

Sturm, Michael; Gurtner, François; Alegre, Juan Gonzalez

Research Report

Fiscal policy challenges in oil-exporting countries – a review of key issues

ECB Occasional Paper, No. 104

Provided in Cooperation with:

European Central Bank (ECB)

Suggested Citation: Sturm, Michael; Gurtner, François; Alegre, Juan Gonzalez (2009) : Fiscal policy challenges in oil-exporting countries – a review of key issues, ECB Occasional Paper, No. 104, European Central Bank (ECB), Frankfurt a. M.

This Version is available at:

<https://hdl.handle.net/10419/154557>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



EUROPEAN CENTRAL BANK

EUROSYSTEM

OCCASIONAL PAPER SERIES

NO 104 / JUNE 2009

CB EZB EKT EKP

2000

**FISCAL POLICY CHALLENGES
IN OIL-EXPORTING
COUNTRIES**

A REVIEW OF KEY ISSUES

by Michael Sturm, François Gurtner
and Juan Gonzalez Alegre



EUROPEAN CENTRAL BANK

EUROSYSTEM



In 2009 all ECB publications feature a motif taken from the €200 banknote.



OCCASIONAL PAPER SERIES

NO 104 / JUNE 2009

FISCAL POLICY CHALLENGES IN OIL-EXPORTING COUNTRIES A REVIEW OF KEY ISSUES

by Michael Sturm,¹ François Gurtner¹
and Juan Gonzalez Alegre²

This paper can be downloaded without charge from
<http://www.ecb.europa.eu> or from the Social Science Research Network
electronic library at http://ssrn.com/abstract_id=1325245.

This paper benefited from comments by Thierry Bracke, Ad van Riet and Frank Moss (ECB). Useful country information was provided by Roland Beck and André Geis (ECB) and Robert Burgess (IMF). The authors are grateful for research assistance by Livia Chitu and for comments provided by an anonymous referee.

The opinions expressed in this paper are those of the authors and do not necessarily reflect the views of the European Central Bank.

1 European Central Bank, Directorate General International and European Relations.

2 Universidad Pablo de Olavide, Seville, Economics Department.

© European Central Bank, 2009

Address

Kaiserstrasse 29
60311 Frankfurt am Main
Germany

Postal address

Postfach 16 03 19
60066 Frankfurt am Main
Germany

Telephone

+49 69 1344 0

Website

<http://www.ecb.europa.eu>

Fax

+49 69 1344 6000

All rights reserved. Any reproduction, publication or reprint in the form of a different publication, whether printed or produced electronically, in whole or in part, is permitted only with the explicit written authorisation of the ECB or the author(s).

The views expressed in this paper do not necessarily reflect those of the European Central Bank.

ISSN 1607-1484 (print)

ISSN 1725-6534 (online)

CONTENTS

ABSTRACT	4	LIST OF BOXES	
EXECUTIVE SUMMARY	5	Box 1	Why has growth performance been disappointing in resource-rich countries – a review of the literature 11
1 INTRODUCTION	7	Box 2	The impact of a shock to public investment in selected oil-exporting countries 19
2 ECONOMIC AND FISCAL PERFORMANCE IN SELECTED OIL-EXPORTING COUNTRIES	9	Box 3	Pro-cyclical fiscal policies in oil-exporting countries 24
2.1 Economic performance	9	Box 4	The reaction of public expenditure to changes in public revenue in oil-exporting countries 29
2.2 Fiscal performance	14	Box 5	Two examples of successful natural resource management: Norway and Botswana 47
3 KEY FISCAL POLICY CHALLENGES STEMMING FROM HYDROCARBON DEPENDENCE	17		
3.1 General challenges	17		
3.1.1 Long-term issues: intergenerational equity and fiscal sustainability	17		
3.1.2 Short-term issues: macroeconomic management and fiscal planning	23		
3.2 Policy challenges in the current decade	26		
3.2.1 Fiscal policy and the real economy	26		
3.2.2 Fiscal policy and inflation	32		
3.2.3 Competing fiscal policy objectives and considerations	36		
3.2.4 Options to mitigate conflicts between competing fiscal objectives	40		
4 INSTITUTIONAL RESPONSES	42		
4.1 Conservative oil price assumptions in the budget	42		
4.2 Oil stabilisation and savings funds	42		
4.3 Fiscal rules	44		
5 CONCLUSIONS	49		
BIBLIOGRAPHY	52		
EUROPEAN CENTRAL BANK OCCASIONAL PAPER SERIES SINCE 2008	59		

