped governments. Monk argued that governments have limited ability to increase taxes and to pay for the additional costs of social welfare provision. Otherwise, governments are facing an increasingly difficult balancing act between economic efficiency and social justice. A result of that is that economic internationalization has led advanced economies to streamline and discount their welfare systems. That is a reason why a governments have responded to the creeping crisis in social commitments by creating another type of SWF: *The pension reserve fund*. Politicians from countries with pension reserve funds have recognized the future cost of their aging populations,

[25] For more detailes see: Blundell-Wignall, A. , Yu-Wei Hu - Yermo, J., *Sovereign Wealth and Pension Fund Issues*, (2008), p. 6

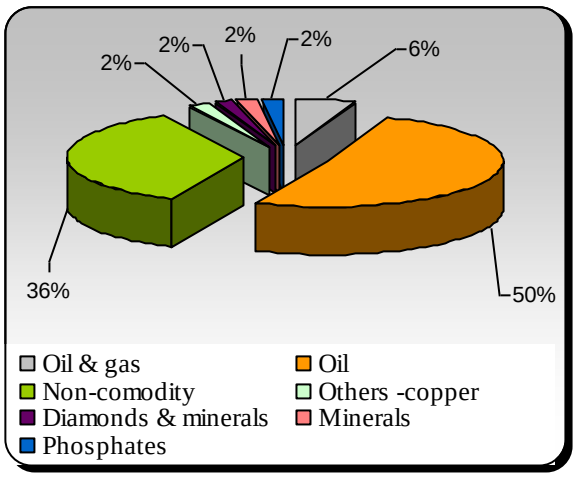
[26] Note: Government Pension Fund-Norway and Government Pension Fund-Global, both established in 2006, are the result of the re-structuring of the Norwegian pension reserve funds (formerly, the National Insurance Scheme Fund) and a SWF (formerly, the Government Petroleum Fund).

and view the SWF as an instrument to overcome the looming (future) crisis (Monk, 2010, p. 13-15).[27]

2.1.3 Founding of SWF´s

Thirty of SWFs are funded with proceeds from the export of crude oil or natural gas as can be seen in Figure 3. Given the great commodity and consumer debt bubbles of the first decade of the twenty-first century, bubbles that took the price of crude oil from below $20 per barrel in the late 1990s, $126 in May 2010 to $87 in October 2011.[28] So it is not a surprise that many SWFs are funded through commodities[29] and the sale of crude oil.

Figure 3: SWF´s by funding source



Source: By author, according to data from SWF Institute, updated Oct 2011

According to recent IMF projections during „the second quarter of 2011, oil prices briefly rose more than 25 percent above the levels that prevailed in January 2011. It is hard to determine the extent to which prices were driven up by stronger demand or by lower supply (for example from Libya). Assuming that a significant share of the price increase reflected lower supply, it may have reduced output in advanced economies by ¼ to ½ percentage point of GDP.“[30]

Otherwise, the working paper from (Setser-Ziemba, 2009, p. 6) presents a model for estimating growth of SWF´s in the countries of the Arabian Gulf under different assumptions about oil prices. „If oil averages $100 a barrel the portfolio of the official sector would rise to $2,1 trillion. Conversely, if oil averages $50 a barrel, most Gulf

[27] MONK, A. H. B., *Sovereignty in the Era of Global Capitalism: The Rise of Sovereign Wealth Funds and the Power of Finance*, p. 13-15

[28] World Crude Oil Prices according from U.S. Energy Information Administration, available at: http://205.254.135.24/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WTOTWORLD&f=W, last updated 20 Oct, 2011

[29] According to PWC, 2011, countries may grow throught different commodities, for example, *lithium* is a key component of rechargeable batteries, hot property. So Chile, Argentina and Bolivia may benefit from the rising importance of *electric cars*. Next source is *solar power*, we may see SWFs in North Africa, financed by exporting solar power in the form of *electricity or hydrogen*.

[30] International Monetary Fund (IMF), *Slowing Growth, Rising Risks*, World Economic Outlook, September 2011, p. 1

countries would need to curtail spending and planned investment projects to avoid a sustained drawdown of their foreign assets – continued interest and dividend payments would keep external assets relatively constant with the region's portfolio ending 2012 with $1,4 trillion. At $25 a barrel, the erosion of assets is significant, despite continued returns on existing assets – the Gulf's external position would fall to just over $1 trillion."[31]. By the way adjusted for inflation in 1979 $38 peak oil price is the equivalent of paying $87,53 today in October 2011. The fluctuations prices of crude oil in 2011 we provide in *Appendix D.*

As a result, we may say that the commodity and debt bubbles also help explain why thirteen SWFs have been established since 2004. SWFs established in the twenty-first century are funded, not by commodity exports[32], but by balance of trade surpluses, derived in part from the excessive debt that the United States and other consumers incurred and spent in this period.

Average oil prices from january 1953 until October 2011 can be seen in *Appendix E1*. The blue line on the above figure shows nominal oil prices adjusted for inflation, in other words the price you would have actually paid at the time. As you can see from April 2008 until September 2008 rose sharply price of crude oil. From there we see one of the sharpest drops in history. Note that the fall from the 1979 peak took until 1986 (7 years) to fall as much as it lost in only six months in 2009. During the previous peak price back in 1979 the nominal monthly average oil price peaked at $38 per barrel. In nominal terms, we see a fall from $126,33 in June 2008 to $31,04 in February 09 but by June 09 it is back to $61,46.

In sum, founding years (from 1953 til 2011) for oil-based SWF´s and oil prices can be seen in Appendix D. Amongst the recent SWF owners are some major countries like Brazil, Russia and China, whose geopolitical interests are much greater than those of traditional SWF owners like the Gulf Cooperation Council countries.[33]

[31] Setser B. and Ziemba R., (2009), *GCC Sovereign Funds, Reversal of Fortune*, p. 6.

[32] Note: List of Top 5 exported products in 2010 according to the International Trade Centre Statistics, are **1**. Mineral fuels, oils, distillation products - 2 309 488 431(US Dollar thousand), **2**. Electrical, electronic equipment - 1 972 203 427, **3**. Machinery, nuclear reactors, boilers - 1 802 004 156, **4**. Vehicles other than railway, tramway - 108 195 856, **5**. Plastics and articles thereof - 483 292 597. And top exporters of mineral fuels, oils, distillation products are: Russian Federation, Saudi Arabia, Canada, United Arab Emirates, Norway=countries with SWFs.

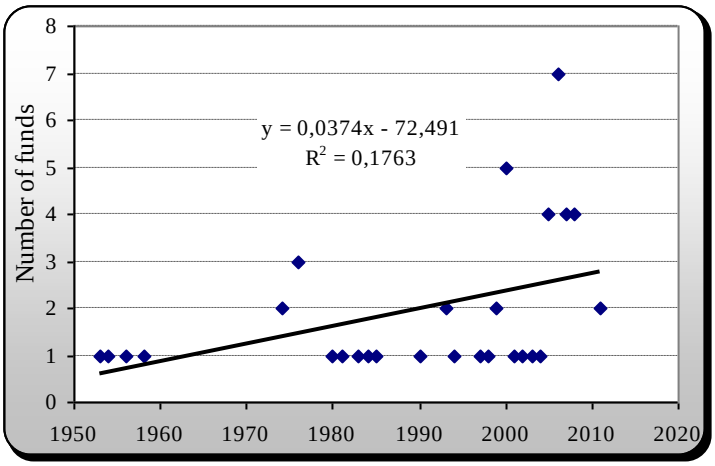
[33] Note: Members of the GCC include Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

In other words, SWF´s have never been so wealthy and this is largely due to the origin of their financial resources. If some of them rely on their central banks reserves like China Investment Corporation, most of them draw their wealth from the exploitation of *raw materials*. Therefore, increase of their assets is proportional to the dizzying rise of oil and gas prices.

Forecast of increase number of SWFs

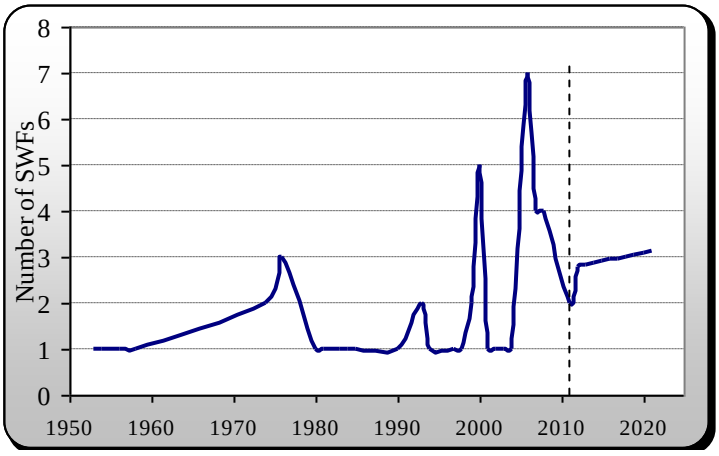
At this point we focus on future growth of SWF´s, for calculations we have been using data of number of funds that were created during period from 1953 to 2011. We used linear trend by method of least squares. According to the number of funds we may say that SWFs will be rising annually by two, three funds, forecast from 2012 to 2021 is presented in *Appendix F* and illustrated in Figure 5.

Figure 4: Regression function



Source: Author´s calculation according data from SWF Institute, updated Oct 2011
*Year of Saudi Arabia is not available.

Figure 5: The forecast of creating SWFs



Source: Author´s calculation according data from SWF Institute, updated Oct 2011
*Year of Saudi Arabia is not available.

By using values (years - T, y) through graphs we obtained formula y = 0,0374x - 72,491, R^2 = 0,1763 (see Figure 4). Then we may calculate by using this formula others variables in Table Y~, (y/Y~)*100, % coeficient. Then by using T* and y, we may obtain formula y = 0,0344x + 2,0826, R^2 = 0,1691. We used this formula for calculations forecasts, it means our value y from 2012 till 2021.

Regression output which depicted in Figure 4-5, also in Appendix D, is much more positive in the favor of positive linear relationship. The most important statistics here is that coefficient of determination R^2 is 17 percent of total variation around the mean value of Y is explained by the variable X included in the model, so quite well for a cross sectional regression analysis. And 17,63 percent change of number of funds is attributed by year, so 82,37 percent change of number of funds is not attributed by year of set up. Number of SWF´s will be increased during period 2012-2021 by 29, from 53 to 82, it means increasing number of funds by 54,7 percent more compared with during period 1953 till 2011. However, SWF´s are not a new phenomenon, but by increasing number of funds show their presence in global finance and economic and financial relations, what we will decribe in next sections.

2.2 Size of sovereign wealth funds

What explains the size differences of SWFs? The size of a SWF´s depend primarily on its **purpose** and the **size** and wealth of the state funding it.[34] Nevertheless the exact size of the funds is uncertain due to the opaque nature of SWF´s. In this section we describe answer for question above.

The twenty largest funds, according to from different sources are shown in *Appendix F*. Total SWFs hold approximately ***$4,762.7 trillion*** (October 2011)[35], while the top five (UAE – Abu Dhabi, Norway, China, Saudi Arabia, China) account for over 55,6 percent of total holdings. Otherwise the world's largest sovereign wealth fund, the Abu Dhabi Investment Authority, manage $627bn, accounting for 13,16 percent of total SWF´s assets.

„*SWFs can induce macroeconomic moral hazard effects when they become large*." Noted Karin Lissakers, Director of Revenue Watch Institute.

In addition what is listed at *Appendix G* 26 SWF´s like US Texas, Iran, Chile, New Zealand, Canada, US New Mexico, Brazil, Botswana, Italy, Nigeria, Venezuela are hold the remaining 4,59 percent of total fund assets, with fund sizes ranking between $0,3 billion and $24,4 billion.

[34] Afyonoglu, G., et. al., *The Brave New World of Sovereign Wealth Funds*, 2010, p. 6

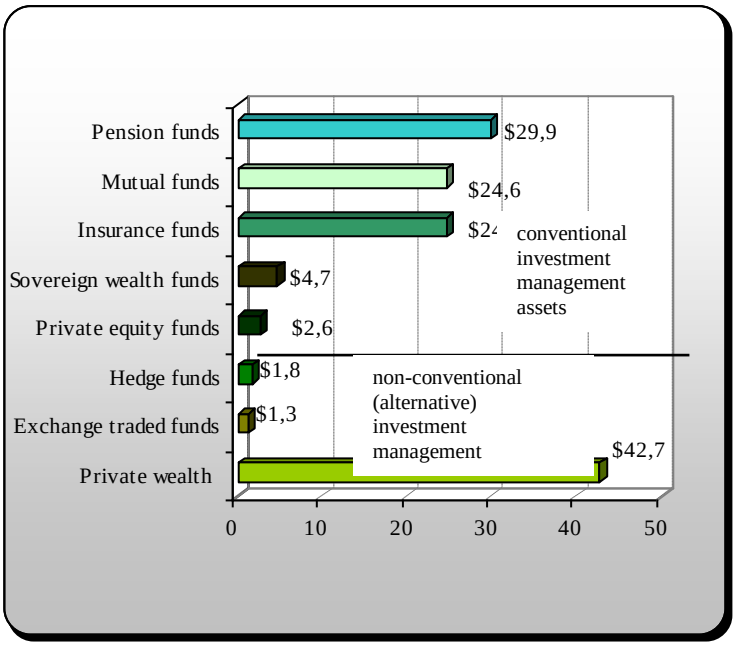
[35] Note: SWF Istitute identified 53 SWF´s with AuM $4,762.7 trillion in Oct 2011, SWF News identifed 57 SWF´s with AuM $4,794 trillion in Sep 2011.

However, there are two primary reasons for the rapid appearance and growth of SWFs: the rapid **increase in oil prices** (like Middle Eastern Countries, Russia[36], and Norway) and the accumulation of large **balance-of-payments surpluses** (mainly by Asian exporting countries). [37]

How big are they?

As a result from Figure 6 we may say that SWF´s are not the dominant capital holders in the world economy. Nevertheless SWF´s are *2,6 times the size of total hedge fund* assets. SWF´s are dwarfed compared to by the holdings of the world's insurance companies, pension funds, and mutual funds.

Figure 6: Global assets under management
($ trillion, end-2010, SWF´s Oct 2011)



Source: Author´s estimates, according to data from TheCityUK - Fund Management October 2011, SWF Institute

On the other hand, as compared to other public financial transactions, SWFs dwarf intercountry flows of official aid. For example, if the Marshall Plan[38] were quoted in today's dollars, it would only amount to $100 billion, a small sum when compared to the $4,7 trillion size of sovereign wealth fund holdings.

TheCityUk[39] presents that Global fund management Conventional AUM of the global fund management industry increased by 10% in 2010, to a record $79,3 trillion. Pension assets accounted for $29,9 trillion of the total, with $24,7 trillion invested in mutual funds and $24,6 trillion in insurance funds. Together with alternative assets

[36] According to Reuters Russia's oil wealth Reserve Fund rose to $61,4 billion on Feb 1, the figure indicated that the fund, established to insure the budget against oil price shocks, had received a one-off injection of cash in January after the government ran a fiscal surplus in 2011, as earlier flagged by officials. Second fund, The National Welfare Fund, mandated to cover the deficit in Russia's state pensions scheme, grew slightly in the past month to $88,33 billion from $86,8 billion in the month to Feb. 1.

[37] Ibidem MEZACCAPO, S. *op. cit.*, p. 18.

[38] BALIN, B. J., *Sovereign Wealth Funds: A Critical Analysis*, 2008, p. 3

[39] MASLAKOVIC, M., *Fund Management*, October 2011, p. 1

(sovereign wealth funds, hedge funds, private equity funds and exchange traded funds) and funds of wealthy individuals, assets of the global fund management industry totalled around *$117 trillion*. The increase in 2010 resulted from both the **recovery in equity markets** during the year as well as an inflow of new funds.

However, SWFs are already bigger, based on their current growth, than the FX reserves in the relative sponsor country. It is a confirmation that SWFs have replaced the traditional accumulation and management policies of FX Reserves. It is because these institutions have aim at better **diversifying risks** and generating **higher returns** than traditional official reserves, typically invested in low-yielding government securities.

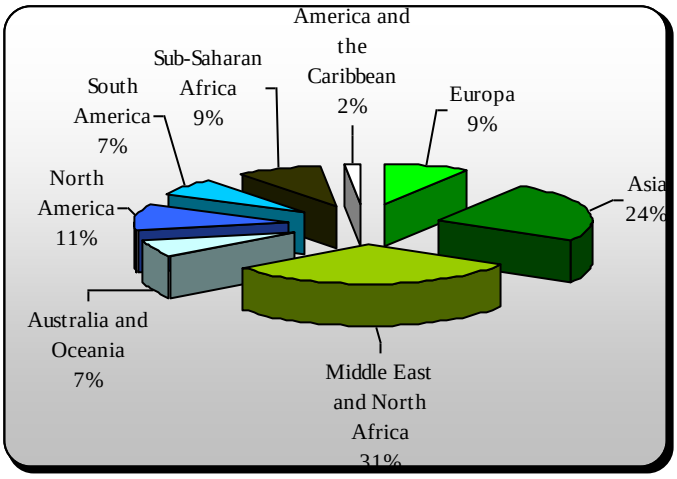
Mezzacapo provides note „*When comparing AUM of SWFs and AUM of other private asset managers (e.g. Hedge Funds) it must be taken into account that SWFs are typically not leveraged*."[40]

Apart from the overall size of SWFs AUM could exceed the size of global FX reserves within a few years. On the one hand impact on SWFs exerted *by global financial crisis* and on the other hand fall *in equity and oil prices*.

2.2.1 Size of SWFs by country

At this section we focus on geography of SWF´s, including OPEC member countries, projections of growth in Europe, Asia, Latin America and the Caribbean countries, South America, Sub-Saharan Africa, Middle East and North Africa according to IMF and then we will look at SWF´s market size by quarter.

Figure 7: Proportion of SWFs by region Sep 2011 (% of 57 Fund´s)



Source: Author´s a best guess estimation, according to data from SWF News, SWF Institute, Pregin 2011

Figure 7 provides geography of SWF´s. The biggest size of fund´s are concetraded in the Middle East, what means that they depend from oil export, such as Saudi Arabia, Kuwait, Qatar, Algeria, Libya.

[40] Ibidem MEZZACAPO, S., (2009), p. 16

Fourteen fund´s are located in coutries like Asia, China, Hong Kong, Singapore, Kazakhstan, Brunei, South Korea. Norway with The Government Pension Fund-Global, Russia with National Wealth Fund, France with Strategic Investment Fund, Ireland with National Pensions Reserve Fund and Italy with Italian strategic fund has 9 percent portion of total assets managed by SWFs. Botswana, Gabon, Mauritania, Sudan, Nigeria countries of Sub-Saharan Africa has the same percentage like europe, what is interesting. Smaller fraction of SWF´s is located in Central America and the Caribbean, Trinidad & Tobago.

Most of countries that are listed above, are member states of *OPEC*[41] as well. According to current estimates from OPEC, more than 80% of the world's proven oil reserves are located in OPEC Member Countries (see *Appendix E2*). Reserves in the *Middle East,* amounting to *65% of the OPEC* total. OPEC Member Countries in recent years, adopted best practices in the industry, realized intensive explorations. As a result, OPEC's oil reserves currently stand at well above 1,193 billion barrels.

According to the study by Xie Ping and Chao Chen „*The size of an SWF does not present an envident corelation to the country's economic strength. Except for China and Russia, the two economies of some global influence, owners of the top SWFs are all small economies*."[42]

At this point we will summarize why SWF´s grow so fast. We shortly describe three reasons: First, oil and other commodity prices keep rising. Oil dollar and commodity dollar are key to SWF growth. Eleven of the 20 largest SWF´s, have their funding sources in oil and other commodities revenues. Second, forex reserves increase. Mainly members of the GCC such as the UAE and Kuwait have been accumulating foreign assets in SWFs for decades. Third is investment returns.

Projections of growth from IMF

It is necessary to know future growth. International Monetary Fund updated on January 2012 World Economic Outlook from September 2011. Projections of growth of real GDP in *European Union* decreased from 1,6 percent in 2011 to *-0,1* in 2012, as you may see in Figure 8 on next page. Growth for 2013 is expected by 1,2 percent. It is impact from financial turbulence will be a drag on activity through lower confidence

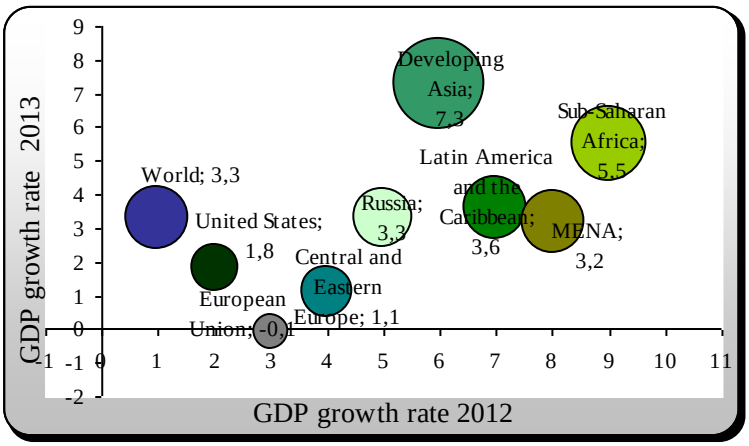
[41] Note: OPEC (The Organization of the Petroleum Exporting Countries) include Algeria, Angola,Ecuador, Irak, Iran, Kuwait, Lybia, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, Venezuela.

[42] Ibidem Xie Ping – Chao Chen, 2009, p. 8

and financing, even as the negative effects of temporary factors such as high commodity prices and supply disruptions from the Japanese earthquake diminish.

Growth in *Developing Asia* is expected to decrease by 0,6 percent compared with period 2011. And 7,8 percent projections for 2013. Anyway investment growth has decelerated with the unwinding of the *fiscal stimulus*, but it remains the principal contributor to growth. The after effects of the earthquake in Japan had impact for a key suppliers of sophisticated inputs in the global supply chain.

Figure 8: GDP growth trends in 2012* (% YoY)



Source: Author´s, according to data from IMF, *Global Recovery Stalls, Downside Risks Intensify*, World Economic Outlook, Update, January 2012, p. 2

* Projections.
Note: Developing Asia includes: China, India, ASEAN 5: Indonesia, Malaysia, Philippines, Thailand, and Vietnam, MENA: Middle East and North Africa.

Growth in *Russia* is projected to reach about *3,3* percent during *2012*. On the other hand energy exporters stand to benefit from a further rise in oil prices, and on the other hand importers will have higher import costs for energy.

Growth in *Latin America and the Caribbean countries* will be led by many of South America's commodity exporters, particularly Argentina, Chile, Paraguay, Peru, and Uruguay. In all of which is expected to grow at levels near or above *3,6* percent in *2012*, compared with period 2011 is decline by 1 percent, and projections 3,9 for 2013.

Growth in *United States* is projected to moderate toward potential in *2012*, in the range of *1,8* percent, compared with 3 percent growth in 2010, and 2,2 percent in 2013.

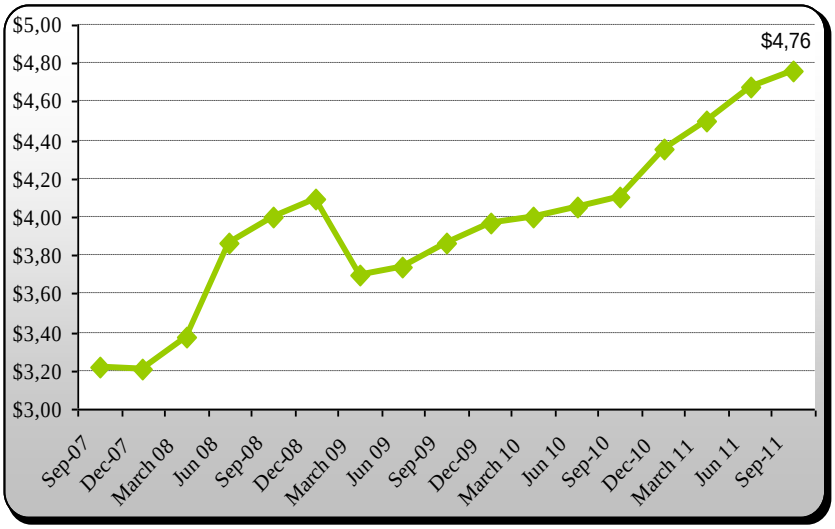
In *Sub-Saharan Africa* is projected real GDP growth *5,5* percent during *2012*. Oil-exporting economies had growth of about 4,9 percent in 2011. Among oil exporters, inflation is projected to remain high, dominated by price developments in Nigeria and Angola, where rapid monetary expansion before the crisis (Nigeria) and a sharp increase in domestic fuel prices (Angola) fed into price increases.

Growth in *Middle East and North African* oil-exporting economies is forecast to reach *3,2* percent in 2012 and about *3,6* percent in *2013* with growth led by Qatar (driven by expanding natural gas exports), Iraq, and Saudi Arabia. For oil exporters,

governments need to seize the opportunity presented by *high oil prices to move toward sustainable and more diversified economies*.[43]

As a result of what is illustrated in Figure 9 we may say that AUM of SWF´s grew from Sep 2007 until Sep 2011 by 48 percent. Rapidly in - creasing AUM of SWF´s was since 2000, mainly driven "by continuing high incomes from co- mmodity sales and re- serve accumulation for existing funds as well as the establishment of new entities" as reported Kern, 2008.[44] That is because oil producers, mainly in Middle East and Latin America, have benefited from the upward spiral in *commodity prices*. Apart from Asian export-led economies, mainly China, *appreciating their currencies*, and a result of this is *maintain competitiveness*, *fostering their exports* and *boosting foreign exchange reserves*.

