

Sovereign Wealth Funds: A Case Study of Korea Investment Corporation

Andrea Paltrinieri¹, Flavio Pichler², Stefano Miani¹

(1.University of Udine, Italy; 2.University of Verona, Italy)

Abstract: Based on “in-depth study”, the aim of the paper is to investigate Korea Investment Corporation (KIC), a non-commodity Sovereign Wealth Fund, in order to analyze its investment strategies over the time (2005-2012) and evaluate any form of “political bias”. Our results suggest that KIC pursues financial objectives, aiming to maximize the portfolio risk/return relationship, as it manages foreign excess reserves of those managed by Bank of Korea. We also argue that a form of “internal political bias” affects investment process, as most of the financial resources are managed in-house. Overall, we support the hypothesis that in Korea Investment Corporation both financial and political objectives coexist.

Key words: sovereign wealth funds (SWFs); institutional investors; asset allocation; political bias; Korea Investment Corporation

JEL codes: G23, G29

1. Introduction

The recent decision of the Federal Reserve to reduce the purchase of government bonds and mortgage backed securities (the so called “tapering”), due to the improved growth prospects of the U.S. economy, has renewed fears about the emerging economies. The Morgan Stanley Capital International developing-nation gauge (MSCI emerging market index) has fallen 6.7% during January, 2014, compared to the drop of only 3.1% of the MSCI World Index advanced-nation shares, and the emerging market equity volatility has jumped the most in two years.

One of the main effects of the “tapering”, during the first weeks of 2014, has been the collapse of emerging market currencies: among them, Argentina’s peso has dropped as much as 16.5% in two days at the end of January, to reach 8.24 against the U.S. dollar before the Central Bank intervened in the market by selling \$100 million and Turkish lira has weakened 7.3% percent during January against the dollar, before the Central Bank discussed an increase in interest rates. In fact, most of the institutional investors tend to buy U.S. dollar assets, selling emerging market stocks, bonds and currencies, thus leading to massive capital outflows from these countries. This situation has revived fears relating to the occurrence of another emerging market financial crisis, similar to the Asiatic one of 1997-1998.

In this framework, both foreign exchange reserves and Sovereign Wealth Funds make a comeback as

Andrea Paltrinieri, Ph.D., Lecturer, University of Udine; research areas/interests: sovereign wealth funds, Islamic stock exchange, exchange traded commodities. E-mail: andrea.paltrinieri@univr.it.

Flavio Pichler, Ph.D., Associate Professor, University of Verona; research areas/interests: theory, regulation and supervision of financial system, economics of insurance and risk management. E-mail: flavio.pichler@univr.it.

Stefano Miani, Full Professor, University of Udine; research areas/interests: pension funds, pension system, regulation of financial markets and intermediaries. E-mail: stefano.miani@uniud.it.

important tools to prevent financial crises and, if necessary, to save the domestic financial system. For example, Argentina, during 2013, used its foreign exchange reserves, to support its currency and overall economy. Those reserves have tumbled at a rate of \$1.1 billion a month to a seven year low of \$29 billion. But also in the Middle East, Kuwait and Abu Dhabi, during subprime financial crisis, had used the financial resources from their Sovereign Wealth Funds to save the domestic bank system and some of the most important firms in the area (i.e., Dubai World).

Hence the decision is to investigate Sovereign Wealth Funds and, especially, Korea Investment Corporation (KIC), the South Korea Sovereign Wealth Fund. Economist (2011) stated that South Korea is a model of growth, a better exemplar than China, which is too vast to copy, and better, too, than Taiwan, Singapore or Hong Kong, but its rapid growth in 2010, after subprime financial crisis, has faced strong headwinds from the global economy, largely due to its openness to global trade and international finance (IMF, 2012).

The aim of the paper is, therefore, to analyze Korea Investment Corporation (KIC), a non-commodity Sovereign Wealth Fund, focusing on its establishment, evolution and corporate governance, within the Korean economy framework. The second objective of the paper is to investigate KIC investment strategies over the time (2005-2012) and its performance in order to evaluate if the fund aims to maximize the portfolio risk/return relationship, as it manages foreign excess reserves of those managed by Bank of Korea.

Our paper makes several contributions to the existing literature. First of all we try to expand the literature on SWF investment strategies and portfolio. Some studies focus on the impact of SWFs in the target firm performance: Bortolotti et al. (2010), Dewenter et al. (2010), Knill et al. (2010) among others, investigate the stock price reaction of target firms around acquisitions from SWFs. They show that the market expects this institutional investors to improve target firm performance given the positive price reaction in a short window. But the same authors, in a longer window (from one to two years), note that SWFs are not be able to improve both target firm performance and stock prices, acting as a passive investors.

Other studies analyze the portfolio of SWFs and their asset allocation. Balding (2008), investigating the portfolio of seven SWFs in a single year, shows their preference for a low risk/return asset classes, such as investment grade bonds and liquidity. Even in the case of equity investments they tend to buy large cap shares, with low level of risk. The same conclusions are reached by Chhaochharia and Laeven (2008), instead Fernandez and Eschweiler (2008) show a more aggressive asset allocation by SWFs, as they overweight equities and alternatives. Kunzel et al. (2011) compare the portfolio of SWFs across time, around subprime financial crisis, dividing them into four groups—stabilization, saving, sovereign pension reserve fund, and reserve investment corporation: they show the importance of the institutional objective and the time horizon in the strategic asset allocation. Our results suggest that KIC has an aggressive strategic asset allocation, overweighting equities and alternatives in accordance with its institutional objective.

Furthermore we contribute to the literature on SWF “political bias”, that is the influence of political motivations on SWF investment strategies. Balding (2008) and Avendaño and Santiso (2009) find no evidence of “political bias”, underlining how SWFs behave similarly to other institutional investors. Bernstein et al. (2009) highlight how SWFs investment strategies are influenced by political motivations, especially when the fund’s Board of Director includes politicians and the fund’s management is not entrusted to external managers. Moreover the authors refer mainly to “internal political bias”, determined by corporate governance of the fund. Knill et al. (2012) demonstrate that SWFs follow non-financial motivations in investment strategies and they “are more likely to invest in nations with which they have relatively weaker political relations”. Paltrinieri and Pichler (2012) show

that in the short term SWFs are influenced by political motivation, what they define “external political bias”. They argue that the influence of macro-economic factors related to internal financial system leads SWFs to deviate from portfolio maximization. Our results suggest that a form of “internal political bias” affects investment process, as most of the financial resources are managed in-house.

Finally we try to extend an emerging body of literature concerning “in-depth studies” on individual SWFs, as they are institutional investors typically characterized by a lack of transparency and poor information provided to the public. Goldstein (2008) and Balding (2012) investigate Temasek, a Singaporean SWF, Clark and Monk (2010) focus on the other fund of Singapore (Government of Investment Corporation, GIC), instead Chesterman (2008) analyzes Norway Government Pension Fund-Global. Woochan (2011) gives a detailed account of the creation and evolution of Korea Investment Corporation. He emphasizes several problems shown by the fund: among them, KIC has an unclear mission statement that also has evolved over time, exhibits a clear conflict between Central Bank and Ministry of Finance and Economy in SWF establishment, favours bureaucrats and politicians. Whereas these issues emerge from Woochan’s paper (2011), inducing the fear of a “political bias”, our work is complementary to the previous, trying to assess whether KIC confirms or refutes this bias, through the analysis of investment process, asset allocation and portfolios from 2005 to 2012. Overall, we support the hypothesis that in Korea Investment Corporation both financial and political objectives coexist.

