

The Review of Sovereign Wealth Fund and Portfolio in Indonesia

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Abstract: This article is a literature study of the Sovereign Wealth Fund as a large fund owner and an investor in various destination countries. SWF is the target of countries and companies that want fresh funds as capital inflow to finance their activities, both as direct investors and buyers of bonds and stocks. SWF has become an important investor and as a holder of various portfolios it aims to obtain optimal returns with minimal risk, including the placement strategy of Sovereign Wealth Fund as part of a hedge against the economic risks of the countries holding SWF funds. The Sovereign Wealth Fund's largest strategic asset allocation shows that it is broadly consistent with that generated by the Markowitz model. Investment performance and company performance as well as the policies of the SWF destination countries are the main factors in the placement of funds. The choice of investment is very dependent on the assets associated with the asset class, risk tolerance and the strategy mandated to achieve the stated portfolio goals. Includes proper asset weight balancing that allows for higher returns and long-term achievement of investment objectives.

Keywords: SWF, Portofolio, Returned, Risk, Strategy

1. Introduction

Nowadays SWF (Sovereign Wealth Fund) has an important role in the country's economy, several countries have used the Sovereign Wealth Fund instrument as part of investment and a means of obtaining funds. SWF becomes a pool to accommodate funds. Some are from excess state income and some are used to attract funds as capital inflow from investors. The large value of SWF funds is an attraction for emerging market countries to attract investors in achieving fresh funds. With the Sovereign Wealth Fund, it can increase the capitalization of funds in the capital market, property sector and infrastructure [1].

On the other hand, SWF fund owners also invest their funds by considering various things to minimize risks. The fifteen countries with the largest SWF funds are according to the table below with a total capitalization of funds of 8,417.95 billion dollars. SWF funds obtained from Oil & Gas and 40% or worth 3,401.70 billion dollars from Non-Commodity funds. Of the fifteen countries that have SWF funds, there are four countries that receive SWF and non-commodity funds, namely China, Singapore, Australia, South Korea. SWF is a state-owned investment vehicle that invests globally in various types of assets ranging from financial to real assets to alternative assets.

Table 1. The Biggest SWF Countries.

Rank	Country	Funds	Assets (USD Billions)	Origin
1	China	SAFE/CADF/CIC	2.244	Non comodity
2	United Arab Emirates	ADIA, EIA/ICD	1.363	Oil & gas
3	Norway	GPF-G/GPF-N	1.108	Oil & gas
4	Saudi Arabia	PIF/SAMA	899.9	Oil & gas
5	Singapore	GIC/TH	703	Non comodity
6	Kuwait	KIA, GIC	533	Oil & gas
7	Qatar	QIA	345	Oil & gas

Rank	Country	Funds	Assets (USD Billions)	Origin
8	Australia	FF/WAFF/QIC	297	Non commodity
9	United States	APFC/WAFF/WIC/	240	Oil & gas, Non commodity
10	Russia	NWF/RDIF	176	Oil & gas, Non commodity
11	South Korea	KIC	157.3	Non commodity
12	Kazakhstan	SK/KNF/NIC	133	Oil & gas
13	Iran	NDFI	91	Oil & gas
14	Libya	LIA	66	Oil & gas
15	Brunei	BIA	60	Oil & gas

This investment fund is obtained from commodity export revenues or direct asset transfers from official foreign exchange reserves, non-commodity export proceeds, capital inflows, budget surpluses, land sales, public savings, privatization of state-owned companies. In portfolio theory every time it generates returns there is also a risk, there are four classifications of risk in the SWF as high-risk assets, medium-risk assets, low-risk and risk-free assets [2]. An optimal model is needed to allocate its assets to produce optimal returns.