Figure 9: SWF´s market size by quarter ($ trillion)



Source: Author´s estimation, according to data from SWF Institute
* The above data has been pulled on specific dates. Market size reflects official disclosure, fund creation, investment activity, capital injections, and other variables.

The prediction about the future growth trend of SWFs varies from different scholars. Morgan Stanley projected that growth of SWFs will have **$12 trillion under management by 2015**, especially those funded by oil exports, as the price of oil increases. The Standard Chartred Bank predicts that SWFs will reach $13,4 trillion in 2017.

Mezzacapo clearly describes how will be grow SWFs. Their growth rate will be *influenced by several economic factors*, such as: trend of oil and other commodities prices; economic growth posted by Asian countries and other eging/ transi-tioning economies; persistence in trade imbalances, international exchange rate policies, FX

[43] Ibidem IMF, September 2011, p. 78-99.
[44] Kern, S., (2008), *SWF´s and foreign investment policies*, October 22, 2008, p. 2.

reserves accumulation trend, the effect of society ageing on public pension systems, political reactions to SWFs investments and broader political issues, financial return on SWFs investments; the effects of the global crisis and economic down-turn.[45]

2.2.2 Size of SWFs and foreign exchange reserves

This section is characterized by national income, different views of Asia financial crisis, competitiveness, self-insurance in relationship the accumulation of reserves. Then we will focus on official reserve assets by regions and estimates of foreign exchange reserve/ SWFs by country according to IMF.

A significant factor which determine growth of SWF´s is amount of foreign exchange reserves[46]. In other words accumulation of FX Reserves is significant balance of payment deficit run by Western Countries (not only the US but also Australia, New Zealand, the United Kingdom, Spain, Greece and Portugal). Anyway the exchange rate management policies can be adopted by some Asian countries (firstly China) in order to preserve their *exports'competitiveness*, all compounded with *integration* and *liberalisation of international flow of capital*.[47]

Nevertheless, real effective exchange rates in surplus economies like China, Korea, *continue to build up their foreign reserves*. In this case, when these economies has a stronger exchange rate, combined with structural reforms would raise domestic purchasing power and contain inflation pressure. So the fact is that if prices of commodities will be rise, governments in commodity-exporting countries will be continue accruing foreign assets, even part of these assets is devoted to cover *domestic investment needs* or purchase back part of their *outstanding debt*. For example Singapore´s Government Investment Corporation was set up in 1981 to manage the country´s foreign exchange reserves.

For countries is important reason for obtaining *sovereign credit ratings*[48]. First, to attracts foreign direct investment, it means to give investors confidence in investing in *bonds* issued in currencies other than traditional global currencies and second countries trying to improve their *credit standings* may opt for more conservative fiscal

[45] Ibidem MEZZACAPO, S. (2009), p. 20

[46] Note: Foreign exchange reserves in a strict sense are only the foreign currency deposits and bonds held by central banks and monetary authorities. Assets of the central bank held in different reserve currencies, such as the dollar, euro and yen, and used to back its liabilities, e.g. the local currency issued. The quantity of foreign exchange reserves can change as a central bank implements monetary policy.

[47] Ibidem MEZZACAPO, S., p. 19

[48] Note: Determinants of rating risk include per capita income, GDP growth, inflation, fiscal balance, external balance, external debt, and the indicator for economic development and default history.

policies, like cut spending, sell assets, obtain foreign currency. So supply of international capital may be restricted for low-rated countries. Third, affects ability to borrow money through financial institutions such as banks.

Rating agencies like Standard and Poors, Moody's, and Fitch provide financial transparency and demonstrate credit standing of countries (see Table 3).

Table 3: Sovereigns Ratings List

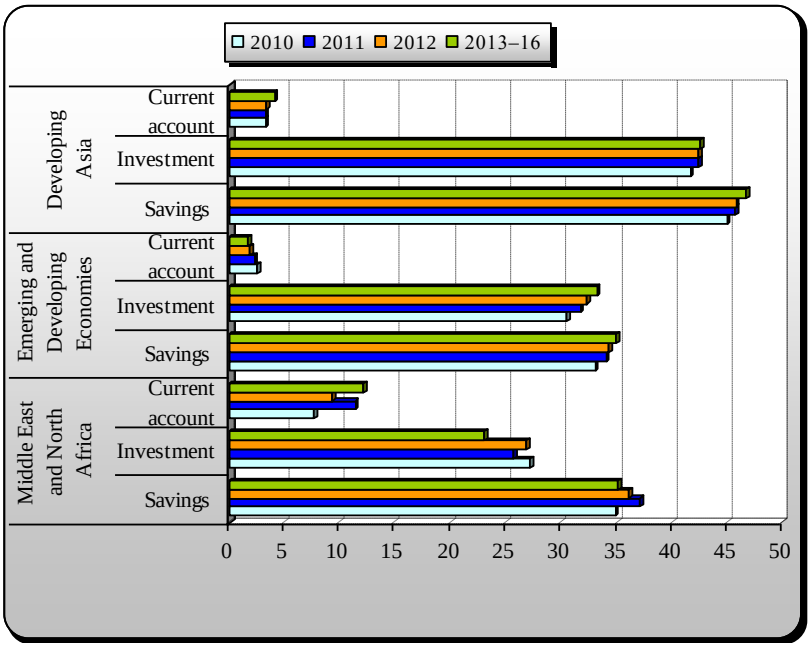
	Local Currency*	Foreign Currency**	Local Currency	Foreign Currency	Local Currency	Foreign Currency
	Standard & Poor's		Moody´s		Fitch	
United Arab Emirates			Aa2	Aa2	AA	AA
Norway	AAA	AAA	Aaa	Aaa	AAA	AAA
China	AA-	AA-	Aa3	Aa3	AA-	A+
Saudi Arabia	AA-	AA-	Aa3	Aa3	AA-	AA-
Kuwait	AA	AA	Aa2	Aa2	AA	AA
Hong Kong	AAA	AAA	Aa1	Aa1	AA+	AA+
Singapore	AAA	AAA	Aaa	Aaa	AAA	AAA
Russia	BBB+	BBB	Baa1	Baa1	BBB	BBB
Qatar	AA	AA	Aa2	Aa2		

Source: Author´s, according to data from Standard & Poor's Aug 5, 2011, Moody´s Oct 28, 2011, Fitch Oct 3, 2011.

***** Local-Currency Government Bond Ratings reflect the government's capacity and willingness to generate local currency revenue to repay its local-currency bonds on a timely basis.

*** *** Foreign-Currency Government Bond Ratings reflect the government's capacity and willingness to mobilize foreign exchange to repay its foreign-currency denominated bonds on a timely basis.

Figure 10: Savings, investment, current account surplus as a percentage of GDP



Source: Author´s estimation according to data from IMF, *Slowing Growth, Rising Risks*, World Economic Outlook, September 2011, p. 207-8

If we look at for national income, is utilized in three areas: 1. sufficient reserves to hedge against exchange rate risks; 2. domestic consumption, government budget and domestic investment; 3. excess reserves to be invested overseas for returns.[49] Percentage of savings, investment,

[49] Ibidem Xie Ping - Chao Chen, 2009, p. 13

and current account surplus[50] to GDP shows (see Figure 10) that major oil exporting countries like Middle East and North Africa´s savings will be decreasing in 2013-16 by 2 percent compared with period of 2011, and investment by 2,7 percent less than 2011. Emerging and developing economies will be increase their savings by 0,9 percent, investments by 1,5 percent in 2013-16 compared with 2011 and current account decline from 2,6 percent in 2010 to 1,7 in 2013-16. And developing asia savings increasing by 1,7 and investment by 0,9 percent in 2013-16 compared with 2010. Current account surplus will be rise by 0,8 percent during period 2013-16 compared with 2010.

By the literature, some reasons are changes in the international monetary system that provided Xie Ping - Chao Chen. The Kingston monetary system resulted in global imbalance and forex reserves. Most countries *preferred the dollar to be the major trade and reserve currency*, but the diminishing pivotal role of the dollar brought about negative impact on international trade, loan and credit. So *imbalance of payments* of the Kingston system increased. By the way the *non reserve currency countries needed to maintain a certain amount of foreign exchange assets,* usually government bonds. We may say that reserve currency countries should maintain the currency value, but at the same time they enjoyed great benefits as the currency issuer. Before the Kingston system was founded, international forex reserves were kept at a *low level with slow growth.*

They also pointed what are the implications if a country has large reserves of foreign currency. In the 1998 Southeast *Asia financial crisis*, for example, Hong Kong protected itself from the attacks of global financial speculators with *sufficient reserves and maintained the stability of the Hong Kong dollar.* Nevertheless, the countries still face the dilemma between the stable currency and the imbalance of payments. The reserve holder increases reserves (such as China) while the currency issuer keeps running a bigger deficit (like USA), which in turn leads to the *depreciation of the currency and loss of wealth for the holder*. As a result is *if the more reserves one holds, the bigger depreciation risk you assume*. So the surge in forex reserve may also result in *excess liquidity* and *asset bubble in the reserve holder*.[51]

[50] Note: Savings – Investment = Current Account
(Net Exports (resource balance) + Factor Income + Current Transfers) – Capital inflows = Change in Foreign exchange reserves

[51] Ibidem Xie, P.–CHen, Ch., p. 8-11

In other point of view of Jones, S. G. - Ocampo, J. A. (2008, p.10-12) desribe that as a result of "second Bretton Woods" is that Asian countries want to maintain on the one hand *export competitiveness*, on the other hand the context of an export-led growth model has led them to run *massive current account surpluses*. By the way the main counterpart is the US deficit. So we may say that the economic benefits of stable and *weak_exchange rates exceed*, typically for the Asian countries, the *costs of reserve accumulation* will be increased. Nevertheless accumulation of dollar reserves by central banks allows the United States to rely on *domestic demand* to drive its *economic growth.* So first motive for accumulation of foreign exchange reserves is *competitiveness,* as well as the absence of appropriate coordination mechanisms for exchange rate policies in export-led economies, and second is *self-insurance*. It means that the spread of financial globalization to developing countries, and the growth of banking systems and financial markets, explain much of the increase in foreign exchange reserves of these countries.

Monk presents that the jolt prompting the creation of SWFs was the 1997 *Asian financial crisis*. This crises led to changes in the *demand for international reserves, increasing the accumulating by affected countries*. For example, Singapore, which had considerable pre-existing reserves, escaped the Asian crisis relatively unscathed. *The accumulation of reserves has been a strategy of crisis prevention*. In some countries, this phenomenon was presented before the Asian financial crisis. For other countries, the crisis served the adoption policy of reserve accumulation, driven by the realization that *self-insurance* would mean not having to rely on the IMF if a currency crisis took place again. The value of accumulated reserves quickly *grew to exceed* the level needed by countries for insurance purposes, *extremely costly*.[52] Cost of reserves in emerging market countries are around 1% of GDP annually (through the first years of the 21st century).[53]

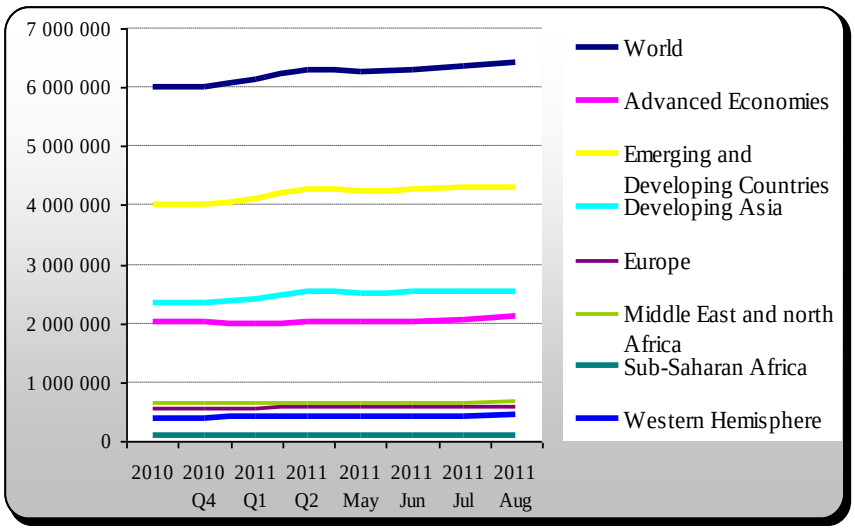
By accumulating reserves we should look at issues such as exchange rate appreciation, liquidity expansion, financial sector imbalances, inflation. It may also include *opportunity costs*. Since foreign currency must be invested in liquid, low risk and low

[52] Note: The cost of holding reserves is the difference between what the reserves can earn through investments in financial markets and what the country pays on the domestic debt that is used to 'sterilize', or soak up, the local currency that was issued to buy the foreign reserves in the first place so as to prevent domestic inflation.

[53] MONK, A. H. B., *Sovereignty in the Era of Global Capitalism: The Rise of Sovereign Wealth Funds and the Power of Finance*, April 2010, p. 6–8

yield instruments that are available to central banks to balance payment requirements. So when countries *transfer excess reserves to SWF´s, that may help isolate the economy from negative effects of reserve accumulation*, like reducing costs of sterilisation by issuing domestic debt to avoid inflation. As a result, we may say that SWF´s are becoming more interesting for countries that have accumulated foreign exchange assets as can be clearly seen in Figure 11 bellow. Emerging and developing countries had 4 302 308 SDRs[54] in August 2011 what is 7,45 percent more compared with 2010, and 66,97 percent of total world reserve assets. Developing Asia increased reserve assets by 7,92 percent from 2010 to August 2011. And advanced economies have in August 2011 by 5,65 more reserve assets compared with 2010.

Figure 11: Official Reserve Assets, Foreign Currency Reserves
(in Convertible Foreign Currencies, SDRs, Millions)

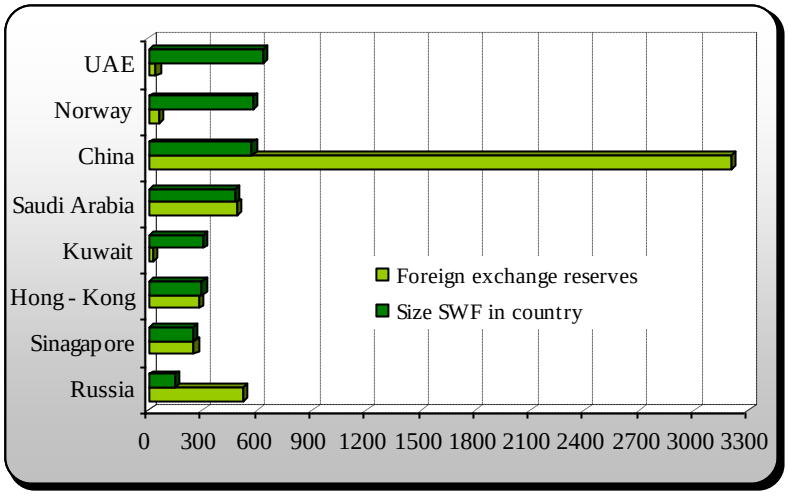


Source: Author´s estimation, according to data from International Financial Statistics (IFS), last updated 28 Oct 2011

Figure 12 on next page shows some emerging countries, such as China, lead export Asian economy, which accumulated $3,201bn in 2011, an increase 7 times, compared in 2007 $446bn. Second Russia accumulated $516bn and third Saudi Arabia, oil-producing countries, accumulated $484bn. It is expected that the process of transferring these accumulated reserves to its SWFs will result in continued growth in the total size of SWF assets. However, China and Singapore, having accumulated reserves as a result of *current account surpluses*.

[54] Note: According to IFS, 1 USD = 0,626184 SDR, October 28, 2011.

Figure 12: Estimates of foreign exchange reserves and SWFs (by country, $ bn)



Source: Author´s comparison according to data from IMF (Sep 2011) and SWF Institute (Oct 2011)

The accumulation of official external assets, several of which are SWF´s, tends to underestimate the importance of *capital inflows* as a source of reserve accumulation, as the accumulation of such official assets abroad is accounted for as a negative contribution to the capital account. This is the case of Venezuela, Chile, in Latin America pointed Jones, S. G. - Ocampo, J. A (2008, p.4).

Matoo and Subramanian present (2008, p.11) that China and other East Asian countries have responded to current account surpluses and capital inflows with *reserve accumulation by the central bank* rather than allowing these surpluses both to *be self corrected and lodged in private hands* through *currency appreciation.* As a result, China has accumulated $3,201bn of foreign exchange reserves. Nevertheless, countries have set up SWFs to manage these reserves.

The question is: How we can explain that China has massive foreign reserves? Basically China *maintain the same exchange rate,* on the one hand *increase demand*, on the other hand the central bank *issue more of the domestic currency* and purchase the foreign currency. A result of that is *will increase the sum of foreign reserves*. Otherwise if the value of the currency is being down (weak of currency), the domestic money supply is increasing (because money are *being printed*)= *inflation* (spiking of food prices).

Anyway China holds huge U.S. dollar-denominated assets, but the U.S. dollar has been weakening on the exchange markets, and resulting in a relative *loss of wealth*.

We may say that in case fluctuations in exchange rates, defense before inflation so a central banks must continually *increase the amount of its reserves* to maintain the same exchange rates.

2.3 Sources of sovereign wealth

By establishing SWFs can be national wealth invested internationally and thus diversifies revenues and reduces concentration risk. The revenues from oil and other commodity exporting countries are exposed to concentration risk, it is because exist dependence on the natural resource sold on international markets. Next risks include an appreciation of the real exchange rate due to the sale of natural resources.

Otherwise in countries that do not rely on commodity exports, SWFs provide mechanisms for breaking up concentrations of portfolios that increase risk. For example, China currently has $3,201bn of Chinese reserves, invested mainly in the US Treasury market. However, this section presents function of sovereign investing, investments of SWFs, investment activity, comparing Private Equity, Hedge Funds and SWFs strategies and finally some equity investments on listed companies.

2.3.1 Function in Sovereign Investing

The unique characteristic of a SWF investment is that it is controlled by a sovereign whose true present and future investment intentions are unknown. It means that the economic, diplomatic, and political interests of a sovereign will almost coincide with the goals of a SWF. Sometimes lack of knowledge makes it possible for Congress and the media to see SWFs as **a threat**. In principle, SWF investments should be managed with a *multi-year horizon, with investments made for the long term, and with the goal of wealth maximization within the fund*.[55]

As pointed out Mezzacapo S. (April 2009, p. 21) SWFs focus on *diversifying risks* and *generating higher returns* than traditional official reserves management by Central Banks and Monetary Authorities. So funds search, first - *greater yield*, second - *the diversification of SWF's portfolios* from traditional low-risk and highly-liquid assets

[55] BEAN, B.W. *Attack of the Sovereign Wealth Funds: Defending the Republic from the Threat of Sovereign Wealth Funds?* 2008, p.11

(for example, government bonds) to other securities and derivatives could increase liquidity.

Bean (2008, p.10) presents that each SWF often publish their investment goals that include investing to:

- diversify away from non-renewable commodities (SWFs from Iran, Kazakhstan, Qatar, and Kuwait share this stated goal),
- increase the return on national savings (SWFs from Alaska and Botswana goal),
- directly implement domestic economic development objectives (Vietnam's SWF),
- invest currently unneeded dollar liquidity (SAFE China, and the State General Reserve Fund of Oman share this goal),
- achieve long-term returns which preserve and enhance international purchasing power of national assets (SWFs from Azerbaijan, Brazil, Norway, China (CIC), and Abu Dhabi (Mubadala).

As a result, we may say that SWF´s are seeking four things. First, high returns, motivated by the opportunity cost of excess official reserves invested in risk-free assets. Second, funds are saving wealth for future generations, when the natural sources will be exhausted, it means no surplus revenue for country. Third, countries dependent on commodity exports set up funds for absorbing the shock of fluctuations in global market prices of oil, it means stabilization function. Fourth, funds are promoting through investments domestic industries.

Political risk

If we look at political risk, it is primary issue of SWF´s investment, because investments may be used for political purposes. The question for investors and regulators is, that they have to ask themselves whether *government-controlled companies* and *investment funds* will always *direct* their affairs in furtherance of *investment returns*, or rather will use business resources in the pursuit of other *government interests*. These government interests might be the *acquisition of sensitive technologies,* expertise through the purchase of a controlling stake in a company, or the acquisition of a major supplier of *a limited natural resource*.[56]

Nicolas Sarkozy, french president, said already early 2008: "*I believe... in globalisation but I don't accept that certain sovereign wealth funds can buy anything*

[56] ROSE, P. *Sovereigns as shareholders*, November 2008, p. 11-12

here and our own capitalists can't buy anything in their countries. I demand reciprocity before we open Europe's barriers." It is politician´s reaction that suggests a *fear of hidden political agendas* because some of funds hinder competition, it means the industries in which they invest are not open to foreign investment in their own countries.[57] For example some of SWF´s are opaque in their objectives and strategies, exception like the Norway Government Pension Fund.

Domestic development

Balin B.J. (2008, p. 5) describes that some SWFs seek to promote investment from multinational corporations and *technological transfer to domestic industries*, invest in local economy. To accomplish this goal, a fund would have to *acquire a majority stake* in a company or form a coalition with other shareholders, on the other hand SWFs may influence firm strategy (company´s investment) in a way that is not consistent with shareholder value. So with its voting power, the SWF can appoint corporate board members that could direct a company to invest in the SWF's home country. For example establish research on the tech transfer which could *produce new technologies and support to domestic firms*. Countries such as "allies" of the United States, like Taiwan, South Korea, and Singapore have invested in foreign companies to promote technological innovation in domestic industries. Furthermore, only Singapore's fund has actually acquired corporations for this aim.

Clearly example provides Rose P. (2008, p. 12) that SWFs might to invest in a company in order to encourage the company, to *build a manufacturing facility* in the country in order to *provide jobs, diversify the economy*, and strengthen the country's tax base.

So SWF´s may be used to create greater opportunities for human development by financing public goods such as education. For example, the Texas Permanent School Fund and the New Mexico land grant fund channel royalties from fossil fuels and minerals on public lands to *public education*. Alberta's Heritage Fund and the Shetland Islands oil funds have been used for *economic development* in Canada and the United Kingdom, respectively.[58]

[57] Fernandes, N. - Bris, A. *Sovereign wealth revalued***,** February 12, 2009, The Financial Times, available at: <http://www.ft.com/cms/s/0/2c8e3874-f7d0-11dd-a284-000077b07658.html>, last updated May 10, 2011

[58] SALEEM, H. A., FLOMENHOFT, G. *Innovating Sovereign Wealth Funds*, February 17, 2011

Even recently, in the United States, a subsidiary of the ADIA invested in Chicago Parking Meters. Investment in public infrastructure by foreign investors, according to the Center on Budget and Policy Priorities, a US policy organization, New Jersey will have a $10,5 billion, California – $25,4 billion, Illinois – $15,0 billion, New York – $9,0 billion, Florida – $3,6 billion projected FY 2012 shortfall. Nevertheless The Securities and Exchange Commission is investigating if certain financial firms violated bribery laws in dealings with SWF´s under the Foreign Corrupt Practices Act. Firms like *Citigroup* and the *Blackstone Group* have received letters of inquiry from the SEC.[59]

As a result, what is mentioned above, we may say that companies can be choosen by SWF for locations, technologies that will help SWF region of origin. In other words, SWF´s use their portfolios to achieve social goal, at the expense of the value and performance of the firm.

Macroeconomic´s point of view according to IMF[60], SWF has impact to domestic economy. First, return from SWFs' assets are likely to have a significant impact on a country's *public finances, monetary conditions, the balance of payments, and balance-sheet linkages*. Second, they may also affect public sector wealth, and have implications for private sector behavior. More to the point, well-designed SWFs can support sound fiscal and monetary policies, and mitigate Dutch disease effects.

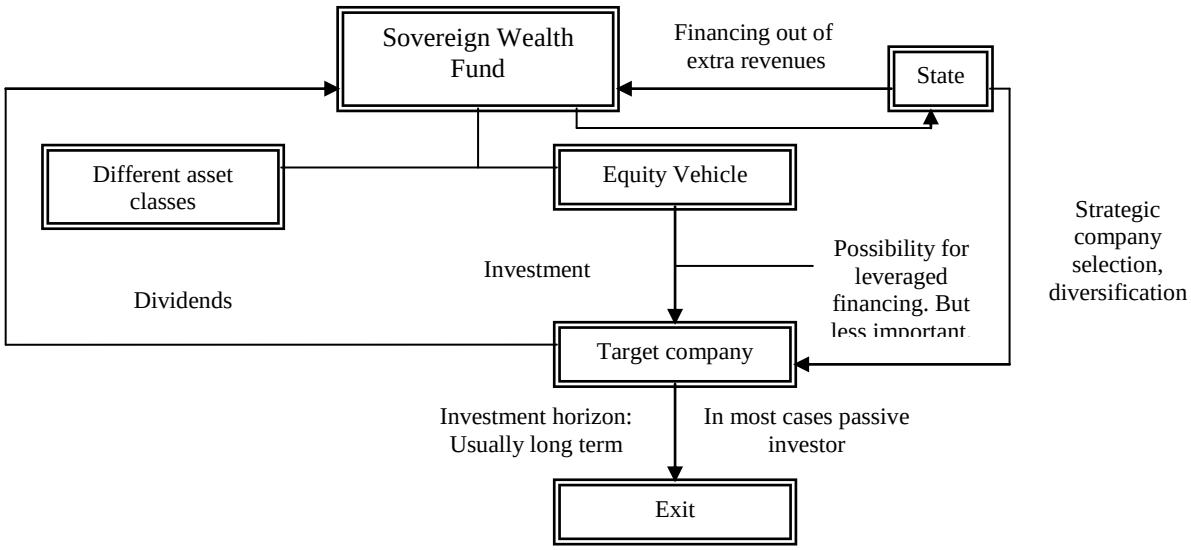
PWC (Selfin, Y.,October 2011, p.2) reported an analysis of historic performance of 51 countries over 30 years that have SWF and describe three main key issues. First, setting up a SWF may help to *reduce inflation*, include factors such as monetary policy stance, the state of the labour market and the current account balance. Second, *exchange rate appreciation* may be lessened by a SWF in countries with floating exchange rates. This may occur because monies can be held in foreign currencies (often in $), so not bidding up the value of the local currency. Third, SWFs may help *improve transparency* in an economy, include factors correlated with measures of economic development such as GDP per capita and the depth of financial markets.

