STRUCTURING ISRAEL'S SOVEREIGN INVESTMENT FUND

Financing the Nation's Future

Financial Innovations Lab™ Report

Milken Institute

December 2011

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Financial Innovations Labs™ bring together researchers, policymakers, and business, financial, and professional practitioners to create market-based solutions to business and public policy challenges. Using real and simulated case studies, participants consider and design alternative capital structures and then apply appropriate financial technologies to them.

Acknowledgments

This Financial Innovation Lab report was prepared by Glenn Yago, senior research fellow at the Milken Institute and senior director of its Israel Center, and by Yuan-Hsin (Rita) Chiang, senior research analyst.

We are grateful to those who participated in the Financial Innovations Lab for their contributions to the ideas and recommendations summarized in this report. We wish to express our appreciation to our Milken Institute colleagues—especially Financial Innovations Lab Manager Caitlin MacLean, Senior Economist Cindy Li, Israel Center Director Alma Gadot-Perez, Executive Assistant Karen Giles, and Editor Dinah McNichols—for their tremendous effort. We are honored to be able to contribute to this important assignment and appreciate the cooperation of Professor Eugene Kandel and Morris Dorfman of the National Economic Council of the Prime Minister's Office, Dr. Karnit Flug of the Bank of Israel, Eran Heimer, Haim Shani, and Yoav Oron of the Ministry of Finance on the Lab and other work focusing on Israel's economic development.

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A nonprofit, nonpartisan economic think tank, the Milken Institute works to improve lives around the world by advancing innovative economic and policy solutions that create jobs, widen access to capital, and enhance health. We produce rigorous, independent economic research—and maximize its impact by convening global leaders from the worlds of business, finance, government, and philanthropy. By fostering collaboration between the public and private sectors, we transform great ideas into action.

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Sovereign investment funds generate economic security for future generations by converting "endowments" of natural resources into financial endowments—not unlike those established for universities.

Introduction

The recent discovery of two massive offshore natural gas fields about 130 kilometers west of Haifa has presented Israel with a mixed blessing. On the one hand, the Tamar and Leviathan fields may have the capacity to support Israel's domestic gas consumption for decades, with significant reserves left for exports and the development and distribution of related platform chemicals as a new export industry. Israel, like other resource-rich countries, can look forward to enormous economic opportunity.

But that opportunity could turn toxic if Israel doesn't plan and invest wisely. The sudden injection of vast revenue derived from natural-resource wealth, be it gold or oil or natural gas, has a long history of wreaking havoc in both developed and developing countries.

This report, based on a Financial Innovations Lab, seeks to help Israel avoid economic pitfalls, and examines how other modern states have successfully channeled their windfalls to finance their futures.

The phenomenon known as "Dutch disease" is named after the unforeseen negative economic effects that followed the 1959 discovery by the Netherlands of vast natural oil and gas fields in the North Sea. Initially, the country saw a surge in national wealth and general welfare. But it wasn't long before Holland's economy began to erode. The massive increases in oil and gas revenues caused an appreciation of the real exchange rate, which hit other manufacturing and export industries hard.[1] Imports became cheaper than locally manufactured goods, domestic inflation soared to 10 percent,[2] and over the next two decades 442,000 manufacturing workers lost their jobs as a result of lower profitability.[3]

In a similar fashion, the expected capital inflow from Israel's natural gas fields—billions of dollars in potential revenue—could double the country's trade surplus and strengthen the shekel. And here, too, it could lead to local currency appreciation and higher prices, particularly among exports in the strong technology and manufacturing industries, which have generated much of the country's recent GDP growth, foreign exchange reserves, and job and income creation. Higher prices in foreign currencies would make exports less competitive, manufacturing would drop off, and inflation risks would follow.

Over the past few decades, many resource-rich countries, from Norway to Chile to Kuwait, have reduced this economic risk through the creation of sovereign wealth funds. These funds typically invest revenues from natural resource (commodity) exports in global markets rather than at home, targeting the returns for government expenditure and national development. The funds help smooth out the natural volatility of commodity price cycles and export income, and can be used as holding companies for their governments' long-term strategic investments.

The funds generate new sources of capital and economic security for future generations by converting "endowments" of natural resources into financial endowments—not unlike those established for universities. Some of them are so-called "permanent funds," born of the philosophy that benefits from a country's nonrenewable resources belong to all future generations, not just to the generation that discovered them. A sovereign wealth fund may also invest non-commodity income, exchange and trade surpluses. And it's not just national governments that create these funds: In the United States, Alaska, Texas, New Mexico, and Wyoming have designed their own state-controlled sovereign wealth funds.

Sovereign wealth funds are expected to multiply rapidly in the coming years. Already the total assets under management of these funds have exceeded those of private equity funds and hedge funds.

Economists disagree among themselves on the very definition of a sovereign wealth fund, and therefore how many exist. The Sovereign Wealth Fund Institute, for example, counts 56, while the consulting and research firm Preqin lists 58. Ted Truman of the Peterson Institute for International Economics lists 53, the Monitor Group lists 33, and Ashby Monk of the University of Oxford lists 64.

The funds themselves are far from a homogeneous group. Their objectives range from fiscal stability to social, economic, and infrastructure development, and from future savings to increasing returns of foreign exchange reserves. Their appetites for risk differ, depending on their goals.

Israel doesn't yet have a sovereign wealth fund, although in early 2011 the government signaled its intention to create one. Even without the natural gas discoveries, large trade surpluses and extensive foreign exchange reserves have had a strong impact on currency appreciation that could damage export competitiveness. Now add the offshore discoveries, and Israel faces a historic opportunity to build national economic security.

With this in mind, the prime minister's National Economic Council, in conjunction with the Bank of Israel and the Ministry of Finance, invited the Milken Institute to conduct a Financial Innovations Lab in the Los Angeles area to discuss and help design a fund. Topics for discussion included the fund's objective, its legal structure and governance framework, its investment strategy, and criteria for performance evaluation. The Lab included presentations; an examination of numerous sovereign wealth funds, their investment strategies, and operational structures; and an extensive discussion of Israel's current economic conditions and challenges.

The first challenge for participants was to determine the goal(s) of the fund, for this would drive all other decisions. After debate, they agreed that its initial goal should be to build a reserve for catastrophic risk arising from natural disaster, war, or economic crisis. A secondary goal, once the fund achieves benchmark returns, would be to build up revenues to cover pension obligations, health care, or other assets affecting the country's human capital.

Given these goals, it is appropriate to characterize the Lab's recommendation as a "sovereign investment fund." This terminology better reflects both the composition of fund's investments and its strategic goals: the intergenerational transfer of sovereign wealth derived from natural resources, and investment in savings and human capital. The fund would ensure that future generations, not just today's, will enjoy the benefits of these discoveries and sound investment practices.

Because natural gas revenues are not expected to flow until after the fund's creation, participants recommended that the fund be launched immediately and then expand as revenues increase and future discoveries are realized.

The Lab determined that the government must take the following steps, which are addressed more fully in Part II:

- ***Determine a clear mission.*** This must be in place and understood from the outset. The government must look at its balance sheet and decide the fund's purpose. This will drive all subsequent investment decisions. For example, if the government elects to create a *stabilization fund*—designed to shield the economy from commodity price volatility—the investments would be lower risk and shorter term for liquidity. A *savings fund*, designed to build long-term reserves over a longer time horizon, would enable the government to accept more risk.

  Lab members preferred the idea of a savings (permanent) fund against catastrophic risk with the additional goal of building reserves for pension obligations and human capital investment.

- ***Formulate a governance framework.*** A proper governance structure is essential to shield the fund from political influences. The fund's governance must remain independent, transparent, and subject to checks and balances. Participants discussed whether to create a single legal entity or a subsidiary department within either the Ministry of Finance or the Bank of Israel. They noted that good governance would also strengthen Israel's credit ratings.

- ***Designate the fund's revenue source.*** Besides investing natural gas commodity revenues and royalty payments, the fund could invest fiscal surplus and foreign exchange reserves, which the Lab recommends. The government must determine what share of commodity revenues to transfer into the fund and if other funding sources will be considered.

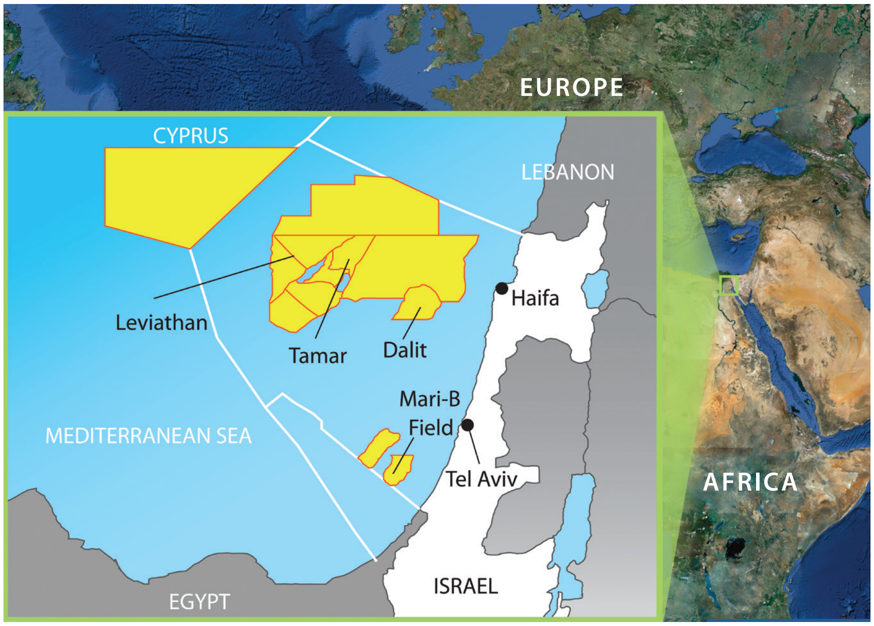
- ***Define the withdrawal and spending rules.*** The fund's goal(s) will determine how the government will spend the returns. A stabilization fund, for example, might transfer some profits back to the fiscal budget so that government expenditures do not fluctuate dramatically. International experience has shown that best practices result if the legislature determines the rules for transfer in and withdrawal.

- ***Design the investment strategy.*** Investment policies must be in line with the fund's primary mission.

Part I: Issues and Perspective

Deep below the Mediterranean Sea, the Tamar and Leviathan fields reportedly contain 250 billion cubic meters and 450 billion cubic meters of natural gas, respectively.[4] Tamar alone could fulfill Israel's natural gas needs for the next two decades, and Leviathan is almost twice as large.[5] This discovery could generate tens of billions of dollars in taxes and royalties, with abundant reserves to make Israel a natural gas exporter or exporter of natural gas–related industrial products.

FIGURE 1 *Recent natural gas discoveries off the coast of Israel*



Sources: National Economic Council, Prime Minister's Office.
Note: Other nearby natural gas fields include the Mari-B field, a series of production sites in operation since 2004. Mari-B is Israel's sole source of natural gas until the Dalit and Tamar fields come online in 2013. The Leviathan gas field is expected to start production in 2017–2018.

Fortunately, the Israeli economy has enjoyed years of robust growth, despite a short downturn due to the global financial crisis. At the end of 2010, GDP growth stood at 4.6 percent. The unemployment rate is about 5.7 percent, and inflation is well managed, at 2.7 percent.[6] But risk exists already with the real exchange rate, which has appreciated 20 percent[7] since 2006, threatening the country's export sector, especially the flourishing high-tech industry. The Bank of Israel has adopted an expansionary monetary policy, lowering the interest rate and purchasing foreign currency, to moderate appreciation over the course of the year. But future gas revenues will inevitably increase Israel's foreign exchange reserves, forcing the shekel to appreciate further. These, of course, are symptoms of the dreaded Dutch disease and could result in greater inflationary pressures, price hikes, and a slowdown in exports.

