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Wealth Management on the Macro Scale: Strategic Asset Allocation Within Sovereign Wealth Funds

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Declaration of Authenticity

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Prague, April 26, 2020 Signature

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Wealth Management on the Macro Scale: Strategic Asset Allocation Within Sovereign Wealth Funds

Abstract:

Macro wealth management, best observed in sovereign wealth funds (SWFs), has recently been of particular interest to the public in light of the present volatility in the global financial markets. This paper aims to address this interest by providing insight into the asset allocation strategies of SWFs with consideration to their source of wealth and investment mandate. It evaluates whether or not SWFs with a certain source of wealth and investment mandate follow an asset allocation strategy distinct from those with another source of wealth and investment mandate. To do so, a sample size of SWFs was chosen and grouped according to their source of wealth and investment mandate, with subsequent analysis following the analytical-synthetic methodology approach. The analysis revealed that source of wealth and investment mandate do correlate with divergent approaches to asset allocation, particularly in the class of alternative investments, in addition to activeness in portfolio companies, especially amongst oil-based SWFs. Therefore, a conclusion is reached that the strategic asset allocation of SWFs will vary based on the SWF's source of wealth and investment mandate. The sample size used within this paper was small due to inconsistency in transparency amongst SWFs, therefore future research should be undertaken as SWFs become more transparent to evaluate the strength of this relationship between strategic asset allocation and source of wealth and investment mandate.

Key words:

Wealth management, SWFs, Investments, Asset allocation, Strategy

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1. Introduction

In the midst of one of our most significant market downturns in which financial markets all over the world have lost immense amounts of value, there has been a widespread concern amongst most, if not all, investors with the strategic asset allocation of their portfolios. Large-scale, institutional investors are no exception. Sovereign wealth funds (SWFs) in particular are being forecasted to lose more than US $1 trillion in their equity investments, of which many have been forced to sell off as the markets have worsened (Arnold, 2020). Such an estimate is crucial when considering the massive stimulus packages being constructed by nations to combat the effects of COVID-19, of which would traditionally be supported, at least partially, by their SWFs. This is due to the fact that SWFs have historically been created as a means of assisting nations with economic disruptions. Prior to the outbreak of COVID-19, an example of such a disruption was the negative economic effects to oil-rich Middle Eastern countries and countries in Asia which manufacture much of the world's consumer goods forecasted to arise from increased efforts at decarbonization across industries (Tagliapietra, 2018; Lee, Peng, Wang, 2017).

SWFs are, at their core, investment vehicles owned by a sovereign government. As of 2018, the total assets under management (AUM) of sovereign investors was US $7.45 trillion, much of which is invested into public equities and fixed income (Preqin, 2018). This provides sovereign investors a significant role in the functioning of global capital markets, acting both as a source of liquidity and a stabilizer (Beck & Fidora, 2008). These roles may enable them to affect the corporate governance of the companies in which they invest and to utilize their investments as a means of advancing the foreign policy of their sovereign owners (Fini & Rethel, 2013; Hemphill, 2009). This central and influential position of SWFs in the markets demonstrates the usefulness of a study of their asset allocation to policymakers and professionals and academicians within the fields of business and finance.

While there have been other investigations of SWFs, these have primarily examined asset allocation in terms of wider disciplines such as agency or focused on SWFs of the same source of wealth. Furthermore, earlier studies have used a period of time pre-dating the 2008 Financial Crisis as the timeline for their research. In strictly analyzing the asset allocation of heterogeneous groups of SWFs over a consecutive time period after the 2008 Financial Crisis without reference to wider disciplines, as this paper does, a greater, updated understanding of the individual components of the portfolios of SWFs may be achieved.

The principle research problem of determining the existence of homogeneous asset allocations for similar funds, as defined in terms of source of wealth and investment mandate, was first approached through the construction of an SWF framework. Subsequently, a sample of SWFs was selected to study the research problem. The selection process also gave consideration to size, as measured by AUM, given the objective to study wealth management on the macro scale, and transparency, as quantified by the Linaburg-Maduell Transparency Index (LMTI). The sample was then grouped into four groups (Mother Natures, Cosmopolitan Philanthropists, Pragmatic Conservationists, Sophisticated Visionaries) and examined over a period of time measuring 2012 to 2016. This time frame was chosen for its relative level of stability in global financial markets and politics while funds were chosen on the basis of their level of transparency, as quantified by the Sovereign Wealth Fund Institute.

After an overview of the methodology applied in the accompanying research, this paper follows a standard structure of first developing a framework for SWFs and what types of funds would be considered as such. The theoretical aspects concerning the LMTI as a measure of transparency for SWFs, in addition to the best practices in portfolio construction and management are then presented. A brief exploration into the impact of SWFs on global financial markets is also performed. Afterwards, a practical application of the theoretical section is undertaken which draws heavily on the annual reports of the SWFs under study. The subsequent conclusions on the asset allocation of the SWFs under study are presented and discussed in the final, conclusion section of this paper.

My career aspirations in portfolio management and my interest in politics prompted me to examine wealth management from a state perspective in the form of SWFs for the purposes of my thesis. My primary objective is to provide insight into macro wealth management. The methodology I apply to grouping the SWFs under study allows for my conclusions to have theoretical value by supplying a workable definition of SWFs, in addition to clarifying the types of assets SWFs with a given source of wealth and mandate are more likely to invest in. The latter yields practical value as such a detailed understanding may be used to deliver more cohesive recommendations to the portfolio management of SWFs. This practical application is representative of my hope that, by performing this research, further advances may be made in determining the best and most efficient approach to managing the wealth of nations.

2. Theoretical

2.1 Methodology

Alsweilem, Cummine, Rietveld, and Tweedie (2015) stated that there are four policy decisions all governments seeking to create an SWF should consider. The first is the initial investment itself that will be used to set up the fund, in addition to the manner in which it will be transferred, otherwise known as the savings rule. Governments can generally source their initial investment from either surplus foreign exchange reserves or the revenues from natural resources. Once the savings rule is considered, it is important for governments to consider the strategy they will apply to investments made through the fund, while also giving thought to the governance structure to be used in managing the fund, and how returns will be transferred out of it. As I analyze the strategic asset allocation of SWFs within this paper, I focus especially on the policy decisions concerning the savings rule, specifically source of wealth, and investment strategy.

As briefly highlighted in the introductory section, I first worked to create my own framework for SWFs to apply in the rest of my paper due to the lack of a succinct definition for them. This was done by considering both institutional investors and SWFs as a sub-category of them. I then endeavored to understand the basics of portfolio construction and management for investors in a general context as I worked to realize my primary objective of determining the existence of similarities between the strategic asset allocation of SWFs. I again considered this in terms of institutional investors and SWFs in particular.

Dyck and Morse (2011) provide a useful module for analyzing the asset allocation of SWFs by basing the funds in their sample size on the funds' AUM. Truman's (2009) module which considered the level of transparency of SWFs in his sample size was also effective. I encompassed both modules into my own sample size creation through the consideration I gave to AUM and transparency, in addition to my framework for SWFs, in the selection process. AUM was one criterium I placed great importance on due to the focus of this paper being wealth management on the macro scale. I did not employ an exact numerical border between what constituted micro and macro and chose instead to follow the rationale that the larger the AUM, the more suitable the fund would be for an investigation of wealth management on the macro scale. Likewise, transparency was a key consideration due to the need to obtain data to evaluate for the purposes of this paper. The LMTI served as the most suitable benchmark for transparency due to the principles on which it is built which advocate for greater transparency amongst SWFs.

After a sample was gathered, I grouped the members according to their investment mandate (public welfare or wealth preservation) and source of wealth (natural resources or surplus reserves), as noted in the introduction. This led to four, mutually exclusive groups of funds. The groups facilitated a smooth comparison process and enabled more succinct conclusions. The composition of my groups, heavy in East and South East Asian countries, is in line with the global distribution of SWFs. As of 2013, 40 percent of total SWF wealth was thought to reside in East and South East Asian countries and 35 percent to reside in the Middle East (Çelik & Isaksson, 2014).

In an effort to provide updated conclusions on the asset allocation of SWFs while also avoiding any white noise, the time frame of 2012 to 2016 was, as noted in the opening section, chosen for the backdrop for research. This also draws some inspiration from the module given by Dyck and Morse (2011) which defined a set time period to center their research in. I chose 2012 to 2016 as my time frame because by 2012 recovery from the 2008 Financial Crisis had been broadly realized across countries and in 2016 the ongoing geopolitical disruptions to trade had not yet reached their current scale. This provided a relative amount of stability in world affairs and a neutral backdrop for research.

The inability to obtain an exact list of all AUM of even the most transparent SWFs served as the biggest influence on the qualitative research techniques I utilized in this paper. The techniques I employed involved first examining the balance sheets of the SWFs under investigation to gain a general understanding of the categories of their investments. I then utilized the textual sections of their annual reports to gain further insight into the investment strategy being applied and what specific type of assets the balance sheet categories encompassed. The findings were then cross compared for homogeneity and heterogeneity on the basis of key words and asset categories. Overall, I applied the analytical-synthetic methodology throughout my paper.

2.2 A Framework for SWFs

Institutional Investors. According to Davis and Steil (2001), institutional investors are “specialized financial institutions that manage savings collectively on behalf of small investors towards a specific objective.” They are, in the words of Çelik and Isaksson (2014), non-human “legal entities.” Nevertheless, as with individual investors, institutional investors aim to achieve their objectives and to maximize returns with as little risk as possible. While the types of institutional investors are theoretically innumerable and depend upon the framework a researcher wishes to apply, Çelik and Isaksson (2014) provide three overarching categories of institutional investors: traditional, alternative, and asset managers. Asset managers, which are defined as holding responsibility for the day-to-day activities of a given investor, is the only category which I refrain from using in my own research framework given the overlap this category has with the traditional and alternative categories.

Entities within the category of traditional institutional investors would be insurance companies, pension funds, and investment funds such as mutual funds. SWFs fall into the category of alternative institutional investors, accompanied by hedge funds, exchange-traded funds (ETFs), and private equity firms. The defining distinction between traditional and alternative institutional investors tends to be the newness of alternative institutional investors compared to traditional ones, which leads to data being less prevalent on them. Additional differences arise when examining their asset allocation, as evidenced by Çelik and Isaksson (2014) and their investigation of institutional investors in OECD countries. Their investigation showed that between 2000 and 2011, traditional institutional investors saw a shift from majority allocation to traditional asset classes such as public equities to greater allocation to "other" investments, the latter composed of alternative asset classes such as venture capital and real estate. However, given that prospectuses generally limit the asset allocation of traditional investors to alternative asset classes, the overwhelming majority of investments for traditional investors was still allocated to traditional investments (Davis & Steil, 2001; Çelik & Isaksson, 2014).

Such cohesiveness was not observed by Çelik and Isaksson (2014) amongst the members of the alternative category of institutional investors. Private equity firms, by their nature, have a high allocation of investments to unlisted equity, with the remaining investments being allocated towards real estate and credit instruments. There is a non-normal asset allocation amongst hedge funds due primarily to their being "a diverse group of investment strategies" rather than standard investment entities (Kirzner & Brodkin, 2002). In general, they are known for taking advantage of arbitrage opportunities in the market, thus making their asset allocation to public equities relatively short-term. More often than not, allocation is also directed towards financial derivatives as a way of achieving the payoffs associated with their short-term investment horizon.

Çelik and Isaksson (2014) noted that they were inclined to draw their data on SWFs from sources beyond the OECD, thus demonstrating the fact that that many SWFs are not members of the OECD (e.g. China, Singapore, United Arab Emirates, etc.). They nevertheless concluded that, along with ETFs, SWFs allocated a high percentage of investments towards public equities. However, in the case of SWFs, the ultimate asset allocation depended on its stated purpose, a point I considered in my case work by employing investment mandate as a grouping factor to the sample size.

SWFs. In the broadest sense, SWFs are simply investment vehicles owned by a sovereign government, a point noted in the introductory section. This is arguably the single most important characteristic that separates SWFs from other institutional investors. They may be generally divided based on the initial capital used to establish them into the categories of commodity-based funds, which receive their initial investment from commodity exports such as oil, or non-commodity-based funds, which are established through excess foreign exchange reserves (Reisen, 2008). In both cases, these streams of revenue are highly variable and, in the case of oil commodities, are not particularly sustainable over the long-term. Thus, an SWF provides an excellent tool for countries with windfalls to support long-lasting prosperity and to avoid Dutch disease (Bernstein, Lerner, & Schoar, 2013).

Some discrepancy arises, however, in the defining of an SWF when considering what it means for a government to be sovereign and thus any fund of theirs to be an SWF, a particularly relevant point when considering the major SWFs of Alaska, Hong Kong, and Abu Dhabi. Thomson (1995) states that sovereignty is directly related to the external and internal recognition of the authority of the state to take forceful action within its borders. Thus sovereignty is not something inherent to a state but, rather, something that is bestowed upon a state by others, otherwise known as international legal sovereignty (Thomson, 1995; Krasner, 1999). As the world has become more globalized, the definition of sovereignty has evolved to highlight the ability of a state to pursue causes it deems worthy without necessarily physically infringing on the territory of another state (Taylor, 1995; Lake, 2003; Agnew, 2005). Within this modern definition of sovereignty, SWFs can, through their investments, serve as a tool to promote the sovereignty of their owners (Dixon & Monk, 2012).

A framework put forth by Alsweilem et al. (2015) further assists in defining SWFs by placing them into a category known as sovereign investors. They further divide SWFs into savings funds and stabilization funds based on a 2008 report by the International Monetary Fund (IMF) on SWFs. Davis, Ossowski, Daniel, and Barnett (2001) define a stabilization fund to be an entity which seeks to lessen the effects of the uncertain cash inflows associated with natural resources on a nation's economy and a savings funds as having the goal of harboring wealth for later generations. Other members to the sovereign investor universe of Alsweilem et al. (2015) include central banks, public pension reserve funds, and sovereign development funds, which are all considered to be distinct based on the main functions they perform.

Çelik and Isaksson (2014) and Clark and Dixon (2017) do not, however, note such a distinction. Based on their frameworks and the frequent overlap I noted between the investment strategies of the categories to Alsweilem et al.'s framework, I also did not distinguish between SWFs and other sovereign investors to the same extent that Alsweilem et al. did. The notable exception is sovereign development funds which have a truly unique investment strategy compared to other sovereign investors that includes public-private partnerships, thereby complicating comparison efforts with other sovereign investors not using this. As a result, the major sovereign investors of Samruk-Kazyna and Temasek were excluded from further study in this paper. The final framework for SWFs utilized in this paper is illustrated in Figure 1.

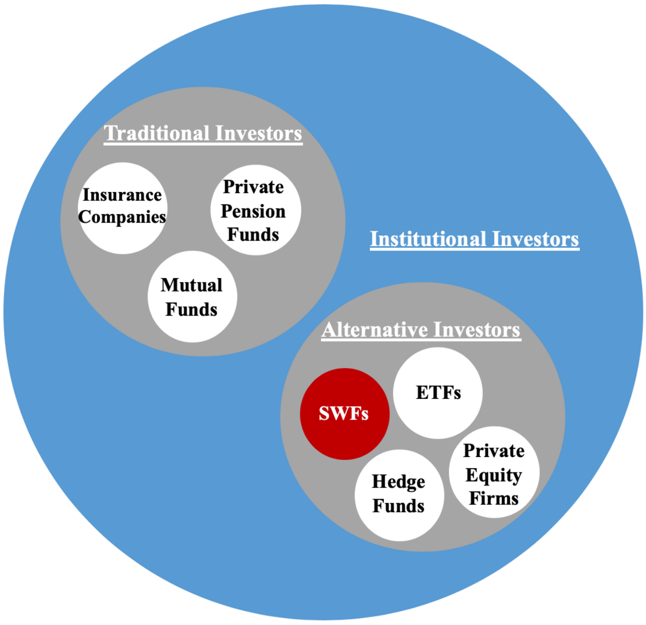

Figure 1. SWF Framework adapted from Çelik and Isaksson (2014).

Bortolotti's (2012) study of SWFs provides a final key input to my framework for SWFs by specifying that, in addition to being government-owned investment vehicles, SWFs are managed away from other government bodies, are not obligated to provide pensions, and have investments in a wide variety of asset classes. It is further noted that a sizable amount of these investments is made outside of the domestic market of the SWF. It is this definition of an SWF to which I most ascribe to in the case work of my paper, giving rise to the inclusion of some SWFs which might be considered as central banks in other frameworks. The key characteristics of SWFs are exhibited in Table 1.