Following Figure 13 clearly shows how SWF works. Figure 14 presented by Citi Capital Advisors describes main objective, funding, organization and investing process.

[59] Sovereign Wealth Fund Institute, Wealth Quarterly, *The Leading Source On Sovereign Wealth News*, April 2011, p. 9-11

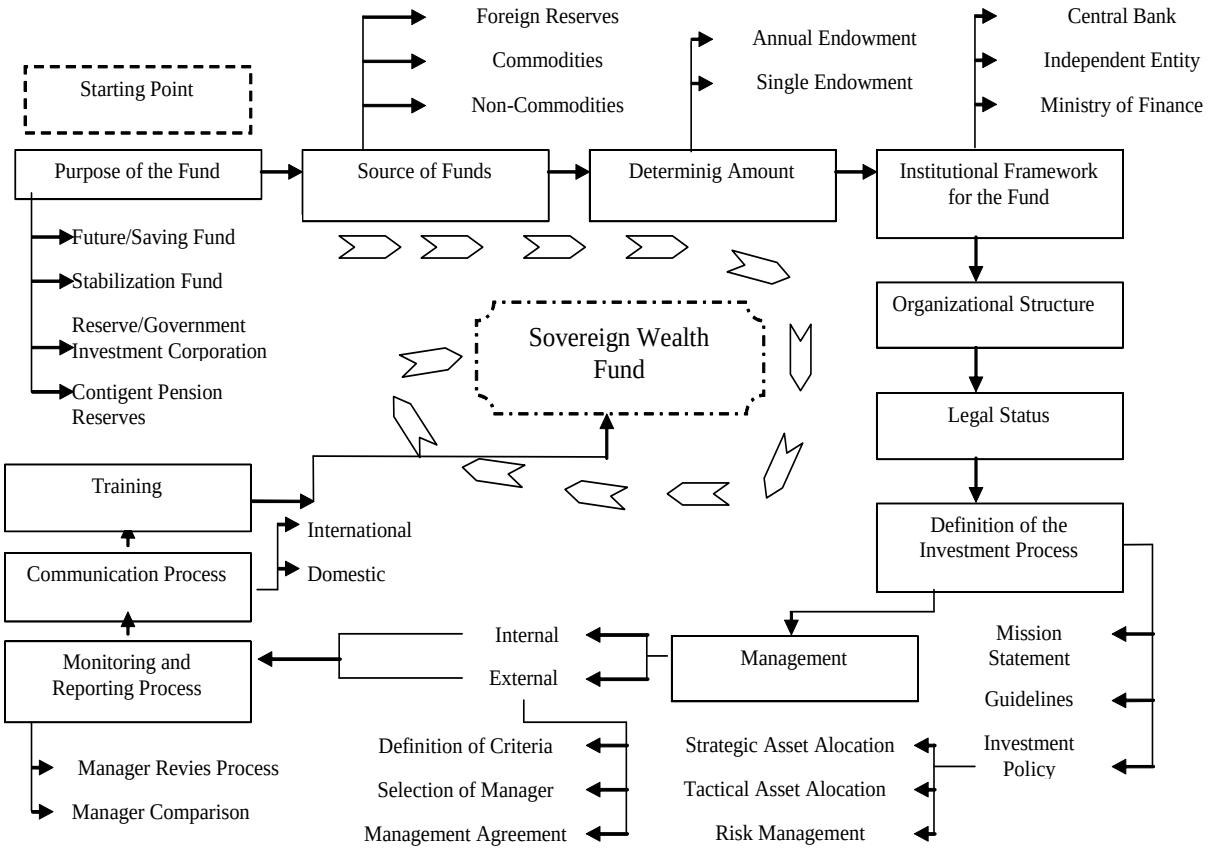
[60] Mark, A. - Jaime, C., *Sovereign Wealth Funds - A Work Agenda*, February 2008, p. 10-11

Figure 14: How SWF works



Source: Author´s, according to data from GOSPEL, H., and partners, *The impact of investment funds on restructing practises and employment levels*, 2010, p.13

Figure 15: SWF Objective, Funding, Organization and Investing Process



Source: Author´s, according to data from JAIN, S., *Integrating Hedge Fund Strategies in Sovereign Wealth Portfolios*, Citi Capital Advisors, November 2009, p.3

In other words, there are many types of SWFs depending on their primary mandates. They exhibit a wide range of continuously evolving investment objectives, investment time horizons and risk appetites. Some SWFs invest purely to *achieve financial returns and portfolio diversification while others have a broader economic or social agenda.*

2.3.2 Benefits of SWFs investments

SWFs try to protect their cash surpluses by investing in risk-free instruments, such as treasury bonds, bills, and notes. When a SWF invests in debt or equity instruments issued by private or public companies, there is not an obligation for them to *disclose such investments*.

One of benefits of fund´s ownership according to study by Fernandes and Bris (2011), is that SWFs make companies more valuable because they *reduce cost of capital of companies* as a result of their commanding lower risk premiums. So the *opportunity cost of funds is to invest in risk-free instruments* such as US bonds[61], as was their common practice in the 1980s. Nevertheless, relative to their size, a single SWF stake represents a small percentage of their total assets anyway (the typical fund in the sample invests in more than 100 stocks), and the marginal investor of the companies in which they invest becomes a more global, international, less risk-averse investor.

The *opportunity costs* as pointed out Curto (2010, p.4) *arise* from the fact that in countries with underdeveloped social and economic infrastructure, *social and economic return on investment at home may exceed the return on investing foreign reserves abroad*, regardless of the nature of that investment and intergenerational preference of the government. He has shown examples that since 2003, *China* has used foreign exchange reserves to support domestic policies with Central Huijin Investment Company to absorb Central Huijin Investment Company and to recapitalize the Agricultural Bank of China and the China Development Bank.

Russia has taken advantage of the recent run-up in oil prices to pay down its external debt, and some other governments (such as *Brazil*) have considered the possibility of using a share of their international reserves in a fund geared toward the promotion of industrial policy.[62]

[61] By the way 88 percent in 2012 of Timor-Leste's assets are invested in US Government debt according to Democratic republic of Timor-Lestef, IMF, February 2012, Country Report No. 12/24.

[62] CURTO, S., *Sovereign Wealth Funds in the Next Decade*, April 2010, p.4

If we focus on increasing of fund´s investments, two factors which provided Bean (2008, p. 14-16) can us briefly explain that. First, *low rates of return offered by U.S. Treasury*[63] and related instruments. Untill now were most secure investments U.S. Treasuries or other instruments, such as those issued by the Federal National Mortgage Asso-ciation (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac), and certain other government supported enterprises (GSEs). FED[64] manages certain short term interest rates applicable to commercial banks and discount rate, the benchmark for many other market-based interest rates in the United States.

Effective Federal Funds Rate (FEDFUNDS, see *Appendix E3*) illustrates that this discount rate has decreased from 5,98 percent in January 2001 to 1,82 percent in December 2001 due to combat the recession of 2001, and was then maintained by the Fed at unusually low levels until period December 2006, when rose to 5,24 percent. The discount rate was later set even lower as the Fed battled the economic crisis, in December 2008 was just 0,16 percent. Currently discount rate decreased from July 1981 to October 2011 by 99,63 percent to 0,07 percent, what may means increase inflation.

As can be seen in *Appendix E3* FED discount rates were low, so investment return on U.S. Treasury was low as well. It means when SWF bought US bonds, return was low so is logically that SWF were going to seek higher return of investment for example in equity in western companies. Second, the *rapid accumulation of AuM by the SWFs*, intended rise in the price of crude oil, which accounts for most of the commodity funded SWFs.

2.3.3 Investment activity

Significant SWF investment makes the investor nation a partner in the economic health of the host country. Investments of these funds by geographic region, proportions, target sector have been subject to several researches. A few examples that demonstrate the shift in investment behavior are listed below.

According to the Deutsch Bank Research SWFs play special role as supranational investors. In other words they often prepare the ground for a self -

[63] Yields on 10-year notes is 1,92%, thirty-year yields declined 6 basis points from Feb 2 to 3,04%. Yields on 5-year notes dropped 5 basis points to 0,85%, the lowest level in about two weeks according to data from Market Watch, last accessed Feb 29, 2012

[64] The U.S. Federal Reserve Board's Open Market Committee

supporting private equity[65] landscape. Roughly **80%** of all SWFs that currently **invest in private equity** (PE) are based in Asia or in Middle East.

Main aim is to construct an internationally diversified portfolio, nonetheless the considerable interest in PE funds with an investment focus on Asia or the Middle East is striking (*see Appendix E4*). More to the point, SWFs grant a certain preferential status to PE funds that invest at least some of their capital in their home region.

Table 4: SWF investments into EU countries

Target countries of SWF investment in the EU	United Kingdom	Germany	France	Netherlands	Italy	Other
Completed investment transactions by SWF (1995 - June 2009), total $187bn	49%	15%	12%	6%	4%	14%

Source: Author´s, according to the GOSPEL, H., and partners, *The impact of investment funds on restructing practises and employment levels,* 2010, p.12

Table 4 shows that SWF´s activity in the EU is highly concentrated in the UK, it means 49% of total investment. Germany and the Netherlands also have relatively high levels of activity, Italy is lower, and data on the other countries in the EuroFoundation´s studies are not readily available. Anyway the bulk of SWFs investments in Europe has been concentrated in large financial institutions.

Total proportion of SWFs investing in each asset class 2010 vs. 2011 is illustrated in Appendix E5 and shows in detailes that individual sections that showing preferences in ivestment areas according to Pregin, a London-based data provider. The proportion of SWFs investing *in infrastructure* increased by 14 percent to 61 percent at the beginning of 2011. There has also been an increase in *real estate* by 5 percent and *private equity* increased by 4 percent.

Focus on SWFs in Middle East

At this point we focus on funds in Middle East and their investments from several sources. *ADIA* reported in review (Prudent Global Growth, 2010, p. 27-29) that ADIA´s transaction *volumes* increased in 2010 over $550bn of assets, increase of almost 40 percent above the previous year, although this was still far below the $1,3 trillion of deals struck at the peak of the market in 2007. The increase in liquidity was driven

[65] In 2030 Goldman Sachs foresees the three main financial centres as China, the US and India, followed by Japan, Brazil and Russia. In other words, four out of the world's six biggest financial centres will be in emerging nations. In global equity markets, emerging countries will account for over 55% of total assets instead of the 31% in 2011.

primarily by improved macro-economic conditions and a global search for yield underpinned by historically *low official interest rates.*

According to the Pregin[66] in Q1 2010, ADIA purchased a 15% stake in London's Gatwick Airport from Global Infrastructure Partners for USD125 million. In Q3 2010, ADIA joined Morgan Stanley Infrastructure Partners and 3i in a bid for High Speed 1, the UK's high speed rail link between London and the Channel Tunnel. The consortium's bid valued the project at between GBP 1,5 billion and GBP 2 billion.

Reuters reported in February 2011 Abu Dhabi's International Petroleum Investment Company (IPIC) took control of Spanish *oil company Cepsa* (CEP.MC) for 3,7 billion euros. In March 2011 *Qatar* said it will invest 3bn euros in Spain's *telecommunications and energy sectors.* The country's ailing savings banks would also receive a 300 million euros capital boost, Qatar said. Spanish power utility Iberdrola (IBE.MC) said Qatar Holding will spend 2,2 billion euros to buy 6,16 percent of the *electricity company*. In April 2011 Dubai investor Royal Emirate Group signed a deal to acquire La Liga football club Getafe for 70 million-90 million euros, renaming the club Getafe Team Dubai.[67]

According to the SWF Institute (April, 2011) *China Investment Corporation* is planning to offer $4 billion in *infrastructure* project loans. Its aim is to increase foreign direct investment[68] in Indonesia.

According to the Pregin *Qatar Investment Authority* is an example of a MENA-based sovereign wealth fund with an extensive *direct real estate portfolio*. These fund made a number of direct real estate purchases during 2010, including the acquisition of the Londonbased Harrods store for £1,5 billion. More to the point fund has invested in a number of prominent properties, such as the London-based Chelsea Barracks and The Shard, which will become the tallest building in the European Union upon completion. It invests through Qatari Diar Real Estate Investment, its real estate investment and development company, more detailes for recently (from December 2011 till February 2012) investment activities of funds see *Appendix J.*

[66] Preqin Sovereign Wealth Fund Review, 2011, p. 5

[67] Macinnes, J., *Gulf sovereign fund investments in Spain*, Reuters, Apr 26, 2011, last updated April 27, 2011

[68] Note: FDI increased in 2011 in Latin America and the Caribbean by 35 percent, in transition economies by 31 percent, South, East and South-East Asia an increase of 11 per cent. More to the point FDI flows to developed countries due to cross-border merger and acquisitions (M&As) also rose by 18 percent according to UNCTAD, *Global flows of foreign direct investment exceeding pre-crisis levels in 2011*,Global investment trends monitor, No. 8, released 24 January 2012, p.1-2

Summary of investment activity

Now we can clearly summarise investment activity of SWFs. During 2010, 21 of the 30 funds in the Monitor-FEEM Transaction Database executed 172 publicly reported investments, valued at a total of **$52,7 billion**. It means 50 percent increase in deal volume compared with 2009. A few clearly points are listed below and can be seen in *Appendix E6*:[69]

- banking, insurance, and trading companies received a total of $20,4 billion in 50 investments, 39 percent of the total annual value,
- 26 investments in commodities, coal, petroleum natural gas, and metals representing $6,9 billion and 10 investments in ancillary industries, processing, renewable energy, energy transmission in value $11 billion,
- although *emerging markets* accounted for a similar portion 58 percent of SWFs' annual direct investment in value $30,4 billion, in *developing economies* accounted for 103 investments, it means 60 percent, see investment flows in *Appendix E7*,
- Singapore's Temasek Holdings *was 2010's most active fund*, making 38 investments, followed by the China Investment Corporation (23) and the Qatar Investment Authority (22). QIA and CIC were the largest *spenders*, accounting for $12,3 billion and $9,8 billion in investments respectively.

2.3.4 Comparing Private Equity, Hedge Funds and SWFs strategies

PE[70], HF, SWFs according to the study by EuroFoundation[71] have reveals a number of similarities and some important differences.

First, the *main similarities* are that they are large private funds which invest in equity and are relatively lightly regulated, with few obligations to disclose their activities publicly.

Second, the main *difference* between them lies in the size of the *ownership stake*. PE investments in companies are usually substantial and often comprise a majority of the ownership. HFs usually hold smaller stakes, though in some instances they are relatively large compared with the norm for institutional investors in companies with

[69] Bortolotti, B., Barbary, V., *Braving the New World: Sovereign wealth fund investment in the uncertain times of 2010*, p. 10

[70] Largest growth funds according to the Pregin 2012: Citigroup International Growth Partnership II, 4.3 USD, UK, Technology Crossover Ventures VII, 2007, 3.0 USD, US, Baring Asia Private Equity Fund V, 2011, 2.5 USD, Hong Kong

[71] Gospel, H., and partners, *The impact of investment funds on restructing practises and employment levels*, 2010, p.13

dispersed ownership. SWFs traditionally held small investments to keep below legal disclosure limits, but there is evidence of a tendency towards taking larger, strategic ownership stakes. HFs and SWFs tend to invest in publicly listed companies whereas PE invests in privately owned firms or takes publicly listed firms into private ownership.

Third, important dimensions are the extent of fund activism in *governance and management*. PE and HFs typically adopt activist approaches to monitoring their investments whilst SWFs for the most part are passive. However, whilst PE has a strong influence on the strategic direction of portfolio companies via majority ownership, activist HFs rely more on a range of tactics associated with the use of various instruments of shareholder rights such as proxy contests. Of the three, PE typically has the strongest influence on target company strategies.

Fourth, the time *horizons for returns* tend to differ between the three types of fund. PE typically aims to hold its portfolio companies for around five years. Most of the return to investors comes from the resale of portfolio companies. HFs typically have a shorter time horizon, aiming to secure returns from activism within a year. SWF have traditionally had the longest time horizons, in line with their passive approach to their investments.

2.3.5 Current situation of equity investments on listed companies

Strong growth in *outward foreign direct investment* (OFDI) from developing countries has become important key of the twenty-first century. This OFDI flows come from state-owned enterprises, SWFs as well as *private enterprises operating as multinational companies from a home base or as free-standing companies*. The focus in this section is on equity holdings, specially Government Pension Fund Global in Europe, Abu Dhabi Investment Authority, Abu Dhabi Investment Council, Qatar Investment Authority in Middle East and finally Alaska Permanent Fund Corporation in United States.

Interesting is that Government Pension Fund Global according to NBIM bought a 50 percent stake in seven properties in and around Paris from AXA Group in July 2011. It was the fund's first real estate investment in France and its second overall. According to Policy Innovations the most salient political usage of a SWF is Norway's sale of its Wal-Mart holdings. The fund invests in more than 7,000 companies but

excludes *arms manufacturers* and *corporations guilty of egregious environmental activities and human rights violations.* Poor labor rights enforcement was cited in relation to Wal-Mart[72], see Table 5.

Table 5:

Fund´s largest equity holdings as of 30 Sep 2011 Fund´s largest bond holings as of 30 Sept 2011

Company	Country	Holdings in millions of kroner	Issuer	Country	Holdings in millions of kroner
Royal Dutch Shell Plc	UK	23,585	United States of America	US	217,096
Nestlé SA	Switzerland	23,066	UK government	UK	106,553
HSBC Holdings Plc	UK	18,207	French Republic	France	77,457
Novartis AG	Switzerland	16,976	Japanese government	Japan	71,656
Vodafone Group Plc	UK	16,168	Federal Republic of Germany	Germany	60,988
Apple Inc	US	14,713	Italian Republic	Italy	43,763
Exxon Mobil Corp	US	14,327	Government of the Netherlands	The Netherlands	2,862
Roche Holding AG	Switzerland	14,031	Kreditanstalt für Wiederaufbau	Germany	22,9
BP PLC	UK	13,149	European Investment Bank	Supranational	20,255
GlaxoSmithKline Plc	UK	12,948	Kingdom of Spain	Spain	19,476
	Total	**167,17**		**Total**	**643,006**

Source: Author´s, according to the data from NBIM.

Abu Dhabi has multiple SWFs with different focuses, see Table 6 that illustrate ADIA´stakes in listed holdings abroad and Table 7 ADIC´ stakes in regional economy. Following Table 8 shows holdings of Alaska´s fund.

Table 6: Notable Holdings ADIA

Firm Name	Firm Location	Stake
Apollo Management	US	9.0%
Ares Management	US	20.0%
Citigroup	US	4.9%
Gatwick Airport	UK	15.0%

Source: Author´s, according to the data from Pregin, 2011

Table 7: Notable Holdings ADIC

Firm Name	Location	Stake
Abu Dhabi Aviation Company	UAE	30%
Abu Fhabi National Insurance Company	UAE	24%
Al Hillal Bank	UAE	100%
Chrysler Building	US	75%
National Bank of Abu Dhabi	UAE	71%
Union National Bank	UAE	50%

Source: Author´s, according to the data from Pregin 2011

Table 8: Top 5 stock holdings by market value as of 12/31/2011

Name	Shares	Cost	Market
APPLE INC	619,38	$91,006,109	$250,848,900
EXXON MOBIL CORP	2,132,337	$125,510,452	$180,736,884
GOOGLE INC	202,367	$95,574,194	$130,708,845
JOHNSON & JOHNSON	1,789,610	$102,354,564	$117,362,624

Source: Author´s, according to the data from APFC

[72] Madden, CH., *Sovereign Wealth Funds under Scrutiny*, May 21, 2008

In January 2010 according to the Pregin, Qatar Investment Authority was in the final stages of negotiations to purchase a 10% stake in Hinduja National PowerCorp (Hin-duja Power). These fund purchased a stake in the company that is building a 1,040 MW coalbased ener-gy plant at Visakha-patnam in Andhra Pradesh. The plant is set to be completed in 2013. In May Qatar Holding set up a USD 1 billion fund that will focus on investment in *infrastructure and mineral natural resources in Indonesia*, which will be implemented by a newly created local investment vehicle – PT Qatar Holding Indonesia. Similarly, in October 2010 QIA announced that it would be investing USD 500 million in the Russian infrastructure in the Urals, with a focus on precious metals and minerals. In December 2010, through its investment subsidiary Qatar Holding, QIA purchased a 9,1% stake in German construction service company Hotchief for EUR 400 million. At this time QIA also agreed to invest up to EUR 5 billion in transport, tourism and renewable energy infrastructure in Greece, as can be seen in *Appendix H1*. Ten Largest direct SWF Investments of 2010 ranked by size of the deal, final target, percentage of stake are shown in *Appendix H2*.

SWFs have appeared in public since 2007 due to their *heavy investments in Western corporations*, what have been mentioned above. Viewed in this light SWFs show absolutely a remarkable size mainly through these investments have become systemically relevant.

2.4 The Management

Funds have to have institutional design that ensures their mandate is carried out. Arreaza, Castilla, Fernandez (2009, p.35) presented three key, first of all, it is necessary to define *a clear mandate* for these funds. A stabilization fund may demand short-term investments, whereas a saving fund's investments may be more long-term oriented. Second, based *on the purpose of the fund*, clear rules of accumulation and spending over time should be established.

Third, the *institutional design* of the fund should take into account the incentives of all parties involved, particularly those that manage the fund, the fiscal authority and the monetary authority. If players' incentives are ignored in the institutional framework, the fund's performance may be threatened by undue political pressures and thus deviate from its objectives. For example, the fiscal authority may have incentives to use the fund's resources for fiscal purposes (*deficit financing*). In the *absence* of an adequate

regulatory framework and *management* the fund will undoubtedly give in to *political pressures.*

As a result from all of these factors, SWF´s must provide frequent reports for ministry of finance, the central bank and the fund's independent management checks and balances by the legislative branch. Nevertheless these should be conceived keeping in mind the activities of existing institutions in the originating country. In any case, the establishment of a SWF should be *not regarded as substitute to fiscal and monetary policies*, but complementary for them.

2.4.1 Transparency & Protectionism

What is transparency of SWF´s? The issues accountability and transparency are closely related, because transparency is a prerequisite to accountability. However, if the fund operates transparently, it becomes more difficult for a SWF manager to explain questions about whether to invest in companies that has negative impact on environment, produce dangerous products or services, nevertheless the oposit is Norwegian Pension Fund.

The several factors such as depend the size of the funds' assets, their portfolio composition (percentage of equity, fixed income, leveraged acquisitions), degree of liquidity and investment maturity have impact on transparency. As we know the funds become major shareholders in foreign companies, so the corporate governance of such companies would disclose any publicly annual reports.

Rose, P. pointed out that exist one "scoreboard" for SWF transparency (2008, p. 160-1), which presenting a U.S.-type disclosure model and SWFs should provide the following: a quarterly reports on its activities, the size of the fund, information on the returns it earns, information on the types of investments, for example, in what sectors and in what instruments, information on the geographic location of investments, information on the specific investments in which instruments, countries, and companies, information on the currency composition of investments, identity of holders of investment mandates, e.g., investment advisers, whether the SWF is subjected to a regular audit, whether the audit is published, whether the audit is independent.

By European Commission

As reported by the European Commission (Gugler, Chaise, 2009, p. 36-7) that since SWFs are managed independently from a country's foreign exchange reserves,

they are *excluded from transparency mechanisms*, such as the IMF maintains for foreign exchange reserves (IMF Special Data Dissemination Standard, SDDS). If we focus on the facts, the SWFs lack of transparency has some correlation with whether the government controlling these funds is democratic or autocratic. Mainly *democratic governments* typically have to meet, in their governance and in their institutions, transparency standards that dictatorships and sheikhdoms do not have to. It is because a fair number of countries with SWFs are *non-democratic*, it means that the non-transparency makes recipients of these funds afraid that non-commercial "strategic", political and social factors would prevail in the making of their investments.[73]

Institutional factors are examined in *Appendix I1 and I2*. Truman (2007) proposed a corporate governance index for SWFs, it is used as a measure of transparency, which is then compared to two indicators of institutional development including: an index of the quality of the legal system and an index of the democratic accountability of the government. As can be seen a large degree of heterogeneity in transparency exists. Particularly SWFs with *low transparency* (Brunei, Qatar, UAE) are associated with economies with *low scores in quality of the legal system* and/or democratic accountability.

