



Petroleum Revenue Funds – Part 1

Some petroleum revenue funds have been upheld as models for successful nonrenewable resource management. But international experience with petroleum revenue funds has been mixed. Where they have failed, oil funds have arguably contributed to the adverse effects of oil and gas revenues. This note, first in a series of four, discusses arguments for and against funds and what they are intended to achieve.

The Extractive Industries Transparency Initiative (EITI) aims to ensure that petroleum income is properly accounted for [1–3]. But if the payments received are poorly spent, or worse, misused, the country would still not benefit fully from its petroleum resources. To address potential problems associated with petroleum income, a number of hydrocarbon-dependent governments have set up petroleum revenue funds. These funds can range from separate independent institutions to little more than a line item in the budget. Many new petroleum funds have been established during this decade. All of these funds are designed to save petroleum revenues, often with accumulation and withdrawal rules that vary with the fund objective, so that not all income is spent in the year received.

International experience with petroleum revenue funds has been mixed. Whether and to what extent these funds can help mitigate various potentially harmful aspects of petroleum revenue (see [4]) has been hotly debated. This note provides background information on what problems petroleum revenue funds are intended to address, fund objectives, arguments for and against establishing a fund, and a brief overview of funds from around the world.

Potential Problems to be Addressed

Petroleum revenues have several unique characteristics: they are unpredictable, volatile, and in due course decline to zero as petroleum reserves are depleted. Price volatility is an important source of revenue volatility, but even if oil prices were stable, petroleum revenues would still be volatile. These revenues may start with a large inflow in the form of signature bonus, followed by a period of little revenue until production starts. The revenues then build up to a peak, possibly with dramatic acceleration once costs have

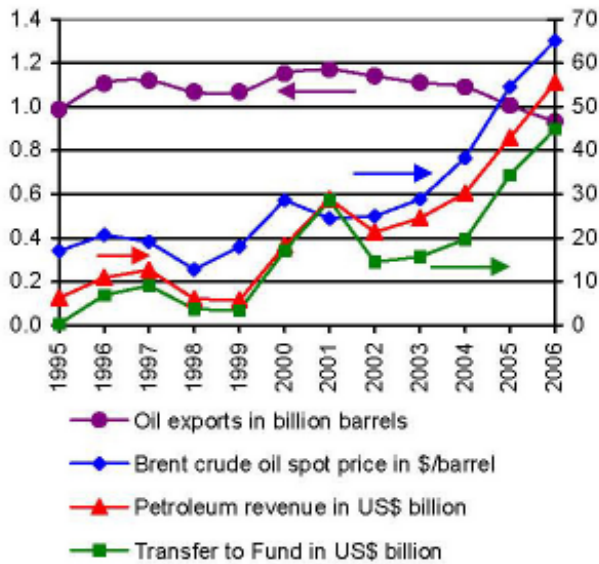
been fully recovered. This introduces a high degree of volatility into the revenue stream even before production decline sets in. In countries with a high degree of dependence on petroleum revenues, spending all income in the year received could lead to wildly fluctuating government expenditures.

As an illustration, shown in Figure 1 in triangles is the annual petroleum revenue received by the government of Norway—the world’s fifth largest oil and third largest natural gas exporter—since 1995 when the country activated its petroleum revenue fund. Oil export volumes and oil prices are also shown for reference. The annual revenue varied from a low of less than US\$6 billion in 1999 to a high of more than US\$55 billion in 2006, this when there was no marked variation in the export volume of oil. Shown in squares is the annual net transfer to the petroleum revenue fund, subtracting the expenses incurred in fund management. The government has historically transferred as much as 99 percent of the petroleum revenue to the fund. The amount of petroleum revenue spent varied from less than US\$0.5 billion in 2001 to more than US\$10 billion in 2004 and 2006.

There are several reasons why a government might not want to spend all its petroleum revenue in the year received.

Capacity to spend the extra revenue well Suppose government launches a massive school building program during an oil boom. If there is a sudden surge in demand for building materials, construction workers, and teachers, domestic capacity to manufacture cement and other building materials may not be sufficient, adequate import infrastructure may not exist and takes time to develop, and there may not be enough construction workers and teachers. Under these circumstances, the wages and costs of construction materials may rise steeply, while school classrooms may be filled with pupils but with too few teachers.

Figure 1 Norwegian Fund Flow



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High costs of large adjustments to government expenditures. Staying with the school building program, many new teachers will have to be hired, who will take years to train. But even if skills and materials shortages could be overcome, if the world oil price were to suddenly collapse and the government petroleum revenue halved or worse, many school buildings might be left unfinished and teachers might not be paid. Half-finished projects are costly to the economy, while a massive firing of teachers to keep the government budget manageable would not only be damaging to education but politically very difficult. The government could borrow money to continue the projects, but running a large fiscal deficit could be costly and even unsustainable in the long run.

