Managing Australia's Mining Boom

Executive summary

- There has been a long history of countries establishing a sovereign wealth fund (SWF) in order to manage the income generated from natural resources, particularly oil. These funds typically have rules and guidelines that specify how this income will be used by the respective Government.
- Two key arguments put forward in support of commodity revenue based SWFs are that they can assist in managing the volatility of tax revenues across commodity cycles (and super-cycles) and that they can mitigate the impact of the 'Dutch disease'.
- These two objectives are inter-related. If the stimulus to the economy from a mining boom can be dampened by withdrawing a proportion of the extra income from circulation, this will tend to reduce price and interest rate pressures and thus reduce the extent of currency appreciation during booms. The other key argument is more directly related to addressing Dutch disease. This objective can be targeted in a number of ways. For example the Norwegian SWF only holds foreign assets. Thus mining-related revenues funds are withdrawn from not only circulation but also from the country during booms. In the context of floating exchange rates, the capital outflow would tend to reduce the domestic exchange rate or at least dampen its rise with flow on impacts to the rest of the economy.
- There is some evidence that SWFs do immunise economies against Dutch disease. For example, notwithstanding its role as a commodity exporter, the rate of decline of manufacturing as a proportion of GDP in the Norwegian economy has slowed relative to that of other industrialised countries over the past decade. Nevertheless, our analysis suggests that other policy initiatives also played a role.
- Thus, while a SWF is not a panacea and substitute for structural reforms (taxation reform, labour market reform, competition policy) that improve the competiveness and the efficiency of an economy in dealing with 'Dutch disease', there is a strong argument to suggest that a mining-boom related SWF together with these other reforms can assist the competiveness of the manufacturing sector.
- Regardless of whether a minerals-boom related SWF is put in place in Australia, there is a strong case for better management of extra revenue associated with the mining boom. This paper makes the case for further work: to develop transparent funding rules that specify what part of the mining revenue collected by the Government should be set aside (whether in a SWF or another vehicle) to deal with broader economic issues; and to improve understanding of the best uses of these funds.

Introduction

Strong growth in global commodity prices and Australia's Asian trading partners has significantly boosted the revenue generated from mining exports (see Appendix). This Economics Research Note examines the role a SWF could play in Australia managing its mining boom and investing to take advantage of the current boom for the long-term prosperity of the economy. There have been recent calls for Australia to consider some form of a SWF. For example, the OECD recently pointed to the greater revenue and fiscal volatility Australia faces from the mining boom and the risk that if these revenues are spent, fiscal policy would become strongly procyclical. The OECD suggests consideration be given to the creation of a 'reserve fund' in Australia, endowed with all resource tax revenues to assist in shielding the budget and real economy from the effects of revenue volatility.[1] Moreover, the Governor of the Reserve Bank of Australia recently raised the prospect that policy makers could consider a 'stabilisation fund' providing a natural hedge against the variability of trading partners.[2]

There has been a long history of resource-rich countries establishing SWFs to manage the income generated from their finite natural resources. The remainder of this Note explores the extent to which this would be a viable policy option by reviewing the nature of international commodity revenue based SWFs.

International review

Prevalence of SWFs

According to the Sovereign Wealth Fund Institute (SWFI), a SWF is any government owned investment fund which is composed of financial assets such as stocks and bonds. Funding for these assets can include: balance of payments surpluses, foreign currency operations, the proceeds of privatisations, fiscal surpluses, and/or receipts resulting from commodity exports.[3]

The existence and profile of SWFs has accelerated in recent years and SWFs are likely to become increasingly important in coming decades. SWFs provide some benefits to the international economy in the form of increasing market liquidity (evidenced in the recent global financial crisis), and facilitating financial resource allocation. Graph 1 shows the estimated value of SWF assets under management. The value of SWF assets has been steadily rising and is approaching US $5,500 billion by 2012. Most of these assets are held by commodity revenue based SWFs.

[1] OECD Economic Surveys: Australia, volume 2010/21, supplement 3, November 2010.
[2] Glenn Stevens, 'The Challenge of Prosperity', Address to the Committee for Economic Development of Australia (CEDA) Annual Dinner, Melbourne - 29 November 2010.
[3] A broader definition of a SWF is a government controlled fund that manages and invests government savings regardless of the revenue source. On this definition, Australia's Future Fund is considered a SWF.