Zoellick, CEO of The World Bank Group, already said in early 2008 in Washington that SWFs offered opportunity, "*not something to fear*", adding that "*the sovereign funds need transparency and should be guided by best practice to avoid politicization. But I believe we should celebrate a possibility that government-sponsored funds will invest equity in development*."[74]

Carl Linaburg and Mich Maduell (Sovereign Wealth Fund Institute) developed *The Linaburg-Maduell Transparency Index*, include ten essential principles. That is a method of rating transparency in respect to SWFs through principles[75]. Mainly

[73] Gugler, P., Chaisse, J. *Sovereign Wealth Funds in the European Union*, p.36-7

[74] Chopra, G.S., *Sovereign Wealth Funds Should Invest in Africa*, 2008

[75] Principles of the Linaburg-Maduell Transparency Index include: **1**. Fund provides history including reason for creation, origins of wealth, and government ownership structure, **2**. Fund provides up-to-date independently audited annual reports, **3**. Fund provides ownership percentage of company holdings, and geographic locations of holdings, **4**. Fund provides total portfolio market value, returns, and management compensation, **5**. Fund provides guidelines in reference to ethical standards, investment policies, and enforcer of guidelines, **6**. Fund provides clear strategies and objectives, **7**. If applicable, the fund clearly identifies subsidiaries and contact information, **8**. If applicable, the fund identifies external managers, **9**. Fund manages its own web site, **10**. Fund provides main office location address and contact information such as telephone and fax.

intended for government - owned investment vehicles, where were fears from unethical agendas. This index was developed around Norway fund, because he is pinnacle of clear investment intentions. According to the SWF Institute 3Q 2011 LMTI, by using thise method highest score gained Chile, UAE-Mubadala, Singapore-Temasek, Ireland NPRF, Azerbaijan, Australian Future Fund, Alaska, Norway GPFG Fund, New Zealand. Conversely lower score gained funds like Algeria, Brunei, Iran, Kiribati, Mauritania, Nigeria. Each fund could receive minimum one and maximum ten points. These transparency ratings may change, depend from additional information funds.

2.5 The Regulation

Committee on Foreign Investment in the United States (CFIUS), is called a regulatory agency in USA. These agency has the right to review all foreign investments, include those of SWFs, impose fines if a foreign entity is in violation of such stipulations and, if necessary, *block or shut down* a foreign investment into the U.S.

If we look at power of regulatory in Europe and Japan, similar to CFIUS exist, are much less well-defined. Countries, such as Germany, Italy, the United Kingdom, and France protect their vital industries and corporations through *blacklists*, where foreign investors *are prohibited* from making acquisitions in a specific list of companies. Nevertheless, only the governments of France and Japan have active oversight agencies like CFIUS to analyze existing foreign investments in vital areas of the economy or in companies that are not on their blacklists.

However, France, Germany and the United Kingdom have never interfered in a direct investment by foreign entities. On the other hand, Chancellor Merkel, in response to growing awareness of the power of swf´s, has championed a CFIUS-like entity to oversee and regulate foreign investments in the German economy.[76]

By practise, critics of SWFs have pointed instead to *Russia's Gazprom*, which has been accused of exerting strategic influence through its investments in Western Europe. So Gazprom's behavior has as much to do with its control over Europe's gas

[76] Truman, E. M. *Sovereign Wealth Funds: The Need for Greater Transparency and Accountability*, August 2007. p.11

pipelines as the Kremlin's control over it.[77] Unlike many SWFs, however, the Russian firm was more likely pursuing political goals as well as financial goals.

Other example, Thailand is also determined to implement investment restrictions. New regulations require that some foreign investors sell holdings or voting rights *exceeding fifty percent* of the outstanding stock of Thai companies.[78]

Academics like Epstein, Rose (2009, p.119-120) and many vocal politicians and experts have warned of the *dangers SWFs pose to our capitalist system* and, somewhat paradoxically, have advocated for *increased regulation*. They described that SWFs be permitted to invest only through financial intermediaries, whereas others have suggested SWFs be limited to investing in global index funds. On the other hand, alternative proposals include that SWFs be stripped of their voting rights, that they be for-bidden from taking controlling positions in domestic companies, and that they be subjected to mandatory disclosure and governance rules.

EU Commission in February 2008 released a report *A common European approach to Sovereign Wealth Funds*. The main aim of the Commission was to set out new policies. These common approach recommended by the Commission included five principles: 1. commitment to an open investment environment, 2. support of multilateral work, 3. use of existing instruments, 4. respect of EC Treaty obligations and international commitments, 5. proportionality and transparency.[79]

Generally Accepted Principles and Practices (GAPP) called *Santiago Principles* have been presented in October 2008. GAPP adoption is intended to support SWFs sponsor countries to better structure. It means manage their SWFs and *promote market confidence*. Mezzacapo noticed that although the financial crisis has given SWFs a boost in popularity, during period of crisis nations were happy to get capital from any source. So the implementation of GAPP practices should help prevent a return to the hostile investment environment of the recent past. Santiago Principles, means that each subject to home country laws, regulations, requirements and obligations. Framework providing guidance to improve SWFs *governance structure, investment policies and decisions, risk management, disclosure and accountability*.[80]

[77] Epstein, R. A. – Rose, A. M., *The Regulation of Sovereign Wealth Funds: The Virtues of Going Slow*, April, 2009, p.116

[78] Ibidem, Rose, P. 2008, p. 147

[79] Ibidem Gugler, P. - Chaisse, J., 2009, p.17

[80] Ibidem Mezzacapo, S., 2009, p.70

Viewed in this light, we may say that managing SWF investments requires a few steps. Host nations should create clear regulations that will protect national security, it means providing framework for SWFs undertaking investment in a given country. On the one hand, many countries have different standards for investment, on the other hand some countries may not have political power to prohibit SWF behavior. Common rules should provide by international agreements, any codes. These rules would provide *certainty for SWFs' transactions to the benefit of both the sovereign and the host nation.*

2.6 Sovereign investing in times of crisis

SWFs provide valuable political connections by Fernandez and Bris (2011). For example, Brazil has recently established its own SWF, with the stated *objective of buffering the country from the global financial crisis* and helping Brazilian companies to *boost trade and expand overseas*. It is likely that such international expansion is spurred by the Brazilian government's appeal with multinationals and other regulators.[81] SWF´s and the subprime crisis, their potential impact on global financial markets are disccussed in this section.

Jen of Morgan Stanley estimated that all SWFs **lost** between $500 billion and $700 billion in 2008, between 18-25% of their value.[82] According Monitor[83] during the crisis, investment value of SWF deals **declined** later in the year, dropping from $67,8 billion in Q1 of 2008 to $35,1 billion in Q4 of 2008.

However, SWFs have been *criticized* for their losses. First, because of for entering the equity market at the wrong time. Second, some blamed for a lack of insight for investing in financial institutions at the early stage of the crisis then suffering heavy losses. Third, others reproached for investing *abroad when their support for domestic markets was highly needed* according to IMF[84].

Mezzacapo (2009, p. 23) noted that since the spread of the sub-prime crisis in 2007 SWFs have invested between *60 billion USD and 92 billion USD* in return of large

[81] Fernandes, N. - Bris, A. *Sovereign wealth revalued***,** February 12, 2009, The Financial Times, available at: http://www.ft.com/cms/s/0/2c8e3874-f7d0-11dd-a284-000077b07658.html, last updated May 10, 2011

[82] *In* Stanley, R., *Sovereign Wealth Funds Taste Bitter Losses*, Business Week , Dec. 11, 2008

[83] Miracky, W.F., Bortolotti, B., *Sovereign Wealth Funds in the global economic crisis of 2008*, 2009, p. 4

[84] Kunzel, P., et. al., *Investment Objectives of Sovereign Wealth Funds - A Shifting Paradigm*, Janurary 2011, p. 8

minority stakes in financial institutions[85] (generally lower that 10%), over two-thirds of the capital invested in foreign financial institutions in 2007 and early 2008 came from Asian SWFs (13% from China), with Middle Eastern SWFs generating the remainder. So SWFs consequently acquired a significantly influential position in such companies, but they typically avoided taking controlling stakes and mainly behaved as passive institutional shareholder. As a result of that we can say that SWFs played interesting and *stabilizing role as significant source of liquidity* in global financial markets during period of financial crisis, what is listed in detailes in *Appendix J* and Table 11 below. Ten largest SWF´s transactions during crisis 2007-2008 by sector distribution - deal volume and deal value are illustrated in detailes in *Appendix K1 and K2*. By deal valume 37 percent has been invested in financial institututions, and by deal valume 63 percent also in financial institututions.

More to the point, common features of these transactions are that they were, first *significant in size*, while remaining minority stakes in companies, second privately *negotiated rather than executed in public markets*, and third often in *convertible bonds*, high-yielding bonds that are to be converted to equity stakes in the future.

Table 11: SWF´s Shareholders in major financial institutions (end-October 2008)

Portfolio commpany	**$ bn**	**% stake**
Citigroup	22,0	12,7
Merrill Lynch	12,2	23,0
UBS	11,5	12,0
Morgan Stanley	5,0	9,9
Barclays	5,0	5,2
Canadian Imperial Bank	2,7	11,1
Bear Stearns	1,0	6,0
∑ **Total**	**59,4**	

Source:Author´s, according to data from MEZZACAPO, S. (2009), *The so-called "Sovereign Wealth Funds": regulatory issues, financial stability and prudential supervision*,p. 99

Survey presented by Monk, describes views to SWF through 146 asset managers, that had professional contact with SWFs. Fifty six percent from asset managers have been from USA and 48 percent from UK. By gender, 82 percent from all

[85] SWFs recapitalised a number of the World's largest banks including Morgan Stanley and Merrill Lynch, Citi.

managers were males. Financial crisis had impact to global trade imbalances, commodity prices[86], pension and budget surpluses, AUM of funds.

[86] Effects of the recession on the Gulf economies was the 60 percent decline in oil prices.

Seventy eight percent of managers see the *rise of SWFs as a long-term* boon. So the recent financial crisis have not done decline of this view, in other words SWFs are and next decade suppose to be the power players.

Otherwise, 49 percent of managers from his survey agreed that is *necessary to increase AUM*, as a result from financial crisis, the same way like central banks increased foreign exchange reserves coming out of the 1997 Asian financial crisis. Other interesting point, SWFs will likely *increase allocations* in next asset classes within the next five years. 56 percent managers have been voting for *equity,* 53 percent for *real estate* and 42 percent for *private equity*. On the other hand, they will likely *reduce allocations* in *hedge funds. Transparency,* 49 percent, is seen to be the biggest governance problem, second by 27 percent is investment capability.[87]

2.6.1 SWF´s and the Subprime crisis

During period November 2007 and February 2008 SWFs have been through major market financial institutions[88] required to put additional capital, more to the point funds absorbed the impacts of the crisis.

Bean (2008, p.23) presents that through the first months of 2008, the financial community dealt with the instability in the global banking system, because of problems in real estate[89]. The trigger for bank losses during financial crisis was subprime mortgages, which had been packaged and repackaged as **securitized investments** (Collateralized debt obligation), and which the banks had purchased in the search for higher yields and larger personal paydays.

Since stakes in global banks were purchased, on the one hand when their credit default swap (CDS) spreads were negatively affected and on the other hands their stock prices have been at their lowest levels. *Appendix L3* shows the CDS spreads of selected financial institutions between during period 2007 and 2008. As you see the vertical lines represent *capital injections* at a point in time, and it is evident that stakes were purchased when CDS spreads were at a record high. Some examples of prominent investments made by SWFs during the subprime crisis include stakes purchased in UBS, Citigroup, Merrill Lynch, Credit Suisse and Morgan Stanley.

[87] CLARK, G.L., MONK, A.H.B, *The Oxford Survey of Sovereign Wealth Funds' Asset Managers*, 2009, p. 3-23

[88] Note: Because of weaknesses in the US financial and regulatory system, cancelled Glass-Steagall Act 1933-1999.

[89] Note: Housing demand collapsed and property prices started to decline.

More to the point, SWFs mainly have assisted in *stabilizing share prices* and the elevated CDS spreads, at least over the short run. In most cases, after the announcement of new capital injections, the initial share price reactions to the SWF investments were *positive*. Also, share price volatility declined somewhat following the capital injections, which supports the view that SWFs could have a *volatility-reducing impact on markets*.

Potential credit losses (on banks, markets[90]) were lower aggregate capital adequacy ratios at *U.S. banks by about 250 basis points*, and at *European banks by about 150 basis points.* Although aggregate ratios remained above regulatory norms, in view in historical perspective, the subprime crisis (losses 20percent of GDP) was of similar dollar magnitude to the Japanese banking crisis of the 1990s illustrated in *Appendix L4*.

According to Global Financial Stability Report from IMF (2008, p.20) their typically long time horizon and limited liquidity needs, SWFs can have a *shock-absorbing role*, at least in terms of abating short-term market volatility. Next a few several factors that facilitate the ability of the SWFs to act as a countervailing force in times of market stress. First, most SWFs have a *long-term investment horizon* and limited liquidity needs, second many SWFs aim to meet *long-term real return* objectives, and accept *short-term volatility* in return for expected higher long-term returns, third compared with other institutional investors, SWFs also have a *stable funding base* and no prudential regulatory requirements, fourth SWFs to accumulate significant *exposure in the global financial sector*.

It is interesting to review how the SWFs reacted to the worst decline in the equity markets since the Great Depression. SWFs have not panicked and *sold their worst performing holdings*, they have behaved as long-term, wealth-maximizing private investors.[91]

One impact of the crisis has been increased *focus at home on the foreign investment* activities of various SWFs. For example, the transparent, super-large Norwegian Government Pension Fund Global, has encountered domestic political

[90] From October 2007 to March 2009 the S&P 500 Index lost 57 percent and the FTSE 100 lost 48 percent of their value and the MSCI Emerging Markets Index dropped 67 percent according to Yahoo Finance.

[91] Bean, W.B., Attack of the Sovereign Wealth Funds: Defending the Republic from the Threat of Sovereign Wealth Funds?, 2008, p. 35

pressures. In the September 2009 Norwegian election, each political party campaigned in part on the proper allocation of resources in the national SWF.[92]

SWFs potential impact on global financial markets and international imbalances

Monk and Clark (2010, p.12-14) describe that after of the global financial crisis, SWFs may benefit first from exploiting gaps in and between markets, second the risk-aversion of established market players, third the obvious reliance of nation states on SWFs as market-makers for government bonds and fourth the increasing *reliance of certain companies on SWFs to act as investors of last resort.*

They argued that in the depth of the global financial crisis, largest SWFs effectively *underwrote the liquidity of global equity and bond markets.* In other words SWFs remained a element in the markets of advanced economies, mainly the US dollar and the Euro. SWFs depend to major market returns on assets invested, so they become universal owners. Their long - term investment programmes are a form of *insurance for the short-term prospects* of whole nations. Like Chinese government has been resistant to calls to discount the value of the Renminbi. The government through the CIC and SAFE have underwritten the assumption of debt by the US government. By the way China´s CIC has about 60% of assets invested in U.S.[93]

Recovery from the crisis is a structural problem not simply a short-term macroeconomic fix. First, the *reliance of governments on export earnings*, second the *reliance of the emerging middle classes of east Asian countries on economic growth*, and third *the reliance of surplus*, let say, *saving countries on the developed financial markets of the west for superior rates of return*. As a result from all of factors SWFs are more than storehouses of financial assets, they represent unsustainable trade imbalances and expectations as regards the risk, adjusted rate of return to be found in the highly leveraged markets of the west.[94]

[92] Ibidem, Bean, 2008, p.39

[93] Joshua, F. and Wier, S., *China Sovereign Fund Has About 60% of Assets Invested in U.S., Jin Says*, Dec 10, 2011, Bloomberg, available at:http://www.bloomberg.com/news/2011-12-09/china-sovereign-fund-has-about-60-of-assets-invested-in-u-s-jin-says.html, last accessed Feb 29, 2012

[94] Clark, G.L., Monk, A.H.B., *Sovereign Wealth Funds: Form and Function in the 21st Century*, September 2010, Oxford University, p. 12-14

In other point of view, the fact is that in the 1960's and 1970's, it *would have been unimaginable* for SWF from China, the Middle East or Russia to invest in the US financial sector or other sector that has been considered critical to national *strategic interests*. In sum, funds are now not only seating on the boards of heavyweight Wall Street companies, but also regarded as "*saviors"* of the recent subprime crisis. So with globalization, SWFs can invest in economies with long-term growth potential and truly capitalize on global economic growth (Chen, 2009, p.16-7).

Summary from this section is that SWFs can play a *stabilizing role* in global financial markets, because they are long-term investors and with mainly unleveraged positions. Second, SWFs' investments may enhance the depth and breadth of markets. Third, SWFs could, as long-term investors and by diversifying the global investor base, contribute to greater market efficiency and lower volatility.

If we look at the shift from reserve assets to SWFs, first could have implications for the *absolute and relative price of assets*, second the flow of funds between countries, and third the evolution of global imbalances.

The next effects may be felt on mature *sovereign debt markets*. First, SWFs may increasingly diversify their existing portfolio away from low-risk, short-term instruments, such as U.S. Treasury bills, and into longer-term equity stakes. So this may affect *interest rates* and equity prices. Second, if SWFs diversify away from dollar holdings, and invest more in line with global equity indices, a decline in capital inflows into the United States may cause an increase in real interest rate differentials and a dollar depreciation.

Future trends of FDI

We may see shift of investments around the world. If we look at on future trends in low-carbon FDI[95] according to the UNCTAD[96] we should focus on power, industry (including manufacturing as well as oil and gas), transport, buildings, waste management.

[95] Low-carbon foreign investment can be defined as the transfer of technologies, practices or products by TNCs to host countries, through equity (FDI) and non-equity TNC participation. Low-carbon foreign investment also includes FDI undertaken to acquire or access low-carbon technologies, processes and products.

[96] UNCTAD, World Investment Report 2010, *Investing in a low-carbon economy*, published in July 2010, p. 37-39

However, the power to reduce these emissions have TNCs. They have a strong presence and are in a prime position to diffuse cleaner technologies and processes. Industry also provides equipment and services to help reduce emissions in other sectors. The transport, building and waste management sectors will each emit less than power and industry in 2030.

So we may say that low-carbon FDI is significant and its potential is huge due to fact that have been estimated with flows of roughly $90 billion in 2009 in three key industries first, alternative/renewable electricity generation, second recycling and third manufacturing of environmental technology products[97] (such as wind turbines, solar panels and biofuels). These industries form the core of initial new low-carbon business opportunities.

[97] Global investments in renewable energy and related technologies have increased from a total of $33 billion in 2004 to $211 billion in 2010, and they have been growing at an average annual rate of 38 percent according to the UNCTAD in November published Technology and Innovation report 2011, p.20.

3 ANALYSIS OF PORTFOLIO

3.1 Asset allocation

Asset allocation design the long-term strategic neutral benchmark for the total portfolio, with goal of maximise expected returns subject to risk tolerances and liquidity constraints. The focus in this section is on analysis of observed asset allocations, affect global financial crisis on asset allocations and crisis implications for SAA.

A long investment horizon is traditionally associated with the ability to take more risk. However, risk is defined as the probability of a loss or underperformance relative to a reference asset, such as T-bill or a government bond, over a given horizon.

On longer horizons, *equities are less volatile* than short-term instruments because of the reinvestment risks associated with short-term investments.

Infrastructure, real estate, and private equity are *long investment horizons* because of ability to invest in illiquid assets to enjoy the illiquidity premium.

By the way, stabilization SWFs have sources from fiscal surplus and would be expected to have a larger share of their investment portfolios in cash and relatively liquid bonds to be able to meet potential unexpected outflows.

On the other hand, if a country's income is dependent on one or even a few real assets, it would be necessary to *diversify* this dependency by investing in financial assets that have a negative or low correlation with the real asset.

3.2 Analysis of observed asset allocations

At this section, due the fact that many SWF´s do not provide data of Strategic asset alocation[98], we focus on funds that are shown in following figures. We use available data from official websites of funds and many annualy, quarterly reports. For this purpose, we categorize assets into four classes: cash, fixed income, equities, and alternative assets. Alternative assets may include private equity, hedge funds, property, commodities, infrastructure, forests. Cash include current accounts and other cash-equivalent instruments. Equities comprise domestic and global

[98] Note: Determines optimize allocation proportions of each asset class (bonds, equities, alternative investment), important decision that control total investment risk and meet investment return objectives.

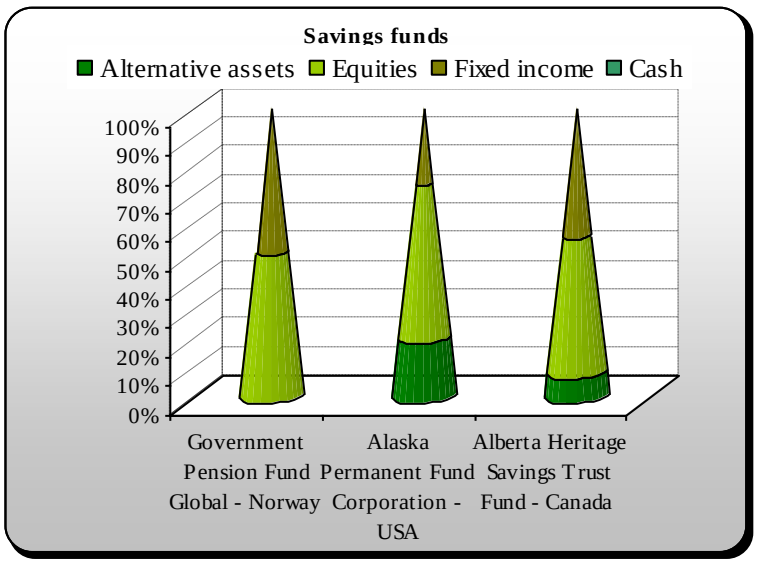
stocks, including those of both developed and emerging markets. Debt securities include bills, notes, and bonds of the treasury, and corporate bonds.

For instance, whereas savings funds have varying proportions of equities in their portfolios, debt (fixed income) and cash figure are typically for stabilization SWFs. Funds with stabilization objectives usually do not invest in alternative assets. Most pension reserve funds also have some equity exposure, as do reserve investment corporations.

Factor such as the maturity of the fund, it means how long it has been in operation. Potentially new SWFs like Australia's Future Fund, Chile's SWFs, and China's CIC due the undergoing legal and institutional changes may not have been able to implement their SAAs fully.

As a result, SWFs may appear to be similar with regard to their type and funding but different types of SWFs have *different asset allocations*. Differences what are mentioned below can be detected in observed asset allocations of SWFs may be due to reasons, including the investment objective, investment strategy (investment horizon), investment portfolio (strategic, tactic, target asset alocation), investment risk (portfolio, credit, liquidity, currency and interest rate[99], risk due to fact uncertainty in financial markets), investment return, opportunity cost, the funding source or sovereign balance sheet. Due to these issues, we have decided to observe year 2007, on the other hand that was time of beginnig crisis, what is illustrated in Figures 15-18 below.

Figures 15: Asset Allocation of Savings Funds, 2007

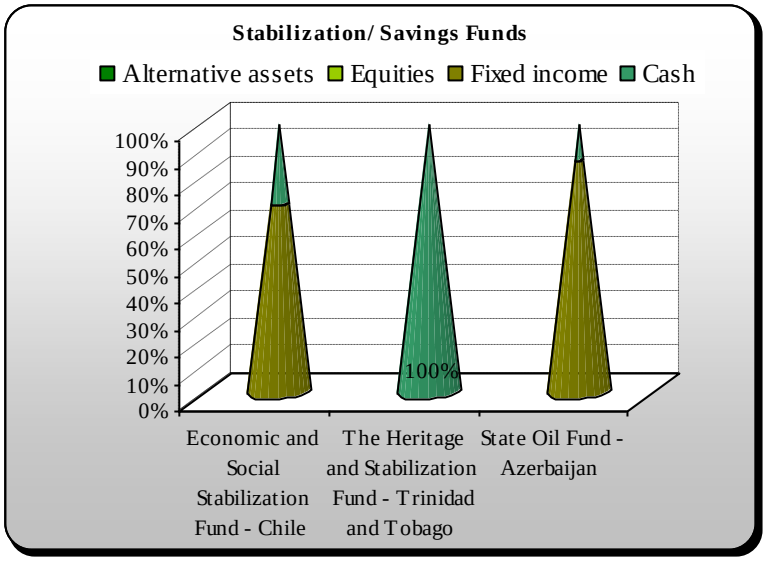


Source: Available data from SWFs websites, reports and authors' calculations
[a] Norway classified as savings fund.

[99] Note: Foreign currency risk is the risk of loss from adverse changes in foreign currency exchange rates. Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment.

Figure 15 on previous page shows that Government Pension Fund Global - Norway invested mainly 50 percent in equities and 50 in fixed income. On the other hand Alberta Heritage Savings Trust Fund - Canada had asset alocation composed from 47,40 percent in equities, 44,60 percent in fixed income and 8 percent in alternative assets in 2007. Alberta's revenue is from non-renewable resource[100], supports government programs like health care and education. Cash is excluded from portfolio of Savings funds. Alaska invested by 6,6 percent more in equities than Alberta.

