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Original Research Article

Development of Countries with Natural Resources: Why Countries Set Up Sovereign Wealth Funds?

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Abstract

This paper focuses on examining the role of Sovereign Wealth Funds (SWFs) in terms of their purposes, objectives, funding, organization and investing process. Therefore, this paper analyzes if countries set up SWF with debt, and if their assets under management will grow in the future. First of all, we clarify new topic, SWFs, by latest research. Secondly, we analyze how SWFs are funded and thirdly, how their investments may contribute to the development of the country.

Keywords: Sovereign Wealth Funds, Assets Under Management, Debt
JEL classification: H63, F30, F21

INTRODUCTION

Sovereign Wealth Funds (SWFs) are defined as sovereign-owned or sovereign-controlled pools of funds that invest in stocks, bonds, real estate, and other financial instruments. Funds has primarily focused on their unique ability to merge the most feared elements of the public and private sectors: the power of private finance and state coerciveness. More to the point, SWFs were not originally created to establish the perfect blend of state centric coercive power and market oriented financial acumen, but to solve very real economic policy dilemmas. In other words, SWFs increased their importance in the global financial system in the last decade and especially during the financial crisis period.

Nevertheless, their assets under management (AUM) reached US $5 trillion in 2013 according to the Sovereign Wealth Fund Institute and will grow to at least $10 trillion by 2015. This amount can be compared to the amount managed by hedge funds and private equity markets at the end of 2011, under 4 trillion in total. According to the Preqin for the first time, assets of these sovereign wealth entities have surpassed the $5tn mark, with total assets estimated at $5,38tn as of October 2013; SWFs have gained more than $750bn in additional assets since 2012.

However, topic Sovereign Wealth Funds has generated recent attention in the literature, what we summarize below. Latest research of Eva Van der Zee (2012) pointed out that SWFs investment policy could contribute to a positive change in the conduct of companies that violate human rights or damage the environment. More to the point, SWFs are different than other institutional investors, because while they act as private actors, they could also be considered to be state actors. Ch. Balding (2012) described innovations in Sovereign Wealth Fund Management. He presented that the most original SWFs were making valuable economic policy innovations to prevent inflation and macroeconomic instability. Francis In, Raphael Jonghyeon Park, Philip Inyeob Ji and Bong Soo Lee (2013) examined the behaviour of SWFs with different objectives and whether SWF investments have a destabilizing effect on the market. Wagner D. (2013) developed an SWF classification that encompasses their common characteristics and investment objectives. Vidhi, Luc (2008), Grennes (2009), Miracky et. Al. (2009) concluded investment strategies, volatility, performance of SWFs.

DATA AND METHODOLOGY

Literature concerning these funds is contained mostly in

financial institutions research and macroeconomic publications of countries including multinational banks. The paper is descriptive and uses investigative data. Our research methodology focuses on two main objectives: first, comprehensiveness of research and second accuracy of information. We rely on data from Sovereign Wealth Fund Institute, International Monetary Fund and World Economic Outlook Database, Preqin. In short, decent data set were collected.

The methods to be deployed in this paper are qualitative and quantitative analysis, Student‘s t-distribution, TINV function, moving average, that requires active intervention by the researcher.

Structure of the Study

The rest of paper 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 and on the other hand we also explain the purposes and size of SWFs. Chapter 3 provides in detailes hypotheses. This paper aims to examine if countries set up SWFs with low or higher debt than 60% of GDP, what is regarded as optimal debt for country. Then we want to examine if SWFs will play important role in the future due to their assets under management, if they will continue to grow. Chapter 4 concludes the paper.

Literature review

This section contains the various definitions of the SWFs. Gugler, P. – Chaisse, J. (2009, p.5) pointed out that 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. Technical definition of SWF´s presented by Monk (2009, p.11) describes 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. Balin, B. J. (2008, p.4) 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.

Categories of SWFs

At this point, as we introduced definitions of SWFs above, now we look over typology of these funds. Viewed in this light, 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.

For better understanding how countries set up SWF it´s necessary to present following Figure 1 that clearly shows how SWF works, more to the point, his main objective, funding, organization and investing process. 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.

What are purposes of SWFs?