Graph 1: Estimated value of SWF assets under management (US $b)

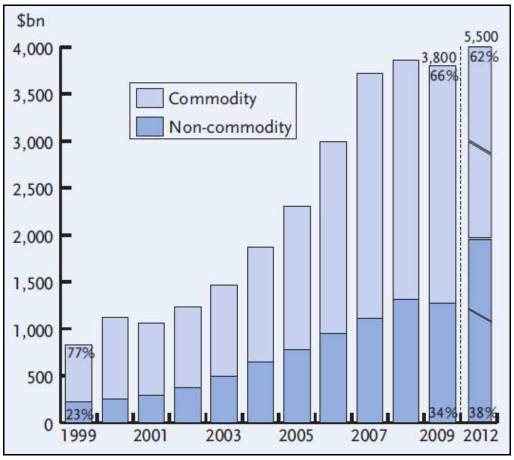


Table 1 presents a selection of *commodity revenue* based international SWFs, based on assets under management, which highlights two points:

(i) There has been a long history of countries establishing SWFs in order to manage the income generated from natural resources, particularly oil.

(ii) SWFs have been widely used across the world, including in North America and Europe.

Table 1 also highlights Australia's Future Fund (a non-commodity revenue fund established in 2006), which is discussed in greater detail below.[4]

Table 1: International commodity-based sovereign wealth funds

Country/State	**Fund name**	**Inception**	**Natural resource**	**Assets US$ b**
Kuwait	Fund for Future Generations Reserve Fund	1976 1953	Oil	203
Canada (Alberta)	Alberta Heritage Savings Trust Fund	1976	Oil	14
United Arab Emirates	Abu Dhabi Investment Authority	1976	Oil	395
US (Alaska)	Alaska Permanent Fund	1976	Oil	36
Chile	Copper Stabilisation Fund / Economic and Social Stabilization Fund	1985/ 2007	Copper	22
Norway	Government Pension Fund – Global	1990	Oil	445
Russia	National Welfare Fund Oil Stabilisation Fund (Reserve Fund)	2008 2004	Oil	168 52
Auxiliary item				
Australia	Australian Future Fund	2006	Budget	49

Source: SWFI.

[4] A list of the largest commodity based and non commodity based SWF's is provided in the Appendix.

Policy objectives

Most international SWFs have transparent policy objectives and rules that govern financial contributions and withdrawals. Table 2 outlines a selection of SWFs and their primary objectives.

Table 2: Primary objectives of SWFs

Primary objective:	**Country/Fund:**
Fiscal flexibility / currency stabilisation	Kuwait: Reserve Fund Norway: Government Pension Fund – Global Russia: Oil Stabilisation Fund (Reserve Fund) Chile: both funds
Investment for future generations	Russia: National Welfare Fund Norway: Government Pension Fund – Global Kuwait: Future Generation Fund
Management of public holdings	Singapore: Temasek Holdings Fund
Wealth or risk/return optimisation	United Arab Emirates: ADIA Singapore: Government Investment Corporation Fund

Source: Based on JP Morgan Research

For example, the Government Pension Fund – Global established in Norway is reported to have been setup to enhance the flexibility of public spending when Government revenue is adversely affected by shocks to the oil price and/or the economy, and to also help manage the financial challenges associated with an ageing population and a gradual decline in petroleum production. It also has some mandate in promoting currency stabilisation and providing wealth for future generations. In contrast, some countries use the income generated from their SWF to help support industries outside the mining sector and broader government programs. For instance, some of the income generated from the Alberta Heritage Savings Trust Fund in Alberta is currently transferred to the General Revenue Fund to support spending in health care, education and infrastructure.

Funding rules

The policy objectives of SWFs, in turn, generally shape the rules governing financial contributions and withdrawals from the fund. Contributions typically stem from budget surpluses or government revenue received from activities related to oil or other non-renewable resources. For instance, the Alaska Permanent Fund receives at least 25 per cent of all mineral lease rentals, royalties, royalty sale proceeds, federal mineral revenue sharing payments and bonuses. In turn, only realized earnings from the fund can be spent (Table 3)[5].

[5] Includes stock dividends, bond interest and real estate rent.