Key Features of SWFs
o Government-owned
o Managed away from other government bodies
o Not obliged to provide pensions
o Widely diversified across asset classes
o High amount of investments abroad

Table 1. Characteristics of SWFs adapted from Bortolotti (2012).

2.3 Transparency of SWFs

The potential for SWFs to use their investments as a way of making advances in foreign policy has been perceived as a threat largely due to the frequent opaqueness in terms of regular reports and other publications from SWFs. As a means of addressing such concerns, the International Working Group of Sovereign Wealth Funds (IWG) was convened in 2008 to draft a selection of generally accepted principles and practices (GAPP), otherwise known as the Santiago Principles (IWG, 2008). The IWG, today known as the International

Forum of Sovereign Wealth Funds (IFSWF), stated then that the principles were based on the goals of SWFs to (1) promote stability in the global financial markets, (2) ensure compliance with relevant requirements concerning disclosure in recipient countries, (3) use risk and return as the basis for their investments, and (4) employ a structure of governance that is stable and transparent. The resulting 24 principles are broadly categorized into (1) outer organization, the macroeconomy, and long-term goals of the SWF, (2) organizational governance, and (3) investment strategy (IWG, 2008).

The LMTI which I use as a measure for transparency in this paper is, as noted in the introduction, a product of the Sovereign Wealth Fund Institute and is thus widely used by many of the world's largest SWFs. It measures transparency on the basis of an SWF fulfilling each of ten principles which are based on the Santiago Principles, giving a maximum score of 10 (Zhang, 2016). The principles place a particular focus on the external reporting of an SWF, including, for example, the regular provision of independently audited reports and the maintenance of a website. As with the Santiago Principles, the LMTI is not exact given the voluntary compliance with both sets of principles by SWFs, a critique duly noted by many researchers (Wong, 2009; Behrendt, 2010; Dixon, 2014; Bismuth, 2017). Nevertheless, I found that the largest SWFs, in terms of AUM, tend to comply with most all of the principles. Such widespread use made the LMTI further suitable as a measure of transparency in this paper. Likewise, the level of compliance seen amongst those SWFs giving them nearly perfect, if not perfect, LMTI scores rendered them ideal candidates for further study.

2.4 Portfolio Construction and Management

Best Practices. As explained by Fabozzi and Markowitz (2011), there are five key steps to managing investments: (1) setting objectives, (2) constructing a policy, (3) deciding a strategy, (4) constructing a portfolio, and (5) evaluating performance. The first two steps are highly connected with the very definition of a SWF and these best practices have therefore been sufficiently addressed in the preceding section setting out a framework for SWFs to be applied in this paper. The third step concerning investment strategy entails a choice between active and passive management of which was best explored by Graham in his formative book, 'The Intelligent Investor' (1949). Within it, he aptly explains the difference between an active and passive strategy being related to the level of "intelligent effort" an investor is willing to put into the construction of their portfolio. Thus, an active investor is one of whom closely monitors the prices of the assets in their portfolio while a passive investor is less influenced by the daily price movements of their assets. Though passive investors are more likely to be associated with a long-term investment horizon, active investors can also hold an asset for the long-term, however they are more inclined to alter the amount of their holdings of the asset based on current events.

The subsequent steps surrounding portfolio construction and performance evaluation are best summarized in the concepts of modern portfolio theory (MPT) and the asset pricing theories of the capital asset pricing model (CAPM) and arbitrage pricing theory (APT). Harry Markowitz (1952a) laid the foundations for MPT in his March 1952 paper examining the selection of portfolios by combining the expected return, E, and variance of return, V, for a given asset in a process known as mean-variance analysis. The goal is to minimize the variance of return of a given asset, that is its specific risk, and to maximize expected return in order to generate what Markowitz termed as efficient portfolios, as shown in Figure 2.

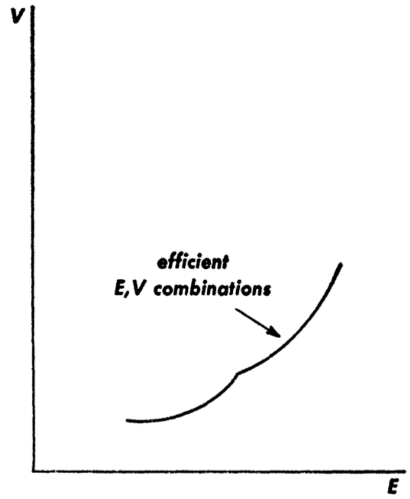

Figure 2. Efficient portfolios, as shown by Markowitz (1952a).

According to Markowitz, maximized expected return and minimized variance of return are achieved from diversification amongst various types of unrelated assets and sectors due to the low covariance that results from such an action.

Within the process of selecting other assets to include in a diversified portfolio is the concept of investor risk appetite, or how much risk an investor is willing to accept for a given return. Markowitz (1952b) addressed this in his April 1952 paper examining the varying utilities associated with different levels of wealth and concluded that there is a general risk averseness for all investors, regardless of level of wealth, presupposing that investors are rational. Nevertheless, he caveated that the extent of this risk averseness will depend upon the unique risk appetite of a given investor, of which is largely determined by their prior gains and losses, or anticipated ones. For example, an investor with a significant amount of liabilities may be more apt to have a lower risk appetite due to the expectations of when those liabilities will become due and the potential to not yet be ready for them. Likewise, if there is the expectation for increased returns through a certain, higher risk asset, an investor might be willing to invest in it because they expect to be compensated for the increased risk associated with that asset. The risk appetite of an investor is, under MPT, the defining factor for a rational investor of which portfolio amongst the group of efficient portfolios is best, otherwise known as the optimal portfolio (Markowitz, 1959). This is visually evidenced by overlaying the investor's indifference curves on the efficient frontier, as shown in Figure 3.

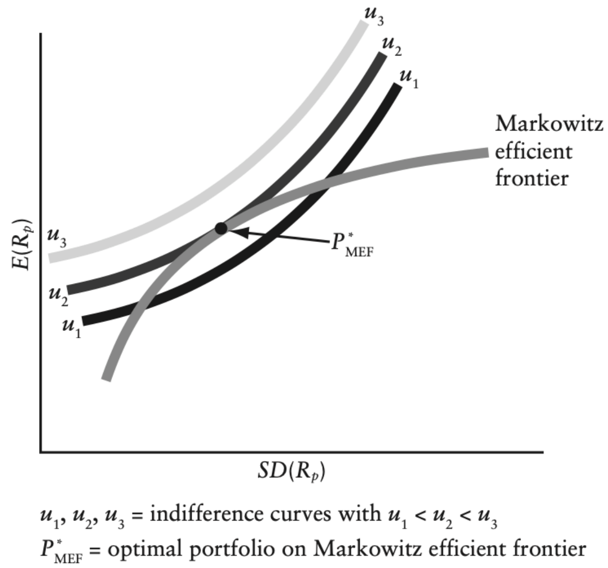

Figure 3. The optimal portfolio from a set of efficient portfolios, from Fabozzi, Markowitz, Kolm, and Gupta (2011)

While Markowitz's ideas are foundational to portfolio construction, they are not perfect, namely due to the use of variance as a measure of the total risk of an asset (i.e. its specific risk and market, or systematic, risk) which would imply a normal distribution to returns that is, in reality, often not the case, and the impact this has on calculating expected returns. The calculation of expected returns is further impeded by the necessity to calculate a multitude of covariances between various potential assets as an input. The CAPM serves as a solution with its distinguishing between an asset's specific risk, which is diversifiable, and market or systematic risk, which is not (Sharpe, 1964; Lintner, 1965). Furthermore, this market risk, B_{ig}, is used as a benchmark against which to measure the return of a potential asset, E_{Ri}, to be added to a given portfolio, as shown in Figure 4, thereby significantly simplifying the covariance calculations required under MPT. Sharpe would go on to develop the reward-to-variability ratio, more commonly known as the Sharpe ratio, from this initial relationship, thereby quantifying the additional return realized by an investor for a unit increase in risk (1966).

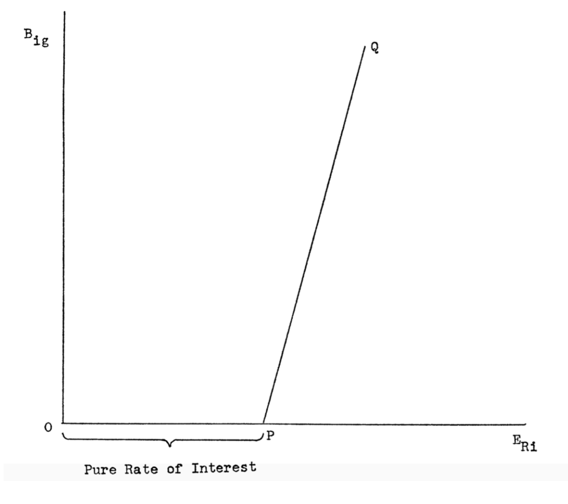

Figure 4. Relation between asset return and market risk, as shown by Sharpe (1964).

Though the CAPM simplified MPT, it continued to assume, as MPT did, that the entire risk of an asset could be measured in a single factor: its sensitivity to the market as a whole, otherwise known as its beta, β. APT recognized the unlikeliness of this and proposed a multi-factor model relating the level of sensitivity of an asset, β_i, to a mean zero common factor, $\tilde{\delta}_i$, as shown in Figure 5, assuming an efficient market in which arbitrage is not possible (Ross, 1976). Whereas APT did not provide specification as to what specific factors to consider in this process nor the amount, later works, such as those by Fama and French (1992), did. In spite of these advancements, the offspring of the CAPM, the Sharpe ratio, continues to be recognized as a relevant measurement to be considered when constructing portfolios, namely through attempts to maximize it (Amenc, Goltz, Martellini, & Milhau, 2011).

$$\tilde{x}_i = E_i + \beta_i \tilde{\delta} + \tilde{\epsilon}_i \,,$$

Figure 5. Simple factor model used to build a multi-factor model of return, as given by Ross (1976).

Asset pricing theories are based on the separation of performance and risk and advocate for the separate management of each, thus leading to the common best practice of constructing a liability-hedging portfolio (LHP) to hedge away as much risk as possible associated with an investor's liabilities, such as that associated with interest rate and inflation, in addition to a performance-seeking portfolio (PSP) designed for optimal risk-return rewards (Amenc, Goltz, Martellini, & Milhau, 2011). In both cases, one would follow a general two-step process of first constructing a portfolio by deciding which asset classes to include in it and then allocating assets by determining how much to invest in each class. The final step to managing investments regarding performance evaluation is best captured by quantifying the return on the investment by taking the difference between its market value at the beginning and end of the period, while also considering any withdrawals made from the investment within the period (Fabozzi & Markowitz, 2011). In the case of withdrawals, best practice would dictate calculating subperiod returns and then averaging them out arithmetically or geometrically for an overall return on investment (Fabozzi & Markowitz, 2011). The Endowment Model first used by Yale University Chief Investment Officer David Swensen in the management of their endowment fund is one such application of these principles and has been widely used by other university endowment funds, institutional investors, and, as the case study will reveal, SWFs (Sheikh & Sun, 2012).

SWF Investment Strategies. The way in which investment management is approached by SWFs is generally in line with the best practices outlined above. Xie, Woo, Zhang, and Zhang (2015) demonstrated the adherence of SWFs to the first two steps surrounding investment objectives and investment policies by showing that, based on the fiscal and monetary policies of their respective governments, SWFs with a policy of stabilization are more likely to invest in safe assets and SWFs with a policy of savings to invest in risky assets, thereby indicating that SWFs "are heterogeneous towards risk preference and tolerance." This is supported by Al-Hassan, Papaioannou, Skancke, and Sung

(2013) who put forth the idea that the investment policy and strategy of SWFs should be created with reference to the greater macroeconomic policies of the state. SWFs have been shown to continue with best practices by making a choice, albeit sometimes made for them by the government, between active and passive investment strategy. In this regard, SWFs have been compared to private asset managers such as mutual funds and private equity firms (Beck & Fidora, 2008; Wong, 2009; Kotter & Lel, 2011). Like some mutual funds, SWFs are generally considered to be passive investors by virtue of the fact that the corporate governance of the firms they are invested in has not, historically, varied over the time they are present as shareholders (Kotter & Lel, 2011). Passivity is also encouraged by regulations from the governments of the countries in which SWFs invest as a means of combatting wider concerns about the use of SWFs as tools for foreign policy (Rose, 2008). Nevertheless, as the case study section will demonstrate, some SWFs elect to pursue an active investment strategy.

In terms of the step surrounding portfolio construction, it is important to first note that MPT would be considered as a normative theory providing a norm for behavior to adhere to when constructing a portfolio, and asset pricing theories a positive theory which give a hypothesis for actual investor behavior in such a scenario, thereby causing the two to look generally different when applied by investors in real life (Fabozzi, Markowitz, Kolm, & Gupta, 2011). SWFs demonstrate this through their general support for diversification while also following a multi-portfolio approach separating risk and performance and giving consideration to market indices in their portfolio construction and asset allocation. In terms of diversification, SWFs have been found to favor an asset-based investment approach utilizing mean-variance analysis in allocating investments (Hammer, Kunzel, & Petrova, 2008). Furthermore, SWFs, with their categorization as alternative institutional investors, have been shown to allocate a significant portion of their portfolios to alternative assets such as real estate and private equity, a factor indicating influence of the Endowment Model which prompts institutional investors to utilize their long-term investment horizon to invest in less liquid assets (Bortolotti, 2012; Sheikh & Sun, 2012). This widespread diversification is largely enabled by the key feature of SWFs not being obligated to provide pensions. This leads to a lower level of liabilities on their balance sheets and, as established by Markowitz (1952a), the propensity to take greater risks and diversify as they do (Beck & Fidora, 2008).

Avendaño and Santiso (2009) pursued a detailed comparison of the portfolio construction of SWFs as compared to twenty-five of the largest mutual funds in the world, focusing especially on their equity portfolios. They found that the portfolio characteristics of the two investors, as measured by average P/E and P/B ratios, among other things, were relatively similar. Nevertheless, SWFs have a tendency to be more diversified in their actual equity investments in terms of geography and industries than mutual funds. It is noteworthy to state that the geographic diversification of SWFs tends to be subject to the cultural similarities the SWF shares with the recipient country, thus a European SWF would be more likely to diversify across Europe or the U.S. rather than the Middle East or Asia (Chhaochharia & Laeven, 2009). At all events, the findings support the placement of SWFs into the category of alternative institutional investors and mutual funds into the category of traditional institutional investors.

SWFs have also been compared to public pension funds in terms of portfolio construction given their tendency to target large, multinational firms with low cash reserves in countries with developed financial markets (Kotter & Lel, 2011). In particular, transparent SWFs, as measured by meeting reporting obligations, have been shown to be more likely to target underperforming firms (Truman, 2009; Kotter & Lel, 2011). There is evidence that SWFs slightly diverge from best practices surrounding the influence of pre-determined investment objectives on portfolio construction in studies showing the impact that the management structure within the fund, that is the use of external or internal fund managers, can have on investment strategy and, ultimately, portfolio construction (Bernstein, Lerner, & Schoar, 2013). The presence of external managers (i.e. not politically connected) to oversee SWFs supports adherence to best practices given that these SWFs are associated with a lesser propensity to allocate investments to domestic assets or to follow trends and invest in markets where asset prices are very high. The opposite was observed in SWFs managed by internal, politically connected managers and further supported by Dyck and Morse's (2011) study which found, overall, a considerable "home bias" and favored industries in the portfolios of SWFs.

The aforementioned bias was shown to have a negative effect on effective hedging, of which becomes especially relevant when considering the tendency for SWFs to follow best practices of utilizing multiple, separate portfolios for performance and hedging. Overall, SWFs have been shown to have a PSP, in addition to three other portfolios akin to LHPs dedicated to hedging the risk that can arise in price changes related to commodities and/or exchange rates (Beck & Rahbari, 2008; Scherer, 2009; Scherer, 2011; Beck & Weber, 2012; Bodie & Brière, 2013). The use of multiple portfolios by SWFs is ultimately a means of combatting the diseconomies of scale experienced by most all institutional investors as their AUM increase (Bernstein, Lerner, & Schoar, 2013). Given that external managers have been shown to combat a bias towards ill-intentioned domestic investments, they may also serve to ensure that the hedging of LHPs is efficient.

