About the Brief
Norio Usui writes that the recent surge in global commodity prices has brought large windfall revenues to resource-rich economies in Asia. Booming economies have, however, faced challenges of macroeconomic stabilization and intergenerational income distribution, and sought a solution to setting up a separate fund outside the budget. This brief assesses the experiences of Azerbaijan and Kazakhstan in their oil revenue management, and concludes that if there is insufficient control of expenditure or deficits, setting up an oil fund by itself does not guarantee either a prudent stance on overall fiscal management or commitment to savings for future generations.

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Global commodity prices are soaring sky-high and bringing large revenue gains to resource-rich economies in Asia. Petroleum exporters such as Azerbaijan, Brunei Darussalam, Indonesia, Kazakhstan, Malaysia, Papua New Guinea, Timor-Leste, Turkmenistan, and Viet Nam have reaped windfall revenues from oil and gas exports. Lao People's Democratic Republic and Uzbekistan are gaining from gold exports. The resource windfall could be expected to facilitate economic development by augmenting foreign exchange, domestic savings, and fiscal revenues.

However, the resource boom has complicated macroeconomic management in these economies. A major concern in the short run is monetary control. With rigid exchange rate policies allowing limited nominal appreciation, soaring foreign exchange inflows make the monetary authorities' task of controlling inflation more challenging. The consequent inflation induces real appreciation, harming the competitiveness of non-oil sectors—a phenomenon known as "Dutch disease"—thus hampering diversification of the economy.

This policy brief focuses on fiscal management in two resource-rich Asian economies, namely Azerbaijan and Kazakhstan. Key features of their recent oil revenue management policies are outlined to derive policy lessons for other resource-rich economies.

Following a recovery in 1999, oil prices increased by more than 50% in 2000 and stabilized in 2001–2003 at the same level (Figure 1). Oil prices have accelerated since 2004, reaching $64 per barrel on average in 2006. Oil prices are further rising to new record heights, surpassing $90 per barrel in November 2007. In the context of the sharp increase in oil prices since the late 1990s, Azerbaijan and Kazakhstan set up oil funds, namely the State Oil Fund of Azerbaijan Republic (SOFAR) in 1999 and the National Fund of the Republic of Kazakhstan (NFRK) in 2001. The aims of these funds are: (i) save a part of oil revenues for future generations, and (ii) mitigate macroeconomic instability arising from the volatility of oil revenues. Authorities were concerned about misspending the oilrenevenue.
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wealth for unproductive, politically motivated purposes. Assets of these oil funds have been invested in foreign fixed-income and equity instruments. The main issue of interest is whether these funds have achieved their dual objectives under the current oil boom.

Oil Revenue Management in Azerbaijan and Kazakhstan

Azerbaijan's and Kazakhstan's growth has been impressive (Figure 2). Kazakhstan has achieved over 9% growth since 2001. Although the direct contribution of the oil sector has been limited in the last 2 years, high oil prices have contributed to over 11% growth of non-oil gross domestic product (GDP) by stimulating construction and service activities. Azerbaijan has seen accelerated growth since 2004 when the Azerbaijan International Operating Company more than doubled its oil production from new oil fields. This stemmed from increase in production capacity in offshore fields due to substantial foreign direct investments over the past decade. The GDP growth rate in 2006 rose to over 30%, the highest in the world, driven by over 60% growth of oil GDP.
Due to the recent oil price gains, the two countries’ exports have increased sharply. Azerbaijan’s exports increased to more than 60% of GDP in 2006, up from 36% in 2003, with oil exports ($12 billion in 2006) making up more than 90% of total exports (Figure 3). While Kazakhstan’s oil dependency is less pronounced, oil exports ($24.6 billion in 2006) still accounted for about 60% of total exports. Additional oil export receipts (measured as an increase in oil exports between 2003 and 2006) reached 49% (Azerbaijan) and 24% (Kazakhstan) of their respective GDP in 2006. Kazakhstan saved more than 60% of the increased oil export receipts in its oil fund, while Azerbaijan saved only 12% (Figure 4).
The two countries also differ in terms of fiscal adjustments to the oil boom. Azerbaijan’s budget revenues in 2006 soared 67% over the previous year, and half of the budget revenues came from the oil sector (Figure 3). In Kazakhstan, fiscal revenues increased by more than 30% in 2006, and the share of oil revenues stood at 37% of total revenues. With ample fiscal resources, Azerbaijan accelerated public spending. It loosened fiscal policy noticeably in 2006, and capital spending more than tripled compared with the previous year. Kazakhstan has consistently kept spending below revenue and ran budget surpluses. Its overall surplus rose to 7.5% of GDP in 2006. On average, Kazakhstan saved 75% of the increased oil revenues accruing to the budget (measured as the ratio of the increase in the fiscal balance to the increase in fiscal oil revenues between 2003 and 2006), while Azerbaijan utilized only 7% for improving fiscal balance (Figure 5).
To understand how the governments in the two countries managed the accumulated budget surpluses, financing items in their budgets are analyzed. In Azerbaijan, cumulative budget surpluses between 2003 and 2006 reached 2.1% of 2006 GDP. During the same period, assets in SOFAR increased by 5.7% of 2006 GDP, but, at the same time, the government borrowed money worth 4% of 2006 GDP from external sources (Figure 6). It is clearly inconsistent to build up funds in SOFAR and, on the other hand, borrow abroad. Given the relatively low return to investments from SOFAR (at around 3–4% in nominal dollar terms during the past few years), the government bore financial costs to fill the gap between the interest rate for external borrowing and investment returns to SOFAR. In contrast, Kazakhstan saved most of the cumulative budget surpluses in NFRK (15% of 2006 GDP), and paid back external debts not only to smooth out public expenditures but also to reduce future debt obligations (1.6% of 2006 GDP).
For oil-exporting countries, decomposing the overall budget balance into oil and non-oil balance is critical for understanding the fiscal stance, evaluating sustainability, and determining the macroeconomic impact of fiscal policy (Barnett and Ossowski 2002). The ratio of non-oil fiscal deficit (defined as non-oil revenues minus expenditures) to non-oil GDP is a good measure of the true fiscal stance, since overall balance can improve even when budget expenditures rise in an unsustainable manner. If this ratio is on an explosive growth path or it is at such a high level that oil revenues cannot cover expenditures, it may indicate unsustainable spending. Azerbaijan’s ambitious spending program is reflected in a widening non-oil fiscal balance in 2006. The non-oil deficits of more than 30% of non-oil GDP exceeds most widely accepted thresholds for limits for medium-term fiscal sustainability (Figure 7). In contrast, Kazakhstan’s non-oil fiscal deficits in 2006 dropped to 4.3% of non-oil GDP with substantial budget surpluses accumulated in the NFRK.