ABSTRACT

Fiscal policy choices have a particularly significant impact on economic performance in oil-exporting countries, owing to the importance of the oil sector in the economy and the fact that in most countries oil revenues accrue to the government. At the same time, fiscal policy in oil-centred economies is facing specific challenges, both in the long run, as regards intergenerational equity and fiscal sustainability, and in the short run, as regards macroeconomic stabilisation and fiscal planning. Institutional responses to the specific fiscal challenges in oil-exporting countries involve conservative oil price assumptions in the budget, the establishment of oil stabilisation and savings funds and fiscal rules. Fiscal policy in most oil-exporting countries has been expansionary over the past years in the wake of high oil prices. Fiscal expansion has added to inflationary pressure, and monetary policy has been constrained in tackling inflation as a result of prevailing exchange rate regimes. While, in this context, fiscal policy is the major tool for macroeconomic stabilisation, it has faced competing objectives and considerations. Cyclical considerations would have warranted fiscal restraint, but, in times of high oil prices, pressures to increase public spending have been mounting. Such pressures stem from primarily distribution-related considerations, development-related spending needs (e.g. in the areas of physical and social infrastructure) and international considerations in the context of, for example, global imbalances. The sharp fall in oil prices since mid-2008 has brought to the fore a different question – whether oil exporters can sustain spending levels reached in previous years.

Key words: fiscal policy, oil-exporting countries, inflation, global imbalances

JEL: E62, E63, H30, H60, Q32, Q38

EXECUTIVE SUMMARY

In the wake of high and rising oil prices from the beginning of this decade until mid-2008, economic developments and macroeconomic policy issues in oil-exporting countries have increasingly attracted attention. Because oil revenues are large and, in most countries, accrue to governments, fiscal policy choices in particular have a significant impact on economic performance with regard to, for example, economic growth, inflation and current account balances, and also have a bearing on advanced economies with regard to, for example, the recycling of oil revenues via the trade or the financial channel and in the context of global imbalances. Fiscal policy in oil-exporting countries is facing a number of specific challenges, stemming mainly from the fact that oil revenues, which constitute the bulk of government revenues in oil-centred economies, are exhaustible, volatile, uncertain and largely originate from external demand. These specific features of oil revenues pose challenges in the long term with regard to intergenerational equity and fiscal sustainability and in the short term with regard to macroeconomic stabilisation and fiscal planning.

Over the past few years, macroeconomic developments in oil-exporting countries have been broadly favourable, owing to high and rising oil prices until mid-2008, and have been characterised by buoyant economic growth and large current account and fiscal surpluses. This contrasts with relatively weak performance in the past, which is often attributed to the “resource curse”. While in past decades oil exporters had relatively low inflation when compared with emerging market and developing economies in general, rising inflationary pressure has emerged as a mounting challenge in most countries in recent years. Monetary policy has been constrained in tackling this challenge as a result of the prevailing exchange rate regimes – mostly fixed pegs or tightly managed floats. This has left fiscal policy to carry the main burden of macroeconomic stabilisation.

However, fiscal policy in oil-exporting countries over the past years has been expansionary, although this has been masked by high fiscal surpluses, highlighting the competing considerations and objectives which fiscal policy has been facing. These are to some extent the result of the specific long and short-term challenges of fiscal policy in resource-rich countries. The major competing considerations in the short run have been, on one hand, cyclical, i.e. containing inflation, which calls for fiscal restraint, and, on the other hand, primarily distribution-related considerations (pressures to immediately redistribute oil revenues to the general population), development-related spending needs in, for example, the areas of physical and social infrastructure (in view of the development level of most oil exporters) and international considerations (oil revenue recycling, in particular in the context of global imbalances), which call for fiscal expansion. In the longer run, fiscal restraint and the accumulation of financial assets, i.e. saving the bulk of recent windfall revenues, would be warranted from an intergenerational and fiscal sustainability point of view, while the drive for economic diversification in many countries requires public investment in, for example, infrastructure and education. Whether under what circumstances financial assets and physical assets can be regarded as substitutes is a key issue in this context. Calibrating fiscal policy in view of these considerations and objectives has been a major challenge for oil-exporting countries over the past few years.