Table 3: Sources of Revenue

Country/State	Fund name	Source of revenue
Kuwait	Reserve Fund Future Generation Fund (FGF)	10 per cent of oil revenue The FGF was created in 1976 by transferring 50% from the Reserve Fund. In addition, 10% of all state revenues are transferred to the FGF on an annual basis and all investment income is reinvested. The FGF consists of investments outside Kuwait
Canada/Alberta	Alberta Heritage Savings Trust Fund	30 per cent of non-renewable resource revenue[6]
United Arab Emirates	Abu Dhabi Investment Authority (ADIA)	Oil revenue with recently the Abu Dhabi Investment Council (ADIC) being established to compete with the ADIA and Abu Dhabi's surpluses will now be allocated to both the ADIA and ADIC
US (Alaska)	Alaska Permanent Fund	At least 25 per cent of all mineral lease rentals, royalties, royalty sale proceeds, federal mineral revenue sharing payments and bonuses
Chile	Copper Stabilisation Fund / Economic and Social Stabilization Fund	Budget surpluses greater than 1 per cent of GDP
Norway	Government Pension Fund – Global	Net flow of mining revenue
Russia	National Welfare Fund Oil Stabilisation Fund (Reserve Fund)	Oil revenue

Performance

What can we say about the success of commodity revenue based SWFs internationally? This is clearly an important question when considering the merit of establishing a new SWF in Australia to manage mining revenue.

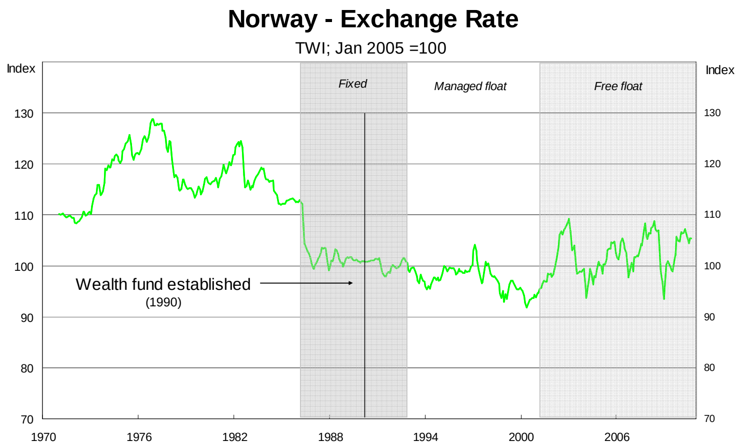
Generally speaking, it is difficult to gauge the ultimate success of international commodity revenue based SWFs as most of them have long-term savings objectives. Nonetheless, some countries also use their SWFs to improve short-term fiscal flexibility, which proved to be particularly important during the global financial crisis (GFC). For example, Norway used their SWF to inject a NOK 20 billion stimulus package (close to 1.2 per cent of GDP) into the economy during the global financial crisis - the biggest fiscal stimulus package in 30 years. While stimulus measures were quite common around the world at this time, Norway's SWF meant that the country had greater flexibility and is now not left with the public debt and credit issues that are currently facing a number of other European countries.

A key argument put forward in support of SWFs is that they can mitigate the impact of the 'Dutch disease' (that is, the deindustrialisation that occurs when a sustained currency appreciation from a boom in natural resource exports causes other sectors to be less competitive) through offsetting currency appreciation.

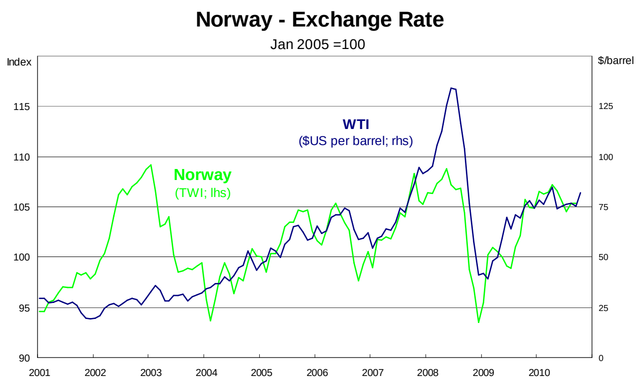
[6] From 1976 to 1977.