A sovereign investment fund could protect Israel from those risks and achieve dual aims. First, it would serve as an efficient investment vehicle for building long-term emergency savings. Second, once the fund achieved benchmark returns, profits could target other policy objectives, such as education, government debt repayment, national security, and building social and human capital.

Dutch disease at a glance …

The *Financial Times* explains Dutch disease as "the negative impact on an economy of anything that gives rise to a sharp inflow of foreign currency, such as the discovery of large oil reserves." When foreign capital flows in, the home currency strengthens. But this also makes its other products more expensive, not just for foreign markets, but for domestic buyers as well. Those products become less competitive overseas, and a flood of cheaper imports will cripple local manufacturers.

The term was coined by *The Economist* to describe declines in the Dutch manufacturing sector after the discovery of a large natural gas field in 1959. But the phenomenon has been around for centuries. In the 16th century, Spain "caught the disease" from the deluge of gold brought back from the New World. Some developing countries today "get sick" from the remittances sent home from abroad by vast numbers of migrant workers.

Other examples of Dutch disease include:

- The Australian gold rush in the 19th century, and the mineral commodities boom in the 2000s
- The Chilean copper boom of the past decade
- High coffee prices that brought a boom to Colombia in the 1970s but then hurt the nation's economy
- The boom in New Zealand's dairy industry in the 2000s
- Natural resource discoveries and production in Nigeria and other post-colonial African states in the 1990s
- Russian oil and natural gas in the 2000s
- The discovery of natural gas fields in the North Sea in the 1970s, and a downturn in the U.K. economy
- Fluctuating oil prices and the negative impact on Norway's national income prior to 1990

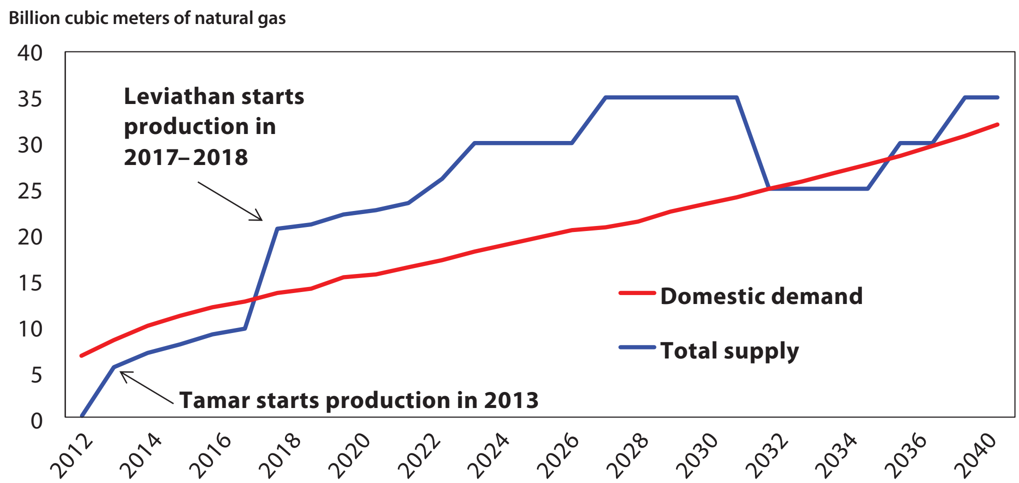
OPPORTUNITIES AND CHALLENGES

The Leviathan gas field, the largest deep-water natural gas discovery of the past decade, will not free Israel from its dependence on all fuel imports. But the windfall will certainly reduce the country's energy bill. From the 1990s until 2006, Israel spent about 2 percent of its annual GDP on energy imports from Egypt, Norway, Mexico, and elsewhere, a figure that has increased to 5 percent since 2006, due to rising oil prices.[8]

The country's natural gas reserves, however, are expected to exceed its domestic needs and provide enough for export. Israel's domestic demand for natural gas is roughly 5 billion cubic meters and is expected to reach 15 billion cubic meters by 2020.[9] Once production at the Tamar well gets under way in 2013, followed by work at Leviathan and other wells around 2017–2018, the combined fields should generate more than 450 billion cubic meters (BCM), or more than 20 billion cubic meters per year. Israel could become a leading natural gas exporter, alongside Egypt, Qatar, Australia, Indonesia, Russia, and Canada.

FIGURE 2

Israel's projected supply and demand of natural gas per year



Sources: Milken Institute, Bank of Israel.

Domestic demand is expected to reach about 19 BCM in 2030 and then to taper off, growing at a rate of 2–3 BCM per year over the following 10 years. But if the government enacts policy to allow for exportation, Israel could be ready to export at least 10 BCM per year by 2020. This would raise the country's already high ($6.7 billion) trade surplus by one-third, or approximately $2 billion.[10] At the same time, the windfall would boost aggregate demand for goods and services with a positive income effect for individuals and the economy: about 4 percent of GDP. Royalties and an excess profits tax would contribute to government revenues of about 1 percent of GDP, based on a modest estimation.[11] With rising oil prices, the tax revenues from natural gas can be even greater.

Nevertheless, this trade surplus, along with more than $70 billion in existing foreign exchange reserves, could add considerable pressure for currency appreciation. In a worst-case scenario, the country could expect the shekel to suffer a real appreciation of between 6 percent and 16 percent, and an inflation rate of 15 percent by 2020.[12] These estimates from the Bank of Israel are conservative and assume low appreciation in natural gas prices.

Dutch disease can lead to a second phenomenon: the "resource curse." This concerns social rather than economic stresses and occurs especially where high levels of wealth and income concentration exist. Richard Auty, a professor of economic geography in the U.K., first noted that an abundance of mineral resources could distort a country's economy to such a degree that it actually becomes a curse.[13] The resulting economic wealth drives up the prices of illiquid and non-tradable assets (those for domestic consumption), chiefly land. With land ownership concentrated in a small group of powerful elites, problems of political and income inequalities follow. Thus, the natural gas discovery could turn a natural resource into a curse for Israel, amplifying the negative impacts of income inequality and wealth concentration.

Many scholars, including Jeffrey Sachs and Andrew Warner, have recognized the link between natural resource wealth and poor economic performance.[14] The energy sector, for example, employs mostly skilled workers, and energy resources tend to be controlled by a small portion of the population. The resulting wealth passes through only a few hands instead of being distributed through the population at large. Terry Lynn Karl of Stanford University refers to this as the "Paradox of Plenty."[15] She investigated oil countries like Venezuela, Iran, Nigeria, Algeria, and Indonesia, and argues that while oil booms in the 1970s created the illusion of prosperity, they actually destabilized regimes. These governments had little incentive to develop their non-energy sectors because foreign capital, not taxes, remained their primary source of revenue. Likewise, Michael Ross of UCLA has argued that oil-rich countries have a higher tendency to fail on infrastructure and social development.[16]

The following table shows the projected macroeconomic effects of the natural gas discoveries, according to the Bank of Israel. They are based on different estimations of the size of current and prospective discoveries.[17] (The Tamar and Leviathan fields represent less than half of the gas reserves predicted for discovery.) The projections are also based on the assumption that no action is taken to prevent risk. The optimistic scenario includes larger natural gas reserves. Under both scenarios, gas exports will increase GDP by 2 percent to 3 percent, with moderate current account surplus and positive government revenues. Based on very conservative estimates of gas price variation, the Israeli new shekel could appreciate at least 6 percent, but also as much as 16 percent. This could have a deleterious impact upon Israel's industrial export base and the country as a whole.

TABLE 1

Estimated economic impacts of Israel's natural gas discovery

	Conservative scenario	Optimistic scenario
GDP (level, incorporating Dutch disease effects)	+2%	+3%
Change in the real exchange rate	+6%	+16%
Change in exports (excluding natural gas)	−2%	−4%
Current account (as % of GDP)	+0.5%	+2%
Government revenues (as % of GDP)	+0.3%	+0.6%
Employment layoffs (number of employees)	5,000 jobs	15,000 jobs

Sources: Milken Institute, Bank of Israel.

Israel could also face a 2 to 4 percent drop in exports in its traditional industries, such as jewelry, software, and machinery, which are more sensitive to the exchange rate. Additionally, the price of non-tradable goods, such as property, could rise because of greater demand, and eventually translate to higher real wages. An estimated 5,000 to 15,000 jobs could be at risk from currency appreciation impacts in export-sensitive industries. The job loss figures are low, however, since the model assumes that high-tech exports are considered relatively immune to currency appreciation. But there seems little basis for this assumption because new competitors enter technology-based markets daily. Even with the bank's assumption, the anticipated hard-currency revenues could drive up inflation to 15 percent.

As noted earlier, many other resource-rich nations have established sovereign wealth funds to manage their inflow of commodity revenues, and stave off currency appreciation and inflation. While a central bank might employ currency "sterilization"—buying back or selling its own currency against a foreign currency on the foreign exchange market—this is a reactive position. In a sovereign wealth fund or sovereign investment fund, the managers take an active role to offset any negative risks. Norway, for example, the world's third-largest oil exporter, established its SWF, the Petroleum Fund (since renamed the Government Pension Fund–Global), more than 20 years ago. By investing the bulk of its North Sea oil revenues back into the international capital markets, Norway has insulated its economy from the disturbances associated with inflation and currency appreciation.

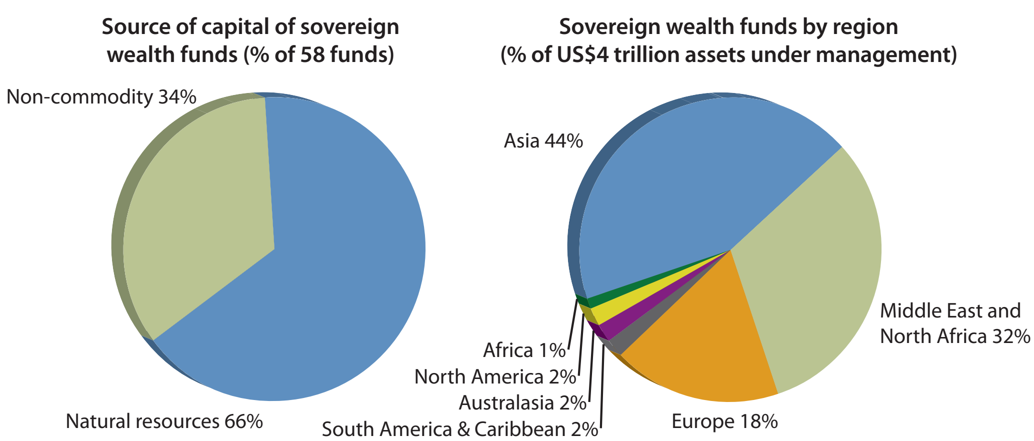
INTERNATIONAL EXPERIENCES

Between 2006 and 2010, 30 new sovereign investment funds were established, bringing the total assets to more than $4 trillion,[18] far exceeding private equity and hedge funds in the global financial markets.[19]

The following figure shows that about two-thirds of sovereign investment funds are funded by tax revenues from natural resources (oil, natural gas, coffee, gold, or copper, for example), and the rest are funded by non-commodity income (fiscal surplus and foreign exchange reserves). Over 70 percent of their assets are based in Asia and the Middle East. The Abu Dhabi Investment Authority (ADIA) ranks the largest sovereign investment fund, with $627 billion of assets under management.

FIGURE 3

Source of capital and geographic distribution of sovereign wealth funds



Sources: Milken Institute, Preqin.
Note: The number of sovereign investment funds is based on a broader definition of sovereign investment fund. Data are available as of December 2010.