Possible ways to mitigate conflicts between competing objectives and considerations at a time of rising oil prices include improving the structure of public spending (i.e. focusing in particular on capital spending, which alleviates bottlenecks in the economy, while containing current expenditure) and optimising the phasing of public spending (i.e. prioritising capital spending targeted at bottlenecks and at enhancing the absorptive capacity of the economy). Rebalancing the macroeconomic policy mix by tightening monetary policy in

times of buoyant economic growth could also help avoid the overburdening of fiscal policy with competing objectives. This would require, however, a modification of prevailing exchange rate regimes by allowing for more exchange rate flexibility. Apart from technical impediments in some countries to running a different monetary and exchange rate regime, concerns about high volatility and “Dutch disease” tends to hold back authorities from opting for more exchange rate flexibility, in particular as oil is priced in US dollars in international markets.

Global economic and financial developments in the second half of 2008 and the concomitant fall in oil prices have mitigated inflationary pressures in oil-exporting countries, as elsewhere, and thus conflicts between the competing fiscal objectives. In the short run, the sudden, sharp fall in oil prices has brought up a set of new issues, in particular as to whether to continue with spending programmes initiated over the past years or to adjust spending to dampened revenue prospects. To the extent that spending has been identified as useful, e.g. for diversifying the economy or upgrading infrastructure, continuing with spending programmes would help both to stabilise the domestic economy and to contribute to global stabilisation efforts. Most oil exporters are in a position to do so, given that over the past years they have brought down public debt to low levels and have accumulated – sometimes large – foreign assets. These can be used to bridge a period of temporarily low oil prices and to avoid pro-cyclicality of fiscal policy, a key challenge for fiscal policy in oil-exporting countries in view of large, unpredictable swings in oil prices.

If oil prices were to remain at relatively low levels compared to the past few years for a protracted period of time, however, oil-exporting countries would have to adjust fiscal policy. Such adjustment could take place on the expenditure and the revenue side. On the expenditure side, current outlays and expenditure on marginal investment projects could be reduced without impeding longer term growth prospects or diversification efforts. On

the revenue side, the introduction or expansion of taxes could be envisaged to ensure fiscal sustainability. Broadening the revenue basis by developing an efficient tax system would also be beneficial over the medium term, reducing the dependence of public budgets on oil receipts and enhancing the control of authorities over public revenues, which so far are largely beyond their control.

Institutional responses to the specific challenges for fiscal policy in oil-exporting countries traditionally involve basing budgets on conservative oil price assumptions and, more recently, the establishment of oil stabilisation and savings funds and, in few cases, explicit fiscal rules. While each of these responses has its merits and its drawbacks, none is a panacea to address the specific long and short-run challenges. They can be helpful devices, but the desired effects only seem to be realised if the quality of a country’s institutions and level of governance in general are conducive to responsible fiscal conduct.

I INTRODUCTION

In the wake of high and rising oil prices from the beginning of this decade until mid-2008, economic developments and macroeconomic policy issues in oil-exporting countries have increasingly attracted attention.¹ In particular, as oil revenues are large and in most countries accrue to governments, fiscal policy choices have a significant impact on economic performance, for example with regard to economic growth, inflation and current account balances, and also have a bearing on advanced economies, for example with regard to the recycling of oil revenues via the trade or the financial channel and in the context of global imbalances. Fiscal policy in oil-exporting countries faces a number of specific challenges, which mainly stem from the fact that oil revenues, which constitute the bulk of government revenues in oil-centred economies, are exhaustible, volatile, uncertain and largely originate from external demand.² These specific features of oil revenues pose challenges in the long term with regard to intergenerational equity and fiscal sustainability and in the short term with regard to macroeconomic stabilisation and fiscal planning. The sharp fluctuations in oil prices in the course of 2008 have highlighted these challenges.