While there is little doubt that SWFs have helped to reduce the pressure on some international currencies, once again, it is difficult to quantify this effect with any precision. What we can say however, is that SWFs do not in themselves insulate economies from currency appreciation. Using Norway again as an example, since the currency was floated in March 2001, the krone has been strongly correlated with the oil price and the currencies of other commodity-rich countries such as Australia (Graphs 2, 3 & 4).

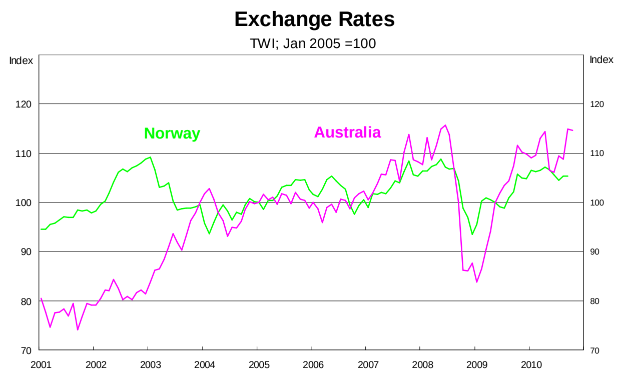
Graph 2: Norway's nominal trade-weighted index



Graph 3: Norway's nominal trade-weighted index



Graph 4: Norway's nominal trade-weighted index



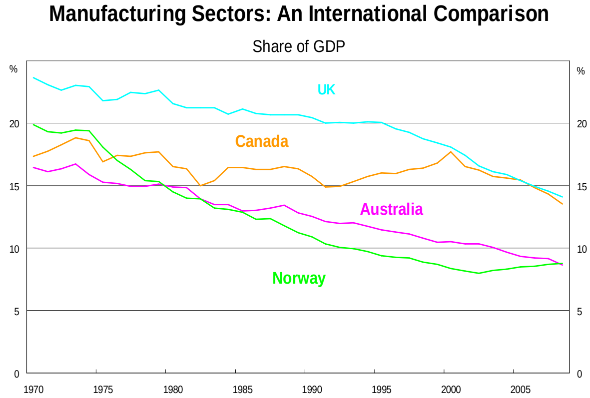
While Graph 5 shows that Norway's SWF has not reversed the 'de-industrialisation' seen over a number of years, the rate of decline of manufacturing as a proportion of GDP in the Norwegian economy has slowed relative to other industrialised countries over the past decade. Whether or not this reflects Norway's SWF is difficult to say, as we have no way of knowing what would have happened in the absence of the fund.

Previous research by Larson (2004) indicates that Norway was able to reduce the effects of Dutch disease by dampening factor movement effects (i.e. resources moving from manufacturing to mining) through income coordination. In addition, the spending effect of a mining boom was dampened because the Norway Government invested abroad through the SWF.

However, the lesson from Larson's research is that multiple factors played a role in dealing with the Dutch disease – including social norms, proper monitoring, and the wage negotiation system that reduced rent seeking behaviour, limiting the typical negative effects associated with a resource boom. Norway also required a highly centralised wage formation system to make it possible to limit wage increases to all sectors from an expanding resource sector. Despite the research by Larson to 2004, since that time Norway's real exchange rate has appreciated (reducing competitiveness) on the back of rising labour costs and prices, leading the Governor of Norway's central bank to state on whether a SWF has addressed the Dutch disease "strictly speaking, the jury is still deliberating".[7]

Hence, a SWF should not be seen as a panacea and substitute for structural reforms (taxation reform, labour market reform, competition policy) that improve the competiveness and the efficiency of an economy in dealing with 'Dutch disease', but there is some possibility that a Norwegian-style SWF together with these other reforms can assist the competiveness of the manufacturing sector.

Graph 5: International ratios of manufacturing value added to GDP



The Australian Future Fund

The Australian Future Fund was established by the *Future Fund Act 2006* to assist future Australian governments meet the cost of public sector superannuation liabilities. In contrast to most of the international examples presented above, the Australian Future Fund is not directly financed from mining related revenue. Instead, the Fund receives financial contributions from budget surpluses, proceeds from the sale of the Government's holding of Telstra and the transfer of remaining Telstra shares. This implies that some mining income may be indirectly invested into the Future Fund, if it helps to achieve a budget surplus, though there are no clear rules that specify the amount of mining revenue that will be invested in the Fund.

In the absence of a SWF that is used to manage Australia's mining-related income, there appears to be few formal rules or guidelines that specify how the Government is managing this mining revenue.