Preparing for the eventual depletion of petroleum reserves. Petroleum reserves are finite, and in time they will be depleted. A government budget that relies heavily on petroleum revenues will have an enormously difficult time adjusting to having no petroleum revenue. To continue to provide income after oil and gas production ceases, several governments have set up funds “for future generations” by saving revenue now with the objective of spending income later.

Impact on the exchange rate. Large fluctuations in foreign earnings that are spent on the domestic market could result in large currency fluctuations. A sudden increase in government expenditures from foreign exchange income might lead to significant strengthening of the local currency, making imports cheaper but exports more expensive and less competitive. This

would lead to a fall in exports with harmful effects beyond the sectors directly affected over time in a phenomenon known as Dutch disease.

Government Response

The key to tackling the foregoing problems is fiscal policy—that is, the government’s spending and taxation policy. To the extent that it makes sense, government spending should be smoothed out so that the government budget does not merely mirror the booms and busts in the world oil market. To limit appreciation of the local currency, one option is to save foreign earnings outside the country and bring in foreign income only gradually over time.

These policies can be pursued without setting up a separately managed petroleum revenue fund. And establishing a fund does not guarantee spending restraints and sound savings. There are many instances in which the existence of a fund did not stop the government from overspending during booms, only to be caught by a serious budget squeeze during price downturns. This could happen, for example, when the fund is outside the national budget. Accumulating money in the fund in times of high petroleum revenue is no solution to the problem caused by revenue volatility if the government borrows against the fund assets and increases spending.

Fund Objectives

Petroleum revenue funds have been set up with the following objectives.

1. Smooth government spending by saving when revenues are high and withdrawing from the fund when revenues fall.
2. Save for the time when petroleum resources are exhausted.
3. Save abroad to slow down currency appreciation.
4. Save for unforeseen events.
5. Save until such a time as when the country has adequate absorptive capacity (skills and other resources to spend the extra revenues productively).

These objectives are not mutually exclusive. For example, income can be saved abroad (objective 3) under any one of the four other objectives. Many funds have more than one objective.

In addition, large revenue flows tend to invite political interference and attempts to divert them for private gain or launch unproductive projects. Setting up a separate petroleum revenue fund with stringent rules governing it is seen by some governments as a means of controlling such tendencies.

Smoothing spending

Expenditure smoothing is one of the most common objectives of petroleum revenue funds. The purpose is to lower the costs of stop-go government spending that would otherwise result in the face of revenue volatility. The key to smoothing expenditure is *delinking* fiscal policy from petroleum revenue. Not letting government expenditures fluctuate with ups and downs of petroleum revenues would also help avoid large swings in exchange rates, provided that savings are not all invested in the domestic market.

Saving for future generations

For an economy dependent on hydrocarbons, the prospect of eventual exhaustion of oil and gas presents a challenge. Some governments—including Alberta, Alaska, Kuwait, Norway, Oman, São Tomé and Príncipe, and Timor-Leste—have chosen to put aside a portion of petroleum revenues to share with all citizens, both current and future who might not enjoy comparable petroleum income. One approach, adopted in Alaska, is to spend only realized fund investment earnings, adjusted for inflation. In this way, the fund's capital is fully preserved, and oil income can be enjoyed into perpetuity in principle.

Saving Abroad

Also referred to as “sterilizing,” saving oil income abroad can mitigate the adverse impact of a sudden increase in domestic spending on the economy. Kuwait's Future Generation Fund invests outside of Kuwait.

Unforeseen events

Following the aftermath of the invasion of Kuwait by Iraq in 1991, Kuwait used its fund resources for reconstruction. Recent examples include funds in Azerbaijan and Timor-Leste.

Absorptive capacity

Low-income countries may have many needs, including universal provision of primary health care, education, safe water, and other basic services. This might argue for an expenditure profile that is high at the beginning and gradually declines over time. That said, if the country cannot implement the spending program productively—if there are not enough teachers, nurses, doctors, engineers, and construction workers—it might still be better to phase in these projects gradually, even in the face of pressing needs.

Arguments For and Against Funds

Funds can help create greater transparency. When coupled with the EITI—whereby payments made by petroleum companies are compared and reconciled with payments received by government—a fund can help citizens track oil revenues from receipt to expenditure.

However, it is important to recognize the challenges facing efficient management of a fund.