With inflation rising in past years in most oil-exporting countries and the scope for curbing inflationary pressure through monetary policy being constrained in view of the prevailing fixed exchange rate pegs or tightly managed floats, fiscal policy has been the main macroeconomic tool available to control inflation. At the same time, governments were facing various pressures to increase spending, given buoyant revenue growth and high fiscal surpluses, highlighting the short-term challenges. Governments have been confronted with the choice of saving the windfall revenues resulting from high oil prices or increasing expenditure, e.g. on physical and social infrastructure. In the short run this choice has cyclical implications for the domestic economy and international implications with regard to the pattern of oil revenue recycling. It also directly relates to the long-term fiscal challenge, as

the implications for intergenerational resource allocation and fiscal sustainability depend on the expected returns from accumulated financial assets versus returns from public capital expenditure. The sharp fall in oil prices since mid-2008 in the wake of the intensification of the global financial turmoil and its fallout on the global economy has brought to the fore the issue of how to react to sudden and large swings in oil prices, i.e. whether to “see past” this fall as a temporary deviation from a longer term upward trend in oil prices, or to change fiscal policy and adjust expenditure to lower levels.

This paper examines the fiscal policy challenges for oil-centred economies over the past few years in general, focusing on developments in four major oil-exporting countries in EU neighbouring regions: Algeria, Nigeria, Russia and Saudi Arabia. These four countries are among the world’s top ten net oil exporters, with Saudi Arabia and Russia being the top two. They represent a variety of experiences in different regions (Algeria/North Africa, Nigeria/Sub-Saharan Africa, Russia/CIS and Saudi Arabia/GCC). They differ with regard to key characteristics, such as population size and population growth, size of economy and GDP per capita, but share the feature of a high economic and fiscal dependency on hydrocarbons, as measured by the share of the oil sector in GDP and the share of oil in total government revenues and exports (Table 1).³

- 1 In this paper, the term “oil-exporting countries” generally refers to the top ten net oil-exporting countries for which oil and gas account for more than 40% of total exports, i.e. the countries that are most relevant to global energy markets and at the same time share the feature of being highly dependent on hydrocarbon exports. These countries are: Algeria, Iran, Kuwait, Libya, Nigeria, Norway, Russia, Saudi Arabia, the United Arab Emirates (UAE) and Venezuela. The paper looks more closely at four of these countries, Algeria, Nigeria, Russia and Saudi Arabia (see below).
- 2 These features and the resulting macroeconomic and, in particular, fiscal challenges apply to all non-renewable natural resources, i.e. also to countries dependent on commodities such as copper, diamonds etc. This paper focuses on hydrocarbon (oil and gas) dependent economies, referring to other resource-rich economies where relevant.
- 3 Hydrocarbon dependency refers to oil and gas. Among the four countries under consideration, Algeria and Russia have considerable gas resources. As the macroeconomic issues do not differ significantly between oil and gas dependency, this text does not differentiate between the two commodities and uses the term “oil” only for the sake of simplicity.

Table 1 Key characteristics of selected oil-exporting countries in 2007

	Algeria	Nigeria	Russia	Saudi Arabia
Population (<i>million</i>)	34.4	143.9	142.1	24.3
Population growth (<i>2000-2007 average, % p.a.</i>)	1.7	2.8	-0.5	2.5
Nominal GDP (<i>USD billion</i>)	134	167	1,290	382
GDP per capita (<i>USD, PPP terms</i>)	6,539	2,028	14,705	22,852
Oil sector ¹⁾ (<i>percentage of GDP</i>)	45.9	35.0	20.0 ²⁾	54.4
Oil revenues ¹⁾ (<i>percentage of total gov. rev.</i>)	78.1	77.4	27.9	87.5
Oil exports ¹⁾ (<i>percentage of total exports</i>)	93.9	84.2	44.1	85.0

Source: IMF.

1) Oil data include gas, data for Algeria refer to 2006 and for the rest of the countries the data are 2007 estimates.

2) World Bank estimate for 2000.