Figures 16: Asset Allocation of Stabilization/Savings Funds, 2007

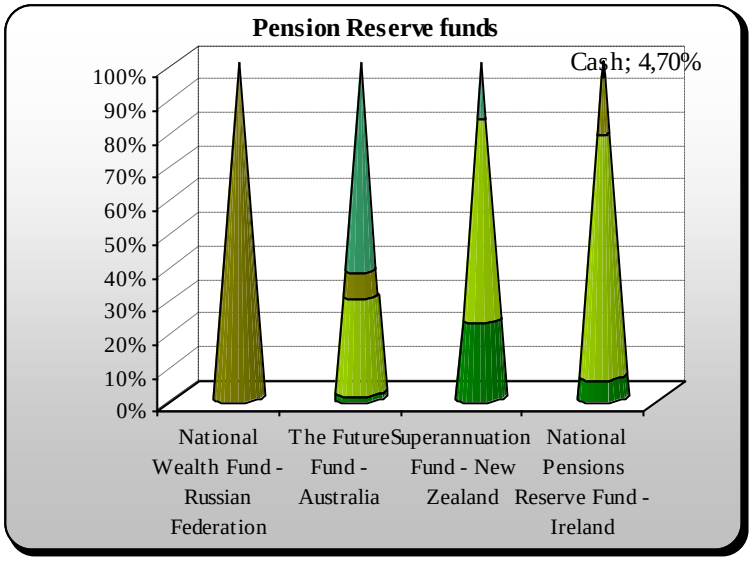


Source: Available data from SWFs websites, reports and authors' calculations

Figure 16 shows that Trinidad and Tobago provides a heritage for future generations, from savings derived from excess revenues (petroleum revenues). Total portfolio of HSF included just cash, due to fact that 95% of the portfolio was invested in short term deposits hold only in US dollars in 2007. As can be seen Economic and Social Stabilization Fund-Chile did not invest in equities or alternative assets, their portoflio included 70 percent fixed income and 30 percent holded in cah in 2007. On the other hand State Oil Fund-Azerbaijan diversified their portfolio, to 86,10 percent in fixed income, 13,80 percent holded in cash and 0,10 percent invested in equities in 2007. Their asset allocations depend on their investment style, includes risk and return of investments.

[100] Canada is biggest exporter of wood sawn (chipped lengthwise, sliced) 4,905,982$ in 2010, according to the International Trade Statistics.

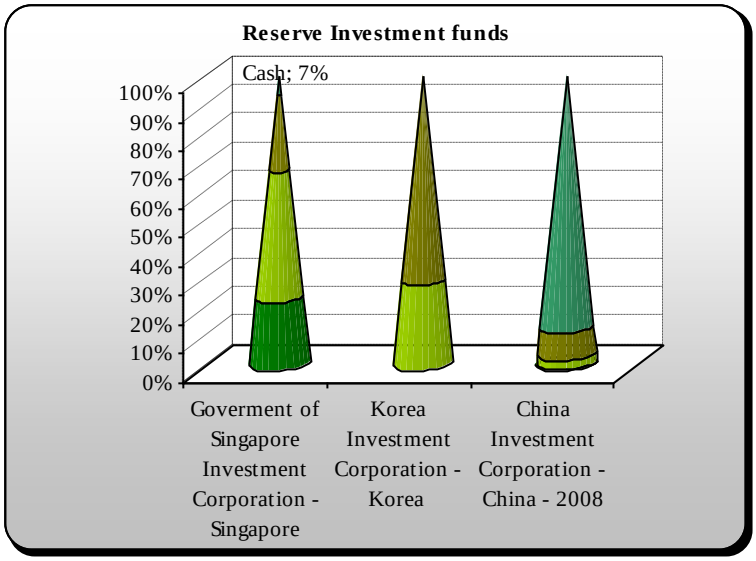
Figures 17: Asset Allocation of Pension Reserve Funds, 2007



Source: Available data from SWFs websites, reports and authors' calculations

National Wealth Fund as can be seen in Figure 17 is dedicated to support pension system of the Russia from oil and gas revenues. The NWF assets have been invested to the Federal Treasury's accounts with the Bank of Russia. The high cash of Future fund reflected $7 billion contributions in August 2007 and $3.9 billion received before the end of the FY, 96,7% hold in AUD. Superannuation Fund - New Zealand had invested also 17 percent in cash.

Figures 18: Asset Allocation of Reserve Investments Funds, 2007



Source: Available data from SWFs websites, reports and authors' calculations

As you see in Figure 18, CIC issued in Sep 2007 special bonds worth RMB 1,55 trillion by the Ministry of Finance, acquired USD 200 billion of China's foreign exchange reserves an formed the foundation of its registered capital, so she holded 87,40 percent of assets in cash. On the other hand Goverment of Singapore Investment Corporation invested 44 percent in equities and by 15,2 percent less invested in equties Korea Investment Corporation. 23 percent of Alternative assets holded Singapore, while Korea excluded these assets from their portfolio in 2007.

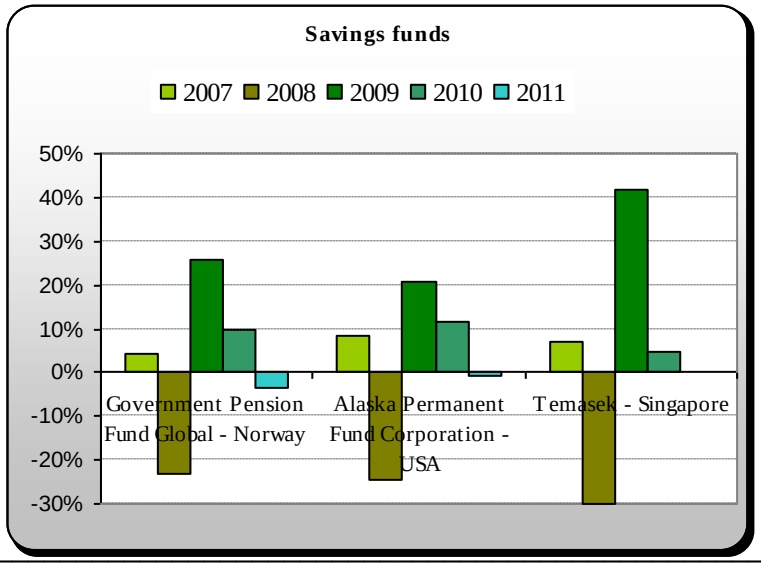
3.3 Affect global financial crisis on asset allocation

The crisis affected SWFs worldwide. The sharp downturn in asset prices, particularly prices for equity and alternative investments, resulted in large losses for many SWFs what is shown in Figures 19-22, especially those with longer investment horizons.

As a consequently of crisis, stabilization funds played prominent roles in *financing government operations*, through rising fiscal deficits, and some of them have supported stimulus packages to prop up economic activity. The funds have provided liquidity to the *banking system* by depositing their assets in domestic banks, others have helped with bank recapitalization. On the other hand funds have purchased domestic stocks to boost markets and investor confidence.

First, the heavy demands on funds resources, second the uncertainty in the economic environment have led many funds to take cautious approach toward investing. Nonetheless, as financial market conditions started to improve in early 2009, some SWFs achieved record profits, their returns during time 2007-2011 are illustrated below.

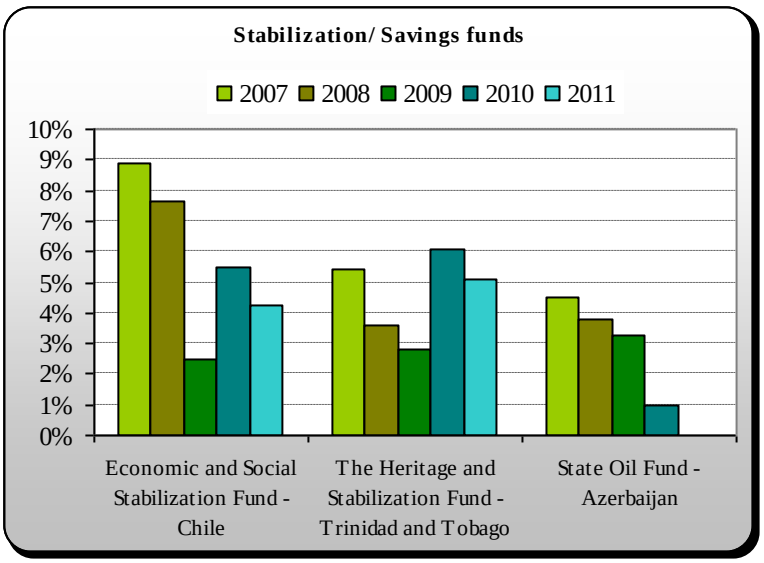
Figures 19: Returns of Saving Funds, 2007 vs. 2011 (inflation adjusted)



Source: Author´s comparison, according to available data from SWFs websites, reports and authors' calculations

Figure 19 shows that big loss of these funds due to the global financial crisis of 2008/2009, nevertheless *Temasek* after March 2009 had 42 percent annualy profit. Alaska Permanent Fund Corporation had negative return by 24,61 percent in 2008, in 2011 we see also negative return by 0,97 percent. The same situation, Norway´s fund had 23,30 percent negative return in 2008, in 2011 also 3,35 negative return.

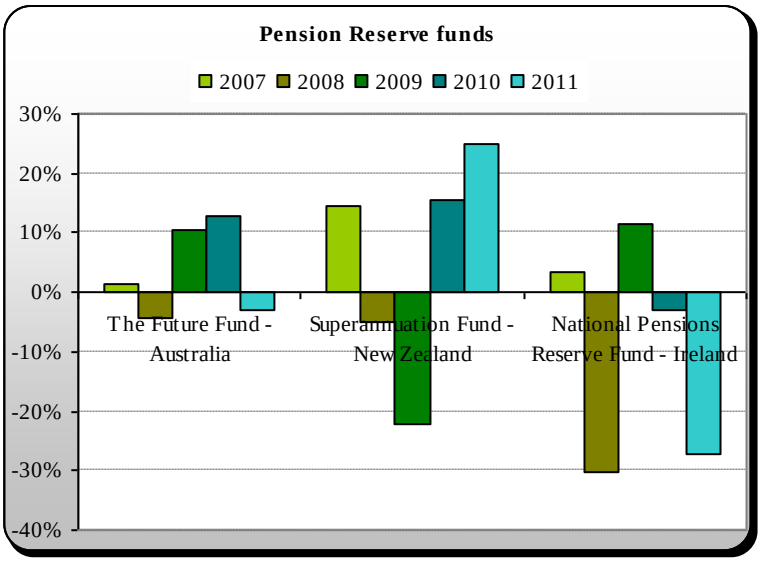
Figures 20: Returns of Stabilization/Savings Funds, 2007 vs. 2011 (inflation adjusted)



Source: Author´s comparison, according to available data from SWFs websites, reports and authors' calculations.

Chile´s return in Figure 20 reflected changes in the exchange rate, 59 percent holded in $, in details 39,8 percent in € and in 2007 exchange rates utilized were 1,4620 USD/EUR, 111,715 JPY/USD. We see positive performance of Economic and Social Stabilization Fund, from 8,89 percent in 2007, to 2,47 percent in 2009 and to 4,27 percent in 2011. Joint development of hydrocarbon resources with foreign companies, the expansion of oil exports and sales, has led to an increase of the *State Oil Fund's* revenues in 2007. Return of Azerbaijan´s fund had decreasing tendency from 4,49 percent in 2007, to 3,29 percent in 2009 and to 1 percent in 2010. These funds had no negative performance, they did not invest in equities, for more details see their asset allocations in Figure 16.

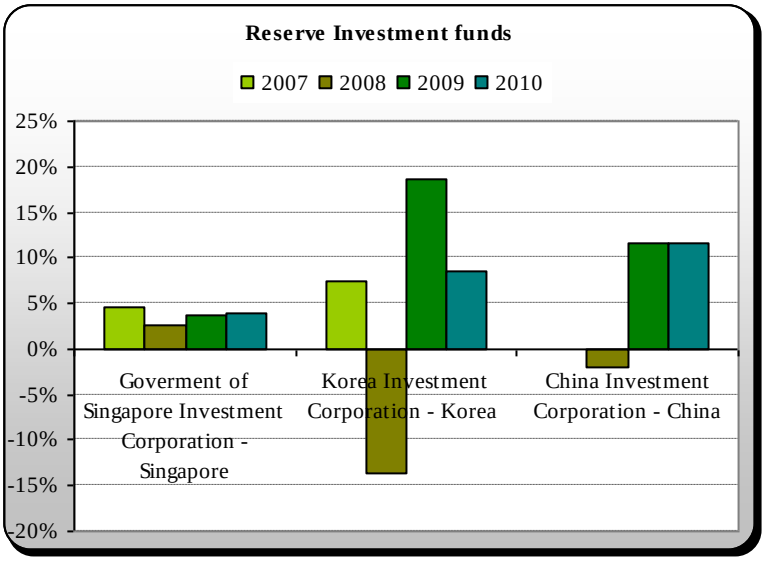
Figures 21: Returns of Pension Reserve Funds, 2007 vs. 2011 (inflation adjusted)



Source: Author´s comparison, according to available data from SWFs websites, reports and authors' calculations.

Figure 21 shows that positive performance, 3,30 percent in 2007, of *Ireland* fund was driven by equity investments. The Fund increased its cash balances in 2007. At the end of 2008 the Fund was 13,3 percentage points under-weight its benchmark equity holding and in March and May 2009 Minister for Finance invested €7 bn to recapitalise Bank of Ireland and Allied Irish Banks plc. Superannuation Fund had positive performance 25,05 percent in 2011, but negative from 4,92 percent in 2008 also to negative 22,14 percent in 2009.

Figures 22: Returns of Reserve Investment Funds, 2007 vs. 2011 (inflation adjusted)



Source: Author´s comparison, according to available data from SWFs websites, reports and authors' calculations.

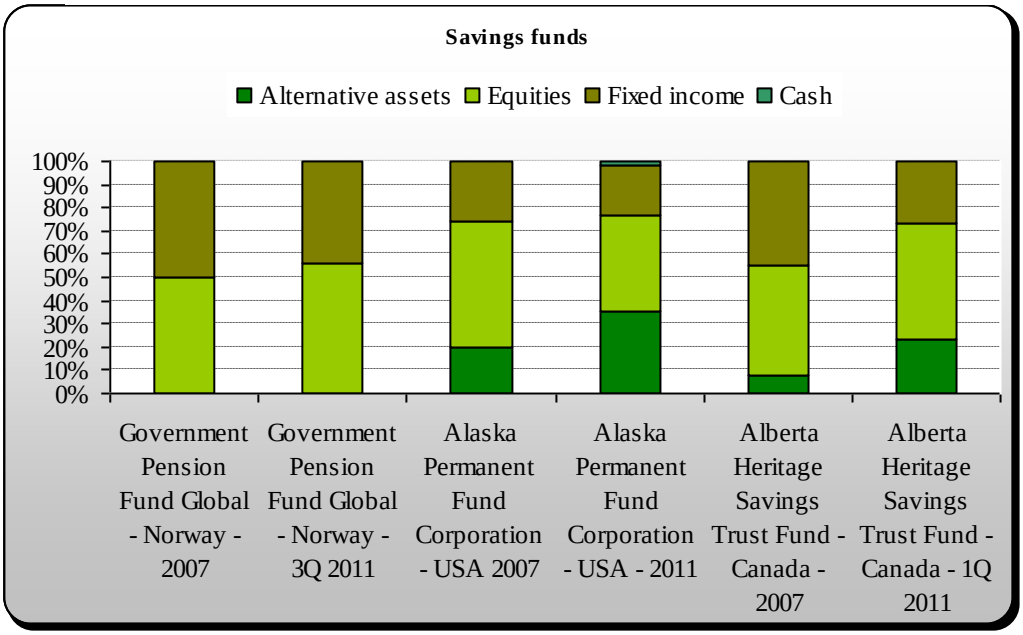
[a] Norway classified as savings fund, 3Q 2011
[b] USA 2011
[c] Canada, annual report from April 2010 March 2011
[d] Chile Nov 2011
[e] Russia F. June 2011
[f] Trinidad and Tobago 3Q 2011
[g] Azerbaijan 2010
[h] Australia 3Q 2011
[i] New Zealand 3Q 2011
[j] Ireland 3Q 2011
[k] Singapore 1Q 2010
[l] China since inception from Sep, 2007- Dec, 2008

Figure 22 shows that *KIC´*s portfolio included in 2008 government bonds 31,4% and due to volatility in the global financial markets led to the selloff triggered a sharp decline in bonds. In 2008 *CIC's* slowdown in the overseas investment, which amounted to only $4,8 bn, and its overseas investment posted a 2,1 percent loss in the same year, because of its losses on debt issued by the Lehman Brothers. China had positive performance from 2009 by 11,70 percent, Korea had also by 18,67 percent in 2009 but we see decrease to 8,46 percent in 2010.

3.4 Crisis implications for Strategic asset allocation

SWFs with previous investments in alternative assets have increased their investments in such assets, presumably with a view to further diversifying their portfolios. Figures 23-26 show their investments in comparison 2007 vs. 2011 that SWFs' implemented changes of asset allocations in different ways. Summary from figures we present below.

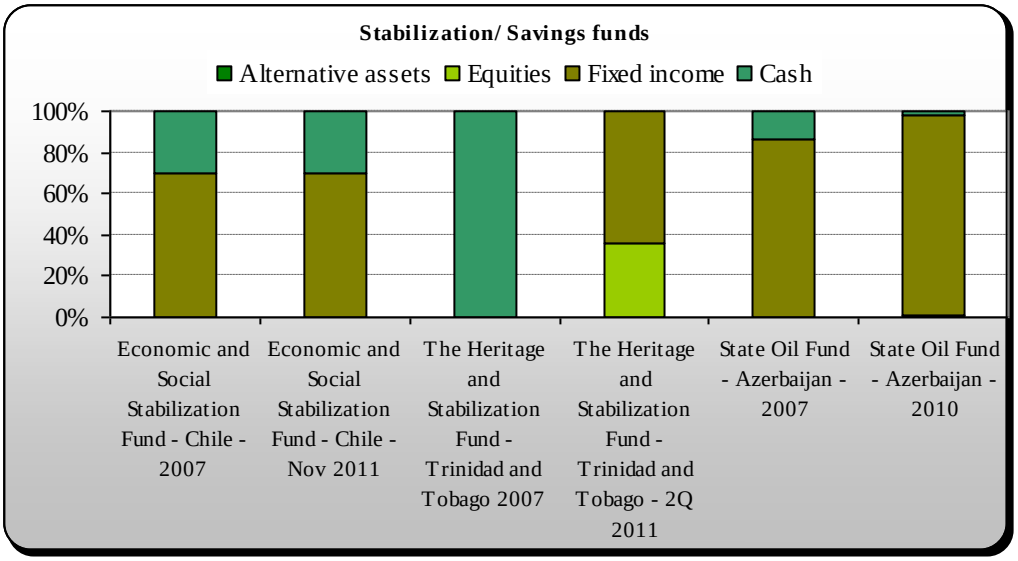
Figure 23: Asset Allocation of Saving Funds, in comparison 2007 vs. 2011



Source: Author´s comparison, according to available data from SWFs websites, reports and authors' calculations.

Figure 23 shows that *Savings funds* like Alaska Permanent Fund has increased the share of their cash holdings by 2 percent. Alternative assets by 15,7 percent to 23,70 percent has increased Alberta Heritage Savings Trust Fund in 1Q 2011.

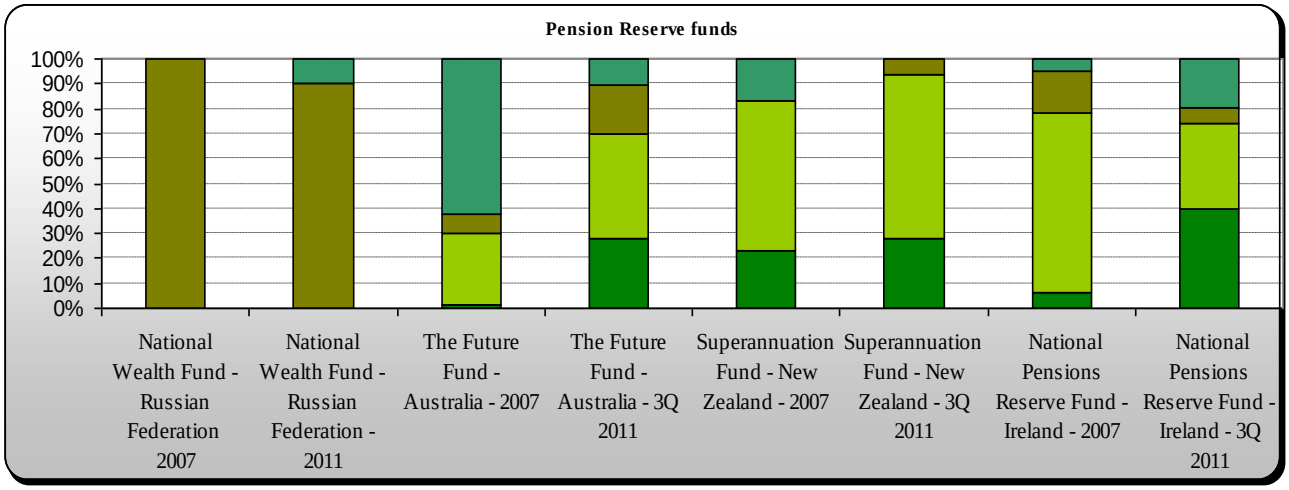
Figure 24: Asset Allocation of Stabilization/ Saving Funds, in comparison 2007 vs. 2011



Source: Author´s comparison, according to available data from SWFs websites, reports and authors' calculations.

Stabilization funds have reduced their shares of cash holdings either because of the use of cash resources or because of moved to fixed income, equties. Such as Trinidad and Tobago diversified portfolio, include 36,27 percent equities and 63,73 percent fixed income in 2Q 2011. State Oil Fund Azerbaijan has increased by 10,9 percent to 97 percent fixed income in 2010.

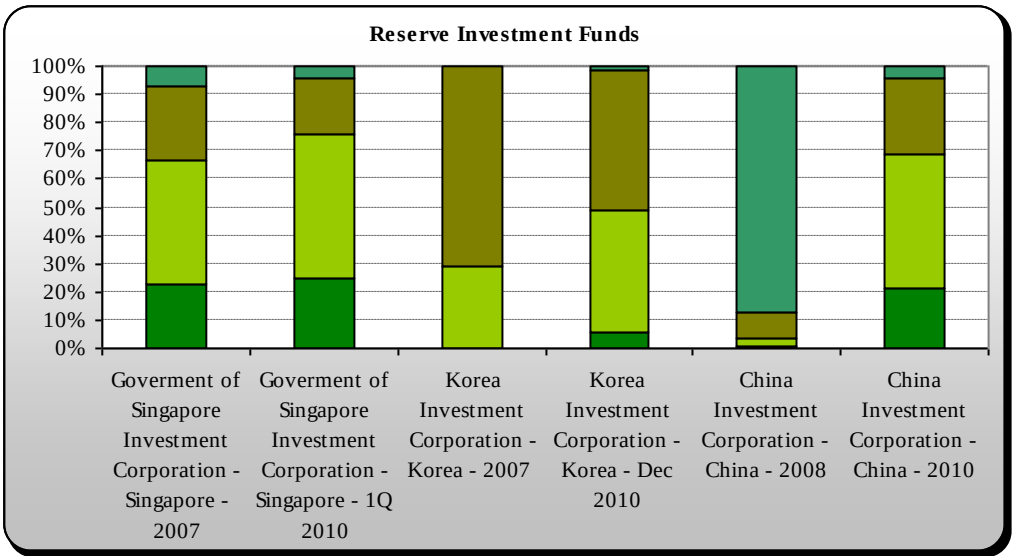
Figure 25: Asset Allocation of Pension Reserve Funds, in comparison 2007 vs. 2011



Source: Author´s comparison, according to available data from SWFs websites, reports and authors' calculations.

Pension reserve funds, in Figure 25, such as Australian Future Fund has introduced alternative assets, 27,90 percent of portfolio, increased equity by 13,2 percent and fixed-income by 11,7 percent in 3Q 2011. National Pensions Reserve Fund Ireland also increased alternative assets by 33,5 percent to 39,80 percent in 3Q 2011.

Figure 26: Asset Allocation of Reserve Investment Funds, in comparison 2007 vs. 2011



Source: Author´s comparison, according to available data from SWFs websites, reports and authors' calculations.

Figure 26 shows that *Reserve investment funds* like Korea Investment Corporation has introduced 5,80 percent alternative assets investment and increased their equity shares by 14,6 percent in December 2010. Conversely, China Investment Corporation has decreased cash from 87,40 percent to 4 percent and has increased also alternative assets by 20,6 percent in 2010.

Notwithstanding the impact of the crisis, some SWFs have also continued with the implementation of previously approved SAAs, like Norway has just increased 5,60 percent equity shares in 3Q 2011. In the case of Norway, the continuous implementation of the SAA helped it to benefit greatly from the rebound of risk assets since early 2009.

Most SWFs prefer to invest in *developed infrastructure in Western economies*. Developed infrastructure is less risky and cash flows do not vary as much as infrastructure projects.

More to the point, *geographic reallocation* and confidence in emerging markets also played important role SWFs to tilt their investments toward these markets. For example Korea Investment Corporation recently opened offices in London, New York, Norwegian fund GPF has plans to open an office in Singapore after opening one in Shanghai, Government of Singapore Investment Co. has 9 offices worldwide, include

London, Mumbai, Singapore, Beijing, Shanghai, Seoul, Tokyo, San Francisco, New York.

Future projection of funds

NBIM reported strategic plan in 2011–2013, the fund will reduce the number of types of bonds. On the equity side, will raise the proportion of large stock holdings. Fund also increased investments in emerging economies such as Brazil, China, Russia, India and Mexico according to Annual report 2010.

Chile's portfolio by credit risk by country is in USA 42,03%, in Germany 33,65% according to released report from November 2011.

Korea Investment Corporation will further diversified investments by focusing on companies engaged in the energy and natural resources development sectors. The fund also broadened initiatives in private equity, real estate and hedge funds according to Annual report from 2010.

