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The background of the slide features a large, semi-transparent globe centered on the right side. In the foreground, several coins are scattered across the bottom, with some appearing to be in motion or falling. The overall color palette is muted, with greys, blues, and earthy tones.

Best Practice Asset Allocation and Risk Management for Sovereign Wealth Funds

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Abstract

Sovereign Wealth Funds (SWFs) create considerable benefits for their own economies and for the global economy, a point that receives little recognition in the general media. What we can see of SWFs activities is like the tip of the iceberg - little public information is disclosed about their asset allocations and investment activities. A deeper understanding of SWFs could help to dispel some of the myths and suspicions surrounding their activities.

Best practice portfolio allocation and risk management provides a framework for reviewing the investment behaviour of SWFs and explaining their underlying rationale. Using an investment consultant's lens, this paper examines the underlying factors driving investment decision-making for long-term investors. It outlines the challenges that long term investors must grapple with and highlights the importance of good investment decision-making processes and governance arrangements. It then compares this approach with what is discernable about the investment activities of SWFs from publicly available information.

Looked at in this way, it appears that the activities of SWFs are broadly consistent with those of a return motivated investor. The portfolio allocations of SWFs, particularly the more established funds, reflect their long-term investment horizon and wealth accumulation purpose, free from the need to match liabilities for a long period. The progressive diversification of their portfolios into alternative asset classes is designed to enhance the investment performance of the funds, a trend also reflected among the large university endowment funds. The age of a fund also influences its portfolio allocation and asset class structure and, particularly with young funds in transition, can add an element of noise in making cross fund comparisons.

The geographic spread of SWFs investments is broadly consistent with the diversification objective for which they were created, albeit with a bias towards non-OECD countries. It is not clear whether the sector preferences displayed by SWFs in their major transactions reflect internal assessments of their competitive advantages, or simply opportunism.

Despite the concerns expressed that the investment activities of SWFs may be targeted at strategic or political rather than financial objectives, they have for the most part invested through external intermediaries, an arrangement that creates an arm's-length relationship with the companies in which they are invested.

The evidence suggests that SWFs in general could move their portfolio's closer to best practice, in particular, by reviewing their liquidity requirements with a view to increasing their exposures to investments that exploit illiquidity premia. They are also beginning to show signs of investing more directly in financial markets. Whether they are able to do so will be partly dependent on their ability to manage political sensitivities from foreign governments. Going forward, they may find it worthwhile to disclose more about their strategies, governance and risk management arrangements with a view to responding to global concerns.

Best Practice Asset Allocation and Risk Management for Sovereign Wealth Funds

by Patricia Pascuzzo, Principal, Sovereign Funds Global

Introduction

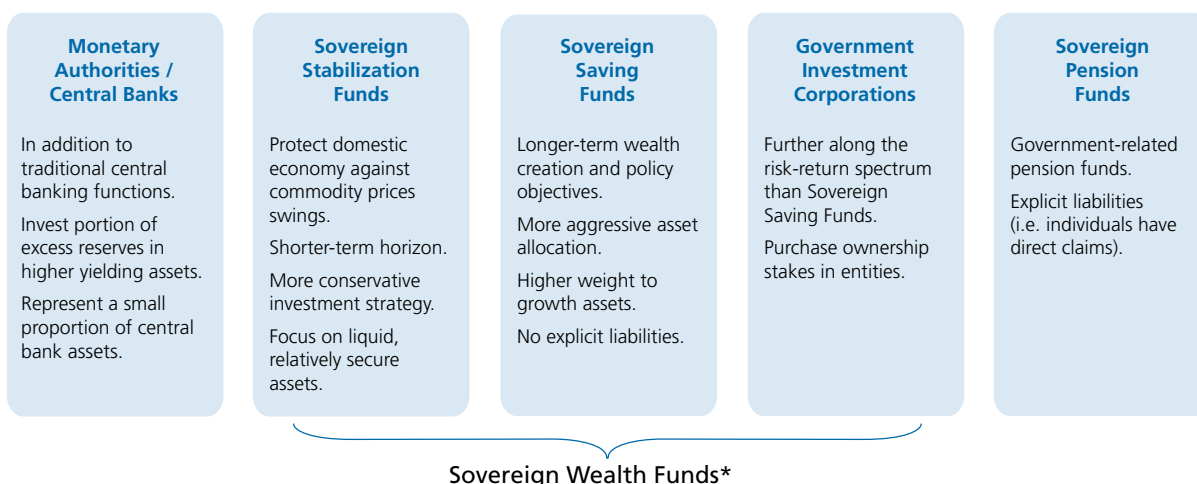
Despite receiving extensive coverage from the global media in recent times, Sovereign Wealth Funds (SWFs) are not new and have been in existence since 1953 with the inception of Kuwait Investment Authority (KIA). SWFs were originally created by oil-exporting or commodity rich economies where the proceeds from the sale of natural resources, or taxes on the commodity income of private corporations, accrued to the state. Conceived as stabilisation funds, their purpose was to mitigate the harmful economic effects resulting from the inherent volatility of oil/commodity prices on exporting economies. These early funds achieved inter-temporal stabilisation by reserving the excess returns resulting from favourable commodity prices to serve as a buffer to be drawn down during periods of commodity price weakness and depletion of reserves.