Markowitz's portfolio theory since 1952 has been used and for the last six decades by various institutional investors to determine their asset allocation. The allocation of the world's largest strategic assets Sovereign Wealth Fund shows that it is broadly consistent with that produced by the one-period Markowitz model [3]. GPFG investment performance is highly dependent on its asset class allowance, risk tolerance and the strategy mandated in achieving its stated portfolio objectives, such as stability of returns over assumed time horizons. Also, proper asset weight rebalancing has enabled higher returns and achievement of long-term investment objectives.

The resulting asset allocation results need to be compared with the results for other SWFs in order to determine whether there is a broader fit of the actual SWF allocation to those proposed by the Markowitz model. Reddy [1] stated that those determined by institutional transitions, development markets and government legitimacy in the country of origin, so as to invest globally, get higher income, economic benefits, and secure resources.

2. Reviews

2.1. Invest and Portfolio

The formation of Gross Domestic Product (GDP) is obtained from the level of consumption, investment, government spending and net exports ($GDP = \text{Consumption} + \text{Investment} + \text{Government Spending} + \text{Net Export}$). GDP is used to measure the country's economic growth. To increase the country's economic growth and increase the Gross Domestic Product, investment funds from within and outside the country are needed.

Economic theory defines or defines investment as spending to buy goods - capital goods and production equipment in order to replace and especially add to future goods and services. Sunariyah [4] stated that investment is an investment for one or more assets owned and usually has a long term with the hope of getting benefits in the future. Furthermore, Jogiyanto [5] said that investment is a delay in current

consumption to be included in productive activities during a certain activity period. Gitman *et al.* [6] define investment as a means by which funds can be placed in the hope that it will generate positive income and / or maintain or increase its value.

Thus, investment is an activity in the form of delaying consumption in the present in a certain amount and for a certain period of time on an asset that is efficient by investors with the aim of obtaining future profits at a certain level as expected.

Foreign Investment (FI) is an effort to increase the amount of capital for economic development sourced from abroad. [7] explains that PMA consists of Foreign Direct Investment Portfolio (Portfolio Investment). Portfolio investing involves only financial assets in the form of bonds and stocks. Portfolio investment activities generally go through financial institutions such as banks, investment fund companies, pension foundations. Included in making decisions to be able to choose diverse portfolios based on information about expected returns and risks [8]. Meanwhile, foreign direct investment includes investment in real assets in the form of building factories, procuring various types of capital goods, purchasing land for production purposes.

The aim of investors is to maximize returns and find out the approximate range for each factor that drives profits and minimize uncertainty and limit deviations in order to obtain optimal portfolio allocation options as an effort to diversify across available financial instruments [9]. Including aligning portfolio products with company strategy is very important to maintain the company's success in the long term [10].

Foreign direct investment can be considered as an important source of capital for economic development. All countries that adopt an open economic system generally require foreign investment, especially companies that produce goods and services for export. This investment is needed to spur domestic economic growth, avoid market sluggishness and create job opportunities.

2.2. Return and Risk

The countries that hold SWF funds want returns at a low level of risk. SWF fund owners must invest in other countries that have very different profit prospects from industrial origin countries if the SWF home country wants to plan income between generations and maximize long-term welfare [11]. The choice of country includes which country and how much will be invested to achieve fund objectives and minimize risk of funds. Nie Li Guang [11] describe the lack of traditional correlation coefficients and have designed new coefficients

including the absolute similarity ratio coefficient, the similarity ratio coefficient squares, the absolute weight of the similarity coefficient. The new type of similarity coefficient is called the ratio-based similarity coefficient to reflect the industrial structure. The industrial risk of the SWF target country is also considered measured by the concentration ratio. To show the decision-making process, taking China as an example to demonstrate the application of the coefficients

designed and the 10 countries for investment purposes.

Figure 1 shows the flow of investment decision making, by calculating the GDP volume of 10 countries and calculating the estimated rate of increase in GDP as part of the investment return plan and calculating the risk with a certain aggregate level. Furthermore, the SWF owner allocates funds to these countries according to the level of their GDP.