[7] 'Perspectives on Managing the Government Pension Fund Global', Speech by Mr Svein Gjedrem, Governor of Norges Bank (Central Bank of Norway), at the Norwegian Polytechnic Society, Oslo, 2 November 2010.

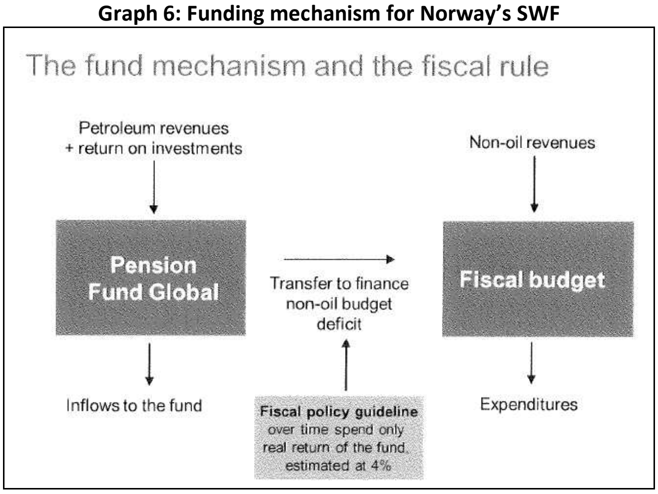
Thus, further work could be done to: (i) develop transparent funding rule(s) that specify what part of the mining revenue collected by the Government should be set aside (whether in a SWF or another vehicle) to deal with broader economic issues; and (ii) determine what specific issues should be focused on (e.g. providing for long-term physical investment or education and training or fiscal stabilisation purposes).

The Norway model

The Government Pension Fund – Global is similar to the Australian Future Fund in the sense that it is essentially funded from budget surpluses. Norway's SWF has two primary sources of income, net cash flow of mining revenue (or the oil budget balance) and the returns on the funds assets. Money is then withdrawn from the fund each year to cover any non-oil budget deficit, which ensures that money is only added to the fund if there is an overall budget surplus. This model is based on the principal that only actual Government savings should be added to the Fund. In addition, fiscal policy guidelines state that over time, the structural, non-oil budget deficit shall correspond to the real return on the fund. This guideline helps to ensure that most of the mining surpluses are invested into the Fund.

The Norway SWF acts as a fiscal policy tool to support a long-term management of its oil revenues. The SWF is only invested abroad in financial assets, which ensures risk diversification and it is claimed also helps to shield the non-oil economy from transitory and volatile revenues stemming from the petroleum sector. Graph 8 outlines the fiscal rules regarding the Norway Fund.

Graph 6: Funding mechanism for Norway's SWF



Source: Norges Bank Investment Management

The fiscal rule under Norway's SWF states that the Government may spend – as an average over the business cycle – the expected normal real return on the capital in the Fund over the central Government budget. This return is estimated at 4 per cent. The rule ensures that the capital in the SWF is not drawn on unless the real return on the SWF is lower than 4 per cent. In this way, future generations will also benefit from the oil wealth[8].

[8] Source: Svein Gjedrem: Perspectives on Managing the Government Pension Fund Global, 2 November 2010.

The Kuwait/Canada model

An alternative model that has been used internationally is to simply set fixed rules for the type and amount of resource revenue to be transferred into a SWF. This model is currently used in Kuwait, for example, where 10 per cent of all oil revenue is transferred to the SWF each year. This policy option provides a high degree of transparency, though the model does not ensure that the money entering the fund represents actual government savings.

The Chile model

Chile has established the Pension Reserve Fund to address an expected future government pension liability shortfall, and the Economic and Social Stabilization Fund to enhance the flexibility of public spending when Government revenue is adversely affected by shocks to the copper prices or to the domestic and/or international economy. One of the principles of the Chile approach to SWFs is to avoid the risks of an overheating economy caused by pro-cyclical fiscal policies during mining booms. Chile's budget rule therefore targets a 'structural budget balance' of its public finances, corrected for cyclical variations and fluctuations in copper prices. This is done by distinguishing between permanent and transitory components of mining related tax revenue.