The first sovereign savings fund was conceived in 1973, when Singapore launched Temasek Holdings, the first SWF created from official foreign exchange reserves. A sovereign savings fund's primary aim is wealth generation to address the issues related to inter-generational equity. This second category of SWFs transforms the present day revenue streams into sustainable income over time in order to transfer a portion of today's revenue to future generations. Certain funds, originally conceived as stabilisation funds (such as KIA) later morphed into savings funds.

Figure 1 illustrates the characteristics of SWFs relative to their close siblings within the sovereign fund family.

This paper outlines the approach taken by best practice institutional investors in portfolio allocation and risk management with particular emphasis on long-term investors. It outlines the challenges that long-term investors must grapple with and highlights the importance of good investment decision-making processes and governance arrangements. It then compares this approach to what is discernable about the investment activities of SWFs from publicly available information.

Figure 1: Characteristics of different types of Sovereign Funds



* Special purpose public investment funds or arrangements, owned or controlled by the government, that hold, manage or administer assets primarily for medium-to-long term macroeconomic and financial objectives. Commonly established out of official foreign currency operations, proceeds of privatizations, fiscal surpluses, and/or receipts from commodity exports.

Source: IMF's working definition

Best practice asset allocation and risk management

A rich set of portfolio allocation and risk management tools have been developed over the course of the last half century. Among many finance and investment academics and practitioners there is a broad consensus emerging on the next frontier for investment¹. While best practice portfolio allocation and risk budgeting requires the deployment of complex portfolio allocation models, such state of the art tools per se are not sufficient. The key challenge lies in putting these tools into practice to improve investment decision-making effectiveness and to create better financial outcomes for investors and other stakeholders. The key to best practice is how to apply these tools to ensure that fiduciaries (trustees, boards and guardians) correctly understand the risk and return characteristics of the alternatives available, and are able to apply their judgement to making appropriate choices. According to Robert Merton (2003) this is “a tough engineering problem, not one of new science”.

Investment challenges

Best practice investment decision-making involves dealing with much complexity and uncertainty. Some of the key challenges faced by long-term institutional investors include the following:

- Operating in financial markets where management of risk and uncertainty is critical to long-term value creation.
- Long horizon prospects for equity and bond returns have time-variant components. Proper risk management requires policy portfolios that vary in composition over time.
- Given the speed of financial markets, there is the need to adapt quickly to market signals in the risk domain to take advantage of opportunities.
- Multiple time horizons need to be managed. While long-term investment can exploit the illiquidity premium, short-term opportunism must also be accommodated.
- Managing agency issues arising from external delegation of funds management. Investment funds place greater reliance on third party providers than do corporations and therefore face more significant agency issues.

Implications for investment processes

The above challenges have important implications for investment decision-making processes.

- Investment portfolio design and risk management involves multiple decisions taking into account a complex web of interactions within a highly uncertain environment. The methods by which the various decision steps are sequenced, and the scope provided for iteration between steps to take account of the interdependencies, are important for effective decision making and investment performance. A stylised portfolio allocation and risk management process is outlined in Figure 2.
- Where strategic asset allocation was once a set and forget exercise (apart from occasional tinkering at the edges) such an approach may leave significant risk-adjusted return potential unexploited. A dynamic asset allocation approach with a 3-5 year horizon (as distinct from a tactical approach with a 12 month horizon or less) can be used to exploit medium term opportunities. However, such approaches increase the complexity of decision making and therefore require higher levels of governance.
- To take advantage of market opportunities, a governance framework needs to accommodate speed of decision making within clear parameters between board meetings.