TABLE 2 *List of selected sovereign wealth funds by country*

Country	Name	Source of fund	Total assets (US$ B)	Year founded
Australia	Future Fund	Fiscal surplus	$75[20]	2006
Azerbaijan	State Oil Fund	Oil	$22	1999
Bahrain	Bahrain Mumtalakat Holding Company	Oil	$9	2006
Canada	Alberta Heritage Savings Trust Fund	Oil	$14	1976
Botswana	Pula Fund	Diamonds	$7	1994
Chile	Economic & Social Stabilization Fund[21] Pension Reserve Fund	Copper Foreign exchange reserves	$22 $3	1985 2006
China	SAFE Investment Company China Investment Corporation (CIC) National Social Security Fund China-Africa Development Fund	Fiscal surplus Foreign exchange reserves Fiscal surplus Fiscal surplus	$347 $332 $147 $5	1997 2007 2000 2007
Hong Kong	Monetary Authority Investment Portfolio	Foreign exchange reserves	$292	1993
Kazakhstan	National Fund	Oil	$39	2000
Kuwait	Kuwait Investment Authority	Oil	$296	1953
Libya	Libyan Investment Authority	Oil	$70	2006
Malaysia	Khazanah Nasional Berhad	Fiscal surplus	$37	1993
New Zealand	New Zealand Superannuation Fund Natural Disaster Fund[22]	Fiscal surplus Fiscal surplus	$12 $5	2003 1945
Norway	Government Pension Fund–Global	Oil	$572	1990
Qatar	Qatar Investment Authority	Oil	$85	2005
Russia	National Welfare Fund[23] Reserve Fund	Oil, gas Foreign exchange reserves	$90 $53	2008 2004
Saudi Arabia	SAMA Foreign Holdings Public Investment Fund	Oil Fiscal surplus	$473 $5	n.a. 2008
Singapore	Government of Singapore Investment Corporation (GIC) Tamasek Holdings	Foreign exchange reserves Government holdings	$248 $145	1981 1974
South Korea	Korea Investment Corporation	Foreign exchange reserves	$37	2005
Timor-Leste	Timor-Leste Petroleum Fund	Oil	$6.3	2005
United Arab Emirates	Abu Dhabi Investment Authority (ADIA) International Petroleum Investment Company (IPIC) Investment Corporation of Dubai Mubadala Development Company Abu Dhabi Investment Council (ADIC)	Oil Oil Oil Oil Oil	$627 $58 $20 $13 $10	1976 1984 2006 2002 2007
United States	Alaska Permanent Fund New Mexico State Investment Council Permanent Wyoming Mineral Trust Fund	Oil Fiscal surplus Minerals	$40 $14 $5	1976 1958 1974

Sources: Milken Institute, SWF Institute.
Note: Selected sovereign investment funds from the SWF Institute web site accessed on June 15, 2011.

The United Arab Emirates' multiple sovereign funds operate under different performance goals. ADIA diversifies its investments internationally and seeks sustained long-term financial returns. The Abu Dhabi Investment Council (ADIC), a small spin-off of ADIA, focuses on local development and regional investments, with stakes in the National Bank of Abu Dhabi, the Abu Dhabi Aviation Company, and other state-owned enterprises. The Government of Abu Dhabi also owns the Mubadala Development Company, another investment vehicle, with a mandate to facilitate domestic economic diversification. As one of the efforts to achieve its goal, the Mubadala Development Company launched a private joint stock company partnership in 2009 with General Electric, specializing in providing tailored financial solutions to businesses.

Sweden has also created a number of government funds (its AP Funds 1 to 6, excluding AP5, which no longer exists), though these are generally classified as public pension reserve funds, rather than sovereign wealth funds. Their combined assets for 2007 totaled $136.7 billion.[24] These funds all share the same objective, to cover future pension liabilities, but they compete through different investment strategies. This model was created as a response to concerns over too little diversification in a single fund and suggests an important lesson for Israel to consider in attempting to increase diversification.

Australia is another resource-rich economy; it is the world's largest exporter of coal and controls 4 trillion cubic meters of conventional gas. But the government doesn't put its mining royalties and tax revenues from resources into a sovereign fund. Instead, the money is spent every year to on general expenditures. However, the Australia Future Fund, established in 2006 and now worth over $70 billion, is funded by budget surplus for savings to meet future civil service pension liabilities.

Norway's sovereign fund began as a stability fund to avert domestic inflation but was later restructured as a savings fund. With assets of $572 billion, it seeks to generate high returns subject to moderate risk, with the goal of safeguarding Norway's future pension liabilities and social welfare. The Ministry of Finance sets benchmarks with which to measure performance.

Unlike Sweden, Australia, and Norway, whose savings funds provide for future pension liabilities, the Mongolian government has announced plans to establish a sovereign fund structured as a stability fund, to "help fend off the boom and bust of the commodity price cycles."[25] The fund will seek to achieve long-term prosperity and growth because half of the nation's $5 billion economic output comes from mining and agriculture. One of the world's largest exploration projects, the Oyu Tolgoi mine situated in the southern Gobi Desert in Mongolia, holds 32 million tons of copper and 1,200 tons of gold. The Canadian firm Ivanhoe Mines has reportedly invested $4 billion into the mining operation,[26] and Mongolia is expected to receive $30 billion in tax revenues generated from the site. The fund will reportedly disburse part of its annual income to all Mongolians in cash or non-cash securities to let them own stakes in the country's mining wealth.

Mongolia borrowed this model from the $40 billion Alaska Permanent Fund, which distributes a few hundred dollars' worth of dividends every year to eligible state residents. State revenues from oil production are otherwise reinvested; by law they may not be spent. Some $18.4 billion in dividends have been paid since the fund was created in 1976.[27]

As this overview suggests, sovereign wealth funds play an important role in national economic security, intergenerational wealth transfer, and economic strategy, while contributing substantially to national revenues. Among other findings:

1. Sovereign wealth funds can function as strategic investors for achieving investment targets and enhancing corporate performance.[28]
2. Competitive, professional management results in improved fund performance.
3. Investments made domestically fare worse than do those made abroad because they may stem from political considerations rather than the best interest of the country.[29]
4. Sovereign funds that focus on emerging markets for higher returns, rather than in developed nations, have widely varying performance.[30]
5. Governance structures do matter; funds operating under political influence perform poorly. Transparent governance improves a country's credit ratings and financial stability.[31]

INTERNATIONAL PRINCIPLES FOR SOVEREIGN FUNDS

In May 2008, the IMF instituted an International Working Group of Sovereign Wealth Funds (IWG-SWF),[32] comprised of representatives from 25 sovereign wealth funds. The representatives held a number of meetings, out of which came the Santiago Principles, a list of voluntary guidelines for best practices in managing and operating sovereign wealth funds.

The Santiago Principles

The Santiago Principles play an integral part of the Generally Accepted Principles and Practices (GAPP). Below are a few of the 24 points; principles and practices are voluntary and are subject to home country laws and regulations. For a complete list of the Santiago Principles, see http://www.iwg-swf.org/pubs/gapplist.htm.

» The key features of the sovereign investment funds' legal basis and structure, as well as the legal relationship between the fund and the other state bodies, should be publicly disclosed.

» The policy purpose of the sovereign investment funds should be clearly defined and publicly disclosed.

» Where the sovereign investment funds' activities have significant direct domestic macroeconomic implications, those activities should be closely coordinated with the domestic fiscal and monetary authorities, so as to ensure consistency with the overall macroeconomic policies.

» There should be clear and publicly disclosed policies, rules, procedures, or arrangements in relation to the sovereign investment funds' general approach to funding, withdrawal, and spending operations.

» The relevant statistical data pertaining to the sovereign investment funds should be reported on a timely basis to the owner, or as otherwise required, for inclusion where appropriate in macroeconomic data sets.

» The operational management of the sovereign investment funds should implement the sovereign investment funds' strategies in an independent manner and in accordance with clearly defined responsibilities.

» The sovereign investment funds' investment policy should be clear and consistent with its defined objectives, risk tolerance, and investment strategy, as set by the owner or the governing body(ies), and be based on sound portfolio management principles.

» The sovereign investment funds should not seek to take advantage of privileged information or inappropriate influence by the broader government in competing with private entities.

THE FINANCIAL INNOVATIONS LAB

The Milken Institute conducted the Financial Innovations Lab on May 5, 2011, to discuss and map potential designs for an Israeli sovereign investment fund. The Lab also addressed prospective opportunities and challenges that Israel may face during the process. The session brought together a diverse group of policymakers, scholars, investment fund executives, financial industry advisors, and representatives from NGOs. A full list of participants may be found in Appendix 2.

After presentations on Israel's macroeconomic conditions, the group examined the structures, governance, and investment strategies of numerous sovereign funds worldwide, and debated the purpose of such a fund for Israel. They looked at the trade-offs between directing revenues toward investments and reducing the public debt. And they reviewed best practices to ensure proper governance and asset management.

Participants continually emphasized the importance of a well-defined objective to the success of the fund, which also depends on a solid governance structure and sound investment strategy. The group recognized the need to first establish a small fund that can be later expanded. They also discussed benchmark rates of return and agreed that extra revenues could be spent to improve human capital and security once the fund's return thresholds were achieved.

Part II: Financial Innovations for Structuring an Israeli Sovereign Investment Fund

STEP 1: DETERMINE A CLEAR MISSION

A fund's objectives—fiscal stability, future savings, or increasing returns on government holdings or foreign exchange reserves—will determine the time horizon of its investment strategy and the portfolio's real return benchmarks. Most sovereign funds favor long-term investments, but even this approach can't protect from the shock of short-term losses. Determining a time horizon is also a gradual process, as a number of Asian funds have learned; so that the investments may be long term, but even in the short term, they tend to be a bit more conservative.

TABLE 3

Four categories of objectives of sovereign wealth funds

Objective	Examples of sovereign wealth fund
Macroeconomic stabilization	Abu Dhabi Investment Council Chile Economic and Social Stabilization Fund Kazakhstan National Fund Mongolia Fund (tentative) Russia National Welfare Fund
Future generation savings	Alaska Permanent Fund (U.S.) Alberta Heritage Savings Trust Fund (Canada) Australia Future Fund Azerbaijan State Oil Fund China National Social Security Fund New Zealand Superannuation Fund Norway Government Pension Fund–Global Permanent Wyoming Mineral Trust Fund (U.S.)
Management of government holdings	Mubadala Holdings (UAE) Tamasek Holdings (Singapore)
Wealth and return maximization	Abu Dhabi Investment Authority China Investment Corporation Government of Singapore Investment Corporation Korea Investment Corporation

Sources: Milken Institute, JPMorgan Research.

As noted in the preceding table, the Kazakhstan National Fund was created (in 2000) as a stabilization fund in order to cushion the impact of volatility in commodity pricing and revenues, and stabilize the government's fiscal balance in the wake of the discovery of the immense Kashagan oil field, not to mention uranium, zinc, lead, and chromium extraction.[33] Singapore's Tamasek Holdings manages the country's direct investments in private companies and state-owned enterprises, and supports the government's economic development strategy. China Investment Corporation reinvests the nation's considerable foreign exchange reserves to optimize the overall risk-return profile of existing wealth.

Some investment funds don't fit into easy categories.[34] They may invest in specific sectors deemed important for the overall economic development, especially skills transfer**.** A country with immense natural resource revenues may create multiple sovereign wealth funds, each with a different goal. In 2008, Russia split its Oil Stabilization Fund into two funds. The Reserve Fund receives the official oil and gas revenues (after a certain portion has been applied to finance federal budget expenditures) and only invests in foreign government bonds. Once the size of the Reserve Fund has reached 10 percent of forecasted GDP in corresponding year, the remaining oil and gas reserves are transferred to the National Welfare Fund. Unlike the Reserve Fund, the National Welfare Fund is allowed to make riskier investments, e.g., corporate bonds and private equities.

And in reality, fund objectives are not always clear. The Abu Dhabi fund Mubadala Development Company believes in "the double bottom line, which is pursuing opportunities with the potential to deliver strong social returns for Abu Dhabi as well as commercial profit."