It is not uncommon for a benchmark, otherwise known as a reference portfolio, to be utilized by SWFs as they construct and evaluate the performance of their portfolio(s). The benchmarks in use tend to be based off of a market index such as the MSCI All Country Index which are then used to determine the return objective that the SWF will adhere to, in addition to its risk parameters (Hammer, Kunzel, & Petrova, 2008; Avendaño & Santiso, 2009). It may also be used as a means of gauging the breakdown of different asset classes and geographies in the overall portfolio of the SWF (Hammer, Kunzel, & Petrova, 2008). As the case study section will demonstrate, certain SWFs have a tendency to use a reference portfolio to gauge the performance of their actual investments and still others to follow the best practice of considering the market value of their portfolio at the beginning and end of their evaluation period when evaluating their investment performance.

2.5 Impact of SWFs on Global Financial Markets and Target Firms

SWFs have been portrayed as a clear indicator of the reintroduction of the state in private markets, especially in the aftermath of the 2008 Financial Crisis (Bremmer, 2010; Aguilera, Capapé, & Santiso, 2016). Prior to and in the immediate aftermath of the crisis, a study showed that SWF investments significantly decreased the credit risk of target firms and during the crisis, SWFs reportedly contributed in excess of US $60 billion to western investment banks such as Citicorp and Merrill Lynch (Bertoni & Lugo, 2014; Cohen, 2009).

This behavior supports the point noted in the introduction that SWFs are viewed as sources of liquidity and stability in the global financial markets. This is especially enabled by the long-term investment horizon of most all SWFs. With a long-term investment horizon and high AUM, SWFs are able to better weather changes in the market than private investors, which in turn can dilute the effects of booms and busts in the business cycle (Cohen, 2009). This also makes SWFs ideal shareholders to companies in terms of serving as a source of continued capital.

Kotter and Lel (2011) demonstrated both the short- and long-term impact to the companies that SWFs invest in. Equity investments by SWFs were shown through cumulative abnormal returns (CARs) to elicit positive reactions from the market in the immediate aftermath of their being announced, which is positively correlated with the level of transparency of the SWF making the investment. Similar findings were noted by Gagliardi, Gianfrate, and Vincenzi (2014) and Bortolotti, Fotak, and Megginson (2015). It was caveated, nevertheless, that this market reaction was smaller when compared to similar investments by private investors. Furthermore, over the long run, Kotter and Lel (2011) found that investments by SWFs had no impact on a company's growth, profitability, or, as noted in an earlier section, corporate governance, of which led to the conclusion that SWFs are typically passive investors.

The passivity of SWFs was countered in Dewenter, Han, and Malatesta's (2010) analysis of the impact of SWF investments on the value of target firms. They found in their sample that SWFs gained board membership in the aftermath of approximately 20 percent of investment announcements and turnover in senior management reached a peak of 14 percent over an investment held over a longer time period, circa three to five years. Their results, nevertheless, coincide with the findings regarding positive market reactions in the aftermath of investment announcements. When considered in the context of active ownership, Dewenter, Han, and Malatesta concluded this to be the result of the increased monitoring capabilities brought on by SWF shareholders.

In light of this, concerns have been voiced that SWFs may use their long-term position as shareholders to further the foreign policy objectives of their owners (Setser, 2008). This concern has been shown to be interconnected with the lack of transparency of most SWFs, especially in terms of investment objectives (Gomes, 2008). Fotak, Gao, and Megginson (2017) connected this to the findings indicating that market reactions to SWF investments are smaller when compared to equivalent investments by private investors by putting forth the idea that there is a stigma attached to sovereign investors. Murtinu and Scalera (2015) add validity to this stigma with their study concluding that the more politicized an SWF is, the higher the decline in stock price of target firms in the aftermath of investments. Furthermore, initiatives such as the Santiago Principles outlined in the earlier section regarding transparency would support the idea that more is expected from SWFs in terms of reporting obligations, of which may be related to this stigma. Therefore, the impact of SWFs to global financial markets and target firms is truly multi-faceted.

3. Practical

As described in earlier sections, I work to achieve the objective of my paper and to provide insight into macro wealth management by looking in-depth at the portfolios and investment strategies of the world's largest SWFs. I identified eight SWFs which fit into my framework, had substantial AUM, and were transparent in their reporting obligations. With consideration to the basic categorizations of SWFs regarding their investment mandate and source of wealth, these SWFs were capable of being grouped and compared for more comprehensive analysis. I narrowed investment mandate into either public welfare or wealth preservation and source of wealth into natural resources or surplus reserves. The final groupings were equal in allocation with two SWFs being allocated to each group and are demonstrated in Figure 6.

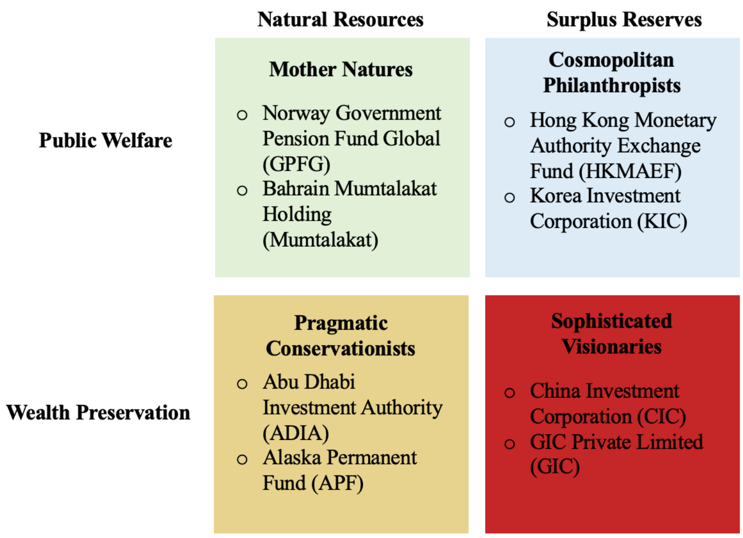

Figure 6. Groups for studying SWFs, author's work.

I introduce each group in the following sections by first explaining their similarities to one another in terms of their investment mandate and source of wealth, thus demonstrating the overall mutual exclusivity of the groups. From there, a broad overview of the individual SWFs is given before presenting their asset allocation and strategy over the period of time spanning 2012 to 2016. Afterwards, the two SWFs are compared, and an assessment is given as to whether or not their investment behavior was also similar, considering the fact that their sources of wealth and investment mandates are. The conclusions to each group are compiled in the subsequent discussion section to answer the research problem of whether or not SWFs with a given mandate and source of wealth approach their wealth management differently than an SWF with another mandate and source of wealth.

3.1 Mother Natures

The SWFs with a source of wealth in their natural resources and a primary objective of supporting their citizens through direct investment into the economy bring to mind the image of Mother Nature. The Norway Government Pension Fund Global (GPFG), run on a day-to-day basis by the Norges Bank Investment Management (NBIM), is one such SWF, given its stated purpose of providing wealth "that will benefit both current and future generations of

Norwegians," and its source of wealth in Norway's oil reserves (NBIM, 2013). The Bahrain Mumtalakat Holding (Mumtalakat) is another such SWF with its goals to "pursue value-enhancing opportunities" and to "grow the wealth of Bahrain" through an initial investment that consisted of such natural resources as aluminum and land (Mumtalakat, 2012; Mumtalakat, 2013). The GPFG, which is the largest SWF in the world in terms of AUM and has an LMTI score of 10, was an ideal SWF to study in this category, as was Mumtalakat, with its placement in the top 40 of SWFs in the world with the most AUM and an LMTI score of 10 (SWFI, 2020a; SWFI, 2020b).

Norway Government Pension Fund Global (GPFG). In spite of its name, the GPFG does not have any current obligations to provide pensions to its citizens, thus ensuring it fulfills a key criterium of SWFs (Wood, O'Sullivan, Goergen, & Baric, 2017). Given its mission "to safeguard and build financial wealth for future generations," it may be inferred that someday it might become a pension fund in the traditional sense (NBIM, 2018). It was established through the Government Pension Fund Act and is regulated by the Norwegian Ministry of Finance in terms of management guidelines, however, as noted above, operational management is carried out by NBIM, thereby fulfilling additional criteria for SWFs (NBIM, 2018). The investment mandate stipulates diversification across three broad asset classes, listed equities, real estate, and fixed income, and also dictates that none of these investments may be made in Norway but, rather, abroad, fulfilling the last of the two criteria for SWFs (NBIM, 2018).

The management guidelines provided by the Norwegian Ministry of Finance to NBIM encompass the fund's benchmark for bond and equity investments, which is a compilation of the FTSE Global All Cap Index and Bloomberg Barclays Indices (NBIM, 2018). There is no benchmark for real estate investments, other than the maximum allocation that may be granted to it, as given in the management guidelines (NBIM, 2018). A reference portfolio that is characterized by Markowitzian efficiency given its aim to achieve "the best possible" balance between risk and return is used as the guiding point for all investments (NBIM, 2018). It is based on the given management guidelines and adapted to capture the nuances of the fund (NBIM, 2018). Real estate is regarded as the principle asset for diversification and a means of achieving a stable risk/return profile (NBIM, 2018). In contrast to some SWFs, the GPFG frames itself as an active investor given its preference for environmental, social, and governance (ESG)-investing and its goal to heighten the long-term profitability of its investments, objectives of which it achieves primarily through exercising its voting rights in portfolio companies (NBIM, 2018).

As demonstrated in Figures 7 and 8, the GPFG saw a shift in its target asset allocation, as established by the guidelines from the Norwegian Ministry of Finance, and geographic focus between 2012 and 2016.

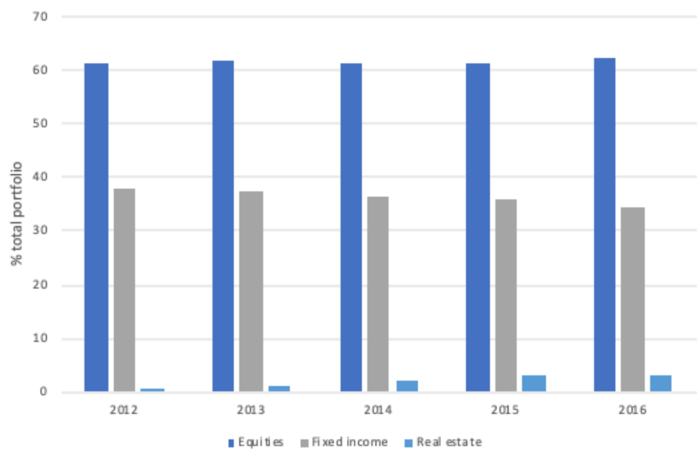

Figure 7. Changes in total asset allocation of the GPFG, NBIM 2012-2016.

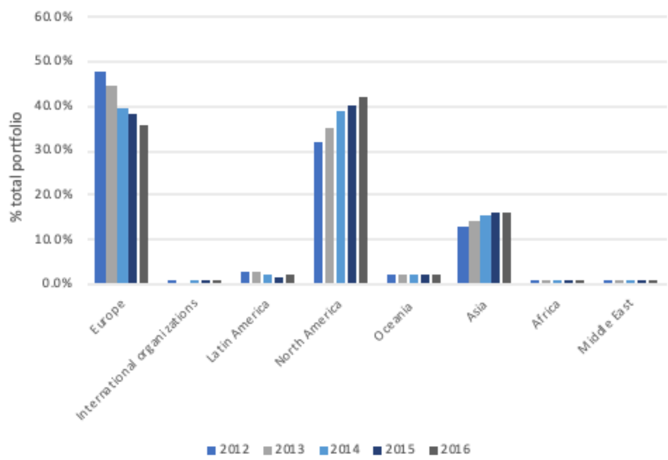

Figure 8. Evolution of geographic asset allocation of the GPFG, NBIM 2012-2016.

The GPFG increased significantly its allocation to real estate investments at the expense of fixed income investments, going from 0.7 percent of total investments made to 3.2 percent. Fixed income decreased at the same time from 38.1 percent to 34.3 percent. This might be attributable to the fluctuations in interest rates and currency exchange rates over the period of time under review. The greater allocation to real estate is partly explanatory of the fund's increased allocation to North America where the majority of its real estate investments were located. The decrease in investments in Europe overall is attributable to the fund's desire to diversify its portfolio across regions and to capture a greater share of global growth. This was especially evident in the overall increase in equities and fixed income in emerging markets as a percentage of total investments in equities and fixed income, as shown in Figure 9.

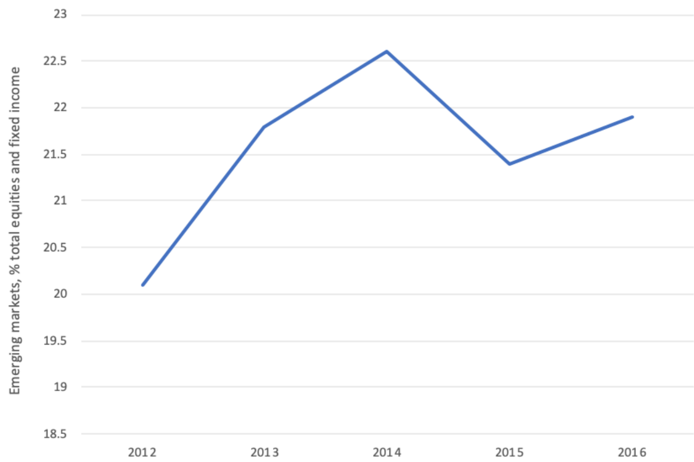

Figure 9. Changes in GPFG holdings of equities and fixed income in emerging markets, NBIM 2012-2016.

The move into emerging markets began in 2012 in the midst of a strategic overhaul in the GPFG where it was deemed that, as noted above, emerging markets offer an attractive diversification opportunity for an investor with a long-term horizon, such as the GPFG (NBIM, 2012). It was further declared that the percentage of total investments in Europe would gradually decrease to around 40 percent and government bonds would be weighted by the size of its country's economy and not its debt (NBIM, 2012). At the same time, the GPFG became a more active investor and committed to the philosophy of ESG (NBIM, 2012). ESG is captured in the fund's environmental investments, which serve as an additional means of diversification and specifically focus on water management, children's rights, and climate change (NBIM, 2016). In 2013, an advisory board was constructed to oversee the fund's active ownership with regards to the corporate governance of the companies it is invested in (NBIM, 2013). As of 2016, the GPFG had three distinct strategies for managing investments in equity and fixed income and a separate strategy for managing real estate investments, all of which were meant to complement each other (NBIM, 2016). The three strategies associated with equity and fixed income were (1) fund allocation in which the fund's reference portfolio is periodically rebalanced to ensure continued exposure to drivers of return, (2) security selection that is based on long-term, quantitative and qualitative analysis of companies and sectors, thereby occasionally encompassing the use of external managers for specialized areas, and (3) asset management promoting cost effective management by considering transaction costs and exchange rate risk, among others (NBIM, 2016). Whereas the GPFG aims to diversify broadly across global equity and fixed income markets, its strategy to real estate investments is to concentrate investments to a few cities in major markets (e.g. Western Europe and U.S.), thus serving as a balancing tool to emerging market risk (NBIM, 2016).

Bahrain Mumtalakat Holding (Mumtalakat). The Royal Decree No. 64/2006 was used to establish Mumtalakat and it remains today "a wholly state-owned holding company" which is operated on a daily basis by the independent Executive Management of Mumtalakat (Mumtalakat, 2013; Mumtalakat, 2020). This state ownership with separate leadership providing day-to-day management allows for Mumtalakat to fulfill two of the five key criteria of SWFs. It seeks primarily to “diversify the Kingdom’s wealth for future generations” and does not indicate any current obligations to provide pensions to its citizens, thereby fulfilling another criterium of the SWF framework (Mumtalakat, 2018). Mumtalakat fulfills its mission through a primarily equity-focused portfolio in a variety of regions and sectors, one of which is real estate, thereby supporting a conclusion of Mumtalakat being diversified across asset classes and invested abroad.

With consideration to the above paragraph describing the separation of power within Mumtalakat, one can deduce that the decision-making processes and overall management within the fund resembles that of a two-tier corporate governance system, a point evidenced in Figure 10. This is at the influence of the Bahrain Companies Law and Bahrain Code of Corporate Governance overseen by the Bahrain Ministry of Industry and Commerce (Mumtalakat, 2020; Mumtalakat, 2013). The Board of Directors is the primary decision maker at Mumtalakat as to which investments or divestments the fund will make (Mumtalakat, 2020). In doing so, it is advised by two sub-committees, the Board Audit & Risk Committee (BARC), which identifies key risks to potential investments and makes recommendations as to how to mitigate them, and the Board Investment Committee (BIC), which reviews and gives approval to investment opportunities identified by the Board of Directors (Mumtalakat, 2020). As stated above, day-to-day management processes are handled by the Mumtalakat Executive Management. In this regard, guidelines to the process for investment management within Mumtalakat are given by the Bahrain Ministry of Industry and Commerce and specific details (i.e. investment philosophy) are supplied by the BIC.