4 SWOT ANALYSIS

At this point, after our research, we provide SWOT analysis that briefly analyzes SWFs. We use these an analytic method to determine competitive strengths, competitive weaknesses, opportunities and threats of the funds. Through clearly identifying these factors may funds, companies, etc. determine the future development, formulate strategy and an appropriate policy strategy.

Table 12: SWOT analysis

Strengths	Weaknesses
• strong growth (rise in oil prices, commodities or others) • long-term investment horizon • investments worldwide (shift in the structure of global finance) • already approved Santiago principles (their observance is arguable) • stabilize the country's economy through diversify of investments • create wealth for future generations • due the surpluses that are held outside the domestic economy (reduces the risk of domestic inflation) • tolerate more risk and higher expected returns than traditional official reserves managed by monetary authorities	• lack transparency (the management, strategy and investment objectives some of funds) • low reporting (some of funds do not provide annually, quarterly reports)
Opportunities	**Threats**
• transfer voting rights from management to shareholders due the acquisitions of firms • implementation the principles of responsible investments (environmental, social, governance issues) like Norway´s fund • potential entrance to new markets (South America, Sub-saharan Africa) • may play a major role in shaping the world economy in the future (due to growing economic power)	• investments for strategic political purposes • possible regulation of their investments in host country (protectionism of host country) • the excessive market fluctuation (influenced by the sub-prime crisis, losses in financial sector) • risk of exchange rate, interest rate etc.

Source: Author´s analysis.

5 HYPOTHESES

Based on data analyzed for the paper, we develop five main hypothesis and preliminary results are demonstrated in this section. Presented calculations are the best author´s estimation.

5.1 Testing hypothesis 1

We formulate hypothesis as follows:

H_0: Increase of SWFs return in 2010 due the fact that, they *did not* implement different asset allocation after 2008. (NO changes in portfolio)

H_1: Increase of SWFs return in 2010 due the fact, that they implemented different asset allocation after 2008. (changes in portfolio)

Table 13: Return of SWFs

(%)		1	2	3	4	5	6
Return after crisis 2010	X_1	9,60%	11,77%	4,60%	5,51%	6,07%	1,00%
Return during crisis 2008	X_2	-23,30%	-24,61%	-30,00%	7,63%	3,61%	3,79%
	$d=x_1 - x_2$	32,90%	36,38%	34,60%	-2,12%	2,46%	-2,79%
		7	**8**	**9**	**10**	**11**	**12**
Return after crisis 2010	X_1	12,80%	15,45%	-3,00%	3,90%	8,46%	11,70%
Return during crisis 2008	X_2	-4,20%	-4,92%	-30,40%	2,60%	-13,71%	-2,10%
	$d=x_1 - x_2$	17,00%	20,37%	27,40%	1,30%	22,17%	13,80%

Table 13 shows return of 12 observed SWFs, includes: Alaska Permanent Fund Corporation–USA, Government Pension Fund Global-Norway, Temasek-Singapore, Economic and Social Stabilization Fund-Chile, The Heritage and Stabilization Fund-Trinidad and Tobago, State Oil Fund–Azerbaijan, The Future Fund-Australia, Superannuation Fund-New Zealand, National Pensions Reserve Fund–Ireland, Goverment of Singapore Investment Corporation-Singapore, Korea Investment Corporation–Korea, China Investment Corporation-China.

We examine whether is an increase of return of funds a statistically significant and whether that could be as a result to the effects of changes in asset portfolio. We create new variable d-observed difference, the difference returns before and after the crisis.

Table 14: Numerical characteristics for the value of d (continued on next page)

Explanatory variable d	
Mean	0,155063636

Error	0,042984245
Median	0,17
The standard deviation	0,142562613
Variance	0,020324099
Kurt	-1,398936317
Skew	0,061528377
Vr	0,3917
Minimum	-0,0279
Maximum	0,3638
Sum	1,7057
Number	12
The largest (1)	0,3638
The smallest (1)	-0,0279
Confidence level (95.0%)	0,095774866

We use method The 'Student' t-test distribution with (N−1) degrees of freedom, mean test of correlation with a known constant. $t = \frac{\bar{d} - \mu_d}{s_d} . \sqrt{n}$ (1)

Indicates significance at the 5% level, α=0,05. We formulate our hypothesis as follows:

H₀: $m_1 = m_2 \quad / \mu_d = 0 /$

H₁: $m_1 > m_2 \quad / \mu_d > 0 /$

If we assume that the mean of values of X_1 and X_2 sets are equal, then the value will be $\mu_d = 0$.

$$t = \frac{0,15506363\ \ 6}{0,14256261\ \ 3} * \sqrt{12} = 3,6074$$

Table 15: The two-sample t-test for mean value

Explanatory variable	x_1	x_2
Mean	0,071145455	-0,08391818
Variance	0,003063277	0,01981757
Observations	11	11
Correlation	0,164073932	
Difference	10	
t stat	3,607452828	
P(T<=t) (1)	0,002394151	
t crit (1)	1,812461102	← Critical value for one-sided alternative hypothesis.
P(T<=t) (2)	0,004788302	
t crit (2)	2,228138842	

Results coming out from t-test depicted in Table 15: 3,607452828 > 1,812461102 → $t > t_c$. We accept an alternative hypothesis, that means this method showed an increase, what is a statistically significant. So we may say that an increase of SWFs return in 2010 could be caused through changes in portfolios, in financial markets due the fact of implementing different asset allocations after 2008. Because the differences are not random.

5.2 Testing hypothesis 2

In this hypothesis we also use data of asset allocations observed 12 SWFs (see previous hypothesis for details). According to data analyzed in Chapter 3, we determine the reliability of 95% and we want to determine mean the reliability of proportion equity in asset allocation in SWFs.

Table 16: Variables, N=12

Z	Equity %
Government Pension Fund Global - Norway	55,6
Qatar Investment Authority - Qatar	60
Alaska Permanent Fund Corporation - USA	42
Alberta Heritage Savings Trust Fund - Canada	50
The Heritage and Stabilization Fund - Trinidad and Tobago	36,27
State Oil Fund - Azerbaijan	0,8
The Future Fund - Australia	42,1
Superannuation Fund - New Zealand	65,4
National Pensions Reserve Fund - Ireland	34,5
Goverment of Singapore Investment Corporation - Singapore	51
Korea Investment Corporation - Korea	43,4
China Investment Corporation - China	48
AVERAGE	44,08917
STDEV	16,44174
TINV for α/2	2,200985
TINV for α	1,795885

We use TINV function that returns the value of t Student's t-distribution as a function of the probability and the degrees of freedom, in our case the number of degrees of freedom = *N-1* where *N* is the number of values, and probability α = 0,05.

Two-sided confidence interval can be determined from the relation:

$$\left(\bar{x} - t_{1-\frac{\alpha}{2}} \frac{s_1}{\sqrt{n-1}} \le \mu \le \bar{x} + t_{1-\frac{\alpha}{2}} \frac{s_1}{\sqrt{n-1}}\right) = 1-\alpha \qquad (2)$$

$$\left(44{,}08 - 2{,}20\frac{16{,}44}{\sqrt{11}} \le \mu \le 44{,}08 + 2{,}20\frac{16{,}44}{\sqrt{11}}\right) = 1-\alpha$$

$$(33{,}17 \le \mu \le 54{,}99) = 95\%$$

It means acceptable range for levels of significance.

Results coming out from this formula explain that with 95 percent probability suppose to proportion of equity in asset allocations in observed SWFs between 33,17 and 54,99 percent of total portfolio.

To determine the left-hand interval, the average of euity we use the relationship:

$$P\left(\mu \geq \bar{x} - t_{1-\alpha}\frac{s_1}{\sqrt{n-1}}\right) = 1-\alpha \qquad (3)$$

$$P\left(\mu \geq 44{,}08 - 1{,}79\frac{16{,}44}{\sqrt{11}}\right) = 0{,}95$$

$$P(\mu \geq 35{,}21) = 95\%$$

Proportion of equity in asset allocation of SWFs will be more than 35,21 percent.

Then we formulate hypothesis as follows:

H_0: This is random deviations due to the selection of elements in the file, m= μ.

H_1: This is NOT random deviations due to the selection of elements in the file m$\neq \mu$.

$$t = \frac{|\bar{x} - \mu|}{s}\sqrt{n} = \frac{44{,}08 - 35{,}21}{16{,}44}\sqrt{12} = 1{,}86$$

$t_{crit} = 2{,}20$

The significance level of 0,05 and 11 degrees of freedom, the inverse two-sided t-distribution is calculated by TINV (0,05; 11) is 2,20.

$t < t_{crit} \rightarrow$ we accept null hypothesis, 44,08=35,21 and deviation is caused by random selection of funds in file Z, what *is not* statistically significant.

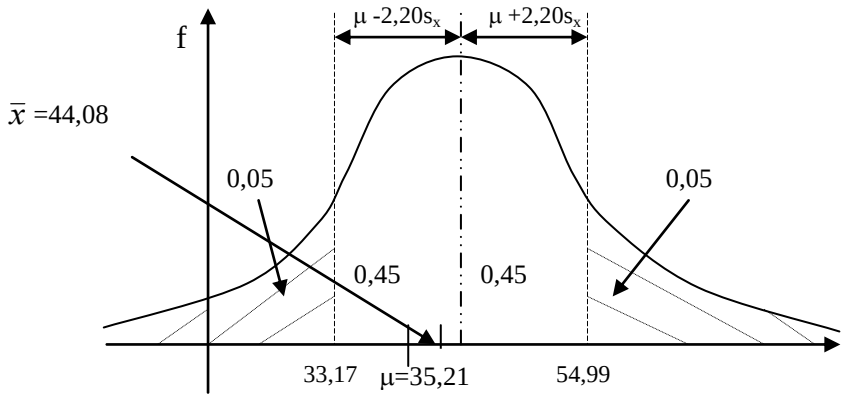


Illustration shows that the measured value 44,08 is located inside the acceptable range, and therefore we accept the null hypothesis.

Summary: Results coming out showed that is 95 percent probability that proportion of equity in asset allocations in observed SWFs supposed to be between 33,17 and 54,99 percent of total portfolio, and by determining left-hand interval we may say that supposed to be more than 35,21 percent in fund´s portfolios.

5.3 Testing hypothesis 3

We want to find out if there is correlation between SWFs with sources from their commodities and total export of countries with funds. If yes, what is the intensity of dependence. Indicates significance at the 5% level, α=0,05.

H_0: There is NOT statistical dependence between observed variables.

H_1: There is statistical dependence between observed variables.

Table 17: Observed Variables, N=20

A/E	Export (US$ billion); *Ej*		
SWF; *Ai*	**Export source**; *Aij*	**Total export countries with SWF**	Total SWF n_i
SWFs with source oil & natural gas*	935,81	3150	4085,81
SWFs with source other comodities**	55	1353	1408
Total Export n_j	990,81	4503	Total; *n* 5493,81

Source: http://comtrade.un.org, /http://stat.wto.org/

* Mineral fuels, oils, distillation products, etc, Kuwajt 2009 mineral flues, Brunei Darussalam 2006, other countries 2010

** Botswana (2010 diamonds), Chile (copper; pearls, precious stones, metals, coins, etc), US Wyoming (minerals, Pearls, precious stones, metals, coins, etc), Kiribati (phosphate is NA)

Numbers in rows and columns are presented in the absolute frequency of observed variables, frequencies for each variation of the characters in the right corner (n) show the frequency of the sample. We take total numbers from Table 17 and calculated theoretical data by using formula,

$$(n_i * n_j)/n \qquad (4)$$

Table 18: Theoretical expected data

	Export source; Eij	Total export countries with SWF
SWFs with source oil & natural gas	736,8768498	3348,93315
SWFs with source other comodities	253,9331502	1154,06685

Then we take results from Table 17 and Table 18 and calculate by formula, also Chi test:

$$x^2 = \frac{\left(A_{ij} - E_{ij}\right)^2}{E_{ij}} \qquad (5)$$

Table19: Chi-test

	Export source; x^2	Total export countries with SWF
SWFs with source oil & natural gas	53,70557952	11,81701649
SWFs with source other comodities	155,8457343	34,29125294

Then we calculate chi ($\chi 2$) as sum of values in Table 19 and chi $_{crit}$ ($\chi 2_{crit}$) by using Chinv test ($\chi 2$; degree of freedom = 1).

chi =255,6595832; chi $_{crit}$ =3,841459149

Results coming out are $\chi 2 > \chi 2_{crit}$, 255,65 > 3,84; we reject null hypothesis, and accept alternative, it means that between earnings from sources of the funds and total export of countries is statistical dependence.

At this point we examine what is the intensity of dependence funds and export earnings. We may use correlation coefficient as Pearson´s coeficient as follows,

$$C = \sqrt{\frac{\chi^2}{n+\chi^2}} = \sqrt{\frac{255{,}65}{5493{,}81+255{,}65}} = 0{,}210 \qquad (6)$$

This value means that between statistical variables, *is weak* statistical dependence, and the maximum value depends on the size of table (number of rows and columns), in our case 0,210 x 4=0,84.

Because Pearson´s coeficient is depend, we may use Cramer´s V, that is not depend on the size of table as folows,

$$V = \sqrt{\frac{\chi^2}{n*\min(r-1,c-1)}} = \sqrt{\frac{255{,}65}{5493{,}81*1}} = 0{,}215 \qquad (7)$$

This figure also confirms that there is weak intensity of dependence, $0 \leq V \geq 1$. Summary: Chi-test showed statistical dependence between funds and earnigs from their commodities. By using Pearson´s coeficient we determined that dependency is 0,210; by using Cramer´s V is 0,215. Figures confirmed weak intensity.

5.4 Testing hypothesis 4

At this point we examine whether the size of observed funds is closely related to size of investments during the crisis, rate of growth of the countries, or both variables together. We will use regression analysis, transferring observed data using the least squares method. Lets analyze the impact of the values of two independent variables on the value of the dependent variable values: Influence of investments during crisis and GDP growth rate on size of the funds.

We categorized funds (by countries) through volume of investments during crisis from May 2007 to 1Q 2008 as follows. China includes: CIC, China Development Bank, SAFE, Singapore: Government of Singapore Inv. Co, Temasek, Saudi Arabia: Saudi

Arabia Mon. Agency, United Arab Emirates: ADIA, Abu Dhabi Inv. Council N/A, Investment Corp. of Dubai, Kuwait: Kuwait Inv. Auth., Korea: Korea Inv. Corp., Qatar: Qatar Inv. Auth.

Table 20: Variables

Country	SWF	Investments $bn [a]	Fund value $bn	Fund value as % of GDP [e]	Capita per GDP [h]	GDP growth (annual %) [f]	Inflation [g]
China	China Inv. Corp.b	12,1	977,5	16,62%	$4,354	8,90%	4,10%
Singapore	Government of Singapore Inv. Co. [c]	31,7	404,7	182,29%	$43,783	6,10%	5,50%
Saudi Arabia	Saudi Arabia Mon. Agency	1,8	472,5	108,87%	$15,836	6,80%	5,30%
United Arab Emirates	ADIA [d]	13,7	685	281,13%	$39,625	1,40%	0,20%
Kuwait	Kuwait Inv. Auth.	6,4	296	271,55%	$45,430	3,20%	3,80%
Korea	Korea Inv. Corp.	2	37	3,64%	$21,052	6,20%	4,20%
Qatar	Qatar Inv. Auth.	6,1	85	86,73%	$72,398	39,50%	2,10%

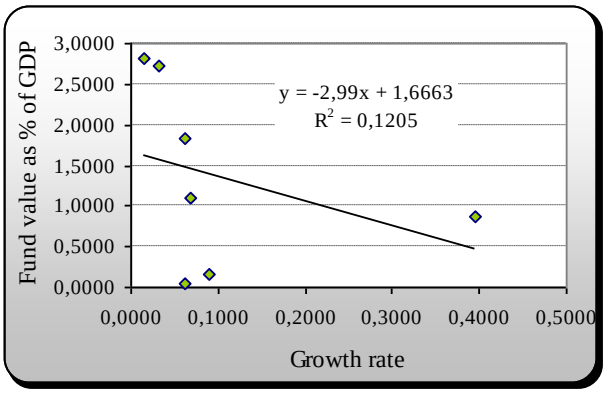
Source: Data according to the United Nations Statistics Data, Division Comtrade, http://www.tradingeconomics.com, MEZZACAPO, S. (2009, p. 98-99) and author´s calculation.

[a] SWFs equity investments in financial institutions during financial crisis: May 2007- 1Q 2008
[b] China includes: CIC, China Development Bank, SAFE
[c] Singapore includes: Government of Singapore Inv. Co, Temasek
[d] UAE includes: ADIA, Abu Dhabi Inv. Council N/A, Investment Corp. of Dubai
[e] GDP (current US$), 2010, Qatar 2009
[f] China 4Q 2011, Singapore 3Q 2011, Saudi Arabia 4Q 2011, UAE 4Q 2011, Kuwait 2010, Korea 2010, Qatar 3Q 2011
[g] 2011, Kuwait 2010
[h] per capita GDP at current prices, 2010, People's republic of China

Table 21: Observed variables

Investments $bn [a]	GDP growth (annual %) [f]	Fund value as % of GDP [e]
12,1	0,0890	0,1662
31,7	0,0610	1,8229
1,8	0,0680	1,0887
13,7	0,0140	2,8113
6,4	0,0320	2,7155
2	0,0620	0,0364
6,1	0,3950	0,8673

Figure 27: Linear regression



By using method of least squares in Figure 39 and regression statistics bellow, we found regression function, y = -2,99x + 1,6663. The results coming out from Figure 40 and regression statistics show that the correlation coefficient is 0,3470 (Multiple R) and is low. The coefficient of determination R^2 = 0,1205 means that 12,05 percent changes of fund value are attributed changes of growth rate so value 87,95 percent *is*

not attributed from changes of growth rate. So the independent variable growth rate *does not* correlate high with fund values as a percentage of GDP. Mean error indicates that the average prediction error in fund value is 1,1601.

Regression statistics	
Multiple R	0,347062644
R Square	0,120452479
Adjusted R Square	-0,055457026
Std. Error of the estimate	1,160148108
Observations	7

ANOVA	*Difference*	*SS - sum of squares*	*MS - mean squares*	*F*	*The significance of F*
Regression	1	0,921623009	0,921623009	0,684741	0,445642297
Residues	5	6,729718165	1,345943633		
Total	6	7,651341174			

	Coefficients
Intercept	1,666293596
GDP growth (annual %)	-2,989951694

At this point, we want to know impact of independent variables: X_1 =investments and X_2 =growth rate, on dependent variable: value of funds, we use regression statistics.

Regression statistics	
Multiple R	0,435510167
R Square	0,189669106
Adjusted R Square	-0,215496341
Error mean	1,245001821
Observations	7

ANOVA	*Difference*	*SS -sum of squares*	*MS-mean squares*	*F*	*The significance of F*
Regression	2	1,451223039	0,72561152	0,468128	0,656636158
Residues	4	6,200118135	1,550029534		
Total	6	7,651341174			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	1,31420	0,86242	1,52384	0,2022	-1,0802	3,7086	-1,0802	3,7086
Investments $bn		0,04986	0,58452	0,5902	-0,1092	0,1675	-0,1093	0,1675
GDP growth (annual %)	-2,55502	3,94829	-0,64712	0,5528	-13,5172	8,4071	-13,5173	8,4071

Observation	*Predicted Y (Fund value as % of GDP)*	*Residuals*	*ei^2*
1	1,439485284	-1,273285284	-1,252568146
2	2,08231069	-0,25941069	-0,255189917
3	1,192924994	-0,104224994	-0,102529189
4	1,677747903	1,133552097	1,115108503
5	1,418983021	1,296516979	1,275421846
6	1,2140846	-1,1776846	-1,158522943
7	0,482763508	0,384536492	0,378279846
	E (u)	3,17207E-17	

Summary: As you can see results from regression statistics and analysis of variance ANOVA, the correlation coefficient increased from 0,3470 to 0,4355. Coefficient of determination increased as well from value of 0,1204 to 0,1896. This means that 12,04 percent of changes in value of funds may be caused by changing growth rate and 18,96 percent of changes in value of fund may be caused by changing in growth rate and investments during crisis. Coeficient of investments $bn means 2,91 percent impact on value of funds, and GDP growth (annual %) has negative percentage of contributions for change value of fund.

Value of error mean dropped to 1,2450, the significance of F is 0,65 what means that 0,65>0,05 what *is not* statisticaly significant. P value of variable 1: is 0,590247>0,05 and variable 2: 0,552816> 0,05; therefore these outputs are statistically insignificant, so it is necessary to change variables.

Regression function is now: y= 1,3142+0,0291x_2-2,5550x_3. If we want to calculate the value of the fund, for example that invested 2,8$bn during the crisis and growth rate was 5,3 percent, we get after substituting into the regression function; y= 1,3142+0,0291*2,8-2,5550*0,053=1,2602; 126,02 it means value of fund as % of GDP.

At this point we want to test the assumption of mean value of random residuals (differences between actual and predicted values) will be zero, according to the results from Residual outputs. We formulate hypothesis as follows:

H_0: $E\left(\vec{u}\right) = 0$ $\qquad \bar{x}_e = \frac{\sum e_i}{n} = 3{,}17207\ E-17$

H_1: $E\left(\vec{u}\right) \neq 0$

We may use formula above. As a result coming out from these formula we may say that average residuals is low, the mean value of residuals is close to zero, so that is classical linear model and we accept null hypothesis.

5.5 Testing hypothesis 5

At this point we want to know what is the dependence of the value of observed funds on, inflation rate (quantitatively variables) and year of established, price of crude oil (qualitatively variables). We will use regression analysis, transferring observed data using the method least squares; MLS. Observed variables, N=19 are listed in *Appendix M.* Qualitative variable has three categories, for description we use artificial variables D_i. First of all, we have to recode quantitatively variables, as you can see in the following Table 2. We use formula as follows:

$$Y_i = \beta_1 + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i}$$

Year of set up SWF till 2011	**x_2**	**x_3**
1. 3-20	1	0
2. 21-35	0	1
3. 36-58	0	0

At this point we want to test the dependence the numbers of years of established funds (from 1953 to 2011), inflation, oil prices (current 105,90; future 130, 150) on the size of the fund. We use regression statistics, see bellow.

Inflation	**x_2**	**x_3**	**Export of Oil, x_4** ($bn, 105,92$/bbl)	**Export of oil, x_5** ($bn, 130$/bbl)	**Export of oil, x_6** ($bn, 150$/bbl)	**Fund value ($bn)**
0,002	0	1	125,787	154,38	178,13	627
0,038	0	0	88,28	108,35	125,02	296
0,021	1	0	90,51	111,08	128,17	85
0,002	0	1	124,84	153,22	176,79	571,5
0,061	1	0	389,48	478,02	551,57	142,5
-0,328	1	0	696,88	85,53	98,69	70
0,052	1	0	834,26	102,39	118,14	56,7
0,030	0	1	120,42	147,8	170,54	40,3
0,074	1	0	61,03	74,9	86,43	38,6
0,130	1	0	29,91	36,71	42,36	30,2
-0,221	0	1	12,55	15,4	17,77	30
0,006	1	0	93,17	114,35	131,94	23
0,023	0	1	13,6	166,95	192,64	15,1
-0,235	0	1	37,7	46,27	53,39	8,2
0,038	1	0	61,09	74,97	86,51	6
0,044	1	0	12,91	15,84	18,28	2,9
0,289	1	0	93,02	114,17	131,73	0,8
0,193	1	0	0,01	0,012	0,014	0,3
0,091	1	0	0,06	0,076	0,088	6,3

* Export is calculated by Exported value in 2010 (US Dollar thousand, oil) / Average price 71,21$/barrel in 2010= we obtained barrels per 2010, then multiplied with current price of oil 105,92 in February 2012; and future 130; 150 $/barrel.

Regression statistics	
Multiple R	0,673487227
R Square	0,453585046
Adjusted R Square	0,180377568
Error mean	169,0445094
Observations	19

ANOVA	*Difference*	*SS - -sum of squares*	*MS-mean squares*	*F*	*The significance of F*
Regression	6	284655,4714	47442,57856	1,660221932	0,21404326
Residues	12	342912,5539	28576,04616		
Total	18	627568,0253			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	245,2632	174,86	1,4025890	0,1860775	-135,73	626,26	-135,73	626,263
Inflation	-295,52851	415,05	-0,7120254	0,490061	-1199,85	608,79	-1199,85	608,79
x2	-214,68572	180,67	-1,1882674	0,25771	-608,33	178,96	-608,33	178,96
x3	-87,984438	182,99	-0,4807	0,639310	-486,704	310,73	-486,70	310,736
Export of oil ($bn, 105,92$/bbl)	-0,0442008	0,20	-0,2142129	0,8339777	-0,49	0,40	-0,49	0,402
Export of oil ($bn, 130$/bbl)	24188,087	15793,12	1,5315577	0,1515597	-10222,18	58598,35	-10222,18	58598,35
Export of oil ($bn, 150$/bbl)	-20962,352	13687,19	-1,5315301	0,151566	-50784,18	8859,48	-50784,18	8859,482

Observation	*Predicted Y; $\hat{y}_1$ (Fund value ($bn)*	yt; (Fund value ($bn)	ei; Residuals	*Percentage*
1	284,0796892	627	342,9203108	2,631578947
2	296	296	-2,79397E-09	7,894736842
3	88,30561447	85	-3,305614467	13,15789474
4	315,493492	571,5	256,006508	18,42105263
5	179,7024517	142,5	-37,20245173	23,68421053
6	41,94313199	70	28,05686801	28,94736842
7	104,3114365	56,7	-47,61143647	34,21052632
8	222,688046	40,3	-182,388046	39,47368421
9	-82,43263905	38,6	121,032639	44,73684211
10	-29,7576384	30,2	59,9576384	50
11	217,5649328	30	-187,5649328	55,26315789
12	159,5950855	23	-136,5950855	60,52631579
13	163,3455976	15,1	-148,2455976	65,78947368
14	88,92824246	8,2	-80,72824246	71,05263158
15	-55,67751101	6	61,67751101	76,31578947
16	-35,50901585	2,9	38,40901585	81,57894737
17	124,2055923	0,8	-123,4055923	86,84210526
18	-29,67583049	0,3	29,97583049	92,10526316
19	-2,710677651	6,3	9,010677651	97,36842105
∑	2050,4	2050,4	-1,83161E-08	

Summary: Results coming out from regression statistics and ANOVA above show that multiple R is 0,673487227, it means high dependency between y (value of the funds) and observed variables. R Square is 0,453585046, it means 45,35 percent of changes on value of funds may be caused by inflation, number of years since the establishment, price of crude oil, and 54,65 percent of changes on size of funds may be caused by other variables.