The rest of the paper is structured as follows: Section 2 provides a definition of SWFs. Section 3 offers a view on Korean economy and KIC background. In section 4 we give an overview of KIC corporate governance, while in section 5 we present the main hypotheses and the research design. Section 6 analyzes KIC asset allocation and investment process and section 7 discusses results and draws some policy and economic implications. Finally section 8 presents our main conclusions.

2. A Definition of Sovereign Wealth Funds

Since a range of very different investment vehicles falls within the broad definition of SWFs (Rozanov, 2005; Blundell-Wignall et al., 2008; Kimmitt, 2008; Truman, 2008), it is important to exactly define what constitutes a SWF.

SWFs are those investment vehicles (1) that are established and controlled by a sovereign state or by a confederation of states, (2) that raise funds mainly through transfers of surplus financial assets in foreign currency, (3) that can issue explicit liabilities to increase financial leverage, (4) whose asset allocation and time horizon differ in relation to institutional objectives.

SWFs can be classified in relation to their institutional goals into: stabilization funds, to isolate state budgets from the excessive volatility of commodity prices, saving funds, to ensure intergenerational transfers of national wealth, sovereign pension reserve funds (SPRFs), to cover potential future pension deficits and reserve investment corporations, to manage currency reserves in excess of those managed by the Central Bank, in order to maximize the risk-return relationship.

In terms of funding, commodity funds raise funds from the sale of non-renewable commodities extracted from national soil (oil, copper, gas), non-commodity funds from transfers of currency reserves generated by current account surpluses (an export-led strategy associated with an exchange rate pegged to a major currency).

In accordance with the definition, we identify a dataset of 56 SWFs, with a total asset under management (AUM) of about \$5.5 trillion (SWF Institute). We analyze Korea Investment Corporation, a non-commodity fund

classified as reserve investment corporation, established in 2005, with a total AUM on June, 2013, of \$57 billion, the 17th according to Sovereign Wealth Fund Institute ranking. In Table 1 we summarize the top twenty SWFs for AUM.

Table 1 The Top Twenty SWFs for Asset Under Management (June, 2013)

State	Sovereign Wealth Fund	Inception date	Funding	Asset Under Management (US\$ billion)
Norway	Government Pension Fund-Global	1990	commodity	737.2
U.A.E. (Abu Dhabi)	Abu Dhabi Investment Authority	1976	commodity	627
China	SAFE Investment Company	1997	non-commodity	567.9
Saudi Arabia	SAMA	1952	commodity	532.8
China	China Investment Corporation	2007	non-commodity	482
Singapore	Government of Singapore Investment Corporation	1981	non-commodity	247.5
Russia	National Welfare Fund	2008	commodity	175.5
China	National Security Fund	2000	non-commodity	160.6
Singapore	Temasek Holdings	1974	non-commodity	157.5
Qatar	Qatar Investment Authority	2005	commodity	115
Australia	Australian Future Fund	2006	non-commodity	88.7
Algeria	Revenue Regulation Fund	2000	commodity	77.2
U.A.E. (Dubai)	Investment Corporation of Dubai	2006	commodity	70
U.A.E. (Abu Dhabi)	International Petroleum Investment Company	1984	commodity	65.3
Libya	Libyan Investment Authority	2006	commodity	65
Kazakhstan	Kazakhstan National Fund	2000	commodity	61.8
South Korea	Korea Investment Corporation	2005	non-commodity	57
U.A.E. (Abu Dhabi)	Mubadala Development Company	2002	commodity	53.1
Iran	National Development Fund of Iran	2011	commodity	49.6
USA	Alaska Permanent Fund	1976	commodity	46.8
Total				4437.5

3. The Korean Economy and KIC Framework

To understand the establishment and the goal of Korea Investment Corporation, we need to examine some essential features of the Korean economy, one of the most important among Emerging Markets.

Despite several countries in East Asia have been severely affected by two financial crises in the last 15 years, some special features of the Korean economy have made it more vulnerable to external shocks.

One of the key point of the Korean economy is linked to the capital flows (Woochan, 2011; Lee & Rhee, 2012). During 1997-1998 East Asian crisis, a sudden stop of net private capital inflows in Korea, triggered by a currency crisis and a loss of confidence by international investors, has fostered a huge financial account deficit at the end of 1997, of about \$11 billion.

But since the Korean won has begun to weaken against dollar, up to reach a peak on December 24, 1997 at 1964.8, the traditional current account deficit run until 1996, swung deeply into surplus, given the cheap Korean exports (\$42.6 billion in 1998 and \$24.5 in 2009). The prospect of a won strengthening (indeed the exchange rate USD-KRW was at about 1160 on mid 1999) got also stronger financial account surpluses, in particular foreign portfolio investments (in the fourth quarter of 1999 there was a financial account surplus of \$6 billion, in the

following quarter of about \$10 billion).

After the crisis both current and financial accounts were in surplus, but in the period 1999 to 2006 financial account has been, on average, lower than current account (Jo, 2011). As Aizenman et al. (2007) note, during this period Korea, among other Asian countries, has experienced growing financial openness coupled with greater exchange rate flexibility: in less than seven years, foreigners' equity position has climbed from 2% of GDP to about 23%, therefore a sudden capital outflows, given the flexibility of exchange rate, would have exposed Korea to a collapse of stock market and a huge real exchange depreciation, made it extremely vulnerable to external shocks.

Indeed in 2008, the crisis triggered by subprime mortgages in US, led to another round of huge capital outflows, especially after Lehman Brothers collapse, in a similar way to 1997. The financial account deficit reached \$42.6 billion in the fourth quarter of 2008, or about 20% of GDP, and that level was mostly due to large deficit in other investments, in particular short-term borrowings by Korean domestic banks and branches of foreign banks (Woochan, 2011).

But, compared to the previous crisis, the greater Korean economy openness made it also vulnerable to the contraction of global demand, as the year-on year growth rate of Korean exports plummeted from +27% in the third quarter to -9.9% in the fourth quarter 2008 and to -24.9% in the first quarter 2009 (Lee & Rhee, 2012). From then, the exchange rate depreciation during 2009 (USD-KRW peaked at about 1600), have led to a rapid increase of exports (the year-on-year growth rate was +28.8% in 2010 and 19.7% in 2011). The Figure 1 shows the exchange rate USD-KRW.