- The issue is not even how much and on what the government is spending petroleum revenue (the fund addresses primarily the first), but rather the overall stance of the government's spending program. Not having a unified budget—not integrating the oil fund fully into the budget, allowing the fund to have its own spending program, or saving petroleum income in the fund but in parallel using fund assets as collateral to borrow money for higher spending—could even worsen, rather than improve, fiscal management.
- Fund administration is another challenge. A suitable mechanism to manage the fund needs to be established, including professional management of fund investments and reporting to the central bank or a board. In countries with limited skills, fund management might compete with other pressing needs requiring scarce specialized skills.
- Stringent withdrawal rules to prevent raiding may have costs, such as inability to withdraw from funds in times of genuine emergency. And a fund can always be “raided.” Venezuela's earlier Investment Fund changed savings rules after only two months of fund operation. More recently, Ecuador's Constitutional Assembly in April 2008 approved a new law that in essence abolishes existing oil funds, gives added authority to the government over the spending of an extra US\$1.5 billion of oil money, and directly boosts the revenue side of the budget [5]. A growing fund balance in the face of many unmet needs would provide an added political impetus to raid the fund.

Petroleum Revenue Funds from Around the World

Table 1 gives an overview of petroleum funds that exist today. The list is not intended to be exhaustive, but main funds are captured in the table. Not shown are general investment authorities that derive a significant portion of their income from petroleum revenue, such as the Abu Dhabi Investment Council, Brunei Invest-

Table 1 Petroleum Revenue Funds

Name	Country	Year established	Size
General Reserve Fund	Kuwait	1960	US\$213 billion Nov 2007 in KIA ¹
Alberta Heritage Savings Trust Fund	Canada	1976	C\$16.6 billion at end Dec 2007 (US\$16.6 billion)
Alaska Permanent Reserve Fund	United States	1976	US\$39.2 billion on 3 Jun 2008
Reserve Fund for Future Generations	Kuwait	1976	US\$213 billion Nov 2007 in KIA ¹
State General Reserve Fund	Oman	1980	Conflicting reports found
Government Pension Fund Global (formerly Petroleum Fund)	Norway	1990 ²	NOK 1,945.8 billion (US\$381 billion) on 31 Mar 2008
Oil Stabilization Fund	Iran, Islamic Republic of	1999	US\$12.9 billion
State Oil Fund	Azerbaijan	1999	2.78 billion Manta (US\$3.3 billion) on 1 Apr 2008
Revenue Regulation Fund	Algeria	2000	US\$47 billion
National Fund	Kazakhstan	2000	3.13 trillion tenge (US\$26 billion) on 1 Jun 2008
Oil Income Stabilization Fund	Mexico	2000	57.285 billion pesos (US\$5.3 billion) at end-2007
Heritage and Stabilization Fund	Trinidad and Tobago	2000	US\$2 billion as of Sep 2007
Fund for Macroeconomic Stabilization (FEM) ³	Venezuela, R. B. de	2003	US\$0.82 billion on 3 Jun 2008
National Oil Account	São Tomé and Príncipe	2004	Not available
Stabilization Fund ⁴	Russian Federation	2004	US\$157 billion as of 31 Jan 2008
Excess Crude Account	Nigeria	2004	US\$17.3 billion at end-2007
Reserve Fund for Oil	Angola	2004	Not available
Petroleum Fund	Timor-Leste	2005	US\$2.63 billion as of 31 Mar 2008
National Hydrocarbon Revenue Fund	Mauritania	2006	Not available

Sources: www.finance.gov.ab.ca/business/ahstf/index.html; www.apfc.org/; www.bcv.org.ve/fem/fms.htm; www.oilfund.az/; www.nationalfund.kz/index.php?uin=1180582829&lang=eng; www1.minfin.ru/en/; www.bancocentral.tl/PF/Reports.asp; www.swfinstitute.org/

¹The Kuwait Investment Authority (KIA) manages the two funds and the combined sum is \$213 billion.

²Activated in 1995. Established as the Petroleum Fund, it became the Pension Fund - Global in 2006.

³The fund's precursor was the Investment Fund for Macroeconomic Stabilization (FIEM), for which a presidential decree was gazetted in 1999.

⁴In February 2008, the Stabilization Fund of the Russian Federation was split into two funds.

ment Agency, Libyan Arab Foreign Investment Company, Qatar Investment Authority, and Saudi Arabian Monetary Agency.

Long-standing oil and gas producers that established funds only recently include Algeria, Mexico, and Trinidad and Tobago in 2000; and Angola, Nigeria, and the Russian Federation in 2004. The Stabilization Fund of the Russian Federation—the world's second largest oil exporter, sometimes surpassing Saudi Arabia—accumulated more than US\$150 billion in four years.

Some funds do not have regular reporting. Despite being mandated by law, the formal balance sheet of the Iranian Oil Stabilization Fund has never been submitted to parliament by its board of trustees or published [6], and conflicting account balances have been cited by different government officials. Others—Alaska, Alberta, Azerbaijan, Norway, and Timor-Leste—publish fund accounts on the Internet.

The next briefing note will discuss what to consider in setting up a fund.

References

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