Lab participants concluded that an Israeli investment fund should not focus on fiscal stabilization or internal development. If the fund were to aim for these two goals, that would mean injecting natural gas revenues into the budget in times of fiscal deficit, which would create the same problems as investing domestically. Israel would see an appreciation of the shekel and resulting inflation. Thus, the Lab discussion focused on other objectives: post-catastrophe emergency assistance and future pension liabilities.

Catastrophic Risks

Israel sits on two significant fault lines, the Dead Sea Fault and the Carmel Fault, and has a history of destructive earthquakes. The last deadly quake struck in 1927, damaging Jericho, Jerusalem, Ramle, Tiberias, and many villages, with hundreds of deaths and injuries.[35] The fault has been dormant in the recent past and its potential threat is unknown, but the government is not financially prepared for a catastrophic quake and remains exposed to this[36] and other risks from weather, fires, war, and economic downturns that could endanger the country's national security.

The Lab recommended the New Zealand Natural Disaster Fund as a model of an emergency fund. This fund is governed by a Crown entity,[37] the Earthquake Commission (a crown entity is controlled by the government but operates as a private corporation). The fund provides primary natural disaster insurance to New Zealand homeowners and currently holds around NZD$5.6 billion and is backed up by reinsurance from overseas groups and a government guarantee. The fund was instrumental in enabling a speedy recovery process from the 2011 Christchurch earthquake.[38]

Future Pension Obligations

The Israeli government still has a $120 billion budgetary pension obligation,[39] even though its percentage to GDP is lower than that of other OECD countries. Israeli could follow Norway and New Zealand to designate a sovereign investment fund for future-generation savings.

Norway's Government Pension Fund–Global is completely funded by the Norwegian petroleum sector through royalties, company taxes, and excess profit tax. Investment returns are transferred back to the government's fiscal budget to fulfill pension liabilities. The rules for transfers are covered by a fiscal principle that implies that the real return on the fund's capital, about 4 percent, should be reflected in the budget deficit.

New Zealand created another sovereign wealth fund to meet future social security shortfalls. Like many countries, its population is aging, with the number of retirees expected to double by 2050. The New Zealand Superannuation Fund invests on a prudent commercial basis and maximizes its return without undue risks. The fund is financed by capital contributions from the government and governed by a separate Crown entity, the Guardians of New Zealand Superannuation. All decisions relating to the business of the Guardians are made under the authority of the Board of the Guardians of New Zealand Superannuation. The Crown plans to allocate around $2 billion a year to the fund over the next 20 years.

Lab participants also noted that sovereign savings can improve a country's credit rating since international markets interpret foreign exchange accumulation as a sign of good governance and sustainable fiscal positions. The existence of a sovereign wealth fund suggests that there are government guarantees on domestic financial-sector deposits, and the financial system as a whole becomes more credible as the fund's assets grow. Israel could use a fund to enhance its foreign debt ratings to AA. This higher sovereign risk rating would reduce sovereign, corporate, and public-private project borrowing while simultaneously strengthening the country's emerging role as a bilateral creditor in expanding international trade.

STEP 2: FORMULATE A GOVERNANCE FRAMEWORK

Despite their many differences, sovereign investment funds share one common feature: they are directly owned by sovereign governments. Yet this simple fact of life also leads to major concerns[40] about a fund's relationships to politics, which can be partisan and volatile. Among those concerns:

- A government may mismanage its international investments to its own economic and financial detriment.[41]
- A government may manage its fund's investments to pursue political objectives. Evidence is found that sovereign investment funds tend to make lower P/E ratio investments at home due to political or social considerations.[42]
- The fund may face political pressure to pursue protectionist moves. Russia, for example, used its sovereign wealth fund to bail out its banks and the private sector—in effect, subsidizing them so they could meet foreign debt obligations.
- The fund's operations may lack transparency.

Due to the vulnerability of these funds to government corruption or mismanagement, Lab participants strongly advised the government to have the Knesset vote on the fund's objective(s). They discussed the issue of transparency, which is crucial to a fund's success but which also makes the government a target of the public's fears about short-term volatility.

The Lab concluded that four elements[43] are indispensable to a sound governance structure. With these in place, a sovereign fund can operate independently yet remain transparent and accountable, and subject to a system of checks and balances.

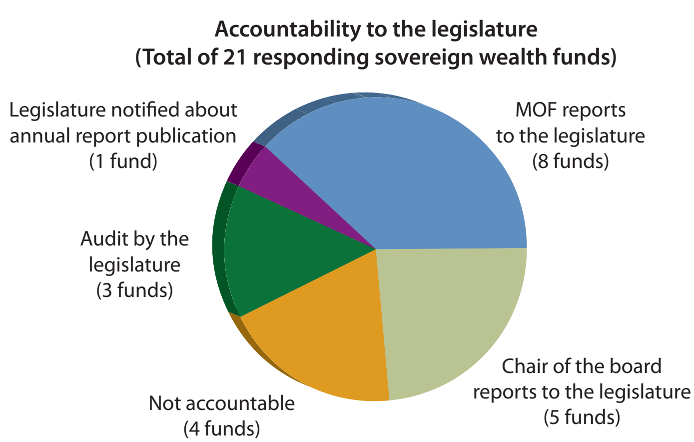
- » The government's role must be clear.
- » The governing body must be well defined.
- » There must be explicit benchmarks and performance criteria.
- » Investment decisions must be made exclusively by professional fund managers, independent of political pressure.

It is interesting to look at a survey of practices and accountability, conducted in 2008 by the IMF as it set about to compile the Santiago Principles (see page 11). Twenty-one of 25 funds responded to the survey. Half defined themselves as separate legal entities, while the rest were pools of assets managed by government institutions.[44] Of the firms that did not define themselves as separate legal entities, eight said they reported, via the Ministry of Finance, to the legislature on the fund's activities (see figure 4). Their boards answer to the Ministry of Finance for the funds' statutory objectives and investment mandates.

In those cases where the sovereign investment fund is managed by a legal entity but remains separate from either the Ministry of Finance or the central bank, the legislature can exercise some scrutiny over the fund. For instance, the fund must submit audited financial statements and sometimes even annual business plans to the legislature for approval. In one case, a designated parliamentary committee approves the business plan and the annual report, and communicates to the public the fund's activities and performance.

FIGURE 4

Accountability of sovereign wealth funds to the legislature in the IMF survey



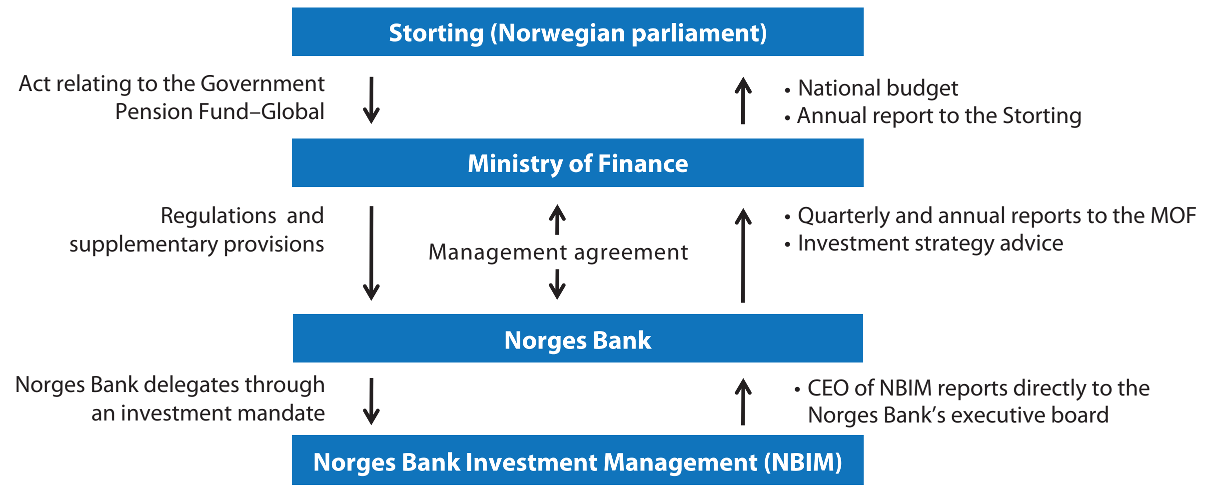
Sources: Milken Institute, IMF.

Where the sovereign investment fund operates as a corporation under general company law, the Ministry of Finance acts as a shareholder to ensure that the board is competent to oversee the fund's activities, but the government typically does not involve itself in the business and investment decisions. This type of fund usually publishes an annual report and maintains a public website.

The recent improvement of transparency among more sovereign wealth funds has been credited to Ted Truman's scoreboard,[45] an effort to review more than 50 sovereign wealth funds worldwide based on structure, governance, transparency, accountability, and behavior (see appendix I).[46] The China Investment Corporation filed a voluntary report with the U.S. Securities and Exchange Commission in 2010 regarding details of its $9.63 billion in U.S. investments, which were mainly concentrated on commodity and exchange-traded funds. The Abu Dhabi Investment Authority, the Government of Singapore Investment Corporation, and Tamasek have published annual reports detailing investment priorities and asset allocations since the scoreboard was first released in 2007.

Norway's Government Pension Fund–Global ranks as the most transparent sovereign wealth fund and also one of the world's largest, with $572 billion in total assets.[47] Its sound legal structure deserves closer examination when considering the governance structure of an Israeli fund. It is managed by a group inside the central bank, Norges Bank Investment Management (NBIM); the Ministry of Finance decides its investment strategy and reports to the Parliament. The Norges Bank executive board sets principles for risk management based on the requirements and expectations of the Norwegian Parliament and the Ministry of Finance.

FIGURE 5 *Legal framework of the Norwegian Government Pension Fund–Global*

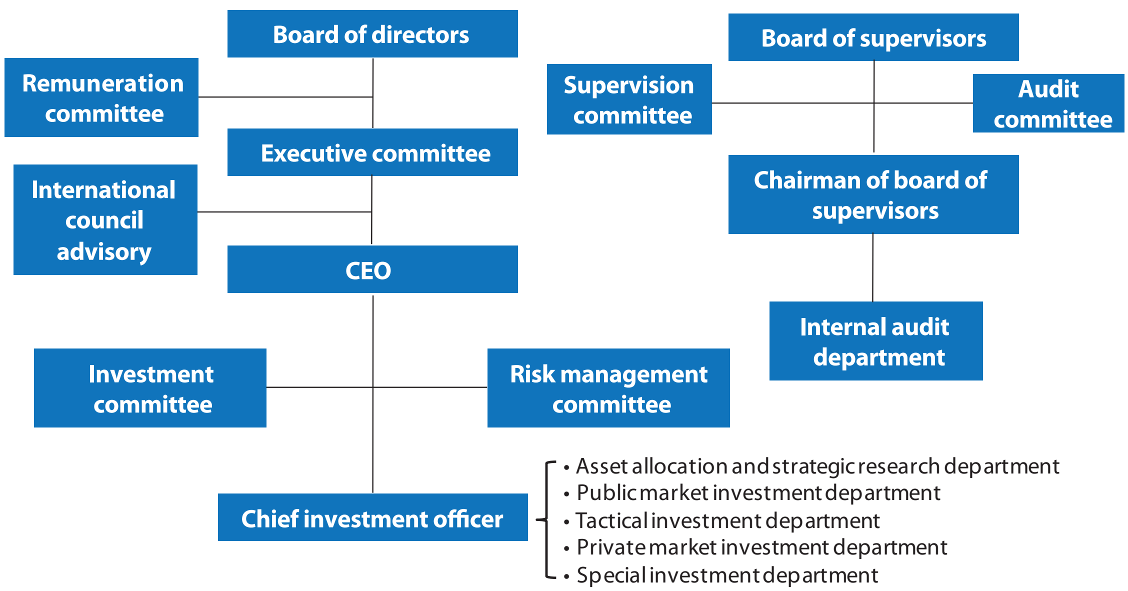


Sources: Milken Institute, Norway's Government Pension Fund–Global annual report 2010.