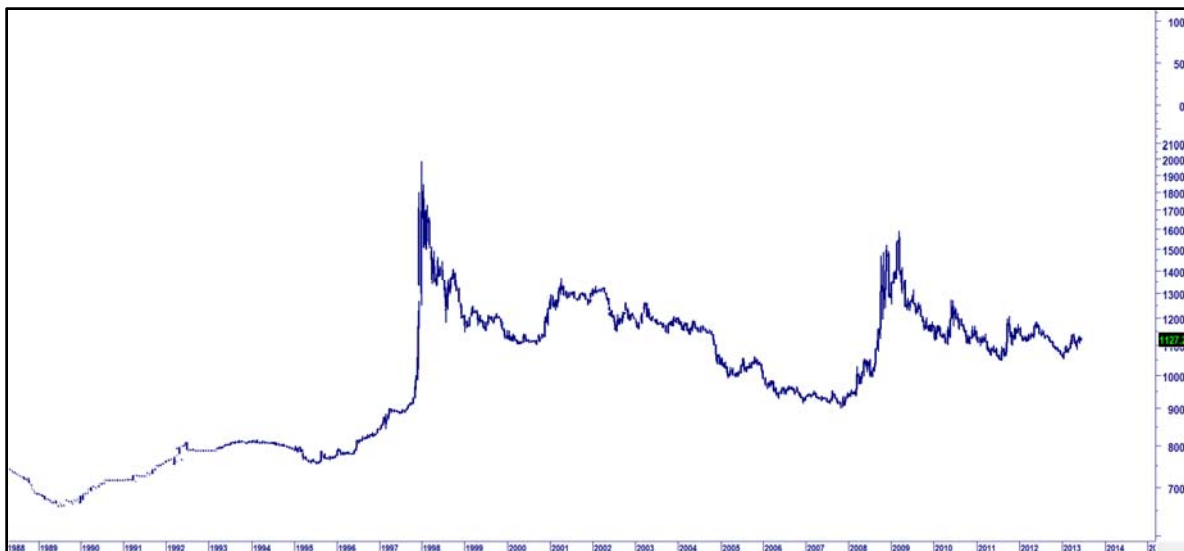


Figure 1 Exchange Rate USD-KRW (1988-2013)

In this framework, it should be emphasized the importance to hoard a large amount of foreign exchange reserves, that is another structural difference between the two crises previously examined. Indeed after Asian financial crisis, both current and financial account surpluses, along with a lingering Korean won depreciation against dollar (Jo, 2011), have fostered a substantial build-up in foreign reserves, probably well above any precautionary level against sudden financial shocks (IMF, 2003; Jinyong & Yong-Cheol, 2005; Aizenman et al., 2007): in 1997 they were \$9 billion, but they reached \$155 billion at the end of 2003 and \$262 billion at the end of

2007, equivalent to 137% of short-term external debt (IMF, 2012).

Even though about \$65 billion of reserves have been used during subprime financial crisis to ensure foreign exchange liquidity and to provide liquidity to entire financial systems (in particular to favour the roll-over of Korean bank short-term external debt), the subsequent reserve accumulation rebuilt the pre-crisis amount already in 2009 (\$269.9 billion, or 146% of short external debt), to reach \$304 billion in 2011.

The total benefits to hold a large amount of reserves (i.e., to restore confidence among global investors, to mitigate the effect of future crises, to provide liquidity to financial systems) should be compared with total costs. Among them, during the current and financial account surpluses, Korea has accumulated foreign reserves by exchanging US dollars into won, but this excess of liquidity had to be absorbed through sterilization measures. Korean government devised a unique policy tool, the Monetary Stabilization Bond, to sterilize excess liquidity (Jinyong & Yong-Cheol, 2012). The issue of this Korean won debt were around \$25 billion before 1997 crisis, up to reach about \$170 billion in 2010, and the interest paid was well above the interest gained on foreign exchange reserves (Woochan, 2011). Whereas the reserves are often held in safe assets, the opportunity costs are not negligible (Lee & Rhee, 2012).

Hence the idea of establishing a Sovereign Wealth Fund (Korea Investment Corporation), to manage the excess reserve in a more lucrative way of those managed by Bank of Korea, to maximize the risk/return relationship. With this goal in mind, we classify KIC as reserve investment corporation and in the following section we provide a brief overview of KIC corporate governance.

4. An Overview of Korea Investment Corporation Corporate Governance

Korea Investment Corporation has been established in 2005 through the Korea Investment Corporation Act with the aims of managing national wealth which are entrusted by both the government and the Bank of Korea and helping developing South Korea's financial system. Consistently with its legal form of reserve investment corporation, that is a SWF made up of excess reserves, KIC aims to maximize the risk/return relationship when managing resources, whilst the Bank of Korea faces restrictions on management foreign exchange reserves, as they are primarily invested on highly liquid assets, cash and debt securities (IMF, Balance of Payments Manual).

KIC has its own legal personality, being set up by the Ministry of Finance and Economy as a corporation, with an initial equity capital of KRW 200 billion (about \$200 million), and it is not established as a pool of assets, such as SAMA for example. It's also an asset managing company managing assets entrusted by the Bank of Korea and the Foreign Exchange Stabilization Fund, that, originally, had \$20 billion to manage, or 13% of total foreign reserves (Woochan, 2011): Bank of Korea had provided \$17 billion by the end of the first quarter 2007, the Foreign Exchange Stabilization Fund other \$3 billion by October, 2007.

Information about how and when financial resources would be provided by the government and/or the Central Bank and under which conditions withdrawals from the fund's would be possible, are scarce. On the funding side, there is not a particular level of foreign reserves that promotes the transfer to KIC (for example if they exceed three months of imports or total short external debt), nor specific provisions as regards to issue new debts to increase financial leveraged. It seems that issuing new domestic bonds could, on the one hand, amplify the sterilization effect that we previously examined, and, on the other hand, raise concern about the performance of the fund, given the high KRW interest rates they could suffer. Therefore, up to now, there hasn't been any bond issuing.

As regards to the withdrawal rules, the Presidential Enforcement Decree stated that the Bank of Korea can withdraw financial resources from KIC if (1) the size of reserves fell by more than 10% for two consecutive months, (2) Korea's sovereign rating fell below investment rating by at least two rating agencies, (3) KIC breached the investment management contract and didn't ratify such breach within a month. Until now, unfortunately, there is no confirmation that KIC would be involved during subprime financial crises, despite the use of Korea international reserves to support domestic banks; only a couple of newspapers speculated that KIC would support Korean banks when they were forced to roll over their external debt (Woochan, 2011).

Thus, on June, 2013, KIC has an asset under management of \$57 billion, but it aims to enhance \$200 billion by 2020 (KIC Annual Report, 2012).

The governance structure for KIC is made up of four bodies and three divisions, with a two-tier board system: the Steering Committee is the governing body for KIC and is composed of the Ministry of Finance and Economy, the governor of the Bank of Korea (the institutions that have entrusted assets exceeding KRW 1 trillion), the CEO of KIC and six external experts on the asset management industry ("civil members").

This composition is intended, on the one hand, to represent all institutions given rise to the fund, and, on the other hand, to ensure autonomy and independence from public authorities when it comes to managing the fund's assets under management, thanks to the six external experts. As regards the latter, KIC accurately defines requisites to be eligible as civil members, underlining a background in the areas of financial system and corporate management, but not a working experience in the asset management industry.

The *Steering Committee* has responsibility over the most important issues regarding the KIC: they are strategic asset allocation, medium to long term investment strategies, increases and/or decreases in the fund's assets under management, appointment of external managers and governors, approval of the financial statement and evaluation of the performances.

There are three other bodies that form KIC's governance structure. The Investment Subcommittee implements the decisions taken by the governing body, defines the tactical asset allocation in accordance with the *Chief Investment Officer*, plans investment on an annual basis and decides on all asset management issues posed by the *Steering Committee*. This body is quite similar to the *Asset Allocation Committee* in a mutual fund. The Risk Management Committee is endowed with the SWF risk management. The *Board of Directors* is a body with almost purely executive powers. It is formed by the CEO and all other governors appointed by the CEO after the positive consideration of the *Steering Committee*. The CEO is directly appointed by the President of the Republic of Korea on the recommendation of the Ministry of Strategy and Finance and after the consideration of the *Steering Committee*. The number of governors is, instead, not fixed: there is no information available on their current number nor on the range within which they can vary. The key functions of the *Board of Governors* are the use of emergency funds, even though no explanation is given on the reasons why they might be used, the arrangement of an estimated budget, the adoption of internal regulations and all other issues the *Steering Committee* asks it to decide on.