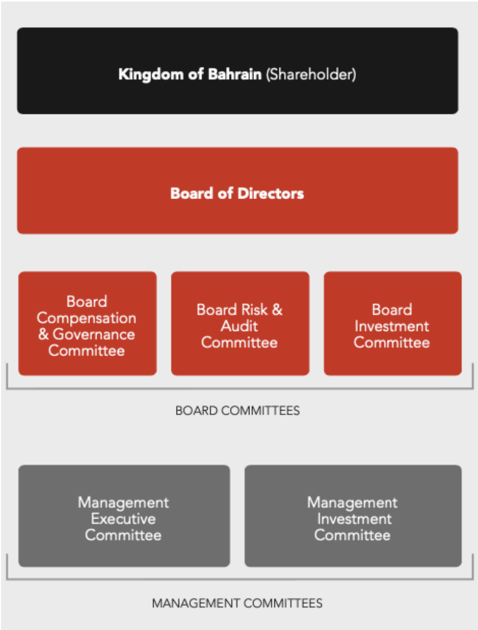

Figure 10. Management structure of Mumtalakat, Mumtalakat, 2014.

The choice of investment is framed in terms of three pillars concerning (1) a long-term investment horizon, (2) adding value to holdings, and (3) promoting transparent corporate governance in holdings (Mumtalakat, 2018). Mumtalakat regularly appoints individuals affiliated with its fund to serve on the boards of portfolio companies to achieve its goals, thereby making it a particularly active investor (Mumtalakat, 2013).

From 2012 to 2016, Mumtalakat's portfolio increased from 37 portfolio companies to over 50. These companies were diversified across sectors into (1) Industrial Manufacturing & Services, (2) Logistics, (3) Consumer & Healthcare, (4) General Services, (5) Financial Services, (6) Real Estate & Tourism, and (7) Telecommunications & Media (TMT). As shown in Figure 11, there was a significant uptick in the allocation to companies in the Industrial Manufacturing & Services and Real Estate & Tourism sectors, moving from 6 to 11 and 9 to 14, respectively. This increased allocation was not done at the expense of a reduced allocation to other sectors, though it is clear that certain sectors, notably TMT, were flat. In addition to its portfolio companies, Mumtalakat professes to have an externally managed fund which is allocated across a number of asset classes and invested globally, though details to this fund were irretrievable in the course of research.

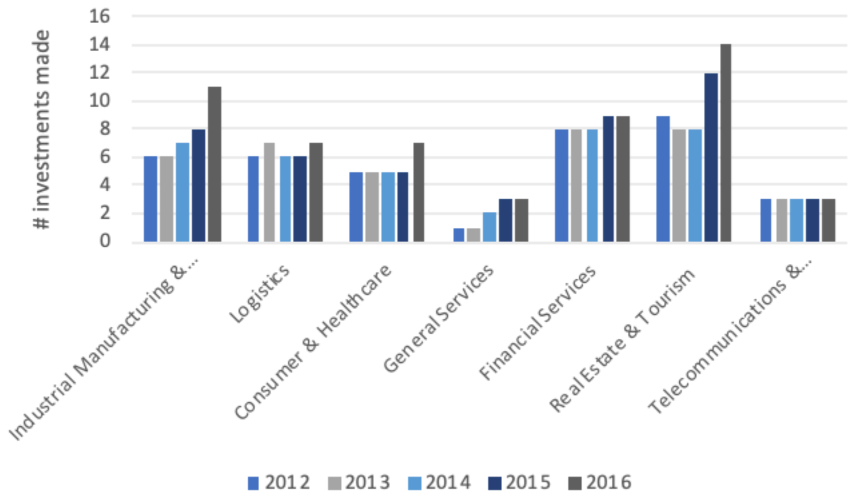

Figure 11. Changes in total asset allocation of Mumtalakat, Mumtalakat 2012-2016.

While details to its externally managed fund were not found, Mumtalakat also invests internationally. Bahrain is one of six member states to the Gulf Cooperation Council (GCC), of which seeks to promote cooperation amongst its Middle Eastern members, especially in the areas of security and the economy (Cooperation Council for the Arab States of the Gulf, 2020). In line with the objectives of the GCC, the majority of Mumtalakat's international investments were made within members of the GCC. Figure 12 demonstrates that this remained the trend over the period of consideration, however there was a notable expansion into other regions, especially North America. With its formal registration as a holding company, Mumtalakat holds a stake in a number of local businesses, however, it should be noted that over this period Mumtalakat also became party to a number of joint ventures with international companies for investments within Bahrain, of which is not evidenced in its direct international investments but could be considered as a type of international investment. Being a holding company has also led to Mumtalakat raising additional funds for its investments from international capital markets, most notably in Malaysia through a sukuk murabaha program that combines the Islamic financing instruments of a sukuk and murabaha which are akin to a bond and a loan in Western financing but do not bear interest.

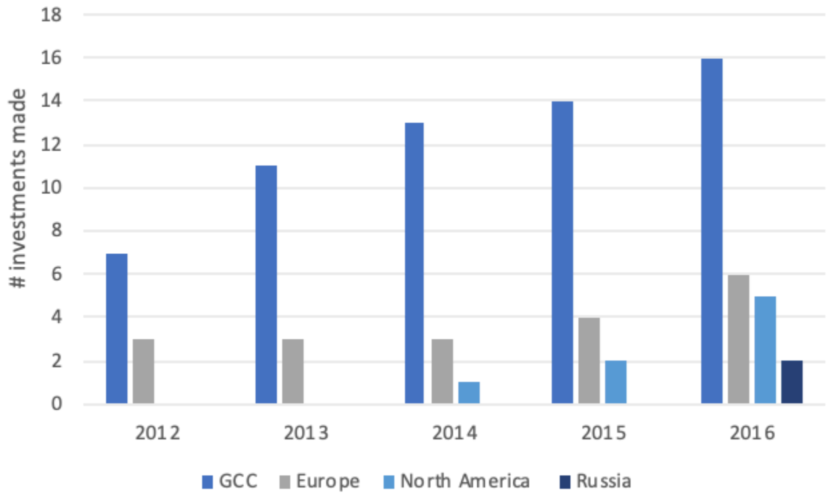

Figure 12. Evolution of geographic asset allocation of Mumtalakat, Mumtalakat 2012-2016.

Mumtalakat's investment strategy has been framed as being aligned with the Government of Bahrain's objective to diversify its economy away from oil and its investment mandate strictly prohibits direct investments in the oil sector. Likewise, Mumtalakat serves as another means for the Government to promote a strong private sector in Bahrain, thereby explaining its direct investment into local companies. As of 2012, the ability of Mumtalakat to add value to the operations of a company was the primary motivating factor to which companies it invested in and resulted in it only investing in companies whose industries it was familiar with (Mumtalakat, 2012). Its active investment style was solidified in 2013 with the publication of a 'Director's Handbook' to be given to the board members of portfolio companies explaining best practices in corporate governance (Mumtalakat, 2013). In addition to direct investments in the local economy, Mumtalakat also partners with foreign entities to invest in Bahrain in order to promote a strong private sector, as noted above. In addition to partnering with private companies, Mumtalakat notably signed a Memorandum of Understanding (MOU) with the Russian SWF, Russian Direct Investment Fund (RDIF), in 2014 and began active joint ventures with them in 2016 (Mumtalakat, 2014; Mumtalakat, 2016). As of 2015, it was seeking more investment opportunities in "developed markets" outside of the GCC, primarily in Europe and North America (Mumtalakat, 2015). It also noted in 2015 its desire to expand into evolving areas of business such as long-term care in the healthcare sector and to capitalize on changing consumer trends such as increased health-awareness (Mumtalakat, 2015).

Comparison. The GPFG and Mumtalakat are both meant to assist their respective governments of oil rich economies with prosperity by primarily serving as a means of providing for their citizens, the points of which tie them together in the category of Mother Natures. The GPFG was established in 1990 and holds significantly more AUM than Mumtalakat which was established in 2006. This could be a major explanatory factor to the differences between the two SWFs. While they both have a separated management structure given their ability to be categorized as an SWF for the purposes of this paper, the GPFG has a slightly steeper structure (Figure 13) than that of the two-tier system of Mumtalakat. Likewise, the guidelines accompanying the GPFG's investments are more complex than those of Mumtalakat, especially in the areas of benchmarking and risk management.

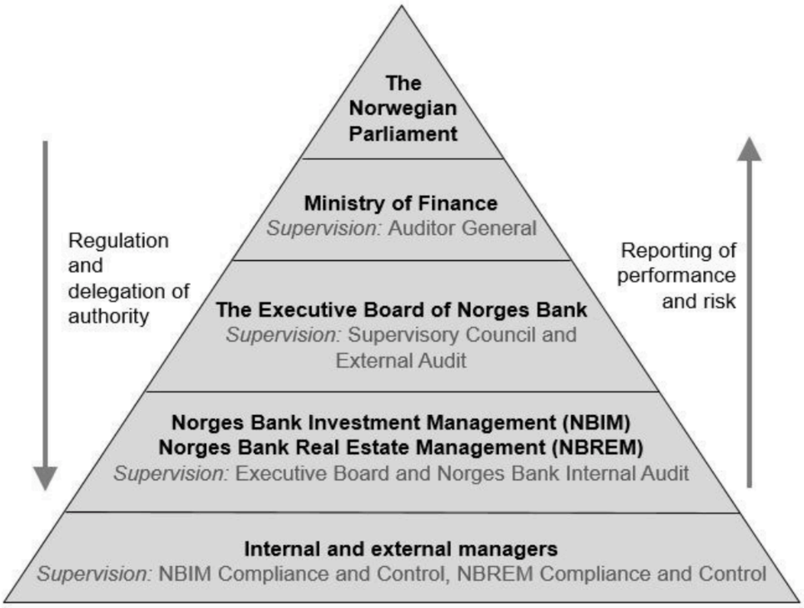

Figure 13. Organizational structure of the GPFG, NBIM, 2018.

They are both active investors though they exercise this in different ways, with the GPFG exercising its voting rights in portfolio companies and promoting ESG broadly and Mumtalakat filling positions on the boards of portfolio companies and promoting primarily corporate governance. The asset classes within each fund are different as well, evidenced by the GPFG holding a sizable fixed income class in external companies and governments that Mumtalakat does not, with the exception of its internal sukuk murabaha program. They both viewed real estate over the period under consideration as an ideal means of diversification, especially in the region of North America and professed a desire to capitalize on developing sectors. Nevertheless, this desire is markedly more return-oriented in the case of Mumtalakat compared to the GPFG given the GPFG's preference for sectors supporting sustainability and thus may be interpreted as a means of furthering their active investing approach. If one were to compare the two SWFs to other institutional investors, this last factor combined with the bigger size and asset classes would lead me to conclude that the GPFG is an SWF that behaves more like an ETF and Mumtalakat that of a private equity firm.

3.2 Cosmopolitan Philanthropists

The trade surpluses arising from exports are often brought about through metropolitan business deals, thus an SWF with a source of wealth from surplus reserves could be described as cosmopolitan. Likewise, when an SWF has the primary purpose of supporting public welfare, it might be considered as a philanthropist, thereby leading to another category of SWFs: Cosmopolitan Philanthropists. The Hong Kong Monetary Authority Exchange Fund (HKMAEF), created with "the bulk of foreign currency assets held in the Government's

General Revenue Account," and working to "either directly or indirectly [affect] the exchange value of Hong Kong" in order to support the domestic financial sector fits well into this category (HKMA, 2012). The Korea Investment Corporation (KIC) which aims "to contribute to advancing the domestic finance industry," and is, like the HKMAEF, built from "the excess capital of foreign reserves" of the South Korean Government, is also positioned appropriately in this category (KIC, 2012). Both SWFs have extensive AUM, with the HKMAEF being within the top 5 largest SWFs in terms of AUM and are sufficiently transparent with identical LMTI scores of 8 (SWFI, 2020a; SWFI, 2020b).

Hong Kong Monetary Authority Exchange Fund (HKMAEF). The HKMAEF is subject to the authority of the Hong Kong Financial Secretary and officially managed on a day-to-day basis by the Hong Kong Monetary Authority (HKMA) which is widely considered as the central bank of Hong Kong (HKMA, 2012). Due to this, certain researchers do not consider the HKMAEF to be a SWF. Nevertheless, given that the HKMA consults the Exchange Fund Advisory Committee (EFAC) on investment decisions and this committee is composed of primarily independent individuals (i.e. not public officials), I would conclude the HKMAEF to be sufficiently managed away from other government bodies for the purposes of my framework (HKMA, 2012). This is further strengthened by the HKMA's use of external managers to oversee some of its equity and all of its alternative asset classes, many of which are abroad, thereby supporting the HKMAEF's fulfillment of an additional two features of SWFs within my framework (HKMA, 2012). Its focus to support the financial sector of Hong Kong would indicate that pension obligations are not within its realm of services of which ensures the fulfillment of another feature of my framework. Likewise, it is worth addressing briefly the sovereignty of Hong Kong as a means of further establishing the HKMAEF as a SWF, especially given the questions which frequently arise on this topic. Cheung (2011) provided an in-depth examination to Hong Kong's influence on mainland China, especially in light of its "high degree of autonomy" under the currently prevailing "One Country, Two Systems" and found there to be a clear influence, especially socio-economically. In the wake of recent protests in Hong Kong against Chinese intervention, broad support was given to Hong Kong from across the world, given the prevailing view of the region as autonomous from China (Horton, 2019). As such, I would conclude Hong Kong to be a sovereign region in the sense described in earlier sections and thus its fund to truly be a SWF.

The EFAC establishes and oversees the HKMAEF's investment objectives of which are primarily concerned with preserving the value of the Hong Kong Dollar, thereby leading one to accurately describe the HKMAEF as a stabilization SWF (HKMA, 2018). They are assisted by five sub-committees which monitor the various areas of the HKMA's work, as shown in Figure 14. The Investment Sub-Committee (ISC) in particular oversees investment management activities and advises on policy, strategy, and risk management.

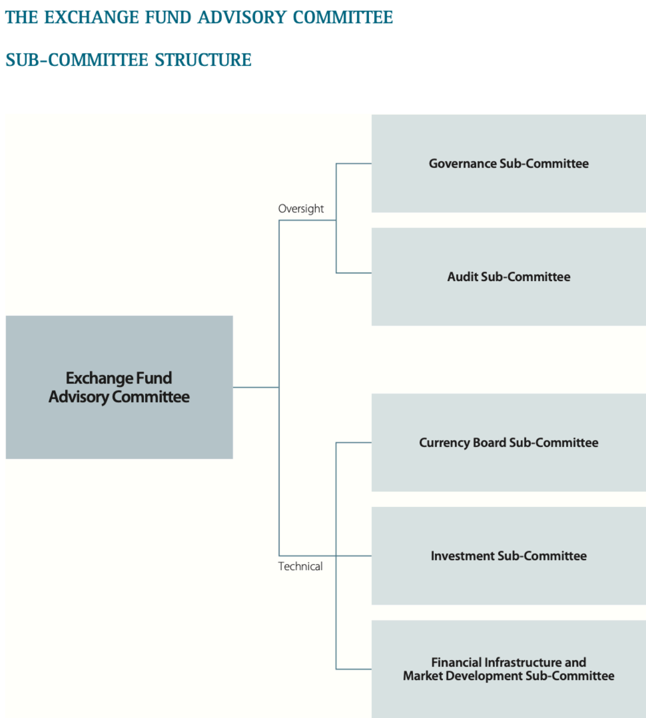

Figure 14. Organizational structure of the EFAC, HKMA, 2018.

The HKMAEF is divided, as shown in Figure 15, into four distinct portfolios: the Backing Portfolio (BF), Investment Portfolio (IP), Long-Term Growth Portfolio (LTGP), and Strategic Portfolio (HKMA, 2018). It is noted by the HKMA that the Strategic Portfolio is not accounted for when assessing the performance of the portfolio overall, therefore I also do not consider it in depth here (HKMA, 2018). Assets are allocated based on a framework of either strategic asset allocation or tactical asset allocation, the former of which is based off of the HKMA's benchmark for investments and the latter of which is meant to provide return in excess of the benchmark (HKMA, 2018). The benchmark is set by the EFAC and the Financial Secretary and deviation ranges are set by the HKMA (HKMA, 2018). The risk management process has grown in complexity as the fund has become more diversified and performance analysis is regularly conducted to understand the origins of strong performance in investments (HKMA, 2018). There are traits of active investing amongst the HKMAEF through its adoption of the Hong Kong Securities and Exchange Commission's Principles of Responsible Ownership (PRO) to which internal and external fund managers are expected to adhere in their managing of investments (HKMA, 2018).