Similar to the Norwegian model, Chile's Economic and Social Stabilization Fund is managed by a financial committee assembled by the Minister of Finance. The committee is responsible for making daily investment decisions, such as asset allocation and returns benchmarks, and reports to the finance minister, who in turn reports to the president. The fund does not report directly to the Legislature but receives its revenues from the overall budget, which is discussed and decided by the Legislature.

The China Investment Corporation (CIC) is a semi-independent, quasi-government investment firm that invests a portion of the nation's foreign exchange reserves (about $323 billion in assets)[48] and seeks long-term investments that maximize returns while maintaining a rigorous approach to managing risk. The CIC reports directly to China's highest executive and administrative body, the State Council, and also to the premier, who is leader of the State Council. Based on objectives and policy set by the State Council, the CIC board of directors determines the firm's investment activities.[49] Besides the board of directors, CIC has a board of supervisors, which oversees the firm's accounting and financial activities. The supervisors also monitor the conduct of the board directors and senior executives.

FIGURE 6 *Organizational structure of the China Investment Corporation*



Sources: Milken Institute, China Investment Corporation.

The Alaska Permanent Fund is a state-owned sovereign investment fund functioning as a public trust. It is overseen by a six-member board of trustees appointed by the governor. One seat is assigned to the state commissioner of revenue, and the governor selects an additional cabinet member for board membership. Four public members fill the remaining seats under staggered, four-year terms. Besides appointing an executive director, the board decides the investment strategy, reviews the fund's asset allocation, and sets the benchmark return rate on an annual basis. The Alaska Permanent Fund diversifies assets, as well as management styles, by using both internal staff and external money managers in managing the fund's $40 billion assets.[50]

Currently, more than 70 percent of the assets of the Abu Dhabi Investment Authority are managed by external managers.[51] However, the percentage of transactions under management of external financial professionals is considerably lower in the Middle East group of sovereign wealth funds.

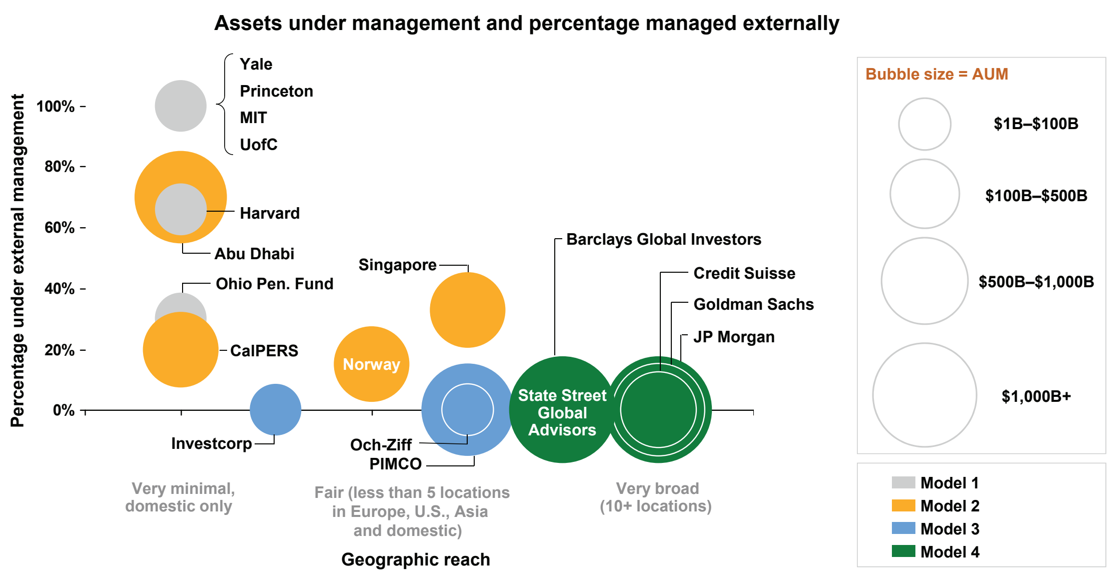
TABLE 4 *Investment transactions and management profile of sovereign wealth funds*

Regional base of sovereign wealth fund	Number of funds	Number of transactions	Managed by external managers	Managed by politicians
Asia group	7	2,045	43%	57%
Middle East group	15	533	13%	13%
Western group	7	84	43%	14%

Source: Shai Bernstein, Josh Lerner, and Antoinette Schoar, "The Investment Strategies of Sovereign Wealth Funds," unpublished draft (2010).
Note: The table includes 2,662 investments made by 29 sovereign wealth funds between 1984 and 2007.

The next figure illustrates the relationship between the geographic reach of investment funds and the portion of their assets managed by external professionals. Smaller investment funds with limited geographic footprints are more likely to work with external managers and outsource a greater proportion of assets under management.[52]

FIGURE 7 *Geographic reach and externally managed assets for various investment funds*



Source: Stax Inc.

Lab participants recommended that any Israeli fund should outsource its asset management for higher returns, even though such a service is expensive. About 10 percent of Norway's Government Pension Fund's assets are outsourced to external managers, especially in its equity portfolio. For years, the excess return from external managers has made "a stable, positive contribution" to the fund's overall excess return, as noted in the 2010 annual report. Through 2010, the total contribution from external equity management to the fund's overall excess return was NOK 22.4 billion, while fees to these managers over the same period came to NOK 6.9 billion.[53]

Lab participants also agreed that Israel should establish an independent trust, a separate entity with a regulatory oversight of policies and safeguards for custodial management of its sovereign fund, with a three-layered governance structure that would include the board of trustees, an investment committee, and a management team. The board chairman should be the Israeli president; other members could include the prime minister, Knesset members, the finance minister, a Supreme Court justice, and the governor of the Bank of Israel. The fund's board of trustees, which sets investment policy, would appoint an investment committee.

FIGURE 8 *Suggested governance structure for the Israel sovereign investment fund*

Board of trustees
- Israel's president
- Representative of the prime minister
- Knesset members
- Finance minister
- Governor of the Bank of Israel
- Supreme court judge

The board of trustees appoints the investment committee

Investment committee
- Finance Ministry
- Bank of Israel
- National Economic Council
- Social security
- A nonpolitical representative from the public with experience running a fund

The investment committee sets up the investment policy (e.g., asset allocation and risk tolerance)

Management team
- External asset managers

Source: Milken Institute Financial Innovations Lab.

STEP 3: DESIGNATE THE FUND'S REVENUE SOURCE

Sovereign investment funds typically rely on three sources of funding: commodity revenues, budget surpluses, and/or foreign exchange reserves. As noted earlier, most are funded by natural resource (commodity) revenues, which are usually viewed as "real" wealth because they typically have no corresponding liability on the government's balance sheet. For example, Norway's Government Pension Fund–Global is 100 percent funded by the nation's oil revenues, as is the Timor-Leste Petroleum Fund.[54] The remaining funds receive capital from non-commodity income, such as a country's budget surplus. The Australia Future Fund is supported by the state budget. Chile's Economic and Social Stabilization Fund was created with an initial deposit of US$6 billion in 2006, and any budget surplus above 1 percent of the previous year's GDP is transferred to the fund each year.[55]

Countries like China and South Korea have used their excess foreign exchange reserves as a source of capital. The Korea Investment Corporation (KIC) is a government-owned company, operated commercially under the KIC Act, which ensures its independence. KIC has been given an initial endowment of US$20 billion, of which $17 billion came from the Bank of Korea under a fund-management agreement, and $3 billion came from the Ministry of Strategy and Finance's Exchange Stabilization Fund.[56] A few capital transfers were announced in the following years.

For commodity-based sovereign wealth funds, the government may claim a portion of the total commodity revenues for transfer into the fiscal budget. The Norwegian government receives about 75 cents to 77 cents on the dollar, and the estimation for the United Kingdom is around 45 cents to 50 cents on the dollar.[57]

TABLE 5

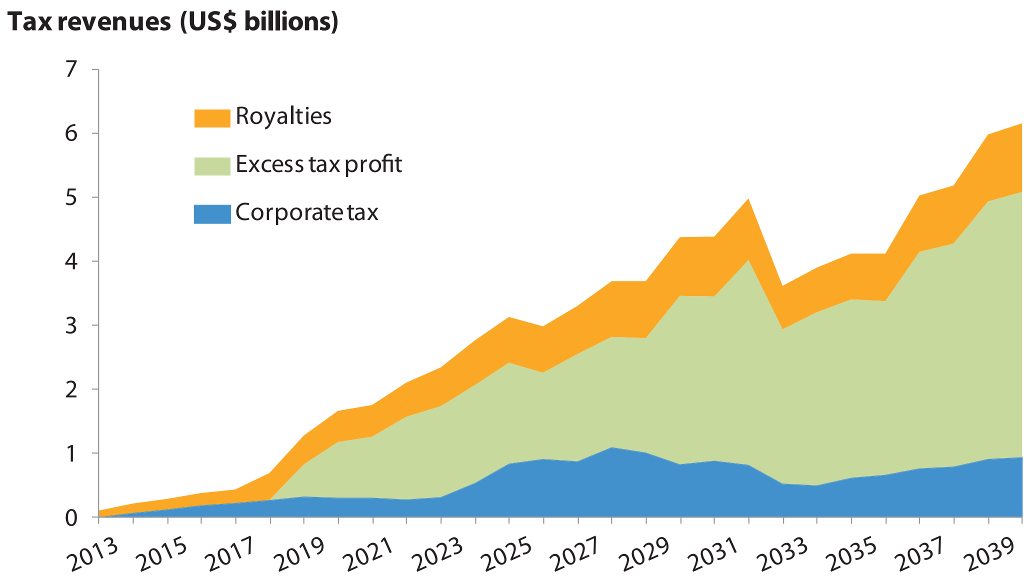
Rate of government take in OECD countries with significant energy production

Country	Percent of government take
Norway	75–77
Netherlands	62–66
Denmark	62–64
Canada	60–63
Australia	56–58
United Kingdom	45–50
United States	47–50

Source: Israel Ministry of Finance.

Earlier this year, the Committee to Examine the Fiscal Policy on Oil and Gas Resources in Israel released its final conclusions (known as the Sheshinski Recommendations[58]) in which the rate of royalties would remain unchanged, at 12.5 percent. However, the initial rate of tax levy on private oil and gas companies will be 20 percent once the cumulative net revenues reach the given threshold, then rise gradually to 50 percent, according to the amount of excess profits. In addition, the percentage of government take will increase to between 52 percent and 62 percent.[59] The following figure presents estimations on the tax revenues generated from the Tamar and Leviathan gas fields, which would be at least $2 billion each year by the end of this decade.[60] For tax revenues generated from the two fields, excess profit taxes will contribute to the largest share, along with royalties and general corporate taxes.

FIGURE 9 *Distribution of tax revenues from Tamar and Leviathan gas fields*



Sources: Milken Institute, Israel's National Economic Council.
Note: This estimation is based on the assumption that the Israeli economy would grow annually at 3.5 percent. Also, the exchange rate is fixed at 3.5 shekel per U.S. dollar, and GDP prices are indexed at gas price $4.5/million British thermal units.