Finally, the corporate governance structure includes three strictly operational and managerial divisions. The first one is the Investment Management Division, headed by the Chief Investment Officer (CIO). It is internally divided in different sub-divisions according to asset classes (fixed income, equity) and strategies (Investment Strategy Group and Private Markets Group). The CIO implements measures adopted by the Steering Committee and is particularly focused on tactical asset allocation, short term investment policy, portfolio management and performance monitoring. He is accountant to the Board of Governors and the Steering Committee. The Corporate

Management Division is chaired by the Chief Operating Officer (COO). Its key functions are medium to long term planning, annual business plans arrangements and IT support to investment management through the Information Technology Team. The Risk Management Division: the Chief Risk Officer (CRO) chairs this division, that is endowed with the risk management of the fund's activity, the supervision of risk factors and performance of investments.

According to the Korea Investment Corporation Act, an independent from management internal audit function is also present (Statutory Auditor). The auditor is appointed by the Ministry of Strategy and Finance, after the positive consideration of the Steering Committee, and performs the typical auditing functions being accountant to the Board of Governors and arranging an Audit Report. The Statutory Auditor appoints the external auditors responsible for the audit of the fund's financial statement (see Figure 2 for a representation of KIC corporate governance).

What emerges from this analysis is that the governance structure of this SWF seems to ensure independence from political interferences, in particular thanks to the presence, in the *Steering Committee*, of the six external experts in asset management issues that should have no links with public authorities. However, two open issues remain: on the one hand, the role of members such as the Ministry of Strategy and Finance and the governor of the Bank of Korea when defining the guidelines or implementing specific investments, on the other hand, the possibility that the President of the Republic of Korea decides not to appoint specific members in the *Steering Committee*.

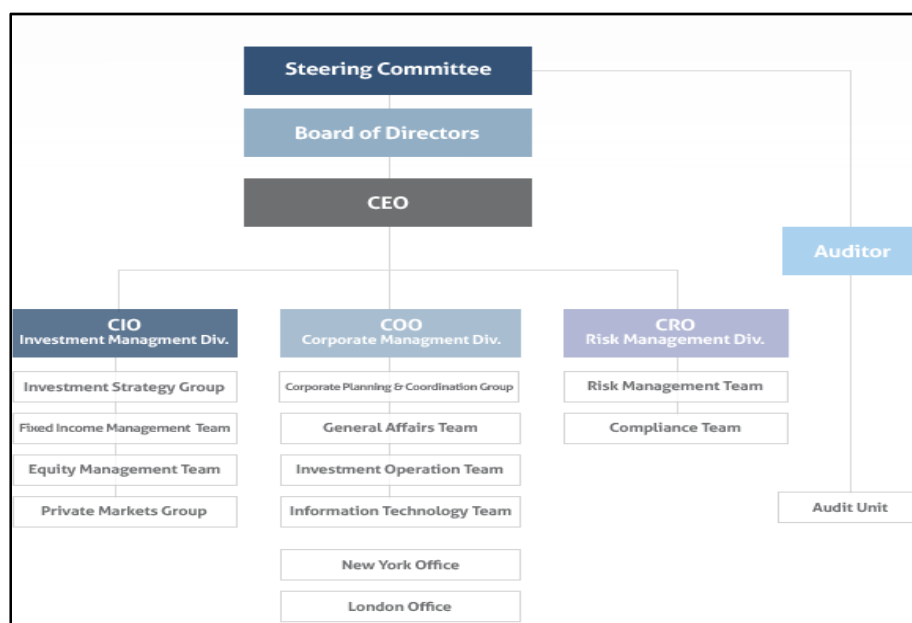


Figure 2 Korea Investment Corporation's Corporate Governance

5. Hypotheses Deduction and Research Design

After having framed Korea Investment Corporation, we assume that, among multiple missions, changing over time, the first goal is to manage the excess foreign reserves in a more lucrative way than Bank of Korea, in order to maximize the portfolio risk/return relationship. This is the reason why we examine the theoretical framework related to the asset management theory.

Following this approach, the first hypothesis is that time horizon is a key driver in the strategic asset allocation: the longer the time horizon and holding period, the higher the risk tolerance (Siegel, 1998). This is related to equity risk premium (Damodaran, 2010). In other words, we expect a higher proportion of equities over bonds and liquidity in Korea Investment Corporation (Gollier, 2007) asset allocation, given that it would also be the “premier Sovereign Wealth Fund for future generations” (KIC Vision, Annual Report 2012).

The second hypothesis is that KIC, given the long time horizon, seek to invest in illiquid assets, such as private equity, hedge funds and real estate to exploit the illiquidity premia, or the extra-return required by investors to hold a less liquid asset (Brandt & Kavajecz, 2004; Khandani & Lo, 2009).

In relation to the geographical asset allocation, there are two opposite thrusts: on the one hand someone could expect a preference for domestic/regional asset, the so-called home bias, that we find in institutional investors (Chan et al., 2005; Ke et al., 2006) and that could foster a “political bias” (Bernstein et al., 2009); on the other hand a ban on investment in KRW-denominated assets (Woochan, 2011) reduces the probability to incur in home bias, but cannot rule out the “political bias” as KIC may invest in countries with similar cultural origins (Chhaochharia & Laeven, 2008). Our third hypothesis is that KIC avoids home and cultural bias, investing abroad, outside Asia-Pacific area.

Finally as Bernstein et al. (2009) show that SWFs are affected by “political bias” when fund’s management is not entrusted to external managers, we check, analyzing the investment process, the presence of internal or external managers. If most of the investment strategies were implemented by external managers, KIC would avoid any form of “internal political bias”.

To conduct this analysis for the period 2005-2012, since the inception, we collect public data from KIC Annual Reports and KIC website: we perform a benchmark analysis, we assess strategic and geographical asset allocation to verify if KIC aims to maximize the risk/return relationship and if it incurs in “political bias”.

We are aware that there is a lack of data on Sovereign Wealth Funds, since they are not regulated, as hedge funds, and KIC is not an exception: this issue can lead to a biased analysis.

Even though its degree of disclosure is not as high as the top SWFs, according to Sovereign Wealth Fund Institute KIC’s *Linaburg-Maduell Index* is equal to 9 out of 10, steadily over time (Woochan, 2011, assumes a score of 6), and the Truman scoreboard is equal to 51%, higher than most of East-Asia non-commodity SWFs and Middle-East commodity SWFs (China Investment Corporation for example has a *Linaburg-Maduell Index* equal to 8, Government of Singapore Investment Corporation equal to 6).

KIC has published its Annual Report since 2007, thus it is possible to gather information on the fund’s management structure, strategies and governance, but this disclosure is still much lower than the most transparent Sovereign Wealth Fund, the Norway Government Pension Fund-Global. We are able to collect data on geographical asset allocation for example only for the period 2010-2011 (in 2012 Annual Report there are no information), but, unfortunately, we are not be able to obtain any information related to sectorial asset allocation. Instead data on benchmark, strategic asset allocation and performance are provided over the time.