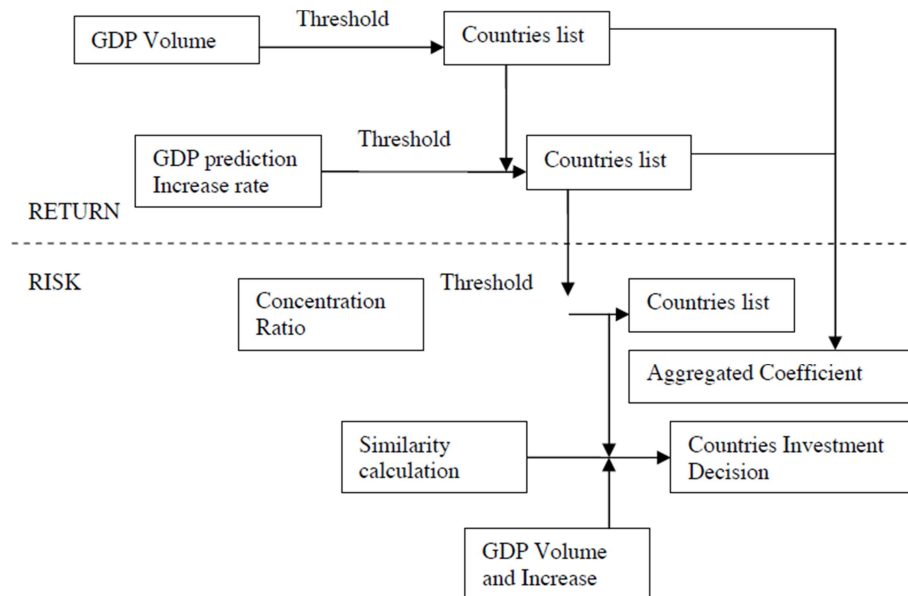


Figure 1. The Process of Decision for Selecting Target Countries.

The selection of a SWF portfolio requires knowledge that can guide decisions regarding the alignment of a sustainable investment program and the SWF's strategic objectives. This allows the use of the principles of portfolio management theory to organize and estimate portfolio performance measures. Diaz *et al.*, [12] defined in measuring the benefits and risks per project using the Monte Carlo Model which is used to produce a sample of data used as a scenario analysis to measure the effects of operational constraints in an effort to link project correlation, benefits, and variability or risk required. Meanwhile, research by Wang Zi *et al.*, [13] takes a new approach in optimizing loan portfolios and minimizing the risk of default under the expected premium target constraints based on modern portfolio theory. The algorithm can be applied to portfolio bonds. In addition, it can contribute to risk management in developing countries.

Portfolio Decision Analysis (PDA) is used in making portfolio analysis and decisions, which refers to theories, methods and practices that support decision makers in making various informed choices from a set of alternatives with the help of mathematical models that take into account relevant constraints, preferences and uncertainties. Liesiö Juuso *et al.*, [14] researched by taking stock of the latest advances in PDA research, based on a representative sample of 148 PDA articles in operations research and management science journals over a 14 year range from 2006 to 2019. The results show that PDA is a research field that is dynamic with close links to practice, as most articles present real applications or contain illustrative

examples motivated by such applications.

What SWF should pay attention to as an investor according to research by Poledna Sebastian *et al.*, [15] financial markets create endogenous systemic risk, a risk where a large part of the system stops functioning and collapses. Systemic risk can spread through different mechanisms and transmission channels. One important form of financial transmission arises from indirect interconnections between financial institutions that are mediated by financial markets. Indirect interconnection occurs when financial institutions invest in common assets and are referred to as overlapping portfolios.

Gangi Francesco *et al.*, [16] reported that there are determinants and effects of Sovereign Wealth Fund (SWFs) investments in various types of funds. By classifying SWFs based on the scope and origin of wealth, savings and reserve funds and non-commodity funds select better performing companies, whereas for development and multi-purpose funds in fact high target profitability does not increase the likelihood of being selected by the SWF category.