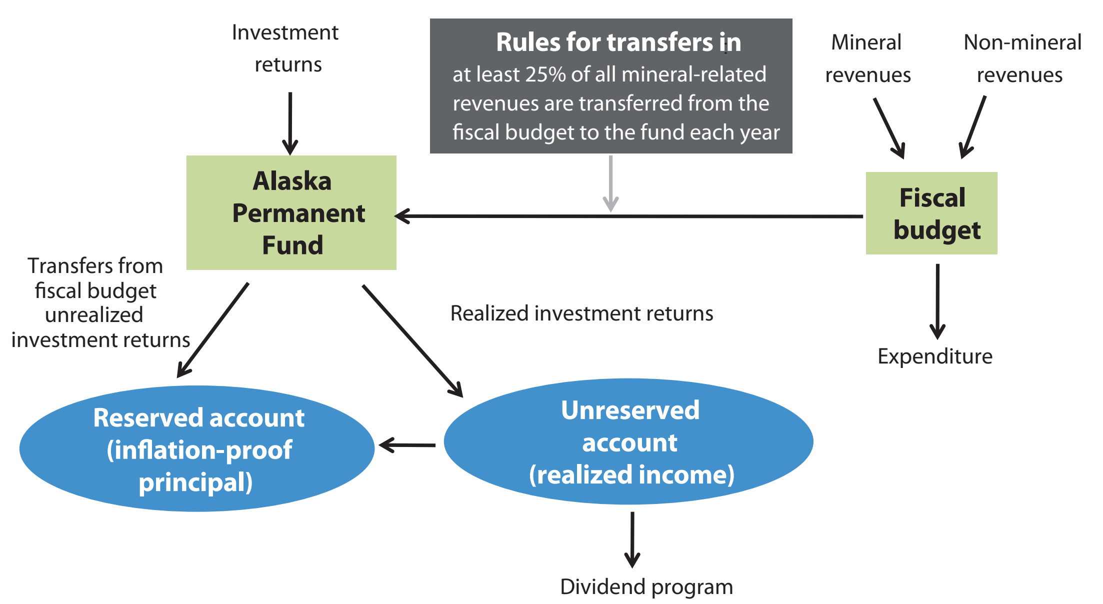
STEP 4: DEFINE THE WITHDRAWAL AND SPENDING RULES

The rules for transfer-out profits (withdrawals) from a sovereign investment fund depend on the fund's objective. The best-performing sovereign fund structures try to reconcile fiscal constraints with budgetary flexibility. For instance, returns of Chile's Economic and Social Stabilization Fund finance the country's budget deficit and pay down public debt, all in line with the purpose of the fund. In February 2009, the Chilean government announced that its $4 billion stimulus package would be mostly funded by selling off some assets of the sovereign investment fund. The fund was also heavily involved in financing reconstruction after the February 2010 earthquake. In fact, the expected long-term returns on the two Chilean sovereign investment funds are considered "structural income" and are included in fiscal spending.[61]

On the other hand, the Alaska Permanent Fund, which was established about 10 years after Atlantic Richfield (ARCO) first pumped oil from its exploratory well at Prudhoe Bay in 1968, is designed to build saving for future generations. The oil field's estimated total capacity topped 25 billion barrels, and the lease sale bonuses generated $900 million to the state treasury. In 1970, Alaska's state budget was only $173 million, and the state's population totaled 295,000. The state government therefore decided to use the fund for intergenerational wealth transfer and equity. Every year, at least 25 percent of all mineral lease rentals, royalties, royalty sale proceeds, federal mining revenue sharing payments, and bonuses received are placed in the fund.[62]

In order to transform the nonrenewable natural resources into renewable stable fiscal streams, the Alaska Permanent Fund is made up of two parts, as shown in the following figure. The reserved account, which is the principal, is invested permanently and cannot be spent without amending the state constitution. The unreserved account (realized income) can be used with approval of the Alaska Legislature and the governor. Part of the unreserved account is applied each year to pay dividends to the eligible state residents.

FIGURE 10 *Funding-in and transfer-out rules of Alaska Permanent Fund*



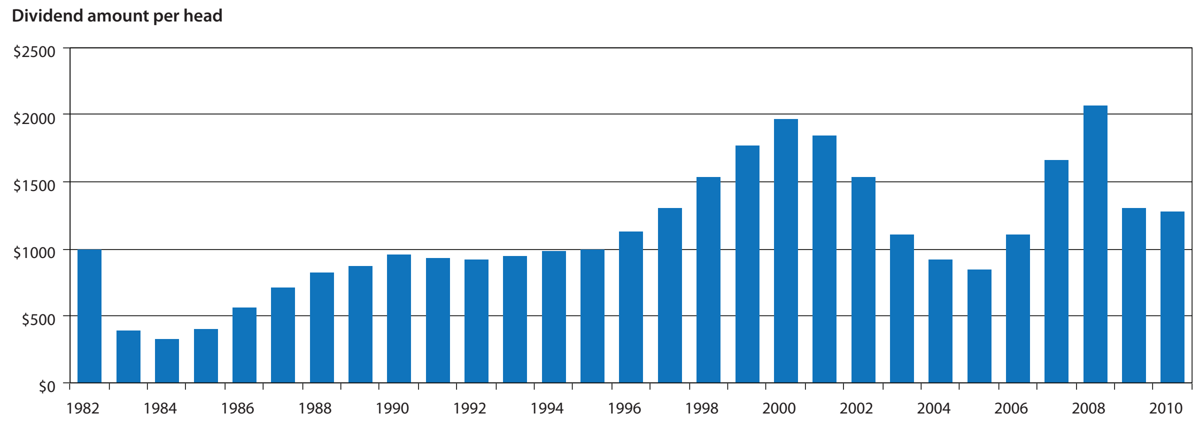
Sources: Milken Institute, Mercer.

In August 2010, the Alaska Permanent Fund Dividend Division sent out 611,522 checks in the amount of $1,281 to Alaskans (including infants and seniors) who had spent the majority of year in-state. The dividends are calculated using a formula set in state law and based on an average of the fund's income over five years. This produces a more stable flow of dividend amounts from year to year. The formula[63] is as follows:

1. Add fund statutory net income from the current plus the previous four fiscal years
2. Multiply by 21 percent
3. Divide by 2
4. Subtract prior year obligations, expenses and Permanent Fund Dividend program operations
5. Divide by the number of eligible applicants

Alaskans must apply each year to receive a dividend. From 1982 through 2010, the dividend program has paid out about $18.4 billion to Alaskans; the dividend amount peaked in 2008 for $2,069 per person.[64] As noted on its web site, the dividend program has "created a broad and powerful constituency for the Fund" and has shown significant income effects on the state's economy. However, the dividend program in a sovereign country (as opposed to a state) would most likely increase the probability of currency appreciation, inflation, and other Dutch disease symptoms.

FIGURE 11 *Alaska Permanent Fund annual dividend amount, 1982– 2010*



Sources: Milken Institute, Alaska Permanent Fund.

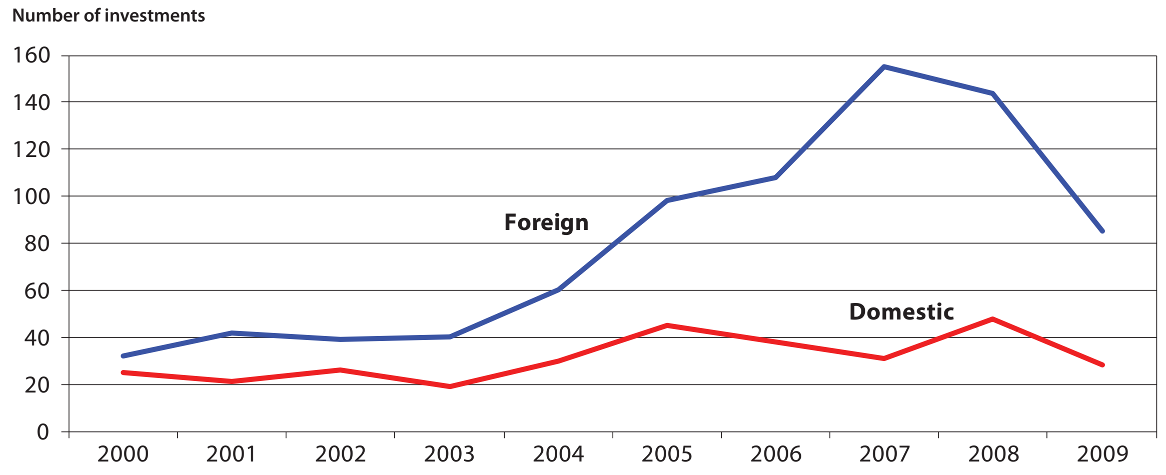
Lab participants agreed that the Israeli government might designate excess profits from natural gas revenues for human capital investment, such as for education and training, once a designated benchmark was reached. In the case of a savings fund focused on investing in the country's future, the importance of combining investments that ensure future economic security, human capital, and protection against catastrophic risks requires careful deliberation of the competing requirements of fiscal constraint and budgetary flexibility.

STEP 5: DESIGN THE INVESTMENT STRATEGY

Determinants of Investment Policy

Clearly, a fund's goal determines its investment strategy. When the China Investment Corporation was established in 2007, the government announced that "the mission of the company will be purely investment-driven," and that it would therefore adopt "a long-term and prudent investment principle." In line with the goal of maximized returns, the CIC also needs a higher rate of return to pay down the interest on the nation's trillion dollars in bonds issued by the People's Bank of China. The interest costs on the outstanding bonds were reported as US$40 million per day in 2007, meaning that the CIC had to earn at least 7.3 percent on its total capital of $200 billion at that time.[65] However, in most cases, profitability is not the only goal of a sovereign investment fund. The New Zealand Superannuation Fund, for example, operates under a mandate to maximize its profits "without undue risk and avoiding prejudice to New Zealand's international reputation."

FIGURE 12 *Number of SWF fund investments by target location, 2000–2009*



Sources: Milken Institute, Monitor Group.
Note: Data are based on the 33 sovereign wealth funds in the Monitor Group's report.

Zvi Bodie, a professor of finance and economics at Boston University, introduced the concept of a sovereign balance sheet[66] to the Lab and said that integrated sovereign "asset liability management" (ALM) would require coordination among various sovereign entities. Sovereign governments need to consolidate both the asset side (e.g., the central bank and sovereign investment funds) and the liability side (debt management and the country's ministry of finance) on their balance sheets. By examining all contingent claims, including the state budget plus public entities and implicit guarantees to the private sector, the government would be able to better allocate and utilize sovereign wealth and investment income to solve asset-liability management problems between its sources of income and expenditure.

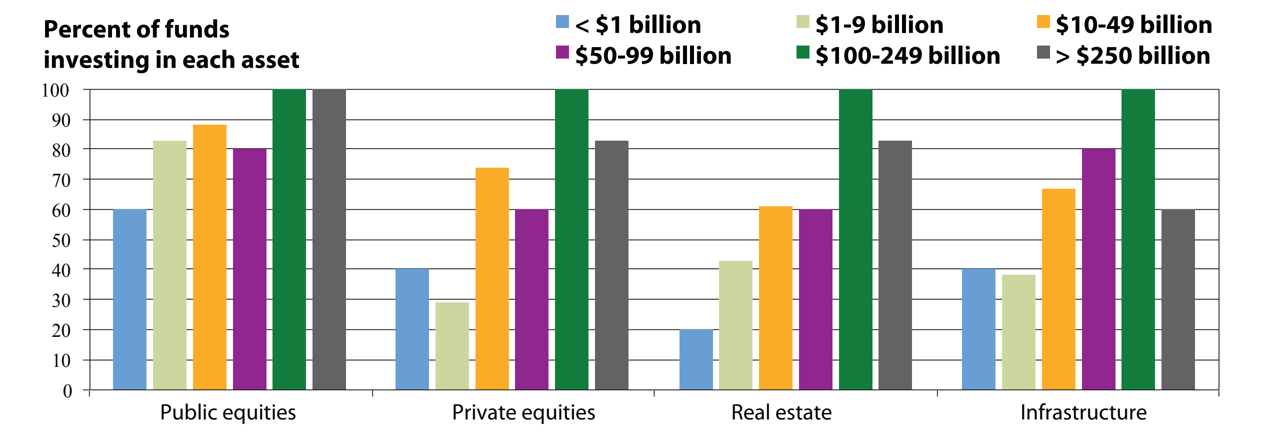
The Qatar Investment Authority (QIA) has functioned as a development vehicle even as it invests overseas. The $85 billion sovereign investment fund[67] has a reputation for taking large, high-profile stakes in European companies, such as Barclays, Volkswagen, and Credit Suisse. Meanwhile, QIA also seeks opportunities to finance domestic companies and projects. A joint venture, Qatar Railways Investment Company, was formed between QIA and the German national railway operator Deutsche Bahn AG (DB) in 2009 to build a four-line metro system in Qatar and two high-speed rails. Having one high-speed line connecting Doha to Bahrain and the other line linking the emirate to Saudi Arabia, Qatar will be capable to join the bid for the 2020 Olympic Games.