The significance of F is 0,214>0,05; what *is not* statisticaly significant (-). The parameter β is not statistically significant because the P-value is 0,186077521>0,05; (-). The parameter x_1 is not statistically significant because the P-value is 0,49006119>0,05; (-). The parameter x_2 is not statistically significant because the P-value is 0,2577138>0,05; (-). The parameter x_3 is not statistically significant because the P-value is 0,63931047>0,05; (-). The parameter x_4 is not statistically significant because the P-value is 0,833977789>0,05; (-). The parameter x_5 is not statistically significant because the P-value is 0,151559773>0,05; (-). The parameter x_6 is not statistically significant because the P-value is 0,15156652>0,05; (-).

And we obtained regression function as follows: $y=245,26-295,52x_2-214,68x_3-87,98x_4-0,044x_5+24188,008x_6-20962,35x_7$.

We formulate hypothesis of beta coefficients, as follows,

$$H_0 : \beta_1 = \beta_2 = \cdots = \beta_k = 0$$

$$H_1 : \exists j : \beta_j \neq 0 \qquad j = 1,2,...,k$$

If we want to know how each variables contributed to change of the value y, is necessary to calculate the beta coefficient. We may use formula as follows:

$$\beta_j = \frac{\left|b_j\right| \cdot \frac{s_{xj}}{s_y}}{\sum_{j=1}^{n} \left|b_j\right| \cdot \frac{s_{xj}}{s_y}} \qquad \beta j \text{ corrected} = \beta j * R^2 * 100\ [\%]$$

beta coefficients

	abs (bj)		stdev	abs(bj)*sxj/sy	beta coefficient	beta corrected
b_0	245,2632387					
b_1	295,5285128	x_1	0,107724771	0,170498599	0,000006272	0,00028452
b_2	214,6857278	x_2	0,495594628	0,569817276	0,000020963	0,000950884
b_3	87,98443836	x_3	0,477566933	0,225032872	0,000008279	0,000375524
b_4	0,044200876	x_4	233,8822755	0,055364839	0,000002036	0,0000923902
b_5	24188,08707	x_5	104,9102536	13590,18311	0,499986546	22,67864202
b_6	20962,35294	x_6	121,0515028	13589,8938	0,499975902	22,67815922
		Y	186,7214243	27181,09763	1	45,35850456%
						R^2=0,453585046

As you can see, variable 1 (inflation) may contribute 0,00028452 percent to change of the value y, variable 2 (numbers of years from establishment) may contribute 0,000950884 percent to change of the value y, variable 3 (numbers of years from establishment) may contribute 0,000375524 percent to change of the value y, variable 4 (price of crude oil ($bn, 105,92$/bbl)may contribute 0,0000923902 percent to change of the value y, variable 5 (price of crude oil 130$/bbl) may contribute 22,67864202 percent to change of the value y, variable 6 (price of crude oil 150$/bbl) may contribute 22,67815922 percent to change of the value y. So we accept alternative hypothesis, because beta coefficients are not equal to zero.

By example, if we look at 12 observed funds, by using Regression statistics and ANOVA, 45,35 percent of changes on value of observed funds may be caused by 6 variables. So first fund with current value 627 ($bn) supposed to have decline to value 284 ($bn) due to impact from 6 variables that are mentioned above, and fifth fund, with current value 142,5 ($bn) supposed to have 179,70($bn), we see an increase due to impact from variables. And 54,65 percent of changes on size of funds may be caused by other variables.

6 CONCLUSION

We identified interesting differences of observed funds in their investment strategies. Whereas savings funds have varying proportions of equities in their portfolios including debt (fixed income), cash figures are typically for stabilization SWFs. Funds with stabilization objectives usually do not invest in alternative assets.

Moreover, cash is excluded from portfolio of Savings funds in 2007, like Government Pension Fund Global-Norway. Performance of Temasek has been negative, -30 percent in 2008, but in 2009 we see 42 percent of return. In contrast, The Heritage and Stabilization Fund-Trinidad and Tobago had 100 percent in cash in their portfolio in 2007. Return of Stabilization/Savings Funds has been positive from 2007 to 2011, we see shift from 1 percent to 8,89 percent.

We analyzed that Pension Reserve Funds, like National Wealth Fund-Russian Federation decreased by 10 percent in 2011 their proportion of fixed income from 100 percent in 2007. The Future Fund-Australia rapidly decreased their cash by 51,3 percent in 3Q 2011 compared with 2007 and invested 42,10 percent in equities in 3Q 2011. In contrast, National Pensions Reserve Fund-Ireland decreased allocation in equties by 37,6 percent in 3Q 2011 compared with 2007. Most negative performance, -30,4 percent in 2008 had National Pensions Reserve Fund-Ireland, also negative in 2011 by -27,20 percent. Superannuation Fund-New Zealand had also negative performance from -22,14 percent in 2009, but to positive 25,05 percent in 2011.

We described that Reserve Investment Funds, such as Korea Investment Corporation increased their investments in equity by 14,6 percent and declined allocation in fixed income by 22,1 percent in December 2010 compared with 2007. On the other hand is remarkable that China Investment Corporation decreased their cash from 87,4 percent in 2008 to 4 percent in 2010, invested more than 48 percent in equities in 2010. We showed that performance of Korea Investment Corporation have been also negative from -13,71 percent in 2008, but to positive 8,46 percent in 2010.

Examples show that research opportunities to try to monitor and determine their investment strategies will continue to be present. As a implications what was mentioned above it is advisable to build a portfolio that performs well in most states of the world, and address risks separately. To this end, the mean-variance Markowitz model is a good starting point for deriving a stabilization SWF's optimal SAA.

If we look at summary from testing hypothesis, results coming out are explained as follows: Testing hypothesis 1 of 12 observed SWFs showed an increase of SWFs in their returns during period 2008 and 2010. Their performances in 2010 could be caused through changes in their portfolios, due the fact of implementing different asset allocations after 2008. As a result of hypothesis, we rejected null hypothesis, and accepted an alternative hypothesis, that means this method showed an increase, what is a statistically significant.

Testing hypothesis 2 by using Methods Student's t-distribution and TINV showed that proportion of equity in asset allocations in 12 observed SWFs supposed to be between 33,17 to 54,99 percent of total portfolios at 95 percent probability. By using next hypothesis we may say that deviation is caused by random selection of funds in observed file Z, therefore we accepted null hypothesis, 44,08=35,21; what *is not* statistically significant.

Testing hypothesis 3 showed that between the funds and export earnings from commodities is statistical dependence. Chi-test showed, $\chi 2 > \chi 2_{crit}$, 255,65>3,84; that is statistical dependence between earnings from sources of the funds and total export of countries is statistical dependence. By using Pearson´s coeficient we determined that dependency is 0,210x4=0,84 for our table; by using Cramer´s V is 0,215. Figures confirmed weak intensity of dependence.

Testing hypothesis 4 showed that by using method MLS 12,04 percent changes of fund value are attributed changes of growth rate, by using ANOVA and regression statistics we found that 18,96 percent of changes in value of fund may be caused by changing in growth rate and their investments during crisis. Coeficient of investments $bn means 2,91 percent impact on value of funds, and GDP growth (annual %) has negative percentage of contributions for change value of fund.

Testing hypothesis 5 by using regression statistics and ANOVA showed that 45,35 percent of changes on value of observed funds may be caused by 6 variables: by inflation, number of years since the establishment (from 1953 to 2011), price of crude oil (current 105,90; future 130, 150), and 54,65 percent of changes on size of funds may be caused by other variables. By example, seventh fund with current value 56,7($bn) supposed to have 104,31 ($bn) due to 45,35 percent impact on funds, 54,65 percent impact may be from other variables.

However, the combination of increased stability, increased returns, and greater economic power make the creation of an SWFs for such powers in international markets.

RESUME

Za posledné obdobie sa suverénne fondy (SWFs) stali predmetom skúmania z rôznych radov, od akademikov až po rôzne konzultačné nadnárodné spoločnosti. Prečo je taký badateľný záujem o ich činnosť, presnejšie povedané o ich investície? Aj touto otázkou sme sa zoberali v danej práci. Isté je však to, že ich počet a veľkosť sa neustále zvyšuje, vidíme závislosť od účelu vzniku daných fondov a taktiež ich zdroja bohatstva. Faktory, ktoré ovplyvňujú ich rast sú predovšetkým ropa, plyn, ďalšie komodity, prebytky bežného účtu a veľké hromadenie devízových rezerv.

Ktoré fondy su najväčšie? Z hľadiska aktív podľa SWF Inštitútu z Októbra 2011 sú nasledovné: Abu Dhabi Investment Authority (UAE), Government Pension Fund-Global (Nórsko), SAFE Investment company - (Čína).Významné investície do rôznych nadnárodných spoločností im pridáva na sile, na druhej strane stále pod tzv. rúškom tajnosti. Táto téma nepriehľadnosti čoraz viac vyvoláva intenzívne diskusie o ich zámeroch, riadení a mieste na svetových finančných trhoch. V dôsledku rastu ich veľkosti, $4.762,7bn v Októbri 2011, hrajú znančnú úlohu na finančných trhoch po celom svete.

Sú dôležité suverénne fondy? Ich významnú úlohu vidíme najmä v súčasných ekonomických podmienkach, kde na jednej strane bol kapitál vo viacerých spoločnostiach zmrazený, bojovali o prežitie, no na druhej strane fondy vystupovali ako veritelia. Pre cieľové krajiny, spoločnosti, kľúčom k zníženiu obáv nad ich investíciami je transparentnosť. Aj keď sme prezentovali, že je nepravdepodobné, že si spolu s investíciami presadzujú politické ciele, stále sú to však investori, ako aj hedge funds či private equity.

V práci sme kategorizovali suverénne fondy do 4 skupín: stabilizačné, šetriace, penzijné, investičné. Identifikovali sme rozdiely medzi stratégiami suverénnych fondov počas obdobia 2007 a v súčasnosti, ich návratnosti a detailné zloženia ich investičných portfólií. Pomocou zistených údajov sme formulovali hypotézy, ktoré boli následne testované pomocou štatistických metód.

Za ďalší smer skúmania suverénnych fondov považujeme Capital Assets Pricing Model, kde za predpokladu, že investujú v závislosti od trhovej kapitalizácie, by mohlo dôjsť k situácii, že v eurozóne a v USA by došlo k odlivu ich kapitálu, zatiaľ čo Japonsko a ďalšie rozvojové trhy by mohli zaznamenať prílev ich kapitálu.

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The Financial Times	http://www.ft.com/home/uk
The Wall Street Journal	http://europe.wsj.com/
U.S. Energy Information Administration	http://www.eia.gov/
United Nations	http://www.un.org/en/

Note: A lot of annual reports (over 50) from official websites of observed funds.

Appendix A

Possible new SWFs

Fund	Source	
South Australia´s SWF	uranium, copper, and iron ore	in 2011 was 5% royalty rate on other mineral products
The Falkland Islands SWF	oil & gas	for 2012, oil explorers are aiming for 8,3 bn barrels of oil around the Falklands, expecting up to $167B in revenues from oil in 2012
Papua New Guinea's Parliament SWF	mineral resources, oil and gas	
The Arab Authority for Agriculture Development (Dubai)	the objective is food security	new $800 million fund
Panama´s SWF (The government of Panama)	surplus revenue generated by the operation of the newly expanded Panama Canal	5% of world trade passes through the Panama Canal, gross income from all sources of about $3 billion dollars per year
Israel´s Cabinet SWF	state revenues from natural gas	gas revenues between $50 billion and $65 billion by 2040
Scotland´s SWF	export 50% of the electricity it generated by 2020	£30bn dividend from a "reindustrialised" green energy sector over the next 20 years
Future Fund in West Virginia	coal and natural gas	about four years ago produced about 150 million tons of coal
State Capital Investment Corporation (SCIC, Vietnam)		to make direct investments in securities
Suriname, Interim SWF	revenues from natural resources (gold, bauxite and oil)	US$ 20 million
Medicine Hat (city in Alberta), local Heritage Trust Fund	gas	median of over 45 billion barrels of oil and 3-6 trillion cubic meters of natural gas
Next Generation Fund (Iraq)	oil revenue	model by March 2012
Ukraine, stabilization fund	a fuel	
Israel´s SWF	hydrocarbon revenues	

Source: Author´s comparison according to data from SWF Institute, Bloomberg, Reuters during period from December 2011 to February 2012.

Appendix B

The Sovereign wealth fund investment continuum

Official Reserves/ Central Bank	**Stabilization Funds**	**Pension Funds**	**Domestic Sovereign Funds**	**Sovereign Wealth Funds**	**State-Owned Enterprices**
• External assets for directly financing international payment imbalances • Highly liquid, often OECD government bonds,	• Funds to insulate budget & economy from excess volatility, inflation, Dutch disease, other macro-economic threats, • Low risk, liquid assets, cash, government bonds	• Investment vehicles to meet government´s future pension obligations • Funded and denominated in local currency	• Investment vehicles to encourage domestic economic development • Funded and denominated in local currency	• Investment vehicles by foreign exchange assets • Managed separetely from official reserves • Typically have a higher tolarance for risk	• Companies in which the states has significant control • May make investments in foreign assets
EXAMPLES					
• Federal Reserve (U.S.) • Bank of England (U.K.) • SAMA (Saudi Arabia)	• Pula Fund (Botswana) • Oil Stabilization Fund (Iran) • Economic and Social Stabilization Fund (Chile)	• Government Pension Fund-Norway • California Public Employees´ Retirement System (U.S.)	• Samruk-Kazyna (Kazakhstan) • Malaysia Development Fund (Malaysia)	• Abu Dhabi Investment Authority (Abu Dhabi) • Government of Singapore Investment Corp. (Singapore) • Qatar Investment Authority (Qatar) • China Investment Corporation (China)	• CNOOC (China) • Gazprom (Russia) • SABIC (Saudi Arabia)

Investment Risk

Source: According to the BORTOLOTTI, B. - BARBARY, V., *Braving the New World: Sovereign wealth fund investment in the uncertain times of 2010*, Monitor Group, published June , 2011, last updated January 20, 2012, p. 34

Appendix C

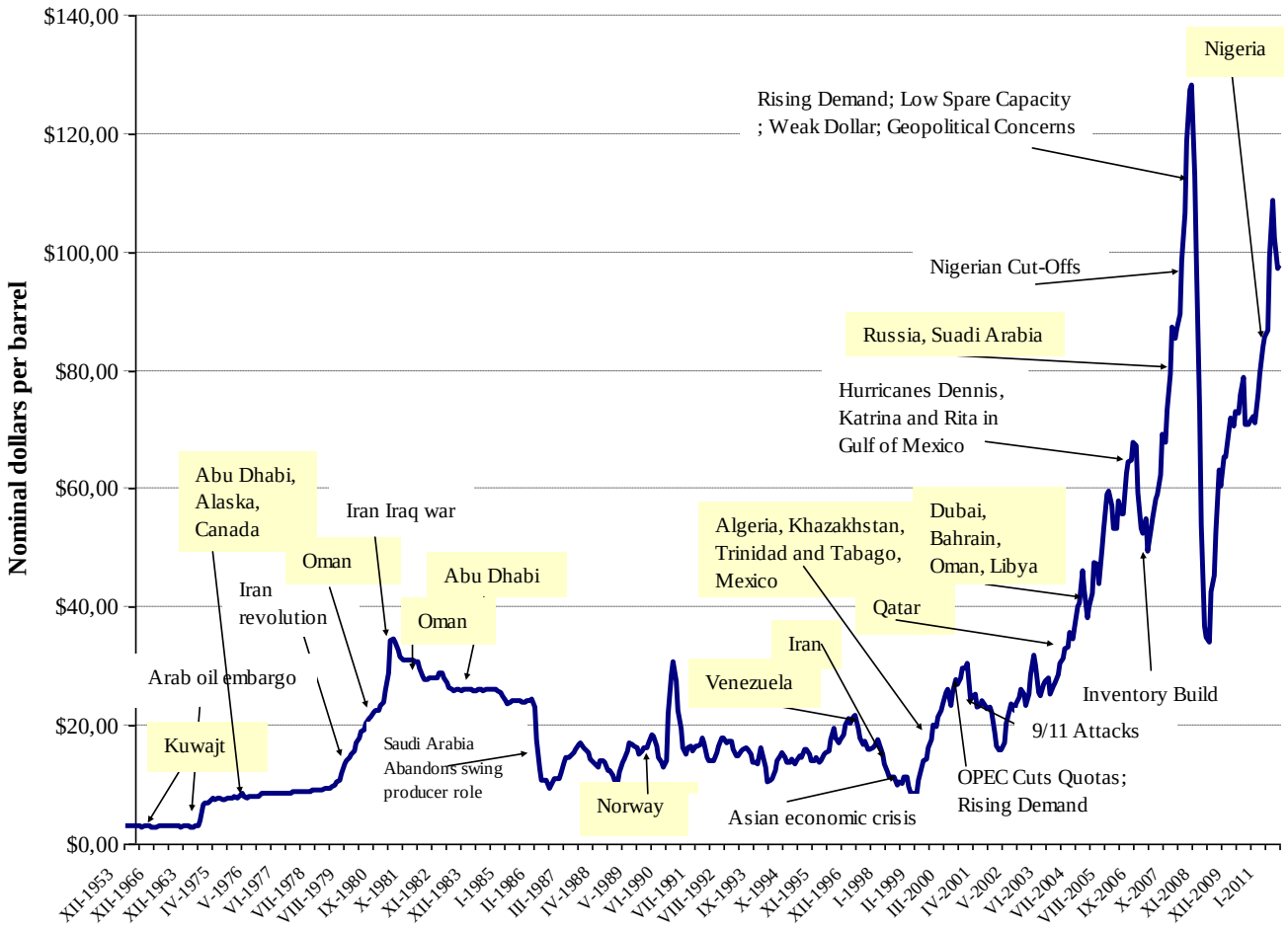
Characteristics of Sovereign Investment Vehicles

	Owner	Source of fund	Investment purposes	Governmen t control	Disclosure	Investment portfolio
1. Sovereign Wealth Funds	Government	Commodity/ Non-Commodity	Responce to the accumulation of wealth	Total	Varies (mostly non transparent)	
2. Sovereign Wealth Enterprises	Central government	Forex reserves/ export revenues/ investment returns	Value enhancement (primary) or strategic goals (secondary)			Diverse
3. Sovereign Owned Enterprises	Central/local government	Government grants/ corporate profits	Value enhancement profit making/ strategy	Significant	Varies	Industrial sector prone
4. Government Pension Fund	Members of pension scheme	Contribution from comunity members	Alleviate future pension funding pressure	Insignificant	Transparent	Diverse
5. Public Pension Fund	Pension member	Pension contributions	Fund defined as benefit obligations	Insignificant	Transparent	
5.1 Social Security Reserve Funds	social security institution or fund management entity	Contributions of employee, employer				
5.2 Sovereign Pension Reserve Funds	Government	Fiscal transfers				
6. Monetary Authorities	Central fovernment	Forex reserves	Value preservation/ currency stabilization	Total	Varies	Monotonous

Source: By author, according to data from SWF Institute, last updated 13 Oct, 2011 and Xie Ping - Chao Chen, *The Theoretical Logic of Sovereign Wealth Funds*, 2009, p. 6

Appendix D

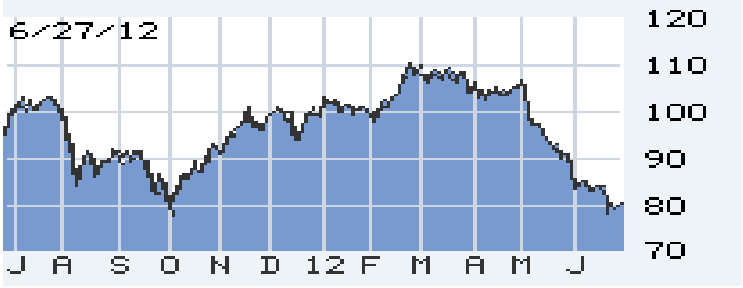
Founding years for oil-based SWF´s and oil prices



Source: By author according to data from www.inflationdata.com, www.eia.gov, Afyonoglu, G., et. al., *The Brave New World of Sovereign Wealth Funds*, 2010, p. 17

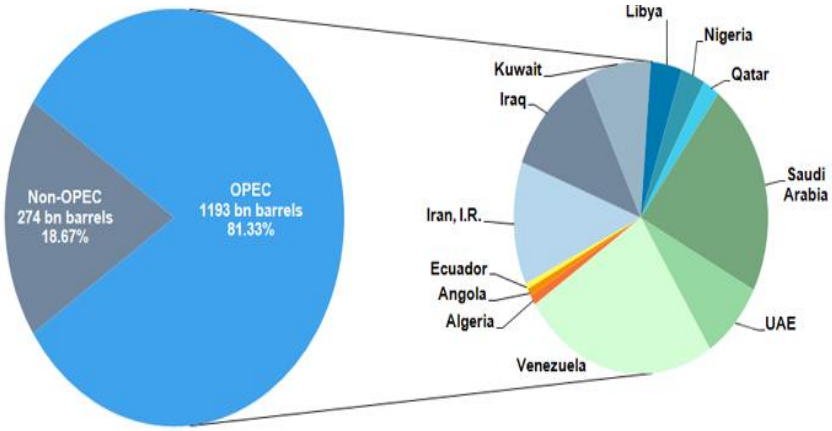
Appendix E

E1: Price of crude oil 2011, $/barrel



Source: Available at: http://online.wsj.com/mdc/public/page/mdc_commodities.html?mod=mdc_topnav_2_3002_europe, last updated 14 Oct, 2011

E2: OPEC share of world crude oil reserves 2010 (bn/b)

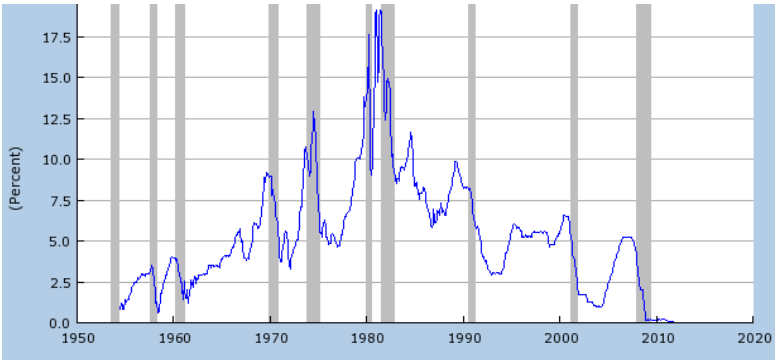


OPEC proven crude oil reserves , end 2010
(billion barrels)

Venezuela	296.50	24.8%	Iraq	143.10	12.0%	Libya	47.10	3.9%	Algeria	12.20	1.0%
Saudi Arabia	264.52	22.2%	Kuwait	101.50	8.5%	Nigeria	37.20	3.1%	Angola	9.50	0.8%
Iran, I.R.	151.17	12.7%	United Arab Emirates	97.80	8.2%	Qatar	25.38	2.1%	Ecuador	7.21	0.6%

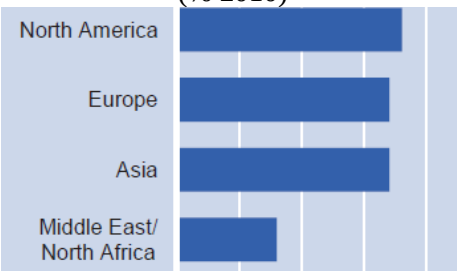
Source: OPEC Annual statistical bulletin 2010

E3: Effective Federal Funds Rate (FEDFUNDS)



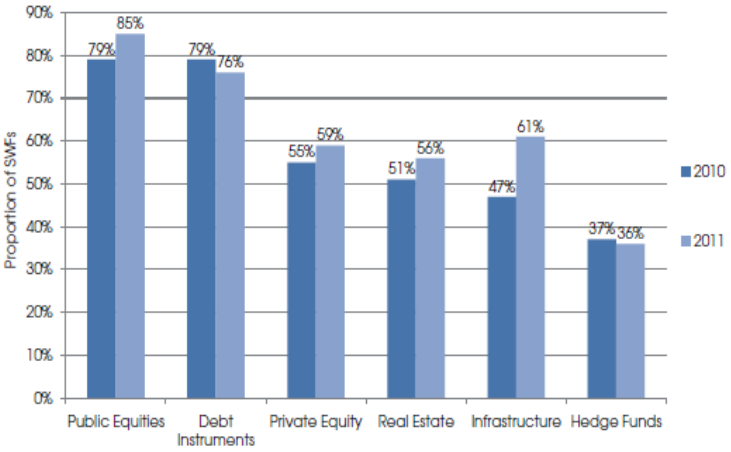
Source: Board of Governors of the Federal Reserve System, http://research.stlouisfed.org/fred2/series/FEDFUNDS?rid=18&soid=1, last accessed Nov 19, 2011