The funding rules outlined above could be applied to the Australia Future Fund or to new separate fund(s) which are used to exclusively manage the mining revenue received by the Australian Government. There are a number of international examples of countries who have multiple SWFs with distinct policy objectives. In Australia, the question of whether or not to establish a new SWF to exclusively manage mining revenue will partly depend on what the mining revenue is used for and if those policy objectives require establishing separate fund(s).

Policy objectives

Given the current economic environment in Australia, and in light of the discussion in the previous section on the performance of SWFs, there are a number of productive ways that the mining revenue collected by the Government could be used.

Enhancing fiscal sustainability and flexibility

The Federal and State Government budgets are expected to come under increasing pressure in the decades ahead, as the anticipated increase in the Australian population and the higher proportion of older Australians imply that health care, aged care, and housing expenditures are likely to rise significantly. Increasing globalisation and the emergence of highly cost competitive manufacturing bases, such as China and India, imply that there are limits to which the Australian Government can deal with these issues by introducing new taxes and/or higher tax rates without jeopardising its competitiveness. Furthermore, evidence suggests that many countries are in fact lowering the tax burdens of companies and individuals in order to attract more foreign investments and skilled workers. Hence, a SWF could be an effective way to deal with these pending issues without jeopardising Australia's competitiveness. Another policy objective could be to enhance the flexibility of public spending when government revenue is adversely affected by shocks to commodity prices or to the domestic and/or international economy. This is essentially the fiscal 'smoothing' objective outlined above which has been adopted in Chile as well as Norway.

The transfer of wealth from the mining sector to other parts of the economy

One unfortunate by-product of the most recent resource boom was that it was associated with a strong appreciation of the Australian dollar, which hurts the competitiveness of Australian exporters in a wide range of sectors (the 'Dutch disease' mentioned earlier). A SWF could be an effective tool for mitigating the extent of a currency appreciation, or to directly assist those industries that may suffer as a result.

Mining revenue could increasingly also help to finance Australia's newly established infrastructure funds such as the Building Australia Fund, the Education Investment Fund, or the Health and Hospitals Fund. In turn this infrastructure can assist in the productivity performance and competitiveness of all industries. However, domestic investment of this type in the short-run at least will add to demand pressures in the domestic economy.

The transfer of wealth across generations

A commonly held view in the community is that the proceeds from Australia's finite natural resources should not only benefit mining companies, but should also benefit current and future generations. This could be achieved through the use of a SWF, which made long-term investments for future generations. The money generated from these investments could be specifically targeted towards ensuring economic growth is not jeopardised by the exhaustion of Australia's natural resources and/or developing alternative energy sources or export markets. Investment in education and skills can be seen as a form of investment that has both immediate productivity benefits but also acts as an investment in the wealth of future generations.

Australian assessment

So far, we have raised the possibility that Australia develops transparent funding rule(s) that specify what part of the mining revenue collected by the Government will be set aside to deal with broader economic issues. This revenue could potentially be placed in the Future Fund or a separate and new SWF. The next section looks at potential advantages and disadvantages of this policy option before drawing some final conclusions.

Advantages

A SWF based on transparent funding rule(s) could help to:

- Make the Government's use of mining revenue more transparent.
- Ensure that mining revenue is being used responsibility.
- Increase the Government's ability to deal with longer-term structural issues.
- Increase the return on Government assets.
- Moderate exchange rate appreciation.

The adoption of the Norwegian SWF model, and its associated fiscal guidelines, could also help to provide direction for future government spending.

Disadvantages

International experience has highlighted that there are a number of risks associated with SWFs. In particular:

- Investment returns are not guaranteed (many SWFs were particularly negatively impacted during the GFC), and there is a chance that national resources could be lost.
- The performance of SWF relies heavily on sound management and policies.
- Political issues can also arise from the purchase of foreign assets.
- There is an opportunity cost in establishing a SWF investing in overseas financial assets. While it may help mitigate the pressure on domestic demand and the exchange rate, there are less resources available for immediate infrastructure and other spending needs (despite in the long-term the prospect of returns on these financial investments overseas). Immediate population pressures also put weight on using mining revenue on immediate infrastructure needs.
- Lastly, one must also consider the administrative costs associated with setting up and running a SWF (which may be limited if additional mining revenue is directed towards the Future Fund).