The key to best practice is how to apply these tools to ensure that fiduciaries correctly understand the risk and return characteristics of the alternatives available, and are able to apply their judgement to making appropriate choices.

¹Ambachtsheer (2005).

Figure 2: A simplified version of the investment decision-making process

1. Define the general objectives of the fund (risk and return measures), whilst considering taxes, time horizon and unique situation characteristics.

2. Determine how much risk to take (set risk budget).

Consult with fund fiduciaries to reach agreement on the size of the risk budget.

Factors influencing how much risk can be taken, including:

- nature and maturity of liabilities, if any
- size of any accumulated surplus funds
- additional non-investment sources of income
- subjective beliefs of the fiduciaries regarding risk
- additional constraints (e.g. on liquidity, credit quality)

3. Determine where to take risks (allocation of risk budget).

After identifying the client's objectives and constraints and creating an investment policy statement, best practice strategic asset allocation involves a hierarchy of decisions:

Stage 1: Capital Market Expectations

Forecast risk and return characteristics for various asset classes and opportunity to actively add value, to form the basis for constructing portfolios that maximise expected return for given levels of risk. Determines the allocation between equities and bonds. This stage targets the overall level of risk.

Stage 2: Strategic Asset Allocation

Determines the allocation between growth and defensive asset classes, desired style biases (such as Value or Growth) and active versus passive exposure. This stage targets the level of risk to be taken at the asset class level. Alternative investments may be used and classified as either growth or defensive, depending on their underlying characteristics. For example, private equity may be classified as growth, while hedge funds may be classified as either growth or defensive, depending on their expected volatility and sensitivity to the traditional markets.

Stage 3: Investment Management

Once the strategic asset allocation (the policy and ranges) has been determined, the next stage is investment management implementation. In the case of bond and equity portfolios, it involves the establishment of benchmarks that represent the policy to allow the performance of the investment managers to be assessed fairly. Alternative assets have various benchmarks, though many are based on adding value above a certain cash reference rate.

Stage 4: Implementing and Monitoring

Ongoing monitoring and rebalancing of the investment portfolio are integral parts of the portfolio management and rebalancing process.

- Investment decisions for long-term investors must withstand the test of time and are normally judged with the benefit of hindsight. When reviewing investment strategies, particularly in circumstances where performance objectives are not being met, it is important to be able to review the rationale behind particular investment decisions and to test whether the underlying assumptions still hold. Systematic decision-making processes, with proper documentation, will help inform judgements about whether to adhere to a particular strategy, alter it or withdraw.

Best practice portfolio allocation and risk management therefore requires a strong governance framework. Critical to good governance for institutional investment are:

- Mission clarity — a clear mission for the fund that flows through to operational goals. Engagement of stakeholders in the development of the mission, and their alignment to it, are also important contributors.
- Recognition of competitive advantage — that all investment decisions be framed with reference to an agreed statement of investment beliefs and philosophies. Such statements should take explicit account of an organisation's competitive advantages (and disadvantages) that can be exploited.

Benefits of long-term investment

Many SWFs share a number of characteristics that provide them significant advantages as compared with other institutional investors such as pension funds and insurers, making them similar, but not identical, to endowment funds. These characteristics include:

- Scale
- Long investment horizon
- Positive cash flow
- Absence of explicit liabilities

As a consequence of SWFs' long-term investment horizon and scale, they are able to exploit a number of competitive advantages.

Illiquidity premia — Liquidity refers to the ease (in terms of time and cost) with which an asset can be converted to cash. There is a cost to the investor associated with holding highly liquid assets. Long-term investors who do not require liquidity instead earn a liquidity risk premium by investing in illiquid assets.

Mean reversion — The tendency for asset prices over time to fluctuate around their true mean value means that returns for a given unit of risk for short-term investors are heavily influenced by the timing of transactions. Long-term investors are better placed to ride out such price fluctuations and achieve a higher return per unit of risk.

Investment Styles — The prices of market assets tend to deviate from their true value from time to time. Such over or under pricing can occur due to sentiment or behavioural factors. A value style of investment seeks to achieve higher risk adjusted returns through exploiting such mis-pricing, however a long-term horizon is required to enable fair value to be achieved. SWFs can access certain long-term investment styles which exploit the mis-pricing of assets that may not be suitable for shorter term investors.