E4*:* Proportion of SWFs investing in PE funds with following geographi-cal targets (% 2010)



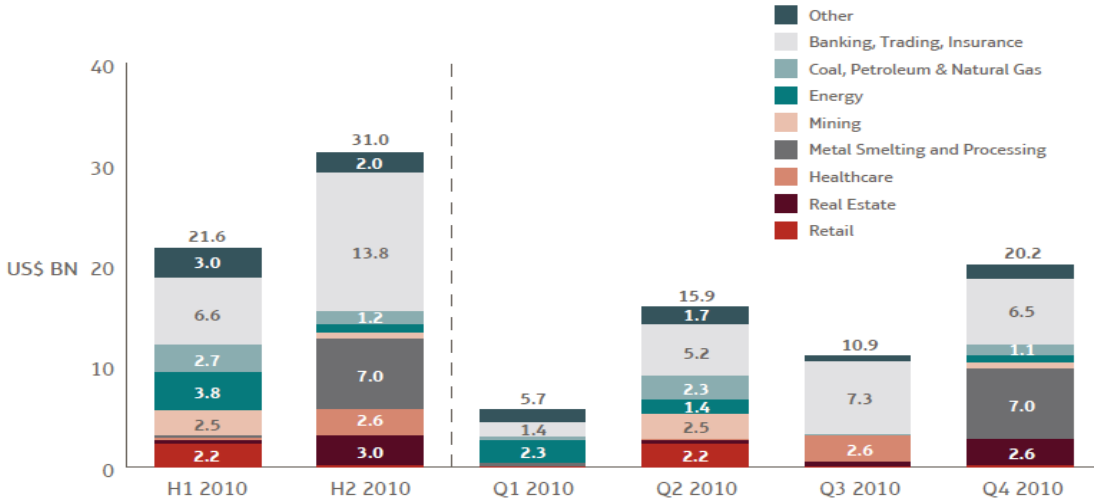
Source: MEYER, T., *Private Equity Opportunities in turbulent times*, Deutsch Bank Research, October 2011, p.11-12

E5*:* Total proportion of SWFs investing in each asset class 2010 vs. 2011



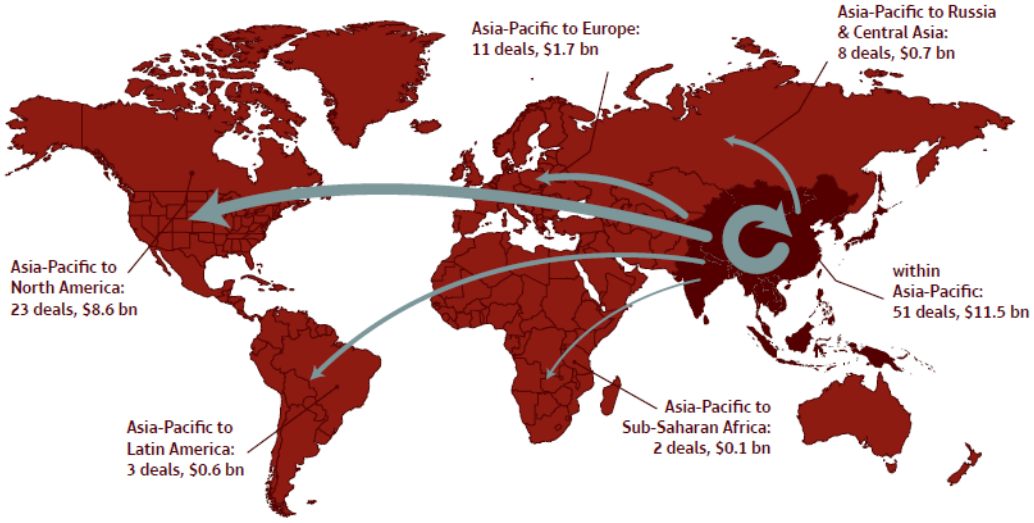
Source: Pregin, 2011 Preqin Sovereign Wealth Fund Review, p. 2

E6*:* Value of SWF Investments by target sector



Source: BORTOLOTTI, B., BARBARY, V., p.14

E7: Investment flows from Asia-Pacific SWFs 2010



Source: BORTOLOTTI, B., BARBARY, V., Monitor Group, 2011, p. 30

Appendix F

Statistical calculations SWF´s

Year - T	T*	y	Y~	(y/Y~)*100	% coeficient= ((y-(Y~))/Y~)*100
1953	-41	1	0,5512	181,4223512	81,42235123
1954	-40	1	0,5886	169,8946653	69,89466531
1956	-38	1	0,6634	150,7386192	50,73861923
1958	-36	1	0,7382	135,4646437	35,46464373
1974	-20	2	1,3366	149,6333982	49,63339817
1976	-18	3	1,4114	212,55491	112,55491
1980	-14	1	1,561	64,06149904	-35,93850096
1981	-13	1	1,5984	62,56256256	-37,43743744
1983	-11	1	1,6732	59,76571838	-40,23428162
1984	-10	1	1,7106	58,45902023	-41,54097977
1985	-9	1	1,748	57,20823799	-42,79176201
1990	-4	1	1,935	51,67958656	-48,32041344
1993	-1	2	2,0472	97,69441188	-2,30558812
1994	0	1	2,0846	47,97083373	-52,02916627
1997	3	1	2,1968	45,52075747	-54,47924253
1998	4	1	2,2342	44,75875034	-55,24124966
1999	5	2	2,2716	88,04366966	-11,95633034
2000	6	5	2,309	216,5439584	116,5439584
2001	7	1	2,3464	42,61847937	-57,38152063
2002	8	1	2,3838	41,94982801	-58,05017199
2003	9	1	2,4212	41,3018338	-58,6981662
2004	10	1	2,4586	40,67355406	-59,32644594
2005	11	4	2,496	160,2564103	60,25641026
2006	12	7	2,5334	276,3085182	176,3085182
2007	13	4	2,5708	155,5935895	55,59358954
2008	14	4	2,6082	153,3624722	53,3624722
2011	17	2	2,7204	73,51860021	-26,48139979
2012	18	2,7876	2,7578	101,0805715	1,08057147
2013	19	2,825	2,7952	101,0661133	1,066113337
2014	20	2,8624	2,8326	101,052037	1,052036998
2015	21	2,8998	2,87	101,0383275	1,038327526
2016	22	2,9372	2,9074	101,0249708	1,024970764
2017	23	2,9746	2,9448	101,0119533	1,011953274
2018	24	3,012	2,9822	100,9992623	0,99926229
2019	25	3,0494	3,0196	100,9868857	0,98688568
2020	26	3,0868	3,057	100,9748119	0,974811907
2021	27	3,1242	3,0944	100,96303	0,96302999
∑ **2012-2021**		**29,559**			

Source: Author´s calculations according to data from SWF Institute, updated Oct 2011
*Year of Saudi Arabia is not available

Appendix G

Twenty largest SWF´s by assets under management
(Estimates assets $billion according to from different sources)

Country	Fund Name	SWF Institute (Oct 2011)	Monitor (July 2011)	SWF´s News (Sep 2011)	Range of estimated AuM
UAE – Abu Dhabi	Abu Dhabi Investment Authority	627	342	342-627	342 to 627
Norway	Government Pension Fund – Global	571,5	560,5	570	560,5 to 571,5
China	SAFE Investment Company	567,9	——	567,9	567,9
Saudi Arabia	SAMA Foreign Holdings	472,5	——	520	472,5 to 520
China	China Investment Corporation	409,6	332,4	409,6	332,4 to 409,6
Kuwait	Kuwait Investment Authority	296	296	296	296
China – Hong Kong	Hong Kong Monetary Authority Investment Portfolio	292,3	——	319,6	292,3 to 319,6
Singapore	Government of Singapore Investment Corporation	247,5	220	247,5	220 to 247,5
Singapore	Temasek Holdings	157,2	153,2	157,2	153,2 to 157,2
China	National Social Security Fund	146,5	132	146,5	132 to 146,5
Russia	National Welfare Fund	142,5	92,6	92,6	92,6 to 142,5
Qatar	Qatar Investment Authority	85	80	80-85	80 to 85
Australia	Australian Future Fund	72,9	77,2	77	72,9 to 77
Libya	Libyan Investment Authority	70	64,2	53,3	53,3 to 70
UAE – Abu Dhabi	International Petroleum Investment Company	58	49,7		49,7 to 58
Algeria	Revenue Regulation Fund	56,7	——	64	56,7 to 64
US – Alaska	Alaska Permanent Fund	40,3	——	37,5	37,5 to 40,3
Kazakhstan	Kazakhstan National Fund	38,6	43,5	44	38,6 to 44
South Korea	Korea Investment Corporation	37	——	37,6	37 to 37,6
Malaysia	Khazanah Nasional	36,8	——	25,7	25,7 to 36,8

Source: This numbers are a best guess estimation according to data from SWF Institute, Monitor, SWF´s News.

Appendix H

H1: Notable Holdings QIA

Firm Name	Firm Location	Stake
Banco Santander Brasil	Brazil	5,0%
Barclay	UK	7,1%
Cegelec	France	100,0%
Chelsfield Partners	UK	20,0%
Credit Suisse	Switzerland	9,9%
Doha Bank	Qatar	20,0%
Epicure Qatar Equity Opportunities	Qatar	10,1%
General Motors	US	10,000.0USD
Harrods	UK	100,0%
Hochtief	Germany	9,1%
Imagination Technologies Group	UK	11,4%
J Sainsburys	UK	27,3%
JMS Indochina	Vietnam	5,7%
London Stock Exchange	UK	20,0%
Porsche	Germany	10,0%
Songbird Estates	UK	24,0%
Volkswagen	Germany	17,0%

Source: Author´s, according to data from Preqin SWF Review, 2011, p. 10

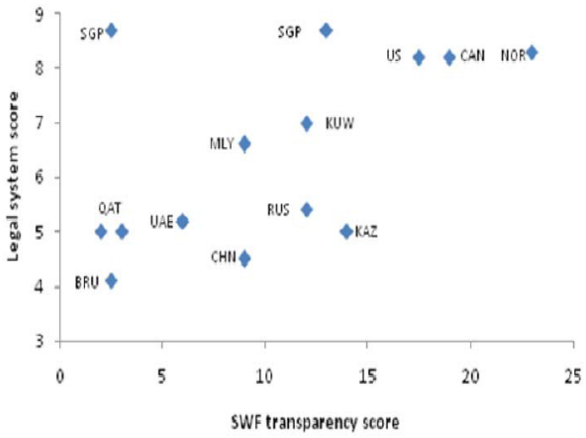
H2: 10 Largest direct SWF Investments of 2010

Parent Entity Name	National Affiliation	Target	Country of Target HQ	Completed date	Size of deal (USD MM)	Size of stake
Mubadala Development Company	U.A.E.	Aluminium in the Sarawak (SCORE)	Malaysia	8.10.2010	$7,000.00	Undisclosed
Qatar Investment Authority	Qatar	Agricultural Bank of China	China	14.7.2010	$2,800.00	Undisclosed
Qatar Investment Authority	Qatar	Banco Santandeer Brasil	Brazil	19.10.2010	$2,719.00	5,00%
Khazanah Nasional Bhd.	Malaysia	Parkway Holding Ltd.	Singapore	26.7.2010	$2,541.00	77.00%
China Investment Corporation	China	General Growth Properties Inc.	U.S.A.	9.11.2010	$2,300.00	7,40%
International Petroleum Investment Company	U.A.E.	UniCredit SpA	Italy	16.6.2010	$2,300.00	4.99%
Qatar Investment Authority	Qatar	Harrods	U.K.	7.5.2010	$2,227.00	100,00%
National Social Security Fund	China	Agricultural Bank of China	China	14.7.2010	$2,195.00	Undisclosed
China Investment Corporation	China	AES Corporation	U.S.A.	15.3.2010	$1.580.00	15,82%
Temasek Holdings	Singapore	China Construction Bank	China	11.11.2010	$1,500.00	0,75%

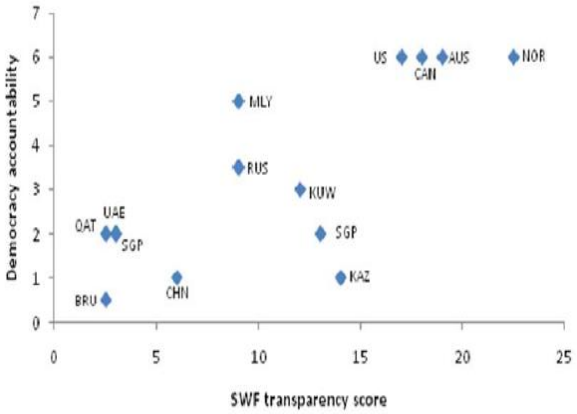
Source: Author´s, according to data from BORTOLOTTI, B., BARBARY, V., *Braving the New World: Sovereign wealth fund investment in the uncertain times of 2010*, p. 31

Appendix I

I1*:* Transparency and Legal system



I2: Transparency and Democracy



Source: TRUMAN, E. M., *Sovereign Wealth Funds: The Need for Greater Transparency and Accountability*, Peterson Institute for International Economics Policy Brief, 2007

Appendix J

Summary of investments of funds from December 2011 till February 2012 (continued on next page)

Sovereign Wealth Fund	Host company	Investment
The Canada Pension Plan Investment Board (CPPIB)	joint venture with the Westfield Group (USA)	equity investment will be US$1,8 bn= 45% interest in the joint venture
Temasek Holdings - Singapore	Marin Software (San Francisco Bay Area)	US$ 30 million
The California State Teachers' Retirement System (CalSTRS)	into infrastructure assets	US$ 500 million
The China Investment Corporation (CIC)	EIG Global Energy Partners	a minority stake in EIG
The Canada Pension Plan Investment Board (CPPIB)	Gassled Joint Venture (Gassled) from Statoil ASA	24,1% stake, C$3,18 bn
The Qatar Investment Authority (QIA)	Credit Suisse Office in London	£330 million
The China Investment Corporation (CIC)	Kemble Water (the holding company of Thames Water, London)	8,68% stake
Government of Singapore Investment Corporation	Li Ning Co (sportswear brand, Hong Kong)	93 million ordinary shares, representing approximately 8% of total share capital
Abu Dhabi's International Petroleum Investment Company (IPIC)	UniCredit S.p.A. (Italy)	by 6,5% raise its stake
The Korea Investment Corporation (KIC)	office in London on 1 Bartholomew Lane	75 million pounds
Qatar Investment Authority	Iberdrola SA (Spain's largest electricity provider)	increased its stake to 8,4 percent, $3 billion
Government Pension Global Fund - Norway	Volvo AB (VOLVB)	increased its stake in Volvo AB (VOLVB) to 3 percent, $840 million
The China Investment Corporation (CIC)	injection from China's central bank	received $50 billion
The China Investment Corporation (CIC)	plan to invest in Sunshine Oilsands Ltd. in Hong Kong	$150 million

Kazakhstan's SWF	Air Astana (aircraft)	in talks to acquire a 49 percent stake
South Korea's SWF	plan to buy Chinese equities and nation's bonds to diversify its foreign-exchange reserves.	buying several hundred million dollars
Qatar Investment Authority	in negotiations to purchase a stake in Qatar Automotive Gateway	
Qatar Investment Authority	in Philippines, mainly in infrastructure projects	$1 billion
The China Investment Corporation (CIC)	Shanduka Group	25 percent for $245 million
Khazanah (government's investment arm, PENANG)	80 percent stake in KCS Green Energy, 40 percent in Camco South East Asia (Camco SEA) and 23,6 percent in Camco International Ltd	invest up to US$150 million in 10 waste-to-energy projects in China
Oman´s Fund	boosted their stake in the Dubai Mercantile	to 29 percent from 25 percent
Abu Dhabi's Investment Authority (ADIA)	Daimler's shares (German car maker)	call options of 7,85%
Abu Dhabi's Investment Authority (ADIA)	to invest in India's infrastructure sector and wants to build a strategic partnership with New Delhi	12% stake in Infrastructure Leasing and Financial Services Company (ILFS)
Vietnam (SCIC)	invested in 627 projects in 55 countries and territories around the world	US$10,8 billion of investments in 2011
UAE´s funds	boost private businesses in Greece	
Qatar Investment Authority	Sri Lanka	co-operation on real estate deals
Khazakhstan's SWF	sponsors a Rally team	
Russian Direct Investment Fund (RDIF) with EBRD	Moscow's MICEX-RTS	7,54 percent stake, $340 million
The China Investment Corporation (CIC)	Yorkshire – including the electrification of the trans-Pennine rail link between Leeds and Manchester	spending billions of pounds on infrastructure projects in Yorkshire
Abu Dhabi's Mubadala and Dubai Aluminium (Dubal); joint venture	boost production, to become the single largest greenfield smelter in the world	plans to invest $3,8 billion
Qatar Investment Authority	European Financial Stability Facility, support the euro	plans to invest $33 billion

Source: Author´s comparison according to data from SWF Institute, Bloomberg, Reuters.

Appendix K

Major SWFs equity investments in financial institutions during financial crisis

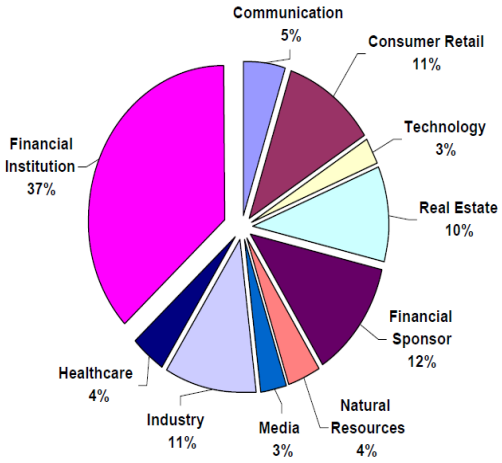
May 2007- 1Q 2008

Date	SWF	Portfolio company	$bn	% Stake	Security type
May 2007	China Inv. Corp.	The Blackstone Group	3,0	9,9	Non-voting common units
Dec-07	Government of Singapore Inv. Co.	UBS	9,8	8,6	New Conv. Units
2007-2008 Q1	Saudi Arabia Mon. Agency	UBS	1,8	1,6	New Conv. Units
2007-2008 Q1	Undisclosed Middle East Investor	UBS	1,8	1,6	n.a.
Dec-07	China Inv. Corp.	Morgan Stanley	5,5	9,9	Trust Preferred securities
Nov-07	ADIA	CITI	7,5	4,9	Trust Preferred securities nad Forward purchase contracts to acquire common stock
Jan-08	Government of Singapore Inv. Co	CITI	6,9	4,4	New Non-cumulative convertible preferred securities
Jan-08	Kuwait Inv. Auth.	CITI	3,0	1,6	New Conv. Units
Jan-08	Korea Inv. Corp.	Merrill Lynch	2,0	4,3	New Non-voting mandatory convertible non-cumulative preferred stock
(Dec 2007) - 2008 Q1	Temasek	Merrill Lynch	5,0	11,3	New common stock
2007-2008 Q1	Kuwait Inv. Auth.	Merrill Lynch	3,4	7,0	New Non-voting mandatory convertible non-cumulative preferred stock
2007-2008 Q1	Temasek	Barclays PLC	2.0	1,8	Common stock
2007-2008 Q1	China Development Bank	Barclays PLC	3.0	3,1	Common stock
2007-2008 Q4	Qatar Inv. Auth.	Barclays PLC	3,5	8,9	n.a.
2007-2008 Q1	Qatar Inv. Auth.	Credit Suisse	0,6	1,0	Common stock
2007-2008 Q1	Investment Corp. of Dubai	London Stock Exchange	3.0	28,0	n.a.
2007-2008 Q1	Qatar Inv. Auth.	London Stock Exchange	2,0	20,0	n.a.
2007-2008 Q1	Temasek	Standard Chartered	8,0	18,0	n.a.
2007-2008 Q4	Investment Corp. of Dubai	Standard Chartered	1,0	2,7	n.a.
2007-2008 Q4	Investment Corp. of Dubai	ICICI Bank Ltd	0,8	2,9	n.a.
2007-2008 Q1	SAFE China	Commonwealth Bank of Australia	0,2	0,3	n.a.
2007-2008 Q1	SAFE China	Australia and New Zealand Banking Group	0,2	0,3	n.a.
2007-2008 Q1	SAFE China	National Australia Bank	0,2	0,3	n.a.
2007-2008 Q1	Abu Dhabi Inv. Council	Carlyle Group	1,4	7,5	n.a.
		Total	**75,6**		

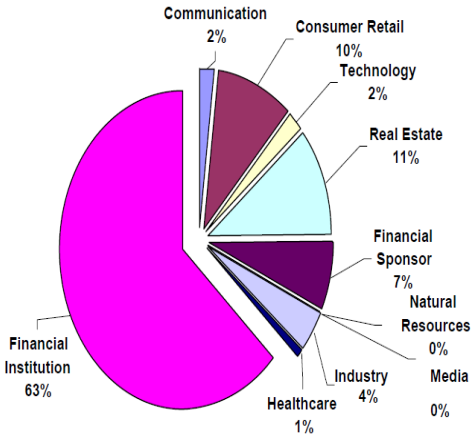
Source: According to data from MEZZACAPO, S. (2009), *The so-called "Sovereign Wealth Funds": regulatory issues, financial stability and prudential supervision*, European Commission, Economic Papers 378, p. 98-99.

Appendix L

L1: Ten largest SWF´s transactions during crisis 2007-2008 (Sector distribution - *Deal volume*)

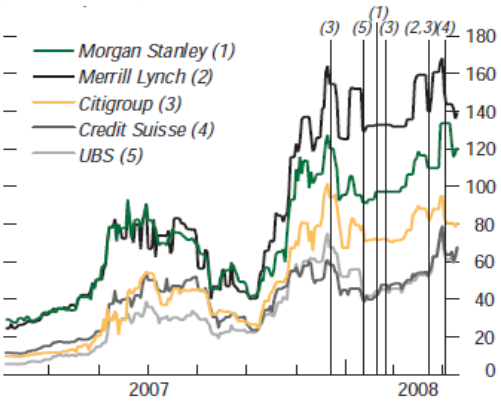


L2*:* Ten largest SWF´s transactions during crisis 2007-2008 Sector distribution - *Deal value*)

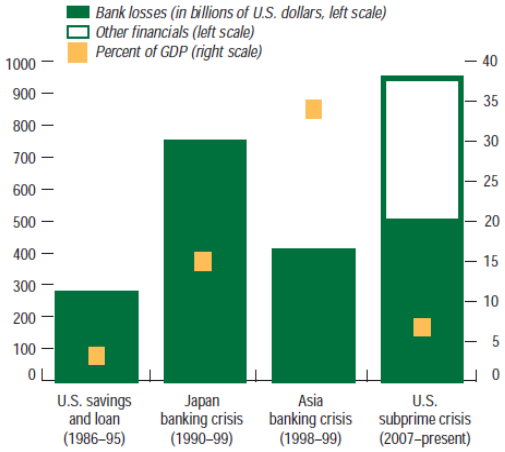


Source: MEZZACAPO, S. (2009), *The so-called "Sovereign Wealth Funds": regulatory issues, financial stability and prudential supervision*, p. 100-1

L3: Credit default swap spreads on selected financial institutions (In basis points)



L4: Comparison of Financial Crisis



Source: IMF, Global Financial Stability Report, Containing Systemic Risks and Restoring Financial Soundness, April 2008,Washington DC, p.13, 20

Appendix M

Observed variables of Testing hypothesis 5, N=19

Country	SWF	Fund value ($bn) [a]	Year established	Inflation [b]
United Arab Emirates	ADIA	627	1976	0,20%
Kuwait	Kuwait Investment Authority	296	1953	3,80%
Qatar	Qatar Investment Authority	85	2005	2,10%
Norway	Government Pension Fund	571,5	1990	0,20%
Russia	National Welfare Fund	142,5	2008	6,10%
Libya	Libyan Investment Authority	70	2006	-32,80%
Algeria	Revenue Regulation Fund	56,7	2000	5,16%
United States of America	Alaska Permanent Fund	40,3	1976	3,00%
Kazakhstan	Kazakhstan National Fund	38,6	2000	7,40%
Azerbaijan	State Oil Fund	30,2	1999	13,00%
Brunei	Brunei Investment Agency	30	1983	-22,10%
Iran	Oil Stabilisation Fund	23	1999	0,60%
Canada	Alberta´s Heritage Fund	15,1	1976	2,30%
Oman	State General Reserve Fund	8,2	1980	-23,50%
Mexico	Oil Revenues Stabilization Fund of Mexico	6	2000	3,82%
Trinidad & Tobago	Heritage and Stabilization Fund	2,9	2000	4,40%
Venezuela	FEM	0,8	1998	28,90%
Mauritania	National Fund for Hydrocarbon Reserves	0,3	2006	19,30%
East Timor	Timor-Leste Petroleum Fund	6,3	2005	9,10%

[a] October 2011
[b] 2011, Kuwait, Azerbaijan, Trinidad & Tobago, Mauritania, East Timor: 2010, Libya, Brunei, Iran, Oman: 2009

Source: Author´s, according to data from United Nations Statistics, SWF Institute, Bloomberg, Energy Information Administration, http://www.tradingeconomics.com/gdp-growth-rates-list-by-country, last updated 22 Feb 2012