Moreover, there are differences between Norway and Australia that need to be kept in mind in considering a blanket adoption of the Norway approach:

- Norway has a greater dependency on revenue from oil and mineral exploration than Australia (13 per cent of GDP for Norway compared to 2 per cent of GDP for Australia) meaning that it has more revenue to divert into a SWF, which in turn means that the role and influence of its SWF can be more significant (as a comparison Table 1 showed Norway's Government Pension Fund – Global has about US$445 billion in assets, compared to approximately US$49 billion for Australia's existing Future Fund).
- Norway runs large capital account surpluses compared to Australia largely being a capital importer (current account deficits). Hence Norway is subject to less capital flow volatility (greater volatility in capital flows could offset any 'sterilisation' impact of a SWF on exchange rates, potentially reducing the intended objective of a SWF).
- The international turnover of Australia's currency on foreign exchange markets relative to Norway's currency is much more significant. Australia's currency is the fifth most traded whereas Norway's is 13th. This makes Australia more vulnerable than Norway to exchange rate movements that cannot necessarily be complemented or countered by the operation of a SWF.

Conclusion

On balance, there is scope for the Australian Government to develop transparent funding rule(s) that specify what part of the mining revenue they collect will be set aside to deal with broader economic issues, including through the vehicle of a SWF. This would require further discussions surrounding a number of questions, including:

- Precisely how much of the Government's mining revenue should be invested in a SWF?
- What withdrawal and contribution rules should be set in place?

- What economic and/or social issues should the revenue be used to address?
- Is there a need to establish a new SWF or broaden the scope and purpose of the Future Fund?

Transparent policies that address these questions should be a key consideration for the Australian Government given the current mining boom and historically high terms of trade.

The establishment of a new SWF in Australia would require careful consideration as to its purpose(s) and design, including how it would complement existing fiscal policy. Multiple objectives have been promoted for SWFs internationally. These range from fiscal stabilisation and intergenerational transfer of wealth to currency stabilisation. The Norway Fund suggests there is some merit in a SWF augmenting existing fiscal policy tools to enhance flexibility of public spending when government revenue is adversely affected by shocks to commodity prices or to the domestic and/or international economy. The jury is out on whether the Norway has helped avoid the Dutch disease caused by a real exchange rate appreciation. However, there appears to be a lessening in 'deindustrialisation' in countries with a SWF. Nonetheless, the establishment of a SWF is potentially a complement for structural reforms (taxation reform, labour market reform, competition policy) that improve the competiveness and the efficiency of an economy.

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Appendix: Background

Strong growth in global commodity prices and Australia's Asian trading partners has significantly boosted the revenue generated from mining exports (Graph A1), and has led a number of mining companies to announce significant investment projects in order to increase their production capacity (Graph A2). The current scale of the mining sector's revenue, and the fact that it is derived from Australia's finite natural resources, has raised the issue of how this income should be managed.

One policy response that has already been seen is the introduction of the Super Profits Tax, which is being used to transfer some of the mining sector's wealth to other areas of the economy. Another policy option that could be explored is the creation of a new SWF, which could be used by the Government to invest some mining-related revenue for longer-term economic objectives.

Graph A1

Graph A2

Source: Statement of Monetary Policy – November 2010

Appendix: Largest SWFs

(US $b, end 2009)

end-2009	$bn assets under management	Country	Inception year	Source
Abu Dhabi Investment Authority	627	UAE	1976	Commodity
Government Pension Fund – Global	445	Norway	1990	Commodity
SAMA Foreign Holdings	431	Saudi Arabia	n/a	Commodity
SAFE Investment Company	347	China	n/a	Non-Commodity
China Investment Corporation	289	China	2007	Non-Commodity
Government of Singapore Invest. Corporation	248	Singapore	1981	Non-Commodity
Kuwait Investment Authority	203	Kuwait	1953	Commodity
National Welfare Fund	168	Russia	2008	Commodity
National Social Security Fund	147	China	2000	Non-commodity
Hong Kong Monetary Authority Invest. Portfolio	140	China (HK)	1993	Non-Commodity
Temasek Holdings	122	Singapore	1974	Non-Commodity
Libyan Investment Authority	70	Libya	2006	Commodity
Qatar Investment Authority	65	Qatar	2005	Commodity
Australian Future Fund	49	Australia	2004	Non-Commodity
Revenue Regulation Fund	47	Algeria	2000	Commodity
Others	402			
Total	**3,800**			

Source: SWFI