**Figure 6. Financing Items in the Budgets (2003–2006, cumulative amounts as of 2006 GDP)**

- **Azerbaijan**
  - Oil fund
  - Domestic financing (net)
  - Foreign financing (net)
  - Others

- **Kazakhstan**
  - Oil fund
  - Domestic financing (net)
  - Foreign financing (net)
  - Others

Note: 1. Since the numbers in this figure indicate financing sources of budget deficits, a negative number implies transfer to the financing source.
2. Azerbaijan’s domestic financing (net) contains other transactions including privatization proceeds.
Source: ADB staff estimates.
Azerbaijan and Kazakhstan have made significant progress toward transparent management of oil revenues. Improving transparency and accountability, both countries have already joined the Extractive Industries Transparency Initiative. However, further progress is necessary for better management of oil revenues, particularly on improving governance, enhancing transparency, integrating with the overall fiscal framework (budget), and sound asset management. A chief concern for both countries is the concentration of decision making powers with the presidents. Stand-alone presidential decrees have at times undermined the governance of the oil funds.

**Conclusions**

Economists have traditionally considered shortages of domestic savings, foreign exchange, and fiscal resources as binding growth constraints in developing countries. In this context, oil booms can help alleviate such shortages and facilitate economic growth. However, countries with oil resources have done far less well than oil importers (Gelb 1988, Sachs and Warner 1995, Sala-i-Martin and Subramanian 2003). This phenomenon has come to be called the “paradox of plenty”, and a sizeable literature emphasizes the negative effects of an export boom on medium-term growth performance. Many oil exporters believe that a solution lies in setting up a separate fund outside the budget. Such a fund will reduce the macroeconomic instability arising from the volatility of oil income and induce the government to save part of oil revenues for future generations. The recent surge in oil prices has lent further importance to such oil funds, but they cannot be a panacea.

In general, oil fund rules do not deal with spending or deficits of the government, although the overall objective of an oil fund is to stabilize public finance. Under an oil boom, its key goal is to smooth out public spending by setting aside a part of soaring oil revenues outside the budget. Since oil funds do not directly affect public spending and thus savings, the implicit mechanism where a fund would lead to higher savings during boom periods is via a liquidity constraint (Davis et al. 2001). In the absence of liquidity constraints, the government could borrow (from domestic and external sources) or withdraw accumulated assets to increase spending, even if a part of oil windfalls is accumulated in an oil fund. Thus, if there is insufficient control of expenditure or deficits, setting up an oil fund may not be effective.