6. KIC Investment Strategies: Asset Allocation Analysis and Investment Process

First of all, we try to understand KIC investment strategies through the benchmark analysis during the period 2005-2012 (see Table 2).

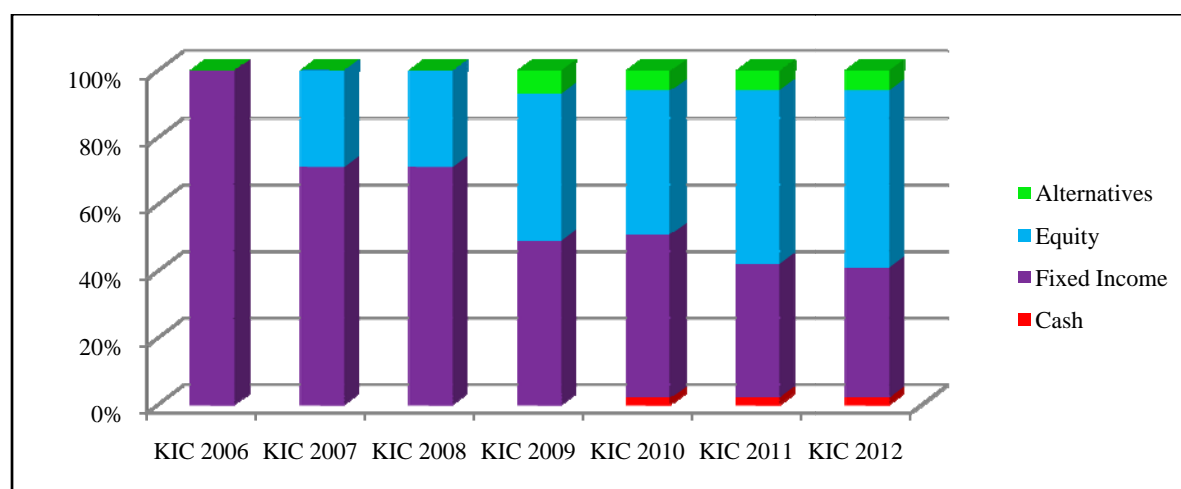
Table 2 Benchmark for Asset Class (December 2007-December 2012)

Asset Class	Benchmark	Introduction
Equity	Morgan Stanley Capital International All Country	2007
Bonds	Barclays Capital Global Aggregate	2008
Inflation-linked bonds	Barclays Capital Global Inflation-linked	2009
Hedge Funds		
Private equity	G7 Inflation + 5%	2010
Real estate		
Commodity	S&P GSCI Light Energy	2010

The table shows the difficulty in identifying KIC portfolios through this type of analysis: the first benchmark (Morgan Stanley Capital International All Country, or MSCI World) was introduced on 2007 in relation to the equity component. Referring to the bond component, on September 2008 Barclays Capital Global Aggregate substituted Lehman Brothers Global Aggregate Bond Index after Lehman Brothers failure, instead at the end of 2009 Barclays Capital Global Inflation-Linked was established to identify inflation-linked bonds as a stand-alone asset class. Finally, on 2010, two benchmarks were introduced as regards to the alternative asset class: S&P GSCI Light Energy index is relative to commodities, while hedge funds, private equity and real estate got a target return, equal to G7 Inflation plus 5%.

Overall, there is a single benchmark for each asset class: the equity and bond components are represented by a global index, instead the alternatives have one sectorial index (S&P GSCI Light Energy index) and one target return.

The absence of any weight of each index makes difficult to identify KIC and leads us to investigate strategic asset allocation (see Figure 3).

**Figure 3 Strategic Asset Allocation: Evolution (December 2006-December 2012)**

To analyze strategic asset allocation, we divided KIC portfolios into four asset classes, namely cash, fixed income, equity and alternatives. We included in fixed income asset class inflation-linked bonds, while in alternatives we consider investments in private equity, hedge funds, real estate and commodities, in the same way as Kunzel et al. (2011).

Looking at the Figure 3, we find evidence that Korea Investment Corporation opted for an aggressive strategic asset allocation; furthermore we can note that the weight of the riskiest asset classes, such as equity and alternatives, has increased over time.

Indeed, after the first phase of inception in 2006 (the first investment was made on November, 2006, in bonds), there has been a progressive growth of the equity component. In 2007, by December, of the \$20 billion entrusted by the Foreign Exchange Stabilization Fund and the Central bank, \$14.8 billion were invested: \$10.3 billion, or 71%, in bonds, \$4.5 billion, or 29%, in equities. While in 2008 asset allocation remained unchanged, in 2009 major changing happened as regards KIC portfolio, since its assets under management had increased to \$30 billion by December that year. The strategic asset allocation shifted towards higher risk/return relationship: at the end of 2009, equities were 47% of the total traditional portfolio.

Furthermore, in the second half of 2009, the Ministry of Finance and Economy, through the Foreign Exchange Stabilization Fund, entrusted additional assets to KIC: \$3 billion were provided to make “special investments” and \$2 billion to be invested in alternatives. The former were used to buy a \$2 billion stake in Merrill Lynch, the latter to implement investments in the alternative asset class, up to just under 7% of the overall portfolio at the end 2009.

In 2010 the asset under management amounted to \$37.5 billion, and it was divided into three different portfolios: 90.8% was invested in traditional asset classes, 5.5% in alternative asset classes and 3.7% had been used for special investments. While the percentage of risky assets has remained almost unchanged on the traditional portfolio, KIC, on the special investment side, aimed at building a diversified portfolio through acquiring shares in leader firms at a global level. At the of end 2010, these special investments are relative to four firms active in the financial and energy sectors: Bank of America-Merrill Lynch, where KIC’s shares already amounted to more than 7% at the of end 2008, Chesapeake Energy, with an interest in the natural gas production, Laricina Energy and Osum Oil Sands Corp., interested in the oil sector.

In 2011, as the asset under management increased to \$42.9 billion, thanks to the additional resources provided by the government and the Bank of Korea, the investments in traditional asset classes raised to 91.1%, at the expense of special investments. High volatility in global financial markets due to different factors, such as the Euro zone debt crisis, the downgrading of the USA economy and the slowdown of the Chinese economy, did not imply changes in KIC’s investment policy. On the contrary, it increased the weight for greater risk activities, maybe consistently with the new vision of the SWF (“to be the premier sovereign fund for future generations”) that boosts a long term time horizon for investments.

Consequently, investments in fixed income decreased from 49% of the overall portfolio in 2010 to 41% in 2011, whilst equities raised from 43% of the overall portfolio in 2010 to 51% in 2011. Alternatives remained unchanged instead. As regards special investments, KIC did not disclose information for 2011.

In 2012, additional injections to the fund resulted in another substantial increase in asset under management, that reached \$57 billion at the end of the year, with “increased exposure to stocks and credit to enhance returns” (Annual Report 2012, CEO Message, p. 8). Indeed, the equity component in December, 2012, amounted to 53% of the total portfolio, with a stable 6% of the alternative asset.

If we consider this major shift in the strategic asset allocation over time (in 2007, only 29% of the total asset under management was invested in equities, in 2012 this percentage was raised to 53%, with another 6% of alternatives), we can say that time horizon is an important key driver in KIC investment strategies.

In particular, strategic asset allocation has heavily changed in 2009, probably because of the impact of the subprime crisis on the fund’s performances (see Table 3 for an overview). The Steering Committee decided then to implement a “contrarian strategy” increasing investments in equities and alternatives, therefore decreasing those in bonds.