Corporate governance — Long-term investors have a greater incentive to engage in dialogue with management or exercise their proxy voting rights to encourage investee boards and management to adopt strategies beneficial to long-term value creation. Such strategies may include policies consistent with sustainability.

Transaction costs — Long-term investors are able to implement buy and hold strategies that involve lower transaction costs including brokerage, trading spreads, trading fees, stamp duties and capital gains taxes.

Scale — Large-scale investors are able to achieve greater diversification and be able to attract and retain top quality professional expertise. Both of these factors enhance their access to unlisted asset classes.

Factors driving SWFs' approach to investment

The best practice processes for portfolio allocation and risk management outlined above provide a context for reviewing what is publicly known about the investment activities of SWFs. The approaches taken by SWFs and differences among them may be explained with reference to the following factors:

- Time horizon — Stabilisation funds with a short to medium-term investment horizon have more conservative portfolio allocations than savings funds with a longer term horizon. There is also a discernable trend among long investment horizon SWFs to begin to integrate responsible investment considerations into their approach to investment.

- Competitive advantages — Assessments of where their strengths lie that may be exploited to achieve sustainable advantage.
- Beliefs and philosophies — Their beliefs about asset and security pricing and why mis-pricing occurs.
- Timing considerations — Particularly how long the fund has been established.

The implications of the above factors on SWF portfolio allocation, geographic spread, sectoral preferences and responsible investment are discussed opposite

Portfolio allocation

SWFs' portfolio allocations, particularly for older funds, reflect their long investment horizon and wealth accumulation purpose, free from the need to match liabilities for a long time. SWFs' investment portfolios normally have considerably higher exposure to risky assets than do foreign exchange reserves.

The portfolio allocations of SWFs can be broadly divided into two categories:

- Highly diversified investment portfolios (such as those of Temasek and many Middle Eastern funds) — Public information and anecdotal evidence suggest that private equity and real estate account for a significant part of such funds' portfolios.
- Reasonably conservative investment portfolios either because they are not fully transitioned (e.g. Australian Future Fund) or have lower risk tolerances (e.g. Norway Government Pension Fund²).

Figure 3 provides a guide as to the asset class exposures and implied risk tolerances of a range of sovereign funds.



Source: Various Fund websites, swfinstitute.org

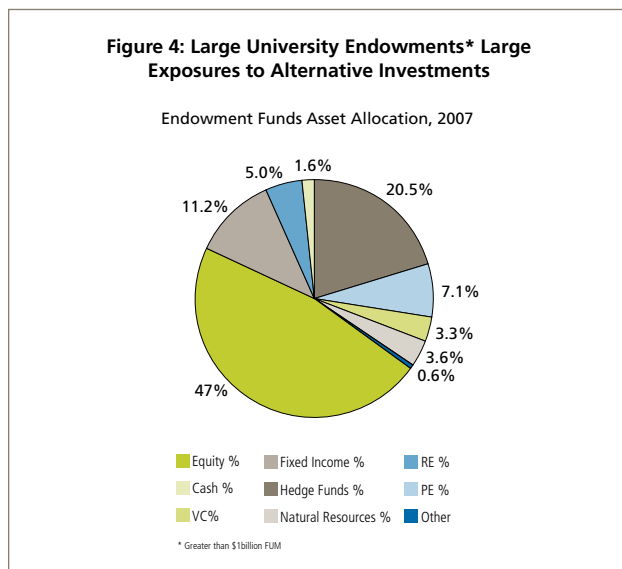
²Norway Government Pension fund has announced its intention to increase its allocation to riskier assets.

Most funds commence by pursuing passive investment in indexed instruments through external managers before progressing to include active management requiring the development of internal capabilities. The approach is often later expanded to include private equity, real estate and infrastructure projects and, in some limited cases (e.g. Canadian Pension Plan), has even included the taking of principal positions in companies.

While a small number of SWFs have established significant holdings of equity in particular companies (such as Qatar Investment Authority 25% holding in Sainsbury and Investment Corporation of Dubai's 28% holding in the London Stock Exchange), they typically invest passively in a diversified portfolio of public equity securities. Some are in fact prohibited by their charters or governing legislation from holding large strategic holdings (e.g. New Zealand Superannuation Fund, Australian Future Fund).