The reason for this sharp contrast in fiscal management can be attributed partly to differences in the design of the oil funds (Table 1). On paper, Azerbaijan’s SOFAR assigns primacy to savings objectives, in the sense that the total amount of outflows cannot exceed inflows in any given year. Yet in practice, a portion of SOFAR funding has been allocated to the state budget to finance public investments. In addition, SOFAR expenditure policy permits the funding of investment projects not planned in the budget, bypassing the public investment program of the budget. SOFAR has financed programs assisting internally displaced people, water and irrigation projects, as well as investment in the Baku-Tbilisi-Ceyhan oil pipeline. These activities have limited the savings of SOFAR. In contrast, Kazakhstan’s oil fund emphasizes stabilization, but at the same time calls for automatic accumulation of oil revenues beyond a predetermined oil price. Although the NFRK is allowed to transfer funds to the budget, subject to the president’s approval, this rule has never been invoked in the current oil boom. In practice, therefore, NFRK has accumulated savings at a brisk rate.
<table>
<thead>
<tr>
<th>Country</th>
<th>Stated objectives</th>
<th>Inflow rules</th>
<th>Outflow rules</th>
<th>Management institutions</th>
<th>Investment abroad</th>
<th>Balance (end 2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azerbaijan State Oil Fund of Azerbaijan Republic (SOFAR) 1999</td>
<td>Greater weight on savings than stabilization.</td>
<td>The government's share in production sharing agreements with foreign oil companies for post-Soviet oil fields.</td>
<td>Withdrawals not to exceed inflows in a given year. Transfers allowed to the budget for public investments. Own investments allowed in projects for refugees, oil pipelines, and water/irrigation.</td>
<td>SOFAR and international asset management companies.</td>
<td>60% in liquidity assets (cash, money market instruments).</td>
<td>$1.9 billion (17.5% of GDP).</td>
</tr>
<tr>
<td>Kazakhstan National Fund of the Republic of Kazakhstan (NFRK) 2001</td>
<td>Somewhat more emphasis on stabilization than savings.</td>
<td>Saving: 10% of baseline budget oil revenues from the identified oil companies. Stabilization: oil revenue above the baseline price. Ad hoc privatization and bonus receipts.</td>
<td>Transfers to the state and local budgets allowed subject to the President’s approval.</td>
<td>The Central Bank and international asset management companies.</td>
<td>40% in sovereign debt securities.</td>
<td>Memo item: Gross official reserves: $2.5 billion.</td>
</tr>
</tbody>
</table>

Note: For Kazakhstan, since July 2007, oil revenues from all oil companies have been transferred to the NFRK.

Sources: Azerbaijan and Kazakhstan country reports (Economist Intelligence Unit, various years); Article IV Consultation – Staff Reports for Azerbaijan and Kazakhstan (IMF, various years); and Eriksen (2006).
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<tr>
<th>Country</th>
<th>Objectives</th>
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<th>Asset mix: high-grade income: 50-70%, equities: 30-50%.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>Stabilization and savings</td>
<td>All oil-related revenues.</td>
<td>Ministry of Finance is responsible for overall management, but the day-to-day operations are delegated to the Central Bank.</td>
<td></td>
</tr>
<tr>
<td>Norwegian Government</td>
<td></td>
<td>Transfers to the central government budget to finance the non-oil budget deficit, which is set equal to the expected long-term real return on the NGPF investments, currently assumed to be 4% of the fund’s assets.</td>
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</tr>
<tr>
<td>Petroleum Fund</td>
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<td></td>
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<tr>
<td>-Global (NGPF), formerly called Government Petroleum Fund</td>
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<td>1990</td>
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<td>Source: Azerbajian and Kazakhstan country reports (Economist Intelligence Unit, various years); Article IV Consultation – Staff Reports for Azerbajian and Kazakhstan (IMF, various years); and Eriksen (2006).</td>
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by itself does not guarantee either a prudent stance on overall fiscal management or commitment to future savings. The problem can further be complicated because an oil boom can make government borrowing easier through improved credit ratings.

The country experiences of Azerbaijan and Kazakhstan suggest that aggregate fiscal discipline is essential for the effective management of oil revenues. Only when an oil fund is well integrated within the budget and managed under an overall fiscal framework with a strong fiscal discipline can an oil fund attain its objectives. The Government Pension Fund – Global run by Norway is widely accepted as a good example of effective management of oil revenues. The distinctive feature of the Norway fund is that it is an integral part of the general budget process, because the only explicit use of the fund is to support non-oil budget deficits. Transfers into or out of the fund take place according to the non-oil budget deficit, which itself is determined through the budgetary process. The fund keeps the parliament fully informed of its activities. It also publishes complete audited statements while providing good returns (Bacon and Tordo 2006). With strong aggregate fiscal discipline, oil exporters can manage windfall revenues even without an oil fund, as Indonesia did in the 1970s (Usui 1997, Davis et al. 2001).

The governments of resource-rich Asian countries need to find a right balance between fulfilling social and infrastructure development needs (by spending oil revenues), maintaining macroeconomic stability (by sterilizing oil revenues), and saving part of oil wealth for future generations (by saving oil revenues). Policymakers need to pay close attention to the effects of higher public spending on the real exchange rate and macroeconomic stability, and should make the best strategic use of windfall gains for achieving long-term development goals. Transparent management of oil revenues is an indispensable requirement to make sure the money is well spent. Although the focus of this policy brief is on Azerbaijan and Kazakhstan, much of the analysis is relevant to other oil-exporting countries and also to nonrenewable resource-rich countries.
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Figure 5. Budget Oil Revenues and Overall Fiscal Balances (2003−2006 percent of 2006 GDP)

Source: ADB staff estimates.

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