Given that this shift proved to be permanent, we support the hypothesis that this SWF tries to maximize the portfolio risk/return relationship, with a higher proportion of equities over bonds and liquidity in order to exploit equity risk premium; at the same time KIC tries to invest in alternatives, to exploit illiquidity premia. This would be consistent with the nature of the fund (“reserve investment corporation”), but also with the last mission (“increase national wealth by maximizing risk/adjusted returns and invest for the benefit of future generation”). From this analysis, we can argue that Korea Investment Corporation pursues financial objectives.

The next step is to analyze geographical asset allocation. As we obtain information only for 2010 and 2011, on one hand, we divided the total portfolio into three asset classes (equities, bonds and alternatives), and, on the other hand, we considered four areas, in which each asset class can be invested (America, Europe, Asia-Pacific and Emerging Markets-ex Asia). Figures 4 and 5 show KIC geographical asset allocation for the period 2010-2011.

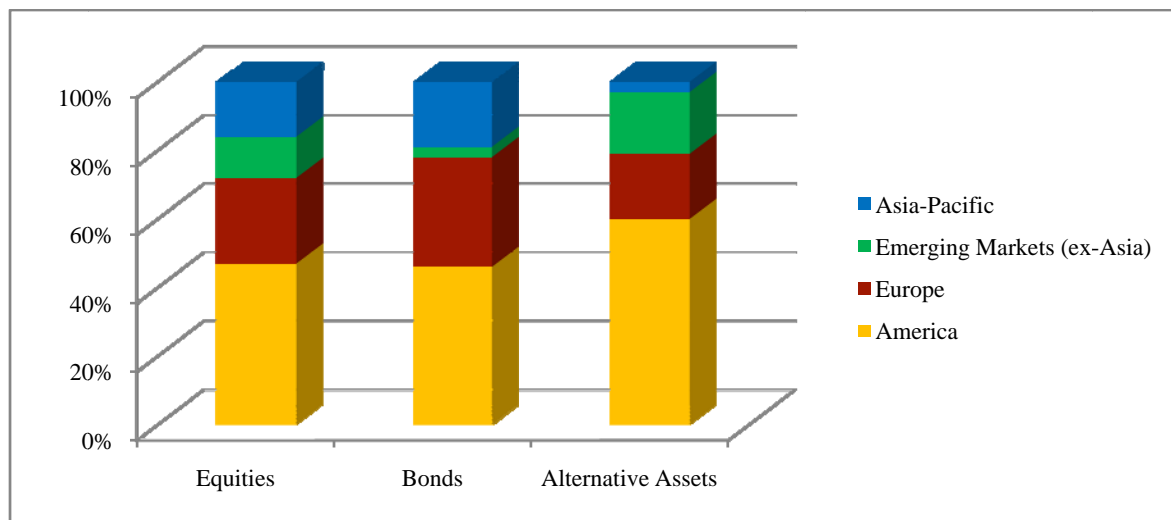


Figure 4 Geographical Asset Allocation (December 2010)

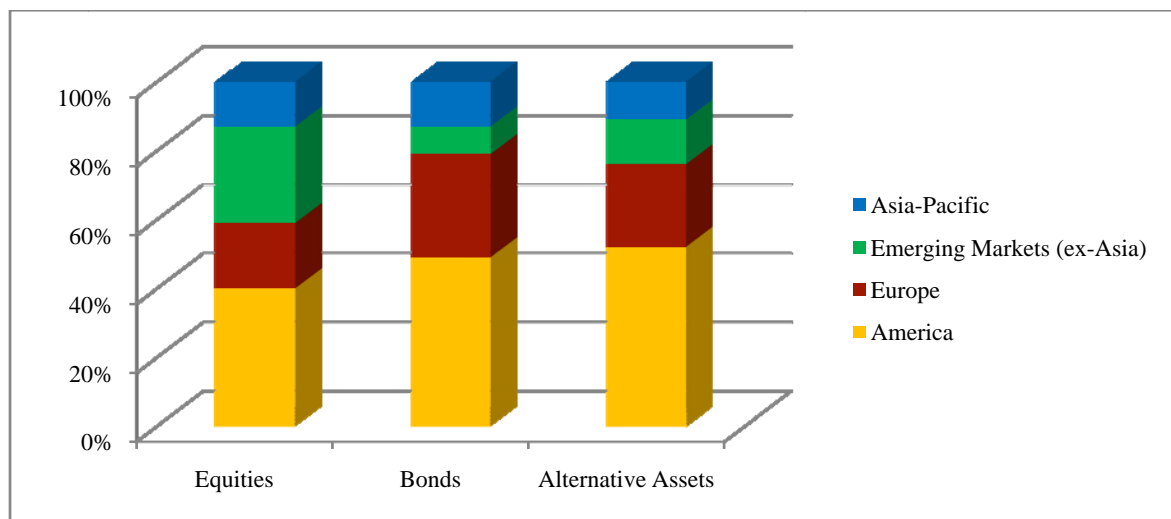


Figure 5 Geographical Asset Allocation (December 2011)

Looking at the figures, we can deduce that geographical asset allocation does not seem to be influenced by a

strong home bias, or a preference for domestic/regional assets. If we consider for example the geographical asset allocation of the equity component in 2010, we can note that 47% was invested in America and 25% in Europe. These type of weights were not so much different from the benchmark used, namely MSCI World (here US weight is 48% and Europe weight is 25%). This trend is confirmed by other asset classes in 2010 and in 2011: we can note that the weight in bond issues in Europe are greater than equities of the same region for both years and, on the other hand, that in 2011 the weight of Emerging Markets-ex Asia equities was increased from 12% to 28%. The Asia-Pacific area has a less than 20% weight on the overall portfolio in 2010 (about equal to zero in alternatives), and less than 15% in 2011.

Overall we can say that KIC tends to avoid both home and cultural bias, as its geographical asset allocation demonstrates that it invests mainly outside Asia-Pacific region, and it is overweight in American assets.

Therefore after asset allocation analysis, we can rule out any form of “political bias”, as KIC tries to pursue financial objectives, under its institutional goal to maximize the excess reserve risk/return relationship, and avoids any form of home and cultural bias investing outside Asia-Pacific region.

But it’s interesting to go deep inside the investment process as Woochan (2011) underlines that “the case of KIC effectively shows how a sovereign wealth fund can be operated in a way that favors the bureaucrats and the politicians”. In particular we want to dwell on one aspect worthy of note, or rather if the portfolio management are carried out by internal or external managers.

At the end of 2007, almost all financial resources were re-entrusted to external managers: indeed, they had to manage the \$4.5 billion in equities and \$8 billion in bonds (out of a \$14.8 billion), or 85% of the asset under management. The remaining \$2.3 billion were internally invested in bond. But, over the years, investments carried out by internal managers have steadily increased. In 2008, 35% of the fund’s financial resources were internally managed; and this percentage grew to 65% at the end of 2009, to reach 70.3% in 2010, up to 71.9% in 2011. At the end of 2012, there was a decline to 66.7%.

The steady increase of in-house investments could have different explanations: as Woochan (2011) notes, more resources are internally managed, less relevant is the double-fees payment by Bank of Korea (one for KIC and the other one for KIC’s external manager), but, at the same time, this choice doesn’t attract foreign asset management companies into Korea and thereby doesn’t contribute to the development of Korea’s financial industry (one of KIC mission). If we follow Bernstein et al. (2009) results, the more resources in-house managed, the more the probability of “internal political bias”.