Despite concerns that their investment activities may be targeted at strategic or political rather than financial objectives, SWFs have also invested for the most part through external intermediaries, an arrangement that creates an arm's-length relationship with the companies in which they are invested.

Apart from a number of Middle Eastern SWFs that have been actively investing in private equity and hedge fund sectors for many years, most SWFs have very low portfolio allocations in alternative investments. Large endowment funds, which display similarly long investment horizons as SWFs, on average have allocations to alternative investments in the order of 30% of their portfolio (see Figure 4). It is expected that more SWFs will seek to increase their exposure to alternative asset classes with a view to harvesting illiquidity premia offered by these investments, provided they are not restricted by political sensitivities of foreign governments.



Source: NACUBO (2008)

Timing considerations, particularly how long a fund has been established, may explain significant differences in asset allocation among funds. In particular, transitioning large funds from cash to a bond and listed equities portfolio may take at least twelve months and often considerably longer, depending on the amount to be invested and the liquidity characteristics of the market. Volatile market conditions, coupled with liquidity issues and the need to control market impact can mean that it takes considerably longer to transition a SWF to its target strategic asset weightings. Derivatives strategies are readily available to create desired market exposures quickly but newly established funds have been reluctant to make use of them. This may reflect concerns that stakeholders such as governments, taxpayers and the media are not ready to jump from low volatility cash portfolio to a much more volatile strategic asset allocation in one move. Reaching a funds target allocation in illiquid markets, such as private equity, typically takes many years reflecting the availability of suitable opportunities. During a transition period, a fund's portfolio allocation does not provide a good indication of its ultimate strategic asset allocation.

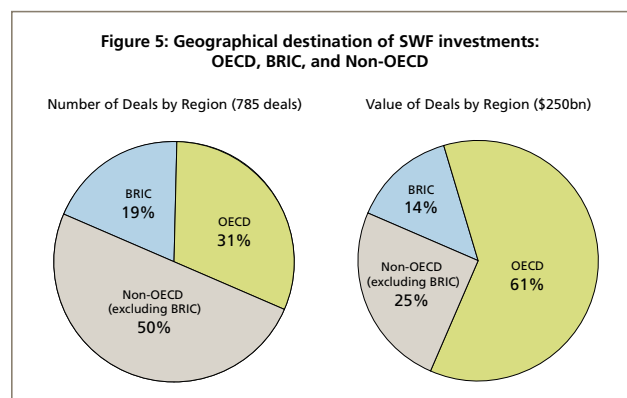
A further factor that explains differences in portfolio allocations among SWFs is that established funds hold legacy assets that may have represented good investment opportunities at the time they were acquired but the opportunities may have subsequently dried up. Similarly, newer funds tend to be better cashed up to take advantage of contemporary opportunities (such as distressed debt) and be better placed to 'leap frog' best practice portfolio allocation (e.g. in determining fixed income portfolios).

Geographic diversification

The largest part of SWFs' holdings is accounted for by foreign investment although a few SWFs restrict their portfolio to domestic assets. This can be justified on the basis of diversification as domestic investment would run counter to the underlying purpose for which many funds were established.

For a significant part of their portfolio, most SWFs adopt a geographic spread of investments that broadly mirror country weights of global market capitalisation. They seek higher returns from active investment through active managers and strategic direct investments.

Based on research from Monitor Group (2008), the deal activity of large SWFs (such as Abu Dhabi Investment Authority, Kuwait Investment Authority, China Investment Corporation and Singapore's Government Investment Corporation) indicates a focus on OECD markets. Such activity makes up 80% of their publicly disclosed transactions which is broadly consistent with the OECD's market capitalisation share within the global market. By contrast Singapore's Temasek has 60% of its publicly disclosed transactions by value outside of the OECD. Its willingness to diversify into emerging markets may reflect that it deems its experience and understanding of regional economies as a competitive advantage.