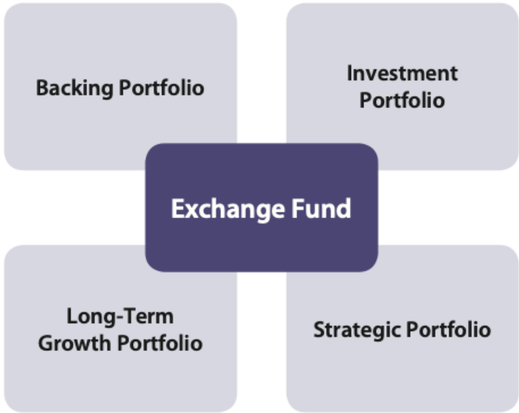

Figure 15. Multi-portfolio structure of the HKMAEF, HKMA, 2018.

The HKMAEF places an emphasis on liquidity in its asset allocation, which is primarily achieved through very liquid assets denominated in United States Dollars (USD). One can observe this in Figure 16 illustrating that the majority of the assets within the HKMAEF were between 2012 and 2016 of either USD or Hong Kong Dollars (HKD), which grew in size compared to other currencies as the period progressed. Furthermore, Figure 17 provides insight into the broad asset classes favored by the HKMAEF over the period wherein which there was a gradual increase in the highly liquid classes of cash and money at call and placements with banks and other financial institutions, the latter of which primarily encompassed reverse repurchase agreements. Financial assets at fair value were the most favored asset class in terms of allocation and were composed of equity securities both outside of and inside Hong Kong, in addition to debt securities such as Treasury bills listed outside of Hong Kong and unlisted certificates of deposit (CDs).

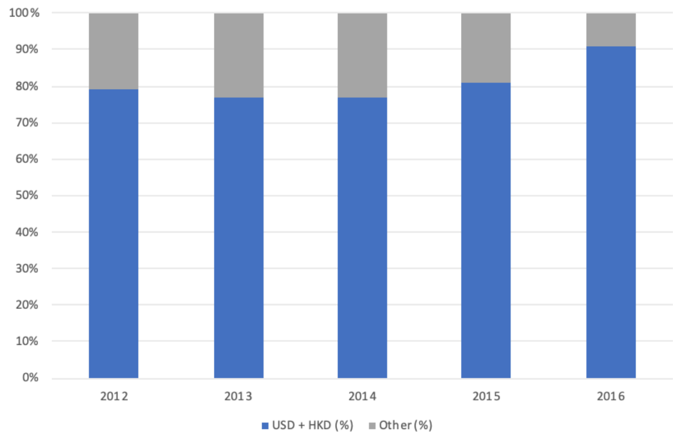

Figure 16. Change in currency allocation of assets of the HKMAEF, HKMA, 2012-2016.

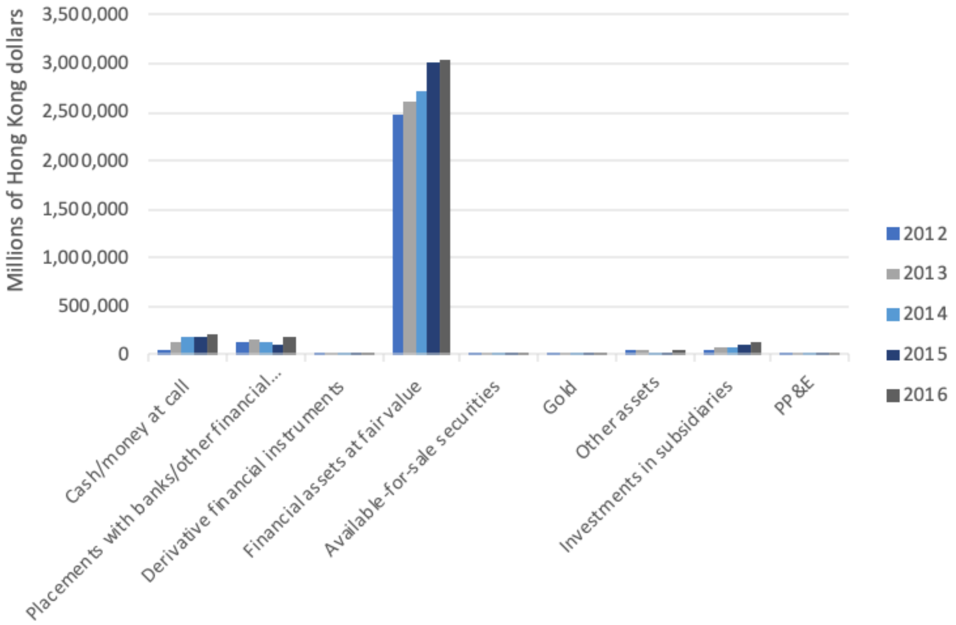

Figure 17. Evolution of HKMAEF asset allocation, HKMA, 2012-2016.

The highly liquid assets of the HKMAEF were housed in its BP and IP, with the exact mix between equities and bonds remaining relatively stable over the period. The LTGP housed the HKMAEF's real estate and private equity investments and was trackable beginning in 2015. Between 2015 and 2016, investments in the two alternative asset classes increased, which is shown in Figure 18. This increase reflects the growing amount of investments into the broad asset class of investments in subsidiaries evidenced in Figure 17, as these subsidiaries were noted to be holding companies through which investments in real estate could be made (HKMA, 2015).

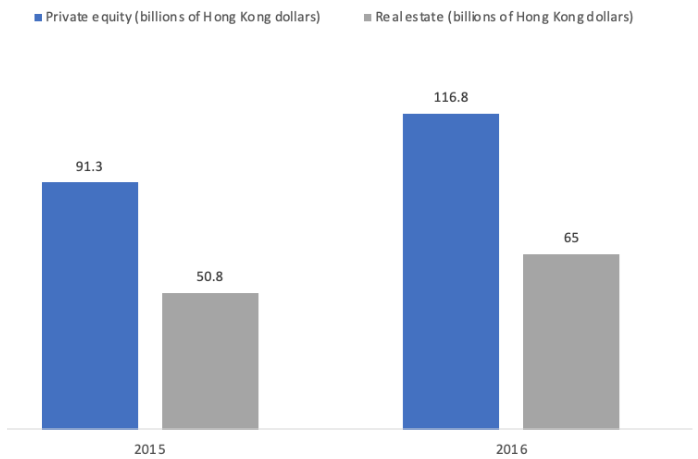

Figure 18. Development of private equity and real estate in the HKMAEF, HKMA, 2015-2016.

The choice of highly liquid assets by the HKMAEF is explained as being required by the Hong Kong Currency Board as a means of providing backing to the HKD (HKMA, 2012).

However, as a means of generating returns in the IP and LTGP and also minimizing risk, broader diversification was undertaken by the HKMAEF by investing more into real estate, in addition to bonds and equities in emerging markets. The HKMAEF's risk management system is reminiscent of best practices in portfolio management through its distinguishing between market risk, liquidity risk, and credit risk, with additional sub-categories in each category of risk. Overall, the HKMAEF demonstrated an increasing use of out-sourced investment management over the period, which it attributed to increased investments in the LTGP which, as noted earlier, is composed of alternative asset classes of which are exclusively managed by external managers and altogether making it more of a traditional SWF. The increase in highly liquid assets over the period was part of the HKMAEF's strategy which anticipated a rough investment environment in 2015 and 2016 brought on by geopolitical uncertainty, amongst other things. This also explains its decreased allocation to non-USD and HKD-denominated assets and expanding investments in the LTGP.

Korea Investment Corporation (KIC). The Korea Investment Corporation Act established the KIC in 2005 and stipulated that it have "investment independence and operational autonomy from the government," thereby allowing the KIC to meet two key features of SWFs (KIC, 2018). The KIC has a two-tier management structure evidenced in Figure 19, with the supreme managing body being the Steering Committee that, along with sub-committees specializing in investing and risk management, provides the guidelines for investing followed by the KIC (KIC, 2018). As noted above, a primary objective of the KIC is to strengthen the domestic finance industry, of which it does through regular dialog with the Korean private financial sector, thus it is not obligated to provide pensions (KIC, 2018). It achieves its returns by investing exclusively outside of South Korea and in a variety of asset classes (KIC, 2018).

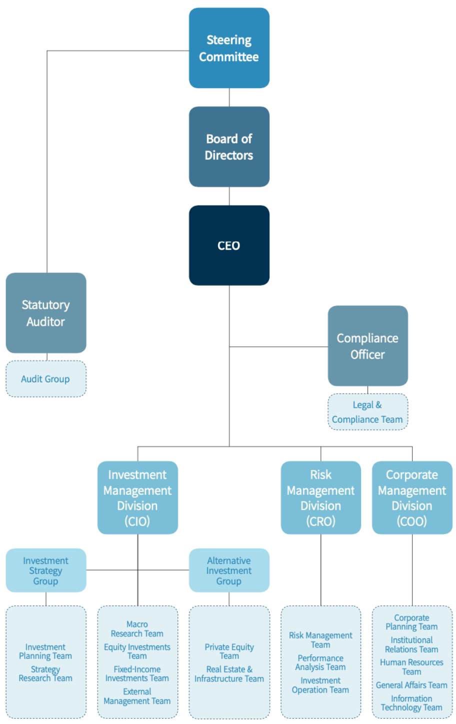

Figure 19. Management structure of the KIC, KIC, 2016.

The KIC follows a succinct process in making investments that considers first the long-term goals of the KIC to arrive at the strategic asset allocation to be followed (KIC, 2018). The KIC has a multi-portfolio model based on asset-type and broadly separated into traditional, alternative, and special (KIC, 2012). Each portfolio has its own management style which takes consideration of the risk limits decided upon by the Risk Management Subcommittee within the Steering Committee and the Risk Management Working Committee within the Board of Directors through consideration to relevant benchmarks, depending upon the type of risk (i.e. market, credit, operational, etc.) and asset (KIC, 2018). The benchmark favored by the KIC for equity investments is the MSCI All Country Index and for bond investments is the Barclays Capital Global Aggregate Index (KIC, 2012). Rebalancing of the portfolios occurs quarterly based upon macroeconomic analyses and investment returns at that point (KIC, 2018). In this regard, the KIC is an active investor, of which is further compounded by its work with portfolio companies, as outlined in its Stewardship Principles (KIC, 2018). With regards to transparency and collaboration, it professes to be an active member of the IFSWF (KIC, 2016).

There was a gradual increase in the portfolio of alternative assets of the KIC between 2012 and 2016 (Figure 20), especially that of real estate, as shown in Figure 21. Hedge funds were another prominent asset invested in within the portfolio, of which was also unique amongst other SWFs. Cash equivalents notably increased too. Equities remained the majority of the portfolio over the period, with fixed income following close behind. Nevertheless, fixed income notably decreased from its 2012 levels. The portfolio of other assets was noted to primarily include inflation-linked bonds, commodities, and cash, of which also increased over time. Overall, the KIC was well-diversified globally over the period, and in 2016 saw 53.53 percent of its total portfolio invested into North America, followed thereafter by Europe where 25.62 percent of total investments were located (KIC, 2016).

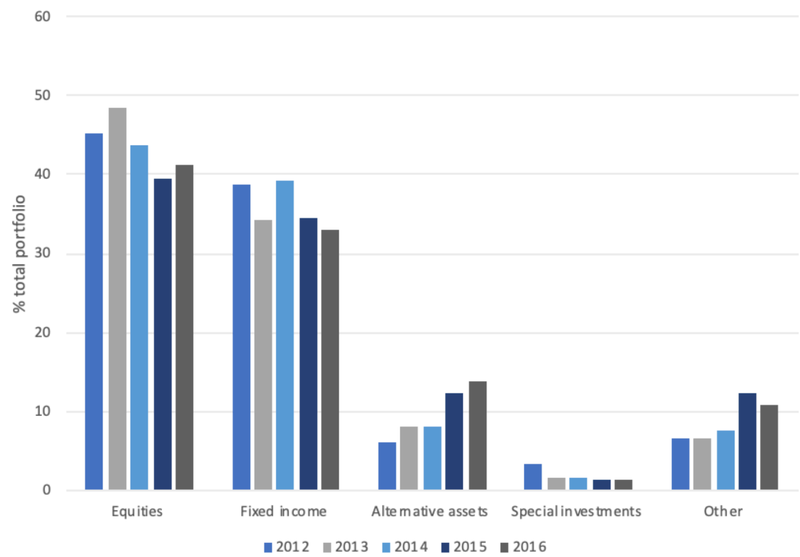

Figure 20. Development of KIC asset allocation, KIC, 2012-2016.

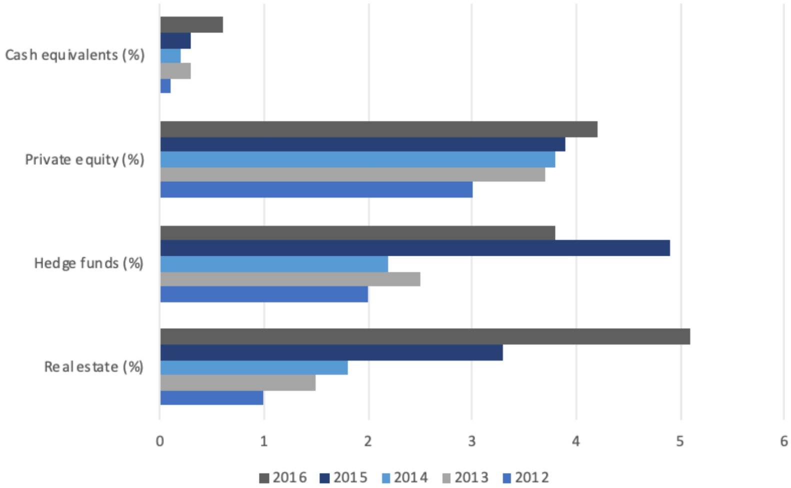

Figure 21. Changes in KIC alternative assets portfolio, KIC, 2012-2016.

Beginning in 2012, the KIC began work on building strategies tailored to each region and country invested in, to which it saw success within its real estate investments as the period progressed. It established an in-house research center in 2014 to combat the biases of external research and to thus make better investment decisions overall (KIC, 2014). Further efforts were made in research as the period progressed with the KIC seeking region, industry, and asset class-specific research specialists to participate in its fund. It collaborated more widely with other SWFs and institutional investors via a series of MOUs and the establishment of the Co-Investment Roundtable of Sovereign and Pension Funds (CROSAPF), which included primarily sharing information regarding investments. The portfolio of alternative assets was expanded due to the KIC's anticipation of a rough investment environment in the latter half of the period.

Comparison. The HKMAEF and KIC are remarkably similar in terms of construction and strategy. Both SWFs operate via a two-tier management structure which further separates itself into specialized sub-committees, notably investments and risk. The risk management procedures of both funds are highly developed and reminiscent of best practices due to their defining the various risks (i.e. market, operational, etc.) and then tailoring a strategy to manage it. The tailored strategy approach extends to the management of each portfolio of assets in both SWF's multi-portfolio structure. The portfolio of alternative assets was increased by both funds as the management of both funds anticipated a rough investment environment at the end of the period. The direct support of both is largely towards the financial health of their respective countries, though the HKMAEF is more closely aligned with the central bank of Hong Kong, which might explain why its portfolio of liquid assets was higher than that of the KIC. This might also explain why it is not as diversified globally as the KIC, of which is further clarified by the KIC's broad network of partners in the CROSAPF. The information regarding global investments of the HKMAEF, however, was notably sparse, therefore this final difference may not be considered as definite.

3.3 Pragmatic Conservationists

Conservationists are commonly discussed in the context of nature and have as their goal to preserve the environment. When conservationists strive to preserve natural resources of which will not last forever, they may be further described as pragmatic. Thus, for the SWFs with a source of wealth in their natural resources and of which aim to prolong the purchasing power given by them, there is no better description than Pragmatic Conservationists. The Abu Dhabi Investment Authority (ADIA) was established with starting capital from the Government of Abu Dhabi of which, given the major oil reserves of Abu Dhabi, may be inferred to be a natural resources source of wealth (ADIA, 2020a). Likewise, the purpose of the ADIA is to "sustain the long-term prosperity of Abu Dhabi," thereby making the category of Pragmatic Conservationists most befitting to the ADIA (ADIA, 2018). The Alaska Permanent Fund (APF) overseen by the Alaska Permanent Fund Corporation (APFC) also fits well in this category given that their starting capital is sourced from Alaska's oil reserves and was established in order to ensure that some of the revenue from these reserves would be saved and invested for future use (APFC, 2020a). Though the ADIA has a mere LMTI score of 6, the fact that it is ranked as the third largest SWF in the world in terms of AUM made a study of it within this category seem worthwhile (SWFI, 2020a; SWFI, 2020b). The APF also ranks relatively high in terms of AUM and has an LMTI score of 10, both of which supported a closer investigation of them as well (SWFI, 2020a; SWFI, 2020b).