Nevertheless, most sovereign investment funds invest in global financial markets to avoid the inflationary side effect of Dutch disease. During 2009, three-fourths of their investments were placed abroad.

Time Horizon and Asset Allocation

Lab participants also pointed out that a fund's investment horizon can affect its asset allocation and risk management. Except for stabilization funds, most sovereign wealth funds favor long-term horizons, which are associated with the ability to take more risks. Another advantage of long-term investment is the ability to invest in alternative assets (infrastructure, real estate, and private equity) to enjoy the premium that takes time to realize. The following figure shows that more than 60 percent of funds larger than $10 billion invest in private equities, real estate, and infrastructure. On the other hand, funds with total assets less than $10 billion prefer investing in public equities.

FIGURE 13 *Proportion of SWFs investing in each asset class by size of fund*



Sources: Milken Institute, Preqin.

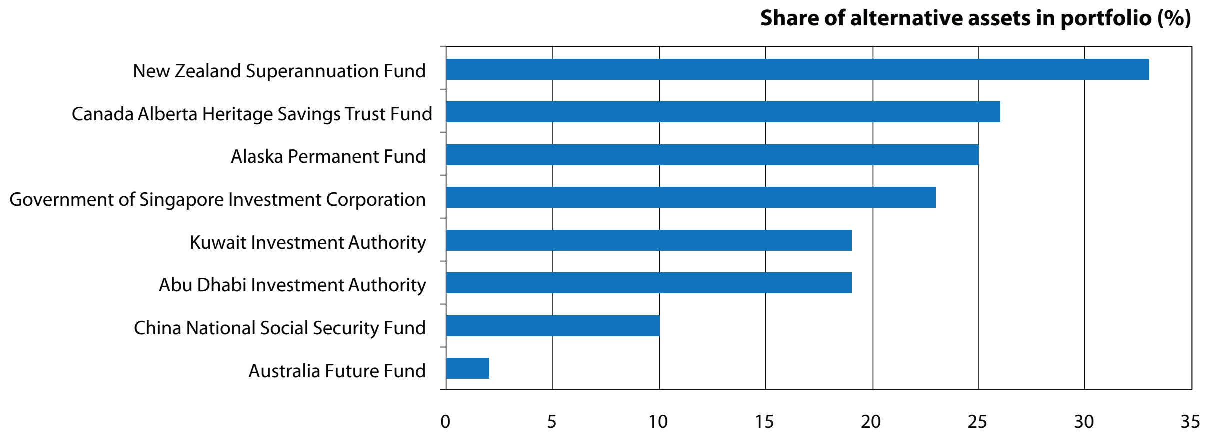
For the past few years, many sovereign investment funds have shifted investment patterns toward riskier portfolios, seeking higher returns. The Kuwait Investment Authority (KIA) is one such fund. Each year, the Kuwaiti government is required by law to transfer 10 percent of oil revenues into KIA, which has been managing two investment funds with combined assets of about $296 billion. With a mandate to enable "Kuwait's future generations to face the uncertainties with greater confidence," KIA has increased its allocations to untraditional asset classes, such as infrastructure and real estate, and rapidly growing emerging markets since 2005. An Israeli fund could invest strategically in emerging-market development, especially through mechanisms that might promote new technology exports (e.g., in water, agritechnology, global health, and energy alternatives) that would promote mutual trade and growth between Israel and the developing world.

Although the fund does not make its asset allocation public, it is believed that KIA invests more than 50 percent of its assets in public equities, one-third in debt instruments, and the rest in alternative assets.[68] The fund is well diversified by geography and investment type, including the 2008 purchase of the GM building in New York for $3.95 billion in partnership with Qatar Investment Authority and Goldman Sachs. Last year, KIA acquired a 4.8 percent stake in the French nuclear energy group Areva, signaling its interest in the energy sector.

Shares of alternative assets of a few sovereign investment funds are presented in figure 14 to show that most funds included investments in infrastructure, real estate, or private equity in their portfolios as of 2008. The Canada Alberta Heritage Savings Trust Fund, for example, designated more than one-fourth of its portfolio to alternative assets as of 2008. In January 2011, the Canadian sovereign investment fund announced that its exposure to infrastructure would double from 4 percent to 8 percent on a global level.[69] The average share of alternative assets in sovereign investment funds' portfolios is expected to reach 17.5 percent in 2012.[70]

FIGURE 14

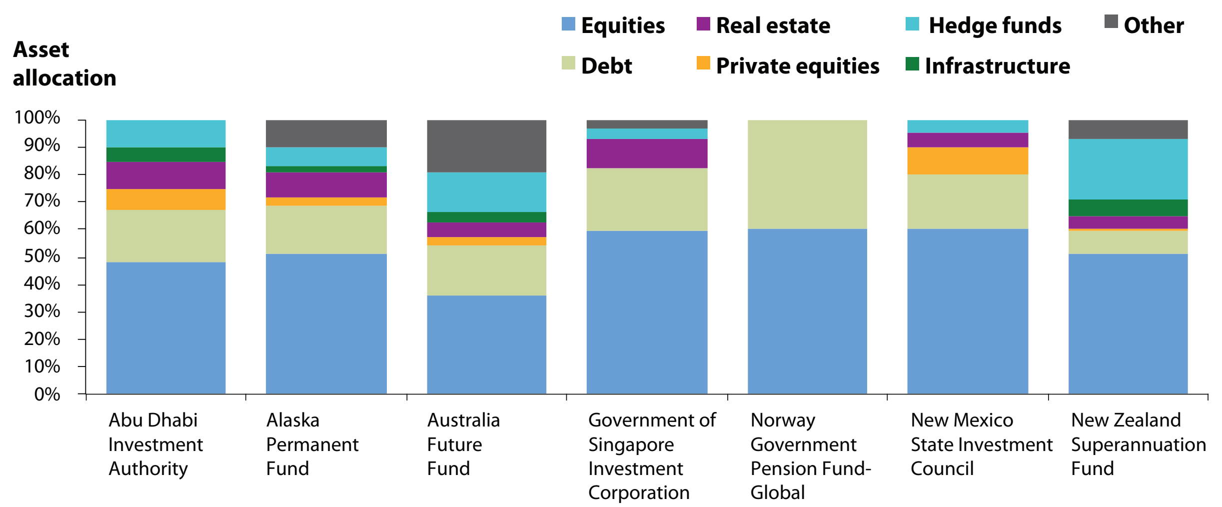
Share of alternative assets in portfolio of select SWFs



Sources: Milken Institute; Eliot Kalter, "Sovereign Wealth Funds Public Policy and Asset Allocation After the Financial Crisis," presentation slides (October 2010). Data as of 2008.

Despite the shifting pattern toward riskier investments, most sovereign investment funds assign a considerable degree of their portfolio to traditional equities and debt instruments, such as government bonds (see figure 15). As a savings fund, Norway's Government Pension Fund–Global only invests in equity and debt, while the Alaska Permanent Fund diversifies its portfolio with some level of alternatives. In order to achieve the long-term real return targeted at 5 percent, the Alaska Permanent Fund has a target asset allocation of 36 percent to equities, 23 percent to debt, 12 percent to real estate, 6 percent to hedge funds, 6 percent to private equities, and 3 percent to infrastructure.[71]

FIGURE 15 *Asset allocation of select SWFs*



Sources: Milken Institute, Preqin.

Sweden's AP Funds have similar conservative investment policies written into their mandates; at least 30 percent of assets must be invested in low-risk, fixed-income securities. According to the 2010 annual report of the Second AP Fund, for example, no more than 40 percent of AP2's assets should be exposed to currency risk, and investments in private equities can only total 5 percent of the whole. Such investments must be made indirectly via private equity firms or mutual funds. Even more restrictive, none of the AP Funds may invest in commodities.

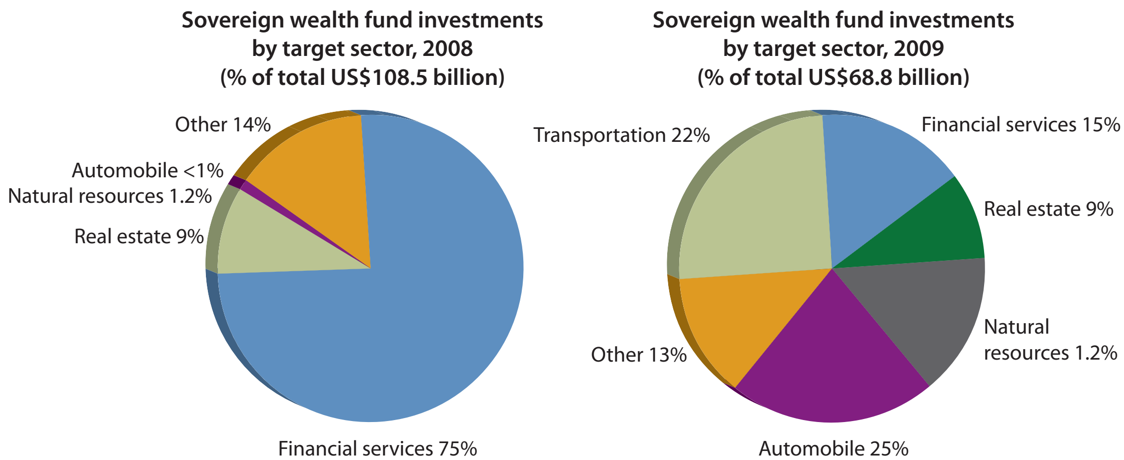
The strategic asset allocation for both Chilean sovereign investment funds (focusing on macroeconomic stabilization) is 66.5 percent in sovereign bonds, 30 percent in money market instruments, and 3.5 percent in inflation-indexed sovereign bonds. The currency composition of the funds is broken down as follows: 50 percent U.S. dollars, 40 percent euros, and 10 percent Japanese yen.[72]

Figure 16 shows that in 2008, sovereign investment funds heavily invested in financial services; a year later, more sectors (e.g., automobile, transportation, natural resources and real estate) were included into their portfolio.

During the Lab's working group discussions, participants raised the point that it is more important to hire financial managers who excel at asset allocation than those who are good at investing specific asset classes, such as fixed-income.

FIGURE 16

SWF investments by target sectors, 2008 and 2009



Sources: Milken Institute, Monitor Group.

Risk Management

How much risk a fund can afford depends on its goals and investment horizon. As a savings fund, Chile's Pension Reserve Fund seeks to address an expected government pension liability shortfall; thus it takes a longer-term view, has a higher risk profile, and can invest in a broader range of asset classes. Chile's Economic and Social Stabilization Fund, on the other hand, has stabilization objectives. It builds up excess copper revenues when the price of copper is high in order to channel revenues into the budget when copper price sinks, thereby smoothing out government expenditures. As a stabilization fund, it has a lower risk profile since it must take a short-term view due to liquidity concerns. The fund primarily invests in currencies, foreign government agency bonds, and financial institution bonds.