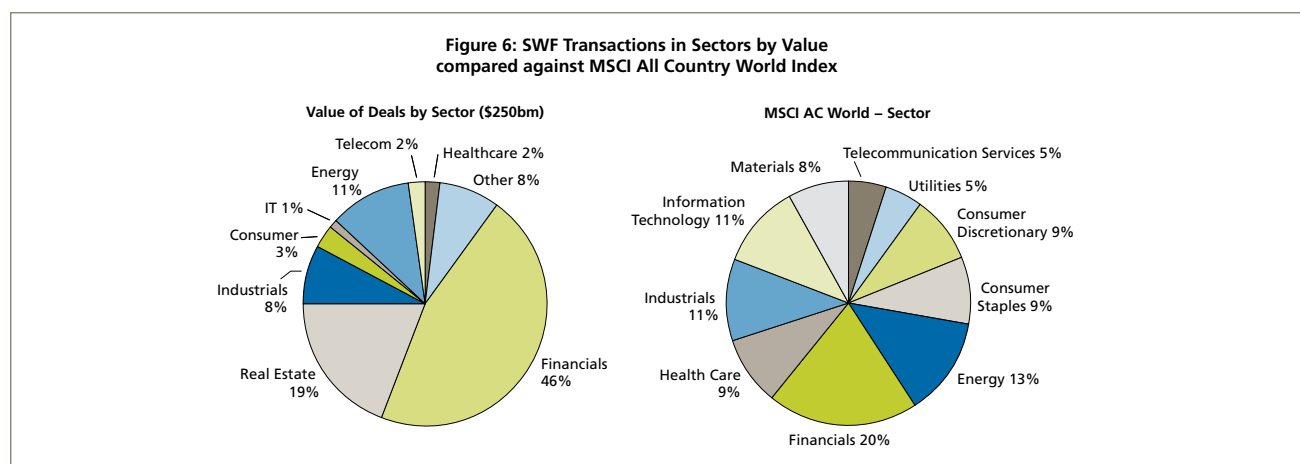
Source: Monitor Group, 2008

In sum, the evidence on SWFs public deal activity presented in Figure 5 indicates that SWFs are willing to invest a higher share in non-OECD countries than market capitalisation weights would suggest. However, they place smaller sums at risk in such transactions, possibly due to country/political risk considerations as well as the larger size of deal opportunities in OECD countries.

Industry Sectors

SWFs take up index investing to achieve broad diversification in equities, and seek higher returns from active investment through active managers and in some cases strategic investments.

On the basis of their deal making activity, SWFs indicate a sectoral preference towards financials that is well in excess of the weight of this sector within the global market capitalisation. Nearly half the publicly disclosed deals by value involved financial services, as compared with a 20% combined weight for financials and real estate in the MSCI All Country World Index.



Source: Monitor Group, 2008

It is not clear to what extent the disproportionate investment by SWFs in financial institutions, such as US and European banks and private equity firms, reflects strategy or opportunism. It may reflect strategy in the following ways.

- SWFs are often investing in a business that they know well. Singapore and Dubai serve as global financial hubs and have relationships with the world's leading financial institutions.
- By acquiring stakes in investment banks and private equity partners (e.g. Blackstone, Carlyle Group, J.C. Flowers) SWFs may be seeking to buy access to a pipeline of investment opportunities

and to tap into product and deal-making expertise that resides with these financial institutions. However, it is too early to tell whether these investments, and their underlying strategy, will turn out to be sound.

The disproportionate investment in financial institutions may also reflect opportunism. The global credit crisis in the first half of 2008 and its impact on financial services stock prices, created an opportunity for SWFs to secure stakes in brand name global stocks on what seemed, at the time, to be attractive terms (see Table 1).

Table 1. Stock prices around time of SWF investment

	Stock price January 2006 – April 2008 (US dollar/euro)			
	High	Low	Average	Announcement of SWF investment
Citigroup ¹⁾	56.4	18.6	45.0	30.7
Citigroup ²⁾	56.4	18.6	45.0	26.9
Merril Lynch ³⁾	97.5	39.9	74.2	53.9
Morgan Stanley ⁴⁾	74.1	36.4	57.9	55.0
UBS ⁵⁾	63.0	23.5	51.2	49.2

Note: The date of the investments and the respective SWFs are shown in the footnotes below.

¹⁾ 26 Nov. 2007 (ADIA).

²⁾ 15 Jan. 2008 (GIC).

³⁾ 24 Dec. 2007 (Temasek).

⁴⁾ 24 Dec. 2007 (GIC).

⁵⁾ 10 Dec. 2007 (GIC).

Sources: Bloomberg and European Central Bank.

SWFs are also overweight in certain other sectors that may also be explained in competitive advantage terms, even though such investments may run counter to the diversification rationale underlying the establishment of the funds.