Abu Dhabi Investment Authority (ADIA). Established in 1976 by the Government of Abu Dhabi, the ADIA functions as "an independent investment institution" and oversees "a diversified global investment portfolio" of which does not invest in the United Arab Emirates (UAE), thereby fulfilling a number of the key features of SWFs (ADIA, 2016; ADIA, 2020a). Its mission, which is centered on sustaining the prosperity Abu Dhabi has experienced due to its natural resources, is more aligned with growth rather than providing pensions (ADIA, 2018). Therefore, the ADIA fulfills the final feature of SWFs specified for the purposes of this paper. As a member of the UAE, some questions may arise to the sovereignty of Abu Dhabi and thus its SWF. Given that the UAE Constitution dictates that the individual Emirates may enter into agreements with neighboring countries, provided they do not oppose the greater interests of the UAE, I would conclude that Abu Dhabi is sufficiently sovereign, and thus its SWF is a veritable SWF (UAE Const. art. 123).

In line with best practices, the ADIA has a reference portfolio which is used to define the risk appetite that the ADIA will adhere to it in its investments (ADIA, 2020b). It also adheres to the Santiago Principles for SWFs, having been a major contributor in formulating them (ADIA, 2016). It has a multi-portfolio structure based on asset class with each portfolio being managed in line with its own guidelines and benchmarks (ADIA, 2020b). A quasi two-tier governance structure (Figure 22) is used to set the overall strategy to which the ADIA will follow, with the strategy outlined by the Board of Directors and implemented by a single Managing Director, all with the assistance of specialized subcommittees, hence a description of "quasi" (ADIA, 2020c). The ADIA is both a passive and active investor given that half of its portfolio is managed on the basis of index-replicating, largely to reduce transaction costs, and the other half managed actively (ADIA, 2020b). Its activeness is further evidenced by its support for ESG, especially environmental, investments (ADIA, 2018).

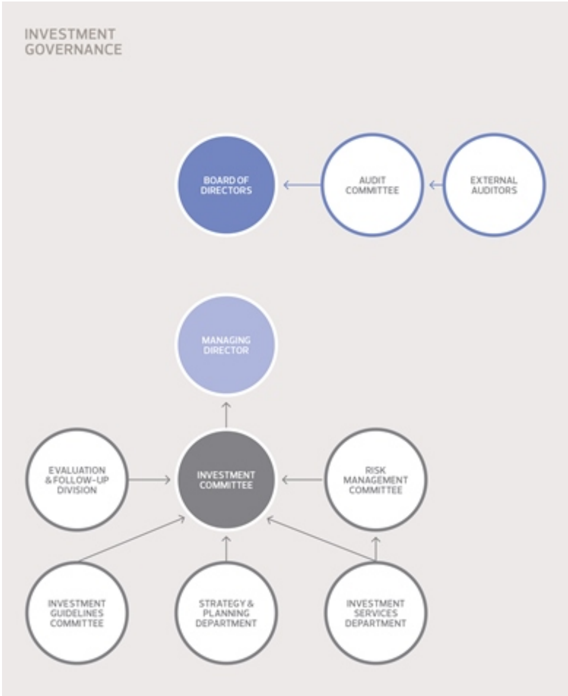

Figure 22. ADIA governance structure, ADIA, 2020c.

The ADIA did not provide an exact breakdown of its asset allocation over the period of time under review. Rather, it illustrated the minimum and maximum allocations that could be granted towards each portfolio (Figure 23). An equivalent approach was taken in reporting on geographic diversification (Figure 24). The boundaries within each portfolio and geographic region did not change over the period and the greatest allocations were awarded to Developed Equities, Emerging Market Equities, and Government Bonds. The most favored regions in terms of allocated investments were North America and Europe. Unlike some other SWFs, the ADIA separated its equity investments into more nuanced categories, in addition to dedicating a single portfolio to each of the commonly favored alternative assets of real estate and private equity. Its portfolio of alternative assets was reported to consist of hedge funds and managed futures.

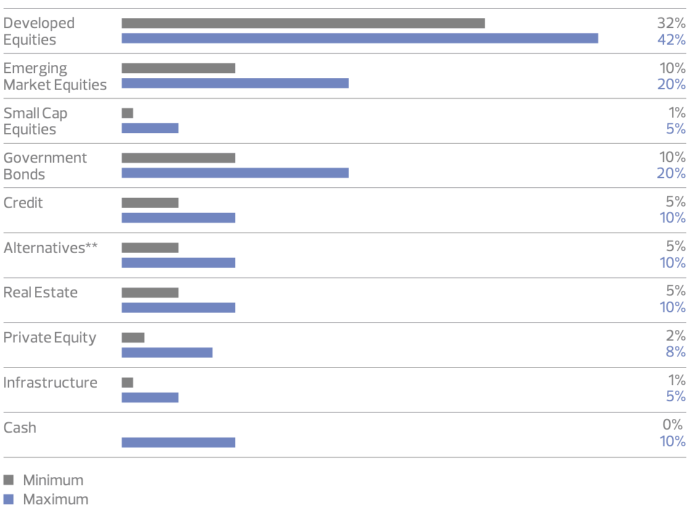

Figure 23. Allocations allowed to portfolios of the ADIA, ADIA, 2016.

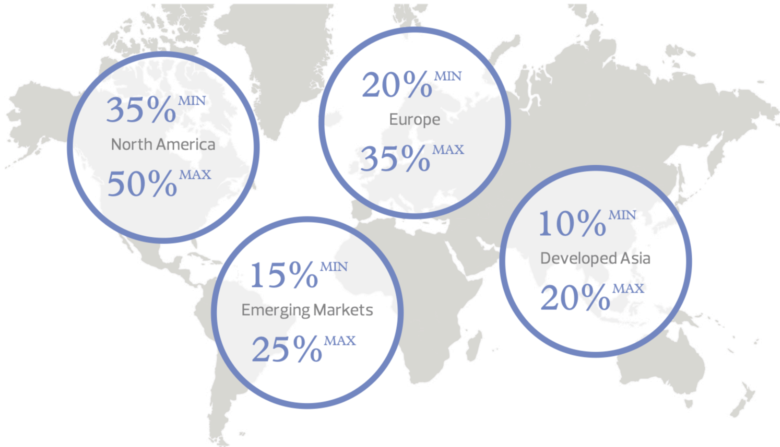

Figure 24. Allocations allowed to regions of the ADIA, ADIA, 2016.

Strategically, the ADIA made significant efforts to increase its in-house management capabilities over the period and to reduce the portion of its portfolio that was externally managed. Research was one specific area which was built up in order "to build a network of relationships across the research community" and to better inform the investment decisions of the ADIA (ADIA, 2014). The ADIA made further efforts towards this network of relationships through partnerships with other institutional investors such as the New Zealand Superannuation Fund and the Alberta Investment Management Company (AIM), in addition to launching the Global Investment Forum (GIF) to bring together external experts and ADIA managers to discuss trends in the investment space. These partnerships were further evident in its Private Equity investments later in the period due to its view that the sector was approaching cyclical maturity (ADIA, 2015). It altered its operating models to allow greater flexibility to managers to target ""alpha" opportunities," while also implementing a ""Smart Beta" portfolio" that was based on indexing (ADIA, 2014; ADIA, 2015). ESG investments became more prominent towards the end of the period during which the Infrastructure portfolio invested in a number of renewable energy projects in Asia (ADIA, 2015; ADIA, 2016).

Alaska Permanent Fund (APF). The APF is reported to be the property of the U.S. State of Alaska and is managed on a day-to-day basis by the APFC which is "an agency separate from the State Treasury," both points supporting the APF's agreement with the key features of SWFs regarding state-ownership and independence (APFC, 2012; APFC, 2020b). As with the ADIA, certain questions might arise as to the sovereignty of Alaska due to its being a member of the U.S. The U.S. was founded on the principle of shared sovereignty and there has been much debate as to whether or not the U.S. Constitution is to be interpreted as a "compact among sovereign states" (Beer, 1998) in which authority is shared by the federal government and the state governments or if it is an agreement between the federal government and the citizens of the U.S., with the states serving as a non-authoritative middle figure (Zick, 2005). The case law of recent years has sided with the former in which state sovereignty is recognized and upheld (Alden v. Maine, 1999; Blatchford v. Native Vill. Of Noatak, 1991; Fed. Maritime Comm'n v. S.C. State Ports Auth., 2002). Based on this case law, I would conclude Alaska to indeed be sovereign and thus its SWF to be truly sovereign.

Two accounts are used for the APF, one of which is spendable (Earnings Reserve Account) and non-spendable (Principal) (APFC, 2020c). The Earnings Reserve Account is used to provide the dividends related to state oil that is awarded to Alaska residents on an annual basis; however, the Principal remains within the APF and has been noted as making up 95 percent of the Fund's AUM (APFC, 2012; APFC, 2020c). Thus, I would conclude that the APF is not obliged to provide pensions. The final features of SWFs regarding allocation are fulfilled by the APF with the reporting that it "is invested globally across public and private assets" (APFC, 2020d).

There are multiple asset classes within the APF, each managed with its own team considering its unique risk structure, therefore the APF adheres to best practices in having a multi-portfolio structure (APFC, 2020d). The APFC was a founding member of the IFSWF and its Santiago Principles, therefore the APF also adheres to best practices in transparency (APFC, 2016). The APF organizes its portfolios into two categories: growth and income, which are further subdivided into liquid and illiquid assets (APFC, 2020d). For example, stocks would be a liquid asset within the growth category and fixed income a liquid asset within the income category; private equity would be an illiquid asset under the growth category and real estate an illiquid asset under the income category (APFC, 2020d). This additional categorization is meant to increase the efficiency of the APF overall by easing the risk management process, a point evidenced in the APF's liquidity overlay mandate which pairs a portion of the APF's cash assets to the stock and bond market in order to reduce the drag associated with cash (APFC, 2020d; APFC, 2020e). The Board of Trustees regularly reviews the asset allocation of the APF; thus it considers itself an active investor (APFC, 2020d). The responsibility of the Board of Trustees to make investment decisions and the role of the APF's Executive Leadership in overseeing these decisions would indicate that the APF adheres to a two-tier governance structure.

As shown in Figure 25, the general, target asset allocation of the APF did not drastically change over the period, with the exception of greater allocations being targeted towards the Absolute Return class in 2016. The Absolute Return class is composed of strategies which strive to mitigate the exposure of the APF to market risk and to minimize volatility. As such, its contents varied over the period. By 2016, it consisted mainly of external hedge fund managers and the Fund's External Chief Investment Officer.

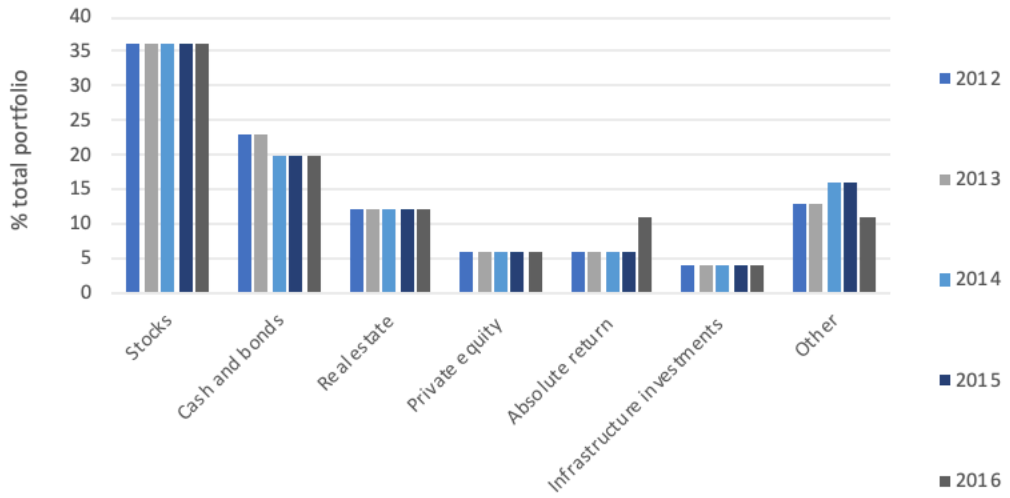

Figure 25. Target asset allocation of the APF, APFC, 2012-2016.

The APF provided tremendous insight into the individual components of its various portfolios, thus enabling further analysis of the development of its asset allocation over the period. The geographic exposure of the APF and the way in which it changed over the period is especially evident through Figure 26 which illustrates the shifts in the APF's stock portfolio by geography. Though overwhelmingly centered in the U.S., increased allocation was given to stocks in Asia and emerging markets ('Other' category). The real estate portfolio also followed a steady pattern as investments in retail and office space decreased in favor of real estate investment trusts (REITs) and multi-family properties (Figure 27).

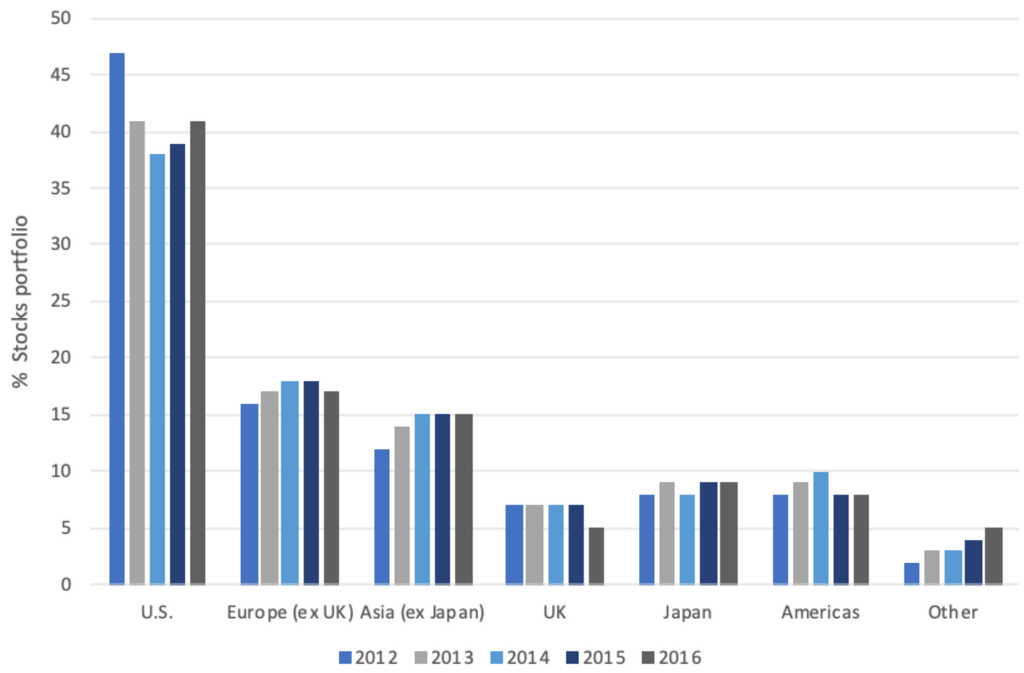

Figure 26. APF Stock portfolio by geography, APFC, 2012-2016.

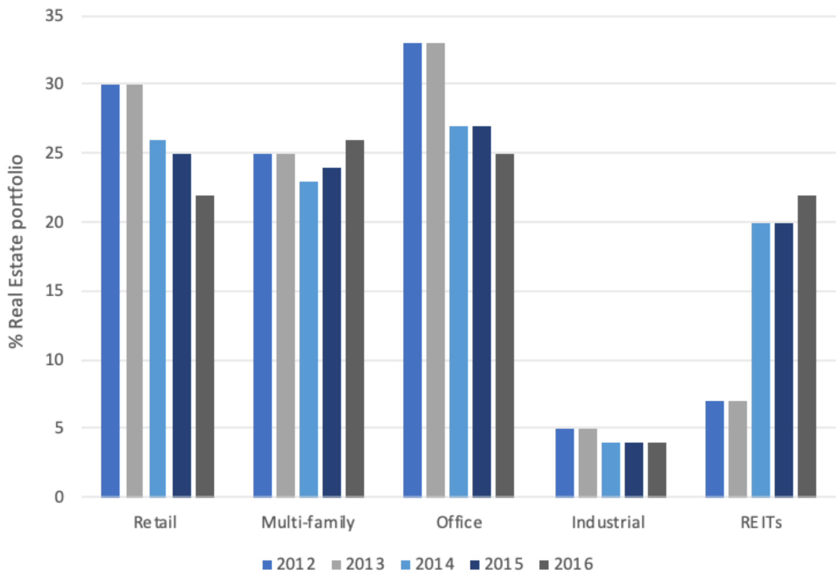

Figure 27. APF Real Estate portfolio by type, APFC, 2012-2016.