2.3. Return and Risk

The objective of SWF investment in forming a portfolio is to produce a return, which is the highest return with a reasonable risk or lower risk with the same return [17]. Antretter Torben *et al.*, [18] stated that the effect of the diversification performance of the portfolio industry has a nonlinear relationship (in the form of S) between the

diversification portfolio industry and performance.

Apart from paying attention to the level of risk, the company's liquidity is also a measure of performance and some even require that the company's sustainable goals be an increase in surplus value. Where the company's goal is not only to generate returns but also to contribute to the environment and society. In line with that, portfolios have better performance because the activities of the composing companies are in line with stakeholder expectations for the Sustainable Development Goals.

Chen Li *et al.*, [19] developed a three-step framework by incorporating environmental, social, and governance (ESG) performance into the optimization portfolio. In comparison

with studies using weighted ESG rating scores by constructing a quadratic and cubic data envelopment analysis (DEA) model to increase evidence of two or more aspects, as well as interactions between environmental, social attributes, and governance. It then combines the ESG score with financial indicators to select assets based on cross efficiency analysis. Portfolio optimization A model that combines ESG scores with selected assets is built to achieve a socially responsible investment strategy. Empirically the results show that the SRI portfolio obtained is superior to traditional investment strategies in many aspects and can simultaneously achieve investment consistency with social values.

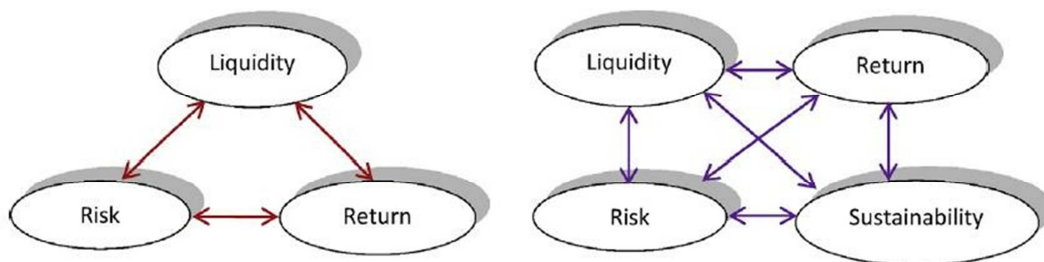


Figure 2. Investor Needs in Investment.

The use of an ESG model that provides superior return value performance than traditional investment strategies will attract SWF owners or other investors to invest their funds.

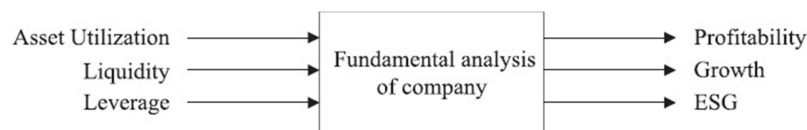


Figure 3. Methodology for ESG.

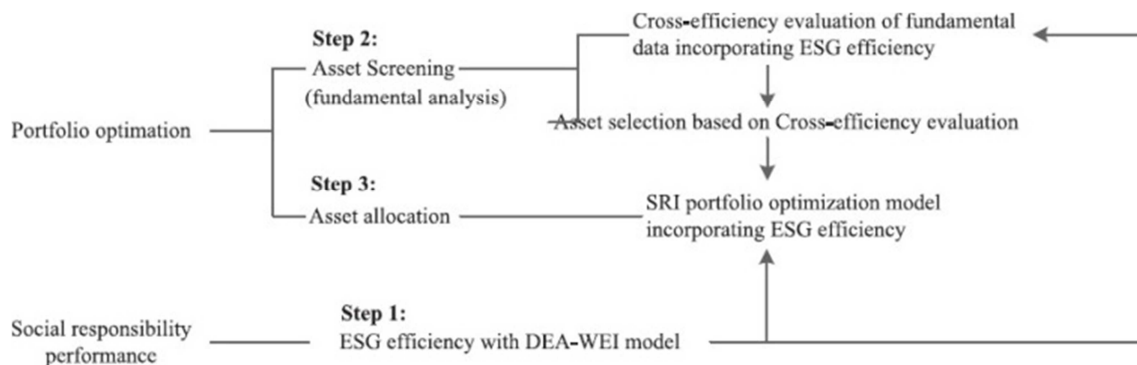


Figure 4. Methodology Model for ESG DEA WEI.