- Temasek's significant investments in ports and shipping companies in Asia likely reflects knowledge of and comfort with investments in these assets as a result of Singapore's position as the world's largest port for container shipping.
- Investments in energy account for approximately 11 percent of SWFs transaction value, with the majority of those originating among Asian and Middle Eastern funds.

Responsible Investment

Long-term investors have a greater incentive to take account of longer term risks and opportunities such as climate change. Recognising the complex social, environmental and governance concerns raised by investment decisions, a number of SWFs have developed responsible investment frameworks based on sound shareholder principles to address such issues. The New Zealand Superannuation Fund for instance is starting to integrate responsible investment considerations into investment mandates and investment manager selection. The Norway Government Pension Fund – Global is also an activist investor seeking to add value through improving corporate governance among investee companies. In more recent times, China's IC has announced its intentions in this area.

Conclusion

Best practice portfolio allocation and risk management provides a framework for reviewing the investment behaviour of SWFs and explaining their underlying rationale. The portfolio allocations of SWFs, particularly in the more established funds, reflects their long-term investment horizon and wealth accumulation purpose, free from the need to match liabilities for a long period. The progressive diversification of their portfolios into alternative asset classes is designed to enhance the investment performance of their funds, a trend also reflected among the large university endowment funds. The geographic spread of their investments largely reflects their underlying diversification rationale albeit with a bias towards non-OECD. It is not clear whether the sector preferences displayed by SWFs in their major transactions reflect internal assessments of where their competitive advantages lie or simply opportunism. The age of a fund also greatly influences its portfolio allocation and asset class structure and, particularly with young funds in transition, can add an element of noise in cross-fund comparisons.

Despite the concerns expressed that the investment activities of SWFs may be targeted at strategic or political rather than financial objectives, they have for the most part invested through external intermediaries, an arrangement that creates an arm's-length relationship with the companies in which they are invested. Looked at in this way, it becomes clearer that the activities of SWFs are broadly consistent with those of a return- motivated investor.

The evidence suggests that SWFs in general could move their portfolio's closer to best practice, in particular, by reviewing their liquidity requirements with a view to increasing their exposure to investments that exploit illiquidity premia. They are also beginning to show signs of investing more directly in financial markets rather than through external managers. Whether they are able to do so will be partly dependent on their ability to manage political sensitivities from foreign governments. Going forward, they may find it worthwhile to disclose more about their strategies, governance and risk management arrangements with a view to responding to global concerns.

It also bears mentioning that SWFs create considerable benefits for their own economies as well as for the global economy. To quote Merton and Bodie (2005):

“in the absence of a financial system that can provide the means for transforming technical innovation into broad enough implementation, technological progress will not have a significant/substantial impact on the economic development and growth of the economy.”

Many governments that established SWFs did so at times when their own domestic financial systems were still under-developed. The creation of such SWFs may have hastened the development of much needed financial infrastructure and, in so doing, served as an accelerant for domestic economic development and, given globalisation, world economic growth.

Further, given their combined scale of funds, SWFs have potentially a significant impact on sustainability. Long-term investors have a greater incentive to take account of longer term risks and opportunities such as climate change (e.g. positions taken by Norway's Government Pension Fund, and New Zealand Superannuation Fund). Being seen to be investing responsibly may also be partly a reputation issue. Either way, we expect SWFs to have an increasingly positive influence on sustainability in the longer term.

The creation of such SWFs may have hastened the development of much needed financial infrastructure and, in so doing, served as an accelerant for domestic economic development and, given globalisation, world economic growth.

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Patricia Pascuzzo

As a Principal in the Sydney Office of Mercer Investment consulting, Patricia specialises in global sovereign fund issues covering investment governance and strategy. Patricia is responsible for developing business development initiatives with sovereign fund clients globally.

Patricia joined Mercer from the Australian Future Fund. In her role as special adviser, Patricia worked with the Board of Guardians to establish the governance arrangements that would support investment decision-making, and provide a robust framework for assessing the Fund's performance.

Patricia has extensive experience in strategy development, corporate governance and economic policy. Previously, she held senior strategy roles at the Australian Stock Exchange, where she was Head of Strategy and Planning, and the Commonwealth Bank of Australia.

She also held senior roles at the Federal Treasury including as head of the area responsible for financial markets policy and regulation and in representational roles at the International Monetary Fund and OECD.

Patricia holds a Bachelor's degree in Economics with first class Honours from the University of Wollongong and a Master's degree in Commerce Majoring in Finance from the University of Sydney.

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