To verify if external managers didn’t get positive results, as the double-fees payment, in order to justify the choice to manage in-house the financial resources, we also check for the KIC performance (see Table 3):

Table 3 Korea Investment Corporation Performance (December 2007-December 2012)

	2007	2008	2009	2010	2011	2012
<i>Total rate of return</i>	7.40%	-13.71%	18.67%	8.46%	-3.32%	11.83
Versus benchmark	-0.25%	-0.66%	+1.42%	+0.05%	-0.90%	0.66
<i>Equities</i>	5.19%	-41.43%	31.96%	11.71%	-10.26%	16.20
Versus benchmark	-1.19%	-0.11%	-0.23%	-0.68%	-0.99%	+0.01
<i>Bonds</i>	9.91%	3.81%	8.56%	5.60%	3.94%	7.76
Versus benchmark	+0.09%	-1.36%	1.71%	0.35%	-0.71%	+1.24

According to the table, there is no strong evidence that, over the time, internal management has been better than external management: if we consider the total return rate against benchmark, we note three years of

underperformance (2007-2008-2011), but in Annual Report there is no distinction between in-house and external managers. Nevertheless, in 2007 and 2008 the fund showed an underperformance against benchmark in both equity and bond investments, also due to higher fees paid to external managers. The only year in which there was an over performance in both equity and bond investments against benchmark was 2012 with 66.7% of the total asset under management internally managed. Overall, in 2012, the total annualized return since inception of the fund was 4.32%, with a slight underperformance against benchmark of -0.07%.

As we don't have strong evidence that internal managers have been better than external managers, we tend to support Bernstein et al. explanation: since KIC was among the first SWFs to delegate to external managers the management of part of its portfolio, in order to ensure independence and lessen political influence, the reversal of the process raise doubts on "internal political bias".

7. Discussion, Policy and Economic Implications

In the previous section we examined KIC investment strategies, its asset allocation and investment process, noting that in this SWF both financial and political objectives coexist. In particular, on the investment side, we pointed to an aggressive strategic allocation pursued by the fund, in order to exploit equity and illiquidity premium, in a similar way to other institutional investors such as hedge funds, and to an absence of home bias, due to a huge overweight in US area. In the analysis of the investment process, we found that there is an influence of political motivations in investment strategies: this feature makes SWFs unique within the asset management industry.

Our paper could have a lot of economic and policy implications. From the macro-economic point of view, we could draw that Korea Investment Corporation is not considered as a tool to protect the Korean financial system against financial crises, in a different way than foreign exchange reserves. Given the overweight of equities and alternatives in the strategic asset allocation, it would be hard to immediately sell these assets and obtain liquidity in order to help for example the domestic banks. Hence the importance of the foreign exchange reserves. The Korean Central Bank should carefully consider both their amount and their diversification into liquid assets, in order to quickly restore the confidence among the investors in the case of a sudden financial crisis.

Nevertheless, our results underline that Sovereign Wealth Funds are extremely important investment vehicles for those countries that have a massive amount of foreign exchange reserves, more than three months of import or total external debt. Countries such as India and Thailand are in talk to establish a new Sovereign Wealth Fund, but also China and Indonesia could easily transfer the excess reserves into an existing one. The investment in asset classes such as equities or real estate or commodities could result in higher performances in the medium to long term compared to those obtained by the Central Banks, and could provide more financial resources to specific objectives (i.e., to cover potential future pension deficits or to assure intergenerational transfers of national wealth).

On the other hand, our findings may be useful to policymakers in the definition of a regulatory framework. There are several authors that suggest to regulate Sovereign Wealth Funds in a similar way to other institutional investors (Mezzacapo, 2009), without introducing any new requirements (Kimmitt, 2008; Epstein & Rose, 2009; Barbary & Bortolotti, 2011). We could frame within this strand the so called "Santiago Principles" or generally accepted principles and practices (GAPP), established by the International Group of Sovereign Wealth Funds. The purpose of the GAPP is "to identify a framework of generally accepted principles and practices that properly

reflect appropriate governance and accountability arrangements as well as the conduct of investment practices by SWFs on a prudent and sound basis (IWG, 2008). They are a voluntary set of principles covering three main areas: (1) legal framework, objectives and coordination with macroeconomic policies, (2) institutional framework and governance structure, (3) investment and risk management framework. If we consider our results, we should be careful to support the self-regulation as a basic framework for SWFs. If they pursue also political objectives, they could be interested to strategic assets of another country, rather than to the mere capital gain related to a financial instruments. If it's true that the major part of nations have a tight regulation in order to avoid controlling stakes from foreign countries/SWFs and to ensure financial stability, one could also consider to introduce a tighter regulation (Gilson & Milhaupt, 2008), removing, for example, the voting rights from the shares purchased by Sovereign Wealth Funds.

8. Conclusion

In this paper we try to shed some light on Korea Investment Corporation, a non-commodity Sovereign Wealth Fund, with a total asset under management of \$57 billion, the 17th according to Sovereign Wealth Fund Institute ranking. We have framed KIC within Korea economy, since the idea of establishing a new SWF in Korea emerged after Asian financial crisis in 1997-1998. After the end of the nineties, Korea has experienced a long period of both current and financial account surplus, thanks to export-led strategy due to a steady depreciation of the USD-KRW exchange rate. In this period it has accumulated a large amount of foreign reserves, more than three months of imports and short external debt, and thus the idea to establish a SWF, classified as reserve investment corporation, to manage the excess reserve in a more lucrative way of those managed by Bank of Korea.

After giving a view of corporate governance of the fund, we try to assess if “political bias” undermine KIC management, through an analysis of asset allocation and investment process. As the first goal is to manage the excess foreign reserves in a more lucrative way than Bank of Korea, if KIC aims to maximize the risk/return relationship, pursuing financial objectives, we could rule out “political bias”.

Our results suggest that KIC tends to manage financial resources pursuing the maximization of the risk/return relationship, as, over time, strategic asset allocation has shifted toward riskier asset classes, such as equities and alternatives in order to exploit equity risk premium and illiquidity premium. In this sense time horizon is a key driver in strategic asset allocation, as KIC tries to be “the premier Sovereign Wealth Fund to future generations”.

At the same time, geographical asset allocation doesn't seem to show a strong home or cultural bias, that, eventually, could result in “political bias”, as KIC overweight US area and underweight Asia-Pacific area, both in bond and equity part of the total portfolio.

But, as we go deep inside the investment process, we note that, despite KIC was among the first SWFs to delegate to external managers the management of part of its portfolio, in order to ensure independence and lessen political influence, this process has been reversed over time. Since that the major part of the financial resources are managed in-house, we cannot completely rule out the presence of “internal political bias”, or the influence of political motivations on investment strategies.

Overall, we support the hypothesis that in Korea Investment Corporation both financial and political objectives coexist, as Dyck and Morse (2011) and Paltrinieri and Pichler (2012) show, in contrast to Balding (2008) and Avendaño and Santiso (2009). We also support Bernstein et al. (2009) thesis that SWF investment

strategies are influenced by political motivations, especially when the fund management is not entrusted to external managers. These results could have a lot of policy and economic implications, that could be addressed in future researches.

Acknowledgment

We would like to thank the American International Business Studies-South East (AIB-SE) conference reviewers (2013) for valuable suggestions.