SWFs can be introduced for a number of different reasons and each has different objectives according to the information from Sovereign Wealth Fund Institute and Preqin. The question is: What is a advantage for country when they decide to set up SWF? A number of SWFs are funded through commodity exports and are set up to provide their countries with a stable level of income in the face of fluctuating commodity prices. Other funds funded by natural resources exports are established with the aim of maximizing returns on the income from exports and

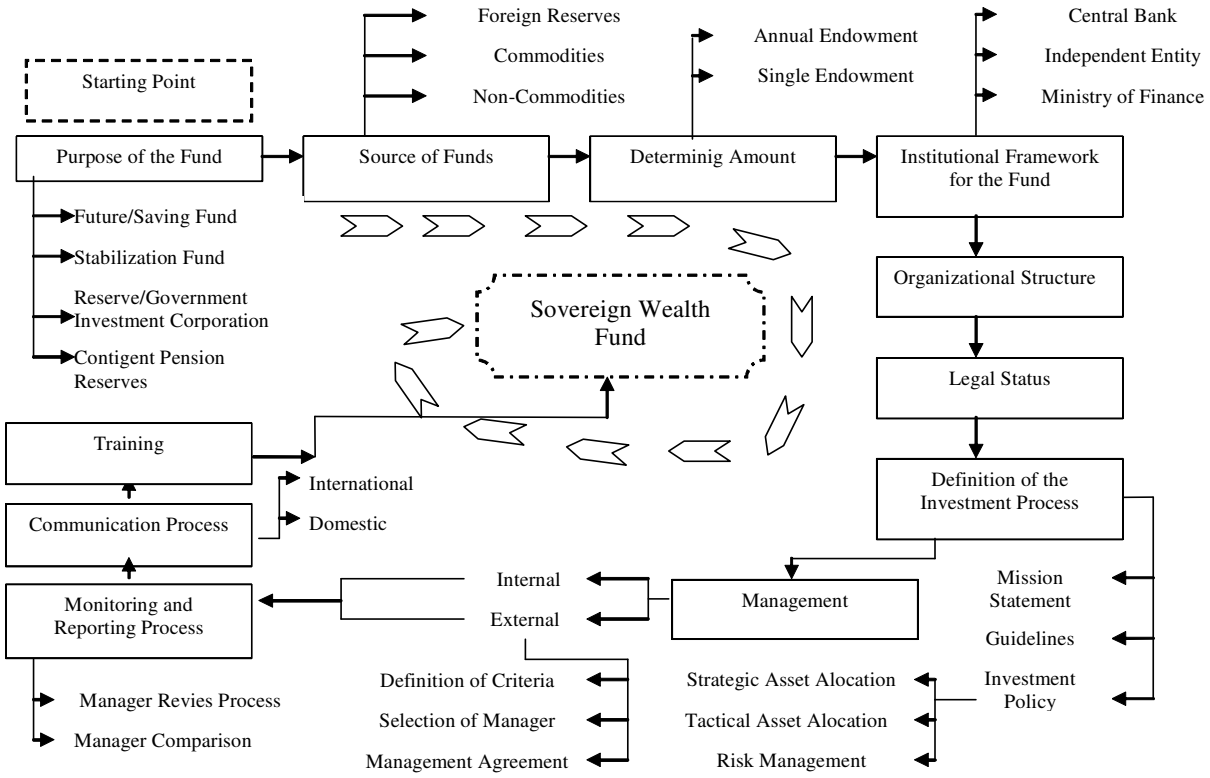

Figure 1. SWF Objective, Funding, Organization and Investing Process

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

diversifying the economy away from reliance on one source. As a result of these varying goals, SWFs also have widely differing investment policies and asset allocations. For example, Timor- Leste Petroleum Fund, which manages Timor-Leste's petroleum resources for the benefit of current and future generations, invests solely in equities and fixed income, whereas Qatar Investment Authority invests in a variety of asset classes and regions in order to obtain as much diversification as possible. Funds can also be established in order to assist in the development of an economy or specific industry sector. For example, Latin American Reserve Fund aims to improve investment conditions within its member states (Bolivia, Columbia, Costa Rica, Ecuador, Peru, Uruguay and Venezuela) and contribute to the consolidation of the member countries' financial policies. 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. As a result, we can say that companies can be choosen by SWF for locations, technologies that will help SWF region of origin. In short, SWF´s use their portfolios to achieve social goal, at the expense of the value and performance of the firm.

As a result of what is mentioned earlier, it´s important to note following three factors. 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, that represents *ownership*. 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, that represents *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 investment direction as funding stability and sustainability determines long-term investment, it means whether the SWF will be use active investment, in short that means *source of funding*.

How big are they?

The size of a SWF´s depend primarily on its purpose and the size and wealth of the state funding it. Preqin

Table 1. Gross debt as percent of GDP

Country	Gross debt as percent of GDP*
United Arab Emirates	16,66
Norway	34,11
Saudi Arabia	3,26
China	22,89
Kuwait	5,25
Singapore	107,76
Russia	14,07
Qatar	32,82
Australia	29,09
Algeria	10,83
Kazakhstan	13,23
South Korea	35,7
Malaysia	56,97
Azerbaijan	14,12
Ireland	123,34
France	93,46
Chile	12,9
New Zealand	37,23
Canada	87,07
Brazil	68,28
Bahrain	35,37
Oman	6,91
Botswana	15,87
Mexico	44
Italy	132,26
Turkmenistan	20,65
Ghana	51,58
Guinea	36,9
Mauritania	98,47
Indonesia	26,23
Gabon	24,15
Vietnam	50,41
Venezuela	53,42
Panama	40,38
Nigeria	19,6
Angola	33,19
Peru	18,64
Iraq	17,52
Brunei Darussalam	2,4
Islamic Republic of Iran	7,91
Singapore	107,76
AM	40.552
STDV	34.752
VAR	1207.702
TINV for $\alpha/2$	1.683←Critical value for one-sided alternative hypothesis