The remainder of this paper is structured as follows: Section 2 reviews the economic and fiscal performance in the four countries under consideration over a longer period. Section 3 analyses key fiscal policy challenges stemming from commodity dependency, differentiating between general challenges and specific challenges experienced over the past few years in view of high oil prices, and most recently, the sudden, sharp fall in oil prices. Section 4 discusses institutional responses to these challenges in the four countries. Section 5 concludes.⁴

⁴ Analysis in the paper is based on IMF WEO data of October 2008. Financial market data is taken into account up to December 2008.

2 ECONOMIC AND FISCAL PERFORMANCE IN SELECTED OIL-EXPORTING COUNTRIES

As fiscal developments have to be seen against the background of general economic developments, sub-section 1 reviews the development of some key macroeconomic indicators – real GDP growth, GDP per capita, current account balances and inflation – of the selected countries since 1980. It thus covers a relatively long period with episodes of low and high oil prices and considerable oil price fluctuations.⁵ Developments in Algeria, Nigeria, Russia and Saudi Arabia are discussed with a view to two benchmarks: oil-exporting countries as a narrow benchmark, comprising countries that share the feature of hydrocarbon dependency, and emerging market and developing economies (EMEs) as a broad benchmark, comprising countries that are at similar stages of economic development but not, in general, dominated by commodities.⁶ In a similar vein, sub-section 2 looks at longer-term developments in key fiscal indicators, so as to put recent developments into perspective. To this end, it reviews the development of government balances, public debt and government revenue and expenditure.

The key results in the long-term perspective are: 1) economic growth in oil-exporting countries has been below average levels in emerging markets; only with the rise of oil prices since the beginning of the decade until mid-2008 has their growth performance become more dynamic and caught up with non-oil-exporting emerging markets; 2) current account balances have been more volatile than the average for emerging market economies, with large surpluses over the past few years; 3) for a long time inflation was generally below levels in emerging markets, but over the past few years it has significantly picked up and exceeded the emerging market average; 4) oil exporters' fiscal developments have been characterised by volatile budget balances, with large surpluses over the past few years, leading to rapidly declining public debt, which had previously reached high levels in several countries; 5) government revenue

is generally higher than in non-oil-exporting emerging market economies and has been rising further since the beginning of the decade; and 6) public expenditure is also somewhat higher than the average for emerging markets.

2.1 ECONOMIC PERFORMANCE

REAL GDP GROWTH AND GDP PER CAPITA

Real GDP growth of oil-exporting countries has been below levels in emerging market economies, except at times of relatively high oil prices, such as in the early 1980s, following the second oil shock of 1979, in 1990/1991, due to a spike in oil prices resulting from the Iraqi invasion of Kuwait, and since the beginning of this decade, mainly as a result of surging demand for oil from emerging market economies. Even at such times their growth rates have barely matched and hardly ever exceeded those of emerging market economies (Chart 1). Average real GDP growth since 1981 was 2.6% p.a., compared with 4.2% in emerging market economies, confirming evidence that natural resource-rich countries tend to grow at a slower pace than countries endowed with fewer or no natural resources. This is known as the “resource curse” (see Box 1 on theory and evidence). Economic growth has also been more volatile than in emerging market economies in general.

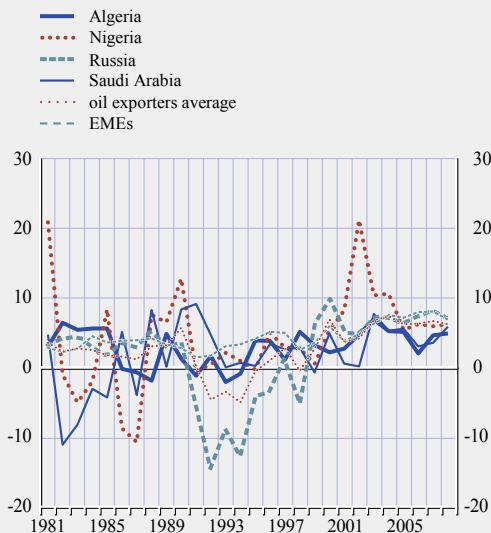
Among the four countries under consideration, average annual economic growth was highest in Nigeria at 4.4%, possibly reflecting its very low

5 While it may have been interesting to look further back into the 1970s, including the first oil price shock of 1973, a lack of comprehensive, consistent and comparable data would have made such a review problematic.