Over the period, the APF acquired characteristics of a venture capital fund and/or private equity firm in terms of strategy as it made investments into the biotechnology sector and allocated more investments to external hedge fund managers. The shift of the APF Stock portfolio into the Asian market was assisted by the APF's hiring its first manager focused on the Chinese market in 2016 (APFC, 2016). There was further diversification geographically in the APF's Real Estate portfolio as it made its first investment into international real estate in 2014 in the UK and continued with additional investments in Spain and Portugal in the subsequent years (APFC, 2014; APFC, 2015; APFC, 2016). The Real Estate portfolio also expanded into the healthcare real estate sector, thus capitalizing on a growing market and demonstrating a specific way in which the APF began to resemble a venture capital fund and/or private equity firm (APFC, 2016). In 2013, it began its "Incubation Platform" which sought out experienced investment professionals to oversee independent strategies within the Absolute Return portfolio, without startup capital (APFC, 2013). Thus, the APF also enhanced its partnership efforts over the period.

Comparison. The ADIA and the APF were, overall, rather similar in terms of an identical multi-portfolio structure in which each portfolio had its own manager and risk benchmark. The overall management structure in which a board makes investment decisions and a team of leadership carries them out was also similar between the funds. Both favored further collaboration, especially in terms of research, as evidenced in the ADIA's GIF and the APF's Incubation Platform. This was also evident in the foundational role each played to the IFSWF and the Santiago Principles. These similarities might arise from the fact that both are states within a federal system of government. Both sought to participate more widely in private equity as the period progressed and made use of partnerships to do so, though the ADIA favored more partnerships with other SWFs compared to the external fund managers chosen by the APF. Likewise, while both funds were interested in ESG investments, the ADIA was more traditional in its choice of environmental investments than the APF and its biotechnology investments. Additional differences arose in the APF's increased attention to

Asia, its more active management structure, and its approach to risk management which did not rely solely on a reference portfolio like the ADIA.

3.4 Sophisticated Visionaries

As highlighted in the introduction to Cosmopolitan Philanthropists, the business deals which lead to mass exporting of goods and, consequently, trade surpluses, are often concluded in cities. When compared to rural environments, cities are often associated with sophistication, therefore SWFs which have starting capital sourced from trade surpluses may be characterized as sophisticated for the purposes of grouping. When the country to which an SWF is associated is conscious of the fact that they may not always have a trade advantage in the global economy and, as a result, make efforts to prolong the purchasing power associated with their current advantage, the term visionary is particularly fitting. When put together, these SWFs are best grouped under the name Sophisticated Visionaries.

China, as the world's largest exporter of goods, has a sizable trade surplus which was used to establish its SWF, the China Investment Corporation (CIC) (CIC, 2012). Given that the CIC's goal is to "seek maximum returns" on its investments for China would indicate a desire to prolong the purchasing power of China's trade surplus, thus positioning the CIC well into the Sophisticated Visionaries category of SWFs (CIC, 2012). Likewise, GIC Private Limited (GIC), one of Singapore's SWFs, which was established with capital from "Singapore's foreign reserves" and aims to "preserve and enhance the international purchasing power" of its assets also fits well into this category of SWFs (GIC, 2020). Both SWFs have slightly lower LMTI scores of 7, however given that both rank within the largest SWFs in the world in terms of AUM, a study of their asset allocation and management strategy seemed warranted for the purposes of this paper examining macro wealth management (SWFI, 2020a; SWFI, 2020b).

China Investment Corporation (CIC). The CIC fulfills a key feature of SWFs given its description as a "wholly state-owned company" (CIC, 2012). Likewise, it is stated as operating with reference to the Company Law of China and is managed by a relatively independent (i.e. non-political) Board of Directors, Board of Supervisors, and Executive Committee, of which would support a conclusion that it is managed away from other government bodies (CIC, 2012). Furthermore, its objective to maximize the return on the investments it makes on behalf of the Chinese state does not make reference to any pensions, thereby indicating that it is not obligated to provide pensions. The CIC subsidiary, CIC International, is stated as overseeing all of the CIC's international investments and, in general, the CIC professes to invest "across diversified asset classes," thereby ensuring its fulfillment of the final two features of the framework for SWFs used in this paper (CIC, 2012).

The CIC has both a passive investing style given its Reference Portfolio, which is composed of fixed income and public equities that are said to be managed passively, in addition to active investing style with the emphasis it places on "research-driven investment" (CIC, 2015; CIC, 2016). The Reference Portfolio draws attention to the CIC's use of a multi-portfolio structure composed of the Reference Portfolio, Policy Portfolio, and Actual Portfolio (CIC, 2016). Each asset class is also overseen by its own department, thereby creating further division. It follows a two-tier governance structure (Figure 28) with a Board of Directors formulating investment strategy with reference to the objectives and principles set by the

Chinese State Council and an Executive Committee leading day-to-day operations of the CIC (CIC, 2016). In addition to CIC International, CIC Capital is another subsidiary which oversees the international investments of the CIC, and both are supported by CIC investment offices in Hong Kong and New York City (CIC, 2016). Central Huijin is the remaining subsidiary of the CIC and is tasked with overseeing its few domestic investments in state-linked companies (CIC, 2016). It follows a comprehensive, three-tier risk management system which distinguishes between various types of risk such as market, credit, and operational, that is further grouped according to a top-down risk factor framework considering the effect of each risk on a given component in the overall portfolio (CIC, 2016). The CIC's further adherence to best practices is evident in its active membership to the IFSWF and advocacy of the Santiago Principles (CIC, 2016).

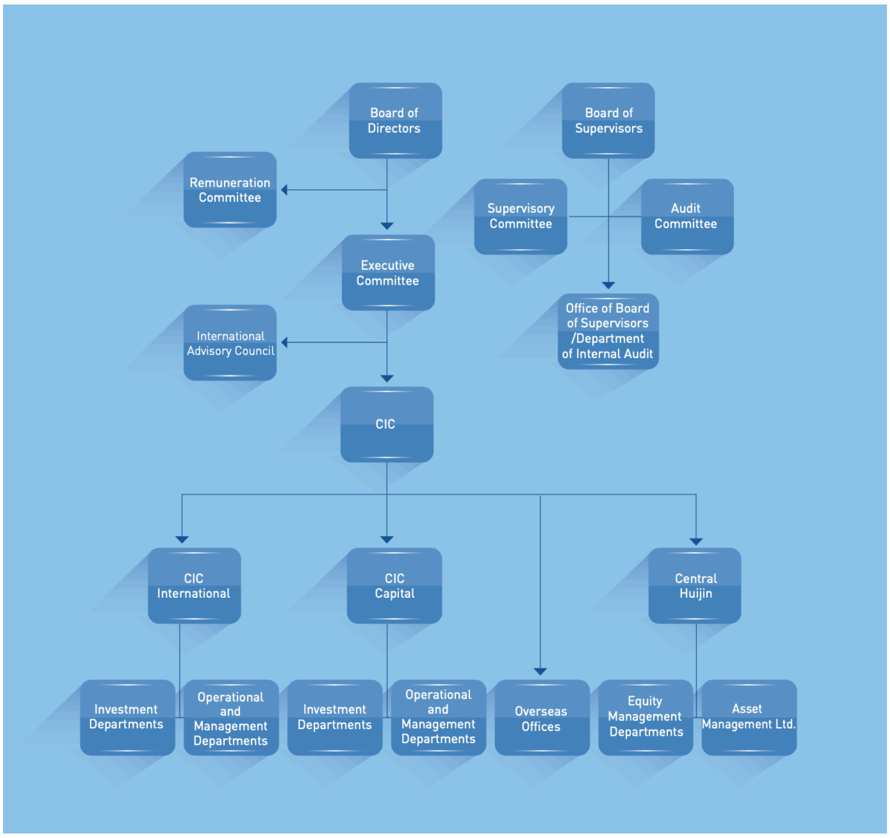

Figure 28. Governance structure of the CIC, CIC, 2016.

The CIC initially allocated a high amount of investments to alternative assets such as hedge funds, real estate, direct investments, and private equity, of which gradually decreased over the period in favor of public equities (Figure 29). This may be attributed to the CIC's use of the Endowment Model application of MPT as a basis for asset allocation in the early part of the period, of which was replaced by the Reference Portfolio framework in the latter half of the period (CIC, 2016).

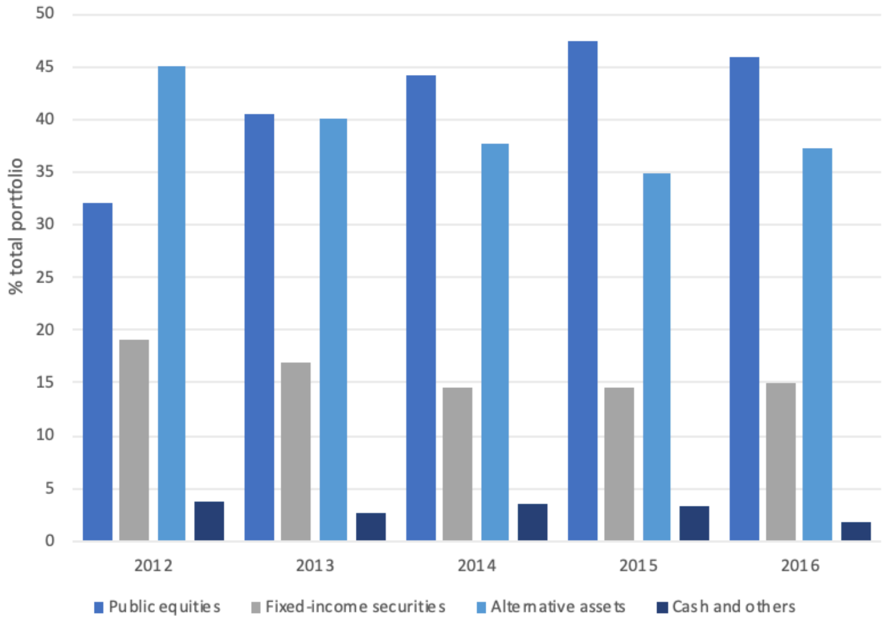

Figure 29. Overall portfolio division of the CIC, CIC, 2012-2016.

The increasingly volatile currency fluctuations in the latter half of the period are explanatory of the CIC's progressively lower allocation to equity and fixed income investments in emerging markets (Figure 30 and Figure 31). This was accompanied by an increase in investments in U.S. equities given the level of economic stability achieved by the U.S. by 2016 (CIC, 2016). Given that this was achieved with relatively little inflation, the CIC essentially eliminated its investments in inflation-indexed bonds towards the end of the period (CIC, 2016).

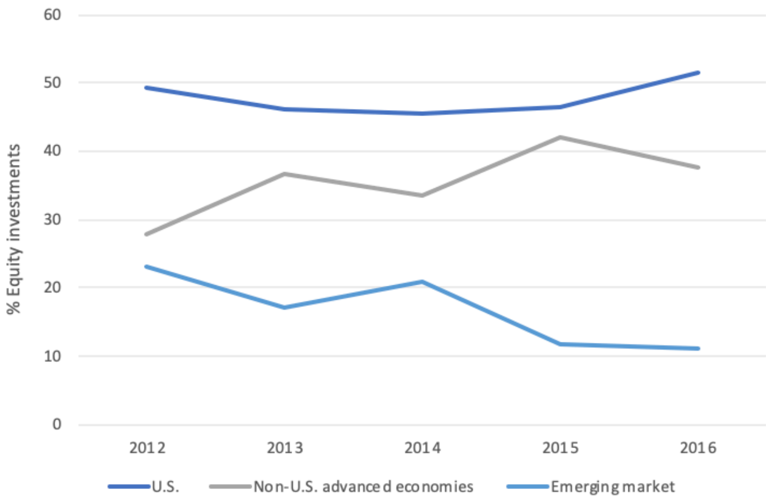

Figure 30. CIC equity investments by region, CIC, 2012-2016.

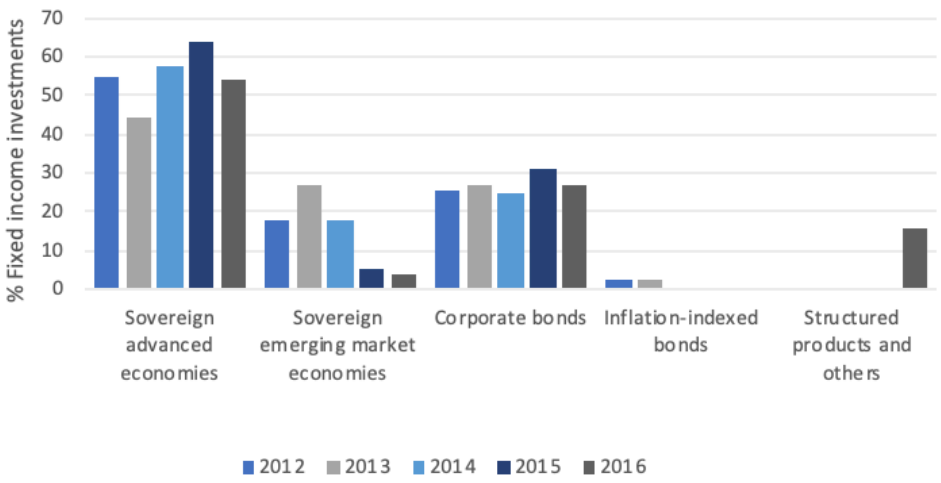

Figure 31. CIC fixed income investments by type, CIC, 2012-2016.

Strategically, the CIC's biggest change over the period was arguably its shift from the Endowment Model for asset allocation to the Reference Portfolio framework as a means of simplifying its investment approach and adopting the best practices of other SWFs (CIC, 2015). Also like other SWFs, the CIC took on some characteristics of private equity firms with its formalization of post-investment management processes to assist in its exiting of investments. Though it was shown to have increased its investments to public equities over alternative assets, as the period progressed the CIC began to reallocate additional funds to alternative assets, best evidenced by its establishing CIC Capital in 2015 to manage direct investments abroad (CIC, 2015). These investments were often in energy and infrastructure, in addition to growth sectors such as healthcare and technology, the latter of which support the view that the CIC adopted a venture capital investment style. Throughout the period, the CIC placed immense emphasis on open communication with companies and officials in the countries of its international investments in an effort to mitigate the suspicion that has been attributed to the motives of SWFs in the past, as described in the literature review. These communications led to the CIC partnering with other SWFs in direct investments, as well as to attracting foreign direct investment into China, especially with regards to the Belt and Road Initiative.

GIC Private Limited (GIC). GIC is "wholly owned by the Government of Singapore" and manages its foreign reserves (GIC, 2019). In spite of this, GIC is given the space to decide on the exact asset allocation of the fund, provided it is in line with the risk parameters set by the Government of Singapore and, more specifically, its Ministry of Finance (GIC, 2019). Thus I would conclude GIC fulfills two major features of SWFs, one being government ownership and the other management away from other government bodies. Further fulfillment of key features is given by GIC's rule to invest strictly outside of Singapore into a variety of asset classes (GIC, 2019). The overarching purpose of GIC is to maintain the purchasing power of Singapore's foreign reserves, and while the Government of Singapore does have access to up to 50 percent of GIC's returns on investments for public infrastructure projects, I am confident that GIC fulfills the final key feature of SWFs, that is not being obligated to provide pensions.

The portfolio of GIC is composed of the Policy Portfolio, which has a long-term horizon and is subsequently not frequently adjusted, and the Active Portfolio, which is short-term and meant to provide additional returns not given by the Policy Portfolio through active management (GIC, 2019). The Policy Portfolio is not entirely passive given that it is adjusted occasionally in the event of major changes in the investment environment, such as a significant change in the returns associated with a particular region (GIC, 2013). However, it is partially passive, which would support the conclusion that GIC is both a passive and active investor. These portfolios are also indicative of GIC's compliance with the best practice of a multi-portfolio structure. GIC favors value investing and is an active member of the IFSWF, thereby indicating further use of best practices within the management of its fund (GIC, 2019). The Government of Singapore sets the overall risk appetite for GIC through the Reference Portfolio which the GIC Board of Directors then considers in risk management (GIC, 2019). This portfolio is considered as GIC's long-term benchmark (GIC, 2013).