Source: Author´s according to the data from International Monetary Fund, World Economic Outlook Database, October 2013, data estimates for 2013

published data in 2014 that indicates that 63% of SWFs have seen an increase in AUM since April 2012. The world's largest SWF, Government Pension Fund – Global in Norway, has continued to grow, adding more than $185bn in assets over 2012-2013 to reach total assets of $782bn. SWFs in Asia, in particular, have also seen a rise in assets as countries in the region look to build up foreign exchange reserves. If we look at funds by region, The MENA region has a reduced share of total SWFs assets, at 28%, as a result of this increase in aggregate capital managed by Asia-based SWF. On the other hand, the proportion of capital managed by Europe-based

Table 2. Moving averages

Year	Season	ID	Value y*	Moving average	Forecast Error	Forecast Error Squared
2007	Q1	1				
	Q2	2				
	Q3	3				
	Q4	4	3,259			
2008	Q1	5	3,427			
	Q2	6	3,916			
	Q3	7	4,061			
	Q4	8	4,149	3,66575	0,48325	0,233531
2009	Q1	9	3,758	3,88825	-0,13025	0,016965
	Q2	10	3,801	3,971	-0,17	0,0289
	Q3	11	3,924	3,94225	-0,01825	0,000333
	Q4	12	4,032	3,908	0,124	0,015376
2010	Q1	13	4,062	3,87875	0,18325	0,033581
	Q2	14	4,119	3,95475	0,16425	0,026978
	Q3	15	4,166	4,03425	0,13175	0,017358
	Q4	16	4,418	4,09475	0,32325	0,104491
2011	Q1	17	4,563	4,19125	0,37175	0,138198
	Q2	18	4,743	4,3165	0,4265	0,181902
	Q3	19	4,859	4,4725	0,3865	0,149382
	Q4	20	4,842	4,64575	0,19625	0,038514
2012	Q1	21	5,007	4,75175	0,25525	0,065153
	Q2	22	5,031	4,86275	0,16825	0,028308
	Q3	23	5,147	4,93475	0,21225	0,04505
	Q4	24	5,198	5,00675	0,19125	0,036577
2013	Q1	25	5,402	5,09575	0,30625	0,093789
	Q2	26	5,489	5,1945	0,2945	0,08673
	Q3	27	5,999	5,309	0,69	0,4761
	Q4	28	6,106	5,522	0,584	0,341056

Source: Author´s estimation, AUM according to the data from SWF Institute, last updated December 2013.
*AUM trillion $.

SWFs has shown an increase, from 16% in 2012 to 20% in 2013, largely due to the continued growth of Norway's Government Pension Fund – Global. North America, Latin America and the Caribbean, Africa, and Australasia each represent 3% or less of total SWF capital, despite each of these regions being home to at least 6% of all SWFs.

Hypotheses

In this section we examine following hypotheses. Data calculations are the best estimations of author.

Testing hypothesis 1

We formulate hypothesis in terms debt of countries that set up SWFs. We observe 41 listed countries according to data from Sovereign Wealth Fund Institute, with higher and lower debt as 60 percent of GDP according to latest data from IMF. The optimal debt is considered 60 percent of GDP. At 0,05 significance level we want to to test the significance of deviations and value 60. (Table 1)

H_0: Countries with low public debt do set up SWFs; m=60.
H_1: Countries with higher public debt do set up SWFs; m>60.
Indicates significance at the 5% level; α=0,05; N=41 and $\mu = 60$.
*Figures are for gross general government debt, as opposed to net federal debt, gross general government debt includes both intra-government debt and the debt of public entities at the sub-national level.

$$t = \frac{\bar{x} - \mu}{s}\sqrt{n} = \frac{40{,}55 - 60}{34{,}75}\sqrt{41} = -3{,}58 \quad (1)$$

We use TINV function that returns the value of t Student's t-distribution as a function of the probability. The significance level of 0,05 and (N−1); 40 degrees of freedom, the inverse one-sided t-distribution is calculated by TINV(2*0,05;40) is 1,68.