References:

- Aizenman J., Lee Y. and Rhee Y. (2007). "International reserves management and capital mobility in a volatile world: Policy considerations and a case study of Korea", *Journal of Japanese International Economies*, Vol. 21, pp. 1-15.
- Avendaño R. and Santiso J. (2009). "Are sovereign wealth funds' investments politically biased? A comparison with mutual funds", working paper, *OECD Development Centre* 283, pp. 1-50.
- Balding C. (2008). "A portfolio analysis of sovereign wealth funds", working paper, University of California, SSRN eLibrary, pp. 1-64.
- Balding C. (2012). "A brief research note on Temasek holdings and Singapore: Mr Madoff goes to Singapore", working paper, SSRN eLibrary, pp. 1-12.
- Barbary V. and Bortolotti B. (2011). "Taming Leviathan: Foreign investment, political risk and a regulatory framework for Sovereign Wealth Funds", *Paolo Baffi Centre on Central Banking and Financial Regulation*, Bocconi University, Working Paper, pp. 1-27.
- Bernstein S., Lerner J. and Schoar A. (2009). "The investment strategies of sovereign wealth funds: National bureau of economic research", *Working Paper 14861*, Cambridge, Massachusetts, pp. 1-53.
- Blundell-Wignall A., Wei Hu Y. and Yermo J. (2008). "Sovereign wealth and pension fund issues", *OECD Working Papers on Insurance and Private Pensions* 14, pp. 1-18.
- Bortolotti B., Fotak V., Megginson W. and Mirackly W. (2010). "Sovereign wealth fund investment patterns and performance", Working Paper, University of Oklahoma, SSRN eLibrary, pp. 1-62.
- Brandt M. and Kavajecz K. (2004). "Price discovery in the U.S. treasury market: The impact of order flow and liquidity on the yield curve", *Journal of Finance*, Vol. 59, No. 6, pp. 2623-2654.
- Chan K., Covrig V. and Ng L. (2005). "What determines the domestic bias and foreign bias? Evidence from mutual fund equity allocation worldwide", *Journal of Finance*, Vol. 60, No. 3, pp. 1495-1534.
- Chesterman S. (2008). "The turn to ethics: Disinvestment from multinational corporations for human: Rights violations-the case of Norway's Sovereign Wealth Fund", *American University International Law Review*, Vol. 23, pp. 577-615.
- Chhaochharia V. and Laeven L. A. (2008). "The investment allocation of sovereign wealth funds", working paper, SSRN eLibrary, pp. 1-44.
- Clark G. L. and Monk A. (2010). "Government of Singapore Investment Corporation (GIC): Insurer of last resort and bulwark of nation-state legitimacy", working paper, SSRN eLibrary, pp. 1-22.
- Damodaran A. (2010). "Equity risk premium (ERP): Determinants, estimation and implications—The 2010 edition", *Stern School of Business*, pp. 1-89.
- Dewenter K. L., Han X. and Malatesta P. H. (2010). "Firm values and sovereign wealth fund investments", *Journal of Financial Economics*, Vol. 98, pp. 256-278.
- Dyck A. and Morse A. (2011). "Sovereign wealth fund portfolios", working paper, University of Toronto and University of Chicago, SSRN eLibrary, pp. 1-36.
- Epstein R. A. and Rose A. M. (2009). "The regulation of sovereign wealth funds: The virtues of going slow", *The University of Chicago Law Review*, Vol. 76, No. 111, pp. 1-24.
- Fernandez D. G. and Eschweiler B. (2008). "Sovereign wealth funds: A bottom-up primer", *JP Morgan Research*, pp. 1-100.
- Gilson R. J. and Milhaupt C. J. (2008). "Sovereign wealth funds and corporate governance: A minimalist response to the new merchantism", *Law and Economics*, pp. 1-35.
- Goldstein A. (2008). "Temasek: fondo sovrano o reincarnazione dell'IRI nello stretto di Malacca?", *Osservatorio Monetario*, No. 3, Milan, Università Cattolica del Sacro Cuore.

- Gollier C. (2007). "Intergenerational risk-sharing and risk-taking of a pension fund", *Cesifo Working Paper*, pp. 1-52.
- International Monetary Fund (2003). "Three current policy issues in developing countries", *World Economic Outlook*, September, pp. 65-111.
- International Monetary Fund (2008). "Sovereign wealth funds—A work agenda: Monetary and capital markets and policy development and review departments", pp. 1-38.
- International Monetary Fund (2012). "Republic of Korea", *2012 Article IV Consultation*, September.
- International Working Group of Sovereign Wealth Funds (IWG) (2008). "Sovereign wealth funds, generally accepted principles and practices: Santiago principles", pp. 1-59.
- Jinyong K. and Yong-Cheol K. (2005). "The monetary stabilization bond spread as a signal for financial crisis", working paper, SSRN eLibrary, pp. 1-29.
- Jo G. J. (2011). "Analysis of international reserve hoarding in Korea", *Pacific Economic Review*, Vol. 16, No. 2, pp. 154-167.
- Ke D., Ng L. and Wang Q. (2006). "Home bias in foreign investment decisions", working paper, SSRN eLibrary, pp. 1-45.
- Khandani A. E. and Lo A. W. (2009). "Illiquidity Premia in asset returns: An empirical analysis of hedge funds, mutual funds, and U.S. equity portfolios", working paper, SSRN eLibrary, pp. 1-59.
- Kimmitt R. M. (2008). "Public footprints in private markets: Sovereign wealth funds and the world economy", *Foreign Affairs*, Vol. 87, No. 1.
- Knill A., Lee B. and Mauck F. (2010). "Is sovereign wealth funds investment destabilizing?", Working Paper, Florida State University, pp. 1-42.
- Knill A., Lee B. and Mauck F. (2012). "Bilateral political relations and sovereign wealth fund investment", *Journal of Corporate Finance*, Vol. 18, pp. 108-123.
- Kunzel P., Lu Y., Petrova I. And Pihlman J. (2011). "Investment objectives of sovereign wealth funds—A shifting paradigm", *International Monetary Fund Working Paper*, WP/11/19, pp. 1-17.
- Lee H. and Rhee C. (2012). "Lessons from the 1997 and the 2008 crises in Korea", *Asian Economic Policy Review*, Vol. 7, pp. 47-64.
- Mezzacapo S. (2009). "Law & Economics dei c.d. Fondi Sovrani d'investimento nell'ordinamento comunitario e nazionale", *Diritto della Banca e del Mercato Finanziario*, Vol. 22, No. 1, pp. 55-90.
- Paltrinieri A. and Pichler F. (2012). "Are Sovereign Wealth Funds different?", *Fourth Joint World Bank/Bank for International Settlements Public Investor Conference on "Central Banks, Sovereign Wealth Funds and Public Pension Plans"*, Washington DC, pp. 1-37.
- Rozanov A. (2005). "Who holds the wealth of nations?", *Central Banking Journal*, Vol. 15, No. 4.
- Siegel J. (1998). *Stocks for the Long Run*, New York, Irwin.
- Truman E. (2008). "The rise of Sovereign wealth funds: Impacts on foreign policy and economic interests", *Testimony before the Committee on Foreign Affairs*, US House of Representatives, Washington, May 21.
- Woochan K. (2011). "Korea investment corporation: Its origin and evolution", *KDI School Working Paper Series*, SSRN eLibrary, pp. 1-44.