Risk management in GIC is conducted along "three lines of defense" encompassing all levels of the organization and also providing for the separation of various types of risk into their own management (GIC, 2019). General decision making in GIC, as shown in Figure 32, tends to follow a two-tier structure with the Board of Directors overseeing the Policy Portfolio and long-term strategy with the support of five committees and GIC Management overseeing the Active Portfolio and active strategies, with reference to the Policy Portfolio given by the Board of Directors (GIC, 2019). The benchmark used for active strategies is their ability to bring a return beyond that of their cost of capital (GIC, 2019). The rest of the portfolio is benchmarked in the short-term against global inflation, in particular a rolling 20-year real return, given the purpose of GIC to protect the purchasing power of the reserves it manages (GIC, 2013; GIC, 2015).

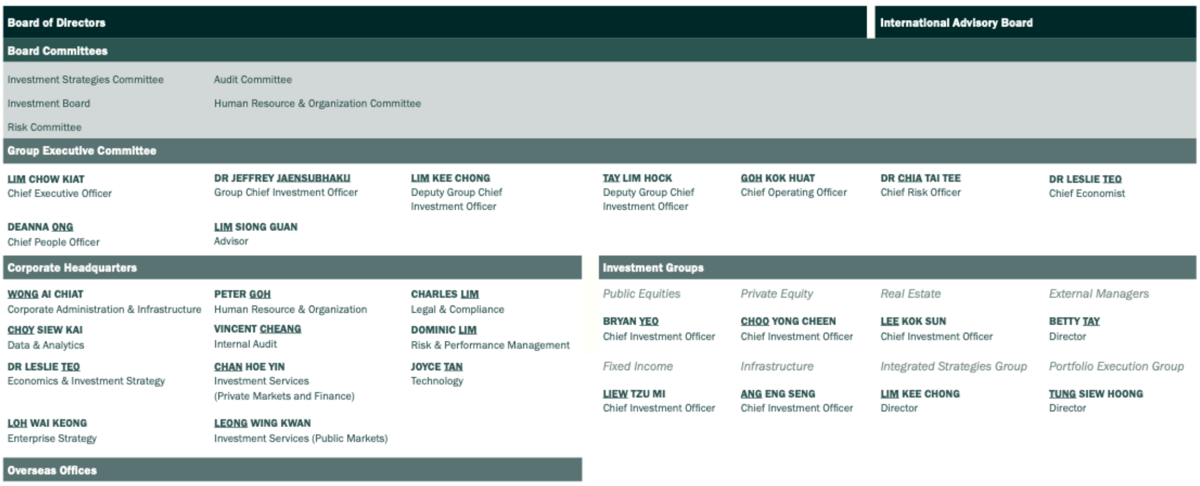

Figure 32. Governance structure of GIC, GIC, 2016.

From Figure 33, one can observe a pronounced and steady increase in GIC's holdings of nominal bonds and cash from 2012 to 2016. This occurred at the expense of equity investments in developed markets, which saw a more or less steady decline over the period. The classes of inflation-linked bonds, real estate, and private equity remained notably constant over the period. These movements may be attributed to GIC's view that, as the period developed, assets became increasingly over-valued and long-term returns were likely to be low. GIC attributed the low long-term returns to macroeconomic developments such as a rise in populism and protectionism. This point might explain GIC's increased investments in Asia at the expense of Europe as the period progressed (Figure 34).

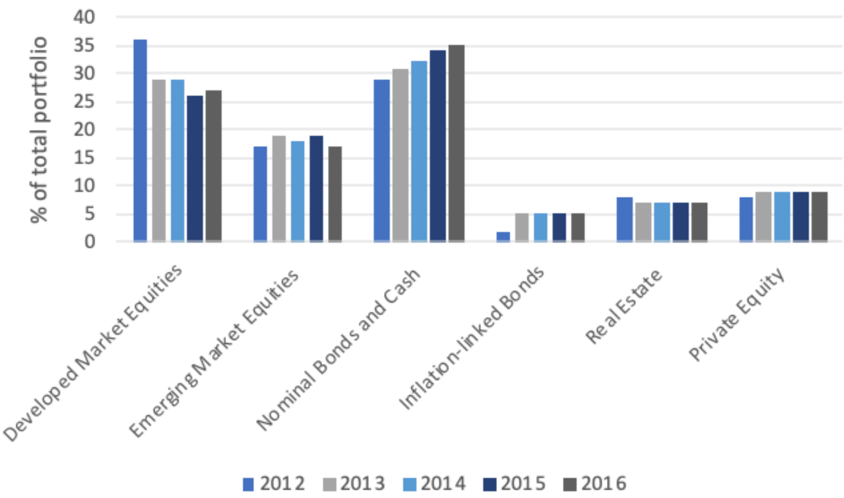

Figure 33. Development of GIC asset allocation, GIC, 2012-2016.

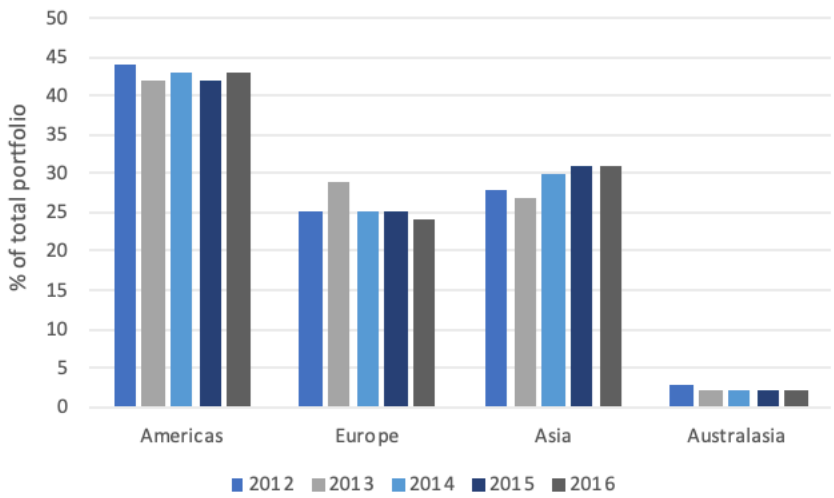

Figure 34. Evolution of GIC asset allocation by region, GIC, 2012-2016.

As noted above, GIC became increasingly pessimistic about the future state of the global investment environment as the period progressed. This led to a more cautious investment strategy manifesting in a larger holding of nominal bonds of which are traditionally viewed as "safe" investments. Its current multi-portfolio structure, which was implemented in 2013, was another result of this pessimistic outlook (GIC, 2013). The anticipation of an economy characterized by protectionism led to GIC increasing its collaborations and establishing a local presence in regions of interest. This was due to the fact that GIC still viewed diversification into different regions as a favorable means of balancing risk and return. GIC approached this dilemma by opening its first office in Brazil in 2014, bringing its total number of offices abroad to ten (GIC, 2014). It published a white paper in collaboration with the Focusing Capital on the Long Term (FCLT) Initiative in 2015 regarding the importance for long-term benchmarks to be used in investment management, which was reported by it to have been a reference in the creation of the S&P Long-Term Value Creation Global Index in 2016 (GIC, 2015; GIC, 2016).

Comparison. Structurally, the CIC and GIC are almost identical. Both follow a two-tier governance structure led by boards of directors which are subject to the preferences of their respective governments in their strategy recommendations. Likewise, investment support committees, particularly those composed of private-sector, foreign individuals, to advise on investment strategy are common across the funds. The CIC and GIC also both make use of investment offices in regions where they have a large portion of their portfolios invested and/or have an interest in investing further. GIC, having been established many years prior to the CIC, naturally has a larger number of these offices. A multi-portfolio structure consisting of a reference portfolio and two others, in addition to a three-tier risk management system, are additional structural commonalities between the funds. Strategically, both funds anticipated a difficult investment environment in the future and took steps to mitigate the risks associated with it. The only commonality in this respect was the funds' increased focus on collaboration with the international community. From a standpoint of asset allocation, the CIC saw alternative assets such as real estate and private equity as the best investment to have in such an environment, whereas GIC favored fixed income assets such as nominal bonds. Both funds have a long-term investment horizon but GIC perhaps has a longer one than the CIC, which might explain this difference.

3.5 Discussion

Overall, the analysis of the asset allocation and investment strategies undertaken by SWFs in the various groups revealed a number of points common to all of them, such as governance and asset classes invested in, of which were in line with the results of the studies referenced in the literature review. Nevertheless, the analysis provided evidence that investment mandate and source of wealth may result in different behavior amongst SWFs, a point most comparable to the results of Xie et al.'s 2015 study of the behavior of savings SWFs in comparison to stabilization SWFs. The differences revealed in my analysis were especially notable within the areas of diversification and activeness within portfolio companies. From this, a few broad conclusions may be drawn regarding the general behavior of SWFs based on their investment mandate and source of wealth (Figure 35).

	Natural Resources	**Surplus Reserves**
Public Welfare	**Mother Natures** o Open investors o Active shareholders o Preference for international real estate for diversification	**Cosmopolitan Philanthropists** o Open to some risk-taking in face of uncertainty o Inactive shareholders o Distaste for emerging markets o Collaborators
Wealth Preservation	**Pragmatic Conservationists** o Cautious, private equity/hedge fund behavior o Inactive shareholders o Diversification through direct investments in growth sectors	**Sophisticated Visionaries** o More conservative in face of uncertainty o Inactive shareholders o Distaste for emerging markets o Collaborators

Figure 35. Investment behavior by SWF group, author's work.

Diversification as defined as an increased allocation to alternative assets took place within all SWFs in the sample size over the period of study. The openness to new assets and markets of Mother Natures and Cosmopolitan Philanthropists referenced in Figure 35 is especially evident from the general trend followed by their expansion into alternative assets (Figure 36), particularly when compared to that of the Pragmatic Conservationists and Sophisticated Visionaries which had a more closed and cautious development into alternative assets (Figure 37). This groups the funds according to their investment mandate and this phenomenon was not as readily apparent when the funds were grouped according to their source of wealth. A conclusion may be made from this that investment mandate alone is the better means of making recommendations to SWFs on appropriate investment management practices to engage with.

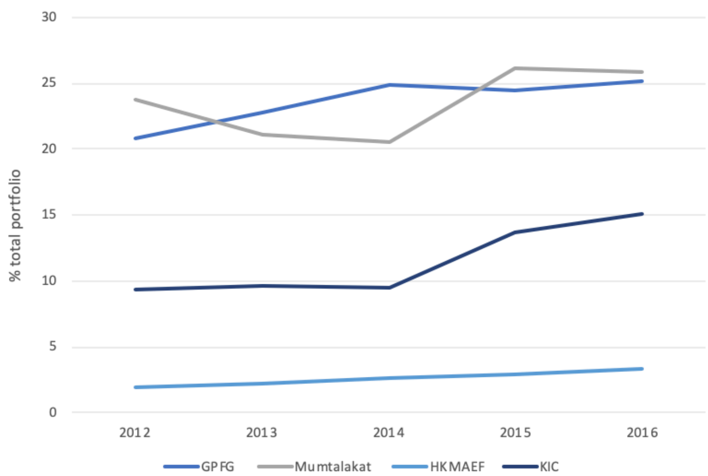

Figure 36. Alternative asset development of Public Welfare SWFs, author's work.

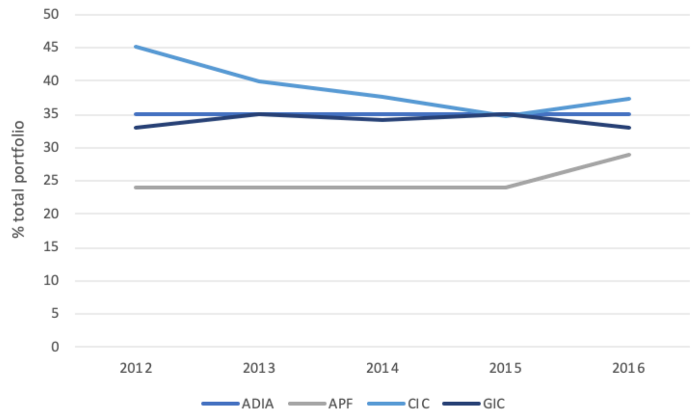

Figure 37. Alternative asset development of Wealth Preservation SWFs, author's work.

While all SWFs under study engaged in diversification through alternative assets to an extent and SWFs with the mandate of promoting public welfare were more open to riskier assets, the exact assets favored differed with consideration to source of wealth. Mother Natures were more likely to use real estate investments outside of their home regions as a means of balancing risk and return, a point evidenced in the changes in asset allocation within the GPFG and Mumtalakat which featured more real estate investments in the U.S. as the period progressed. Likewise, Cosmopolitan Philanthropists favored hedge funds and private equity firms, as observed in the textual sections of both the HKMAEF and KIC's annual reports regarding their strategic choices over the period. The Pragmatic Conservationists of the ADIA and APF were somewhat open to risk with their investing into sustainable companies and biotechnology, thereby behaving in a similar manner to private equity firms and hedge funds. However, as evidenced in Figure 37, these investments were slower to develop, thereby supporting their cautious approach to diversification, in line with their investment mandate. The Sophisticated Visionaries were generally cautious when it came to alternative assets without a particular preference, points especially evident in the CIC's initial reduction in alternative assets in its overall portfolio as it shifted away from the Endowment Model of investment management and the GIC's reduction in alternative assets in the latter half of the period in anticipation of a rough investment environment.

In spite of the visible trends in grouping funds only by investment mandate and without regard to source of wealth, the above section details that source of wealth still impacts final investment choices to an extent, given the different types of alternative assets favored by the funds. The impact of source of wealth in grouping was also evident in the varying degrees of activeness between the funds in their portfolio companies. Mother Natures were the most active of all groups, given the GPFG's regular exercising of votes in and Mumtalakat's board membership to their portfolio companies. Pragmatic Conservationists were less active, in spite of investing into growing companies, thereby supporting the hedge fund characterization of their investment style.

The activeness of Cosmopolitan Philanthropists and Sophisticated Visionaries was identical, with all remaining inactive in their portfolio companies but compensating for such behavior through ambitious collaboration with external stakeholders. Furthermore, with regards to diversification, all were noted in the textual sections of their annual reports to have significantly decreased their exposure to emerging markets as the period progressed. These similarities support another grouping possibility of SWFs based on region, in this case, Asia. However, given the divergences between Mumtalakat and the ADIA, both based in the Middle East, a regional grouping is not a certain best approach.

4. Conclusion

The sage investment advice of MPT revolves around the idea of knowing the risks which one wishes to avoid, as well as the level of risk one can manage in the process. Based on this, it seemed a reasonable endeavor to consider whether or not SWFs with different objectives and sources of wealth might have different investment styles, in spite of being part of a class of investors which has a unique set of commonalities. In particular, I wondered what the impact of a source of wealth from natural resources would be on an SWF's asset allocation, given their non-renewable nature and increasing support for decarbonization in recent years. My analysis revealed that these SWFs were among the most unique in their behavior, especially when compared to the behavior of SWFs sourced from foreign exchange reserves and, more importantly, amongst each other when considering the factor of investment mandate. Likewise, I found that there was a possibility to group funds based on investment mandate alone and to still draw reasonable conclusions. In this regard, I am confident that I have achieved the objective of this thesis, to provide insight into macro wealth management.

There are admittedly some limitations to my research and analysis, namely the small sample size with which I worked, as well as the inconsistency in data reporting across SWFs. This may be attributed to a limitation most any researcher of SWFs will face and that is inconsistency with the transparency of funds. Without transparency, it becomes difficult to make any meaningful analysis of an SWF. The LMTI made it easier to distinguish between which SWFs would be transparent enough for analysis and the Santiago Principles will hopefully result in more wide-spread transparency and consistent reporting of data amongst SWFs in the future. The latter point will make analyzing SWFs a more achievable task.

As more SWFs become transparent, it would be interesting to revisit this study and to add more funds to each group for analysis over the same period. From here, more widespread conclusions might be made as to whether or not SWFs with different investment mandates and sources of wealth manage their assets in varying manners. In particular, it would be an interesting expansion to develop the discussion section point of regional SWF grouping and whether or not any similarities exist amongst the funds included. These results might be used in a new business of providing consulting services to nations and other state actors wishing to construct their own SWF. With knowledge of the source of wealth that would be used to establish the SWF, as well as what the SWF wishes to achieve, these consultants might be able to easily give the framework in which the SWF should manage its assets, and which assets might be best suited to achieve their goals. Such a service would be a worthwhile endeavor due to the fact that, in the end, the wealth of a nation is one of its most precious resources and, like any valued asset, should be protected at all costs.

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