Results coming out from Table 1 and formula (1) we present as follows; $t < t_{crit} \rightarrow$ we accept null hypothesis, -3,58<1,68 and deviation or difference between value m and μ is caused by random selection

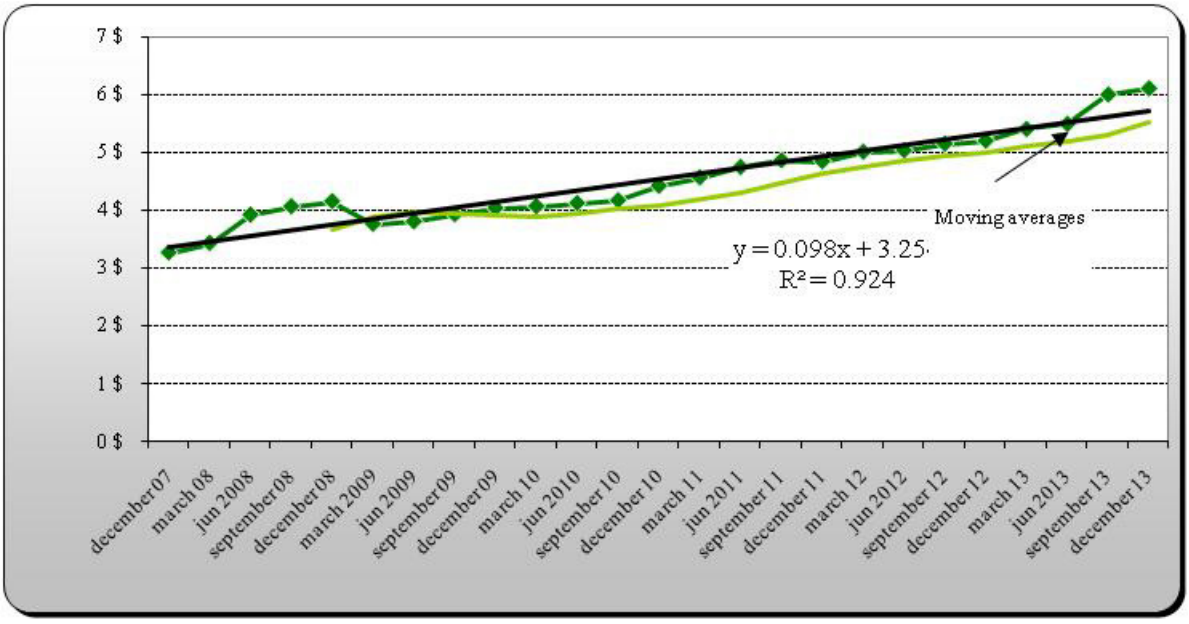

Figure 2. Moving averages

Source: Author´s estimations. *AUM tn$

of countries in Table 1, what is not a statistically significant difference. So we can arrive to the conclusion that countries mainly with low public debt usually set up SWFs.

Testing hypothesis 2

We formulate next hypothesis in terms of AUM of observed funds, and we are using quarterly data from Sovereign Wealth Funds, last updated December 2013.
H_0: SWFs will play an important role in international finance in the future due to rising AUM.
H_1: SWFs will NOT play important role in international finance in the future due to decreasing of AUM.

If we look at on moving average, one of the basic tools of technical analysis, was based on the fact that determining the trend from the graph can be quite difficult and inaccurate, due to cyclical fluctuations. We used functions of a moving average for identifing trends and measure the strength of an AUM of SWFs. Moving averages can be beneficial in setting stop-losses. (Table 2)

The number of periods for moving average is K=4 constant. A simple moving average is calculated as the sum of values in a given time period divided by the number of values.

Figure 2 shows that the coefficient of correlation is positive and the coefficient of determination is R^2=0,9245; what means that 92,45 percent changes in assets under management of SWFs can be attributed by changes of investments in each future quarters. We arrived to the conclusion, that SWF will be bigger in terms AUM than today, more highly liquid, and focus long-term, less sensitive than for example Hedge Funds, Private Equity.

CONCLUDING REMARKS

In summary, we identified that due to random selection of countries that set up SWFs we can arrive to the conclusion that countries with low debt usually set up funds. Second hypothesis confirmed that assets under management of SWFs will grow in the future, in sum these funds will play important role in international finance.

In short, investment objective, investment purpose (long term, short term), investment risk (exchange rate, interest rate), return may contribute to the changes of AUM of SWFs. On the other hand, growth rate may be influenced by following factors such as trend of oil and other commodities prices, economic growth of transitioning economies, political reactions on investments of SWFs, economic down-turn.

However, SWFs, like all other investors, due to financial crisis, and other geopolitical events, have continued to thrive and to grow. Viewed in this light, over the past year the assets under management of Middle Eastern SWFs have increased by 6%, compared to the 19% growth in assets of Asia-based sovereign wealth funds. In sum, more SWFs look set to be created as other nations plan entities to invest in the future of their population. For instance, currently India, Bolivia and Panama are all undergoing internal discussions to form their own sovereign wealth funds.

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