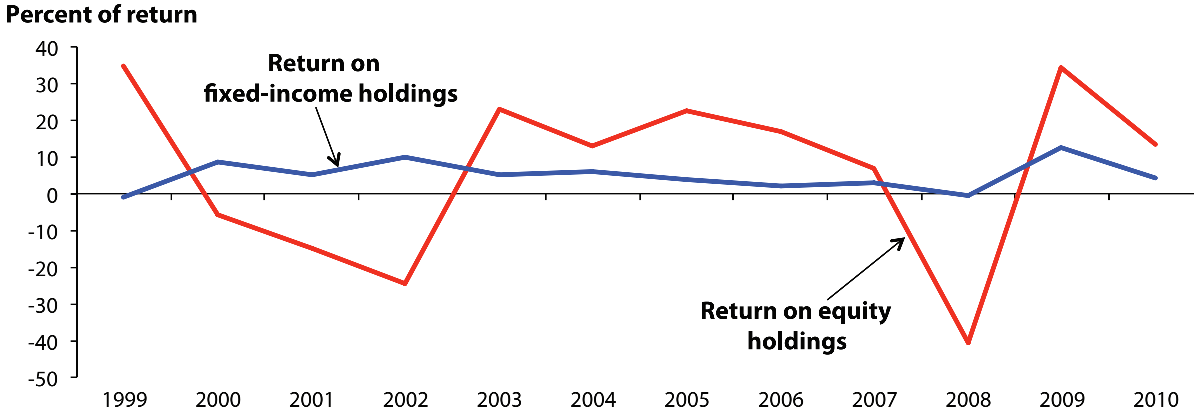
A sound fund will take a close look at the country's liabilities (e.g., pension, and local and foreign currency debt), which are the real benchmarks of risk.

Real Return Benchmark

Sovereign wealth funds as a whole have lost over $66 billion on their listed stock investments, due to the most recent financial crisis.[73] In spite of a substantial decline of return, from 7.5 percent in 2008 to less than 2.5 percent in 2009, Chile's two sovereign investment funds have performed relatively well for the past few years, with the average rates of return higher than 6.7 percent.[74]

FIGURE 17

Rate of return for Norway Government Pension Fund—Global, 1999–2010



Sources: Milken Institute, Norges Bank.

Returns on equity holdings of Norway's Government Pension Fund—Global have fluctuated for the past decade, while returns on government and corporate bonds are more stable. As a long-term investor, Norway's sovereign investment fund is targeting a 4 percent rate of return with investments in equities and debt instruments only. According to its annual report, investments in the United States accounted for 30 percent of the fund's equity holdings at the end of 2010, followed by the United Kingdom with 14.3 percent, France with 7 percent, Germany with 5.9 percent, and Switzerland and Japan with 5.6 percent each. The fund also invested in some of the largest emerging economies, such as Brazil, China, Russia, and India, with less than 2 percent each for 2010.[75]

The Lab advised the government to set up the benchmark return based on the country's liabilities. Israel's public debt equals 79.4 percent of the national output. Since the responsible fiscal policy enacted in 2003 only allows expenditure increases when the debt-to-GDP ratio goes down, the government expects to reach the target debt-to-GDP ratio at 60 percent by 2020.[76] However, participants also pointed out that Israel may face a flat-debt management situation since its debt-to-GDP ratio is lower mainly due to the high GDP growth rate, instead of actual debt reduction. On the other hand, the focus of the fund as a long-term generational savings fund obviates the need for the fund's focus on sovereign debt management.

OTHER RECOMMENDATIONS FROM THE LAB

Key additional recommendations linked the development of an asset allocation framework with performance and risk measurement tools. Transparency, measurement, and monitoring were considered crucial to a fund's success.

- ***Start early and start small.***
  All participants agreed that the Israeli government should establish the fund sooner rather than later. In this way, the economy can be well prepared before the windfall revenues arrive. Moreover, an early learning curve can allow Israel to better position the fund. The initial size of the fund can be as small as $500 million and expanded later, if necessary, to $10 billion. It is important to recognize that fund design and development are long-term processes.[77] Some participants felt that the high level of current foreign exchange reserves might be sufficient to justify creation of a fund independent of gas receipts, based on knowledge-industry exports. It could later be augmented by gas receipts.

- ***Public support is essential to the success of the sovereign investment fund.***
  Many countries have made efforts to earn public support for their sovereign wealth funds. The Israeli government should come up with plans to link fund performance to strategic financial stability, and social and economic goals that the people will support.

- ***Educate the public to save for the future.***
  As part of gaining public support, the government should educate the public about how other nations have benefited from the sound management of their sovereign wealth funds, and why saving for emergency and catastrophic risks is necessary and important. The government could introduce financial literacy programs to bridge gaps in public awareness.

- ***Upgrade Israel's sovereign rating to AA.***
  The government should integrate financial investment policy with the overarching objective of raising of Israel's sovereign debt rating. A specific goal would be to achieve a AA rating (from Fitch, Moody's, and S&P). The positive impact of an upgrade on the costs of capital for accelerated economic expansion could be considerable. As a result, Israel might seek membership in the Paris Club and leverage its sovereign fund and economic development initiatives in a constructive role for debt restructuring, debt relief, and debt cancellation with indebted countries and their other creditors. Israel could thus leverage its natural resource base and economic development investment policies to play a more significant role in multilateral development finance and financial management. The result would be the recognition of Israel's catalytic and supportive role in promoting global development finance.

- ***Set sovereign investment and strategic investment policies.***
  Additional areas of inquiry would involve examining alternative uses of natural gas for domestic use, feedstock for fuel substitutes, and platform chemical industry development. These approaches could link to objectives for domestic industrial policy and regional economic development. Such value-added strategies were encouraged as potential ways to build global collaborations for further economic growth.

- ***Seize the opportunity to invest in human capital.***
  Considerable discussion emerged about the methods and potential formulas for allocating fund returns (as opposed to a fund corpus, in which revenues are returned to the fund itself for its own maintenance) above specific benchmarks for meeting Israel's social and human capital needs in education, health, and other areas. Given the high rates of return on human capital investment both to individual income and macroeconomic growth, allocating fund returns to education and health seems to present a significant opportunity for Israel's first permanent sovereign investment fund to increase the country's competitiveness and its social and economic welfare.

Conclusion

The Tamar and Leviathan natural gas fields, which represent less than half of the gas reserves awaiting discovery and extraction from within Israel's territorial waters, will inject a surge of revenues into the Israeli economy. Without any action, the discoveries, wonderful though they are, could actually harm the nation's economy through currency appreciation and inflation. As a precaution, the government has announced that it will follow the path taken by Norway, Singapore, and Chile, and consider creating a sovereign investment fund to manage the anticipated windfall and, in the words of Eugene Kandel, head of the National Economic Council, determine how best "to insulate Israel from the adverse effects of the blessing that we found the gas." Investing those foreign profits domestically poses risks that a sovereign fund can avoid while still offering substantial returns for future needs. This "emergency fund" would be in the country's best interest as a means of securing its future since Israel remains vulnerable to serious earthquakes, other natural disasters, geopolitical turmoil, and international economic crises. Moreover, these exogenous factors also create risk and uncertainty related to pension, health, and other social costs in the future.

Through the examination of existing funds, the Lab was able to offer specific and practical recommendations to create a fund as a long-term vehicle for investment in social and human capital (e.g., education), infrastructure, security, and for value-added industrial and economic development at home and abroad.

APPENDIX I

Sovereign Wealth Fund Scoreboard

Pension funds (P) and reserve pension funds (PR) are in italics						
Country	**Sovereign wealth fund**	**Structure**	**Governance**	**Accountability and transparency**	**Behavior**	**Total**
Norway	Government Pension Fund–Global	100	100	100	75	97
United States	*California Public Employees' Retirement System (P)*	88	100	96	100	95
New Zealand	*Superannuation Fund (PR)*	88	100	100	75	94
Canada	*Canada Pension Plan (P)*	88	100	96	75	92
United States	Alaska Permanent Fund	94	86	100	75	92
	Wyoming Permanent Mineral Trust Fund	94	93	86	100	91
Canada	*Caisse de depot et placement du Quebec (P)*	88	100	89	75	89
France	*Fonds de reserve pour les retraites (P)*	88	100	89	75	89
Ireland	*National Pensions Reserve Fund (PR)*	88	100	86	63	86
Netherlands	*Stichting Pensioenfonds ABP (P)*	88	86	86	75	85
Timor-Leste	Petroleum Fund	100	43	100	75	85
Japan	*Government Pension Investment Fund (P)*	88	93	80	75	84
Canada	*Ontario Teachers' Pension Plan (P)*	88	86	89	50	83
Trinidad and Tobago	Heritage and Stabilization Fund	100	64	93	50	83
Australia	*Future Fund (PR)*	88	86	75	75	80
United States	New Mexico Severance Tax Permanent Fund	94	50	89	75	80
Thailand	*Government Pension Fund (P)*	88	86	88	13	78
Azerbaijan	State Oil Fund	94	57	89	25	76
Canada	Alberta Heritage Savings Trust Fund	94	57	79	50	74
Singapore	Tamasek Holdings	88	79	68	50	73
Chile	Economic and Social Stabilization Fund	94	57	86	0	71
China	*National Social Security Fund (P)*	81	43	82	50	70
Hong Kong	Exchange Fund	88	43	79	50	70
Chile	*Pension Reserve Fund (PR)*	81	57	86	0	68
United States	Alabama Trust Fund	94	57	64	50	68
Kazakhstan	National Fund	94	57	64	25	65
Singapore	Government of Singapore Investment Corporation	81	71	61	38	65
Kuwait	Kuwait Investment Authority	88	86	48	25	63
Korea	Korea Investment Corporation	75	71	45	63	60

Country	Sovereign wealth fund	Structure	Governance	Accountability and transparency	Behavior	Total
Pension funds (P) and reserve pension funds (PR) are in italics						
United Arab Emirates	Mubadala Development Company	63	57	68	25	59
China	China Investment Corporation	75	50	59	25	57
Botswana	Pula Fund	69	57	57	25	56
United Arab Emirates	Dubai International Capital	75	86	36	25	55
Russia	Reserve Fund and National Wealth Fund	81	29	50	25	50
Sao Tome and Principe	National Oil Account	100	57	29	0	48
Malaysia	Khazanah Nasional	56	50	46	0	44
Mexico	Oil Income Stabilization Fund	81	14	43	25	44
Kiribati	Revenue Equalization Reserve Fund	81	57	7	0	35
Vietnam	State Capital Investment Corporation	81	57	7	0	35
Bahrain	Mumtalakat Holding Company	38	14	43	0	30
Algeria	Revenue Regulation Fund	69	29	14	0	29
Iran	Oil Stabilization Fund	63	29	18	0	29
Nigeria	Excess Crude Account	63	36	14	0	29
Venezuela	Macroeconomic Stabilization Fund	69	14	18	0	27
Venezuela	National Development Fund	50	14	27	0	27
United Arab Emirates	International Petroleum Investment Company	44	29	21	0	26
Oman	State General Reserve Fund	63	0	18	0	23
Brunei Darussalam	Brunei Investment Agency	44	0	25	0	21
United Arab Emirates	Investment Corporation of Dubai	44	7	21	0	21
Sudan	Oil Reserve Stabilization Account	50	0	14	0	18
Qatar	Qatar Investment Authority	47	14	2	0	15
United Arab Emirates	Istithmar World	31	21	7	0	15
United Arab Emirates	Abu Dhabi Investment Authority	25	14	4	0	11

Source: Edwin M. Truman, "Sovereign Wealth Funds: Threat or Salvation?," Peterson Institute for International Economics, 2010.
Note: Figures are percent of maximum possible points for the sovereign investment fund under each category.

APPENDIX II

Financial Innovations Lab Participants

(Affiliations at time of Lab)

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Houlihan Lokey

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58. The Sheshinski committee is headed by Prof. Eytan Sheshinski. Its members includes National Economic Council head Eugene Kandel, National Infrastructures Ministry Director-General Shaul Tzemach, National Infrastructures Ministry Petroleum Commissioner Dr. Yaakov Mimran, Tax Authority Director Yehuda Nasradishi, and Finance Ministry Budget Director Dr. Udi Nissan.

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