2.4. Strategies

Sovereign Wealth Fund as a container that has a lot of funds requires a strategy in the placement plan to get returns and minimize risks. Researches have been conducted on SWF, one of which is SWF China. Miao You and Liyan Han [20] designed a model to analyze an investment strategy based on the special investment objectives of China's sovereign wealth fund (SWF) to maximize national welfare, considering SWF as a part of China's energy strategy. Theoretical analysis and simulations show that the Sovereign Wealth Fund strategy can

improve national welfare. As an instrument to hedge against national economic risks, the Sovereign Wealth Fund strategy prefers to invest in strategic industries.

The more sovereign wealth risk hedging strategies, the overall welfare of the nation increases. Putra E Yogas [21] defined strategy development is one of the things that investors need to pay attention to to minimize investment risk. The strategy for managing risk in investment is to diversify the portfolio. The portfolio for stock selection is based on the similarity of price movement data through clustering using K-means. Because stocks in the same cluster have higher

similarities than stocks in different clusters, the portfolio consists of stocks selected in each different cluster.

A Mean-Variance and Equal-Weight portfolio consisting of stocks selected using this approach offers less volatility, a higher Sharpe Index, and better cumulative performance. Boubakri Narjess [22] satted provides an overview of strategies in determining factors of sovereign wealth fund (SWF) decisions to invest in public companies operating in strategic industries compared to pension funds. SWF tends to be in the financial sector, natural resources, mining, transportation, telecommunications and utilities and countries with sustainable economic growth which emphasize the long-term investment perspective compared to pension funds more interested in dividends, liquidity, and large companies.

Bugan F Mehmet *et al.*, [23] shows the relationship between Islamic and conventional stock market returns has a conditional correlation and hedging ratio and shows that there is a positive and significant correlation between stock markets in developing countries and the Dow Jones Islamic Market Index, which implies benefits. limited portfolio diversification provided by the Islamic stock market. This shows that SWF needs to also take advantage of opportunities in the Islamic market.

3. Conclusion

Sovereign Wealth Fund is a large fund owner and has become an investor who has the desire to get optimal returns with minimal risk. In its activities, it is part of direct investment in infrastructure development, the purchase of capital goods and portfolio investment by channeling funds to the stock markets of destination countries that have good prospects for bonds and stocks. Placement of funds is carried out using various strategies, taking into account the investment destination countries and companies with portfolio performance that provide the most optimal returns. Markowitz's portfolio theory and other portfolio theories have been used as a reference for researchers to examine the behavior of investors or SWF fund owners in determining the allocation of their assets.

The Sovereign Wealth Fund's largest strategic asset allocation shows that it is broadly consistent with that generated by the Markowitz model. Investment performance and company performance as well as the policies of the SWF destination countries are the main factors in the placement of funds. The choice of investment is very dependent on the assets associated with the asset class, risk tolerance and the strategy mandated to achieve the stated portfolio goals. Includes proper asset weight balancing that allows for higher returns and long-term achievement of investment objectives.

Reddy [1] stated that the Sovereign Wealth Fund needs to pay close attention to institutional transitions, development markets and government legitimacy in the country of origin, so that investments globally get higher income providing economic benefits and safe resources. The Sovereign Wealth Fund placement strategy is part of a hedge against the economic risks of countries holding SWF funds and chooses to place funds in strategic industries.

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