6 The benchmark “oil-exporting countries” comprises the top ten net oil-exporting countries for which oil and gas account for above 40% of total exports (see footnote 1). As the four countries selected for closer consideration in this paper are part of this group and include Russia, which is by far the largest economy among the top ten net oil exporters, they strongly influence the average. The benchmark “emerging and developing economies” comprises 142 countries in accordance with the IMF classification. The countries under closer consideration and the top ten net oil exporters – with the exception of Norway – form part of this group, but owing to the large number of countries, the majority of which are not hydrocarbon-dependent economies, they do not strongly influence the average for the group.

Chart 1 Real GDP growth

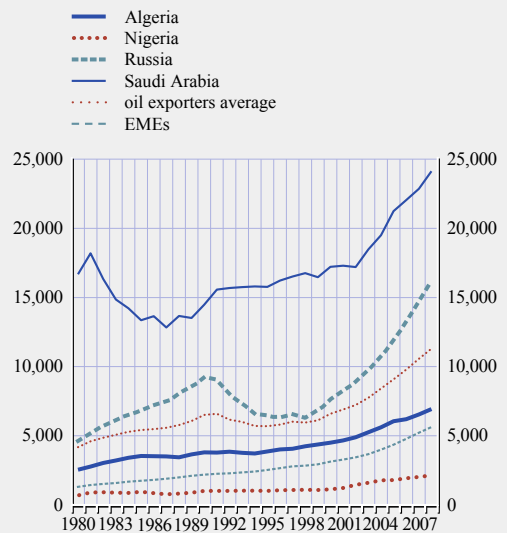
(annual percentage changes)



Source: IMF.
Notes: Averages weighted by GDP in PPP terms. 2008: projections.

Chart 2 GDP per capita

(USD; PPP terms)



Source: IMF.
Notes: Averages weighted by GDP in PPP terms. 2008: projections.

starting level, with the by far lowest GDP per capita among oil exporters. Average growth was low in Russia⁷ and Saudi Arabia, at 1.8% and 2% respectively. In the case of Russia, this reflects, in particular, the deep recession at the beginning of the economic transition in the early 1990s and, to a lesser extent, the financial crisis of 1998. Saudi Arabia faced a deep recession from 1982 to 1985 following the sharp drop in oil prices in the first half of the 1980s, and growth remained sluggish until the rise in oil prices after 2003, apart from a few exceptional years like 1990-91. Algeria has a somewhat better average annual growth at 2.9%, although it was hampered by, among other things, political unrest after 1992. Oil-exporting countries in general and the four countries under consideration in particular are also characterised by a relatively volatile growth performance, with Nigeria and Saudi Arabia being the most volatile. However, since the oil price rise starting in 2003, all four countries have had relatively

stable real GDP growth at elevated levels, comparable to those in other emerging market economies.

In terms of GDP per capita, oil-exporting countries exhibit higher levels (Chart 2), but lower and less steady growth than emerging market economies. GDP per capita was stagnant or even falling in the late 1980s and 1990s, reflecting a combination of low oil prices, high population growth (Algeria, Nigeria and Saudi Arabia) and economic crisis (Russia). This trend was reversed only at the beginning of this decade with high and rising oil prices. Russia in particular shows an accelerated and above average pace of GDP per capita growth, supported by steady population decline, unlike other oil exporters and emerging market economies.

7 Data for Russia before 1992 are data for the Soviet Union.

Box 1

**WHY HAS GROWTH PERFORMANCE BEEN DISAPPOINTING IN RESOURCE-RICH COUNTRIES –
A REVIEW OF THE LITERATURE**

After the first oil price shocks in the 1970s,¹ economists sought a better understanding of the impact of growing revenue inflows on oil exporters' economies (Mabro and Monroe (1974), Neary and van Wijnbergen (1986)). Several empirical studies showed that resource-abundant countries tend to grow slower than countries without natural resources (Sachs and Warner (1995, 1999), Auty (1993, 2001)). This phenomenon became known as the "resource curse".²

There are four main explanations of the resource curse: the *Dutch disease* hypothesis; *reduced incentives* to develop the non-resource part of the economy; *high volatility* of resource revenues; and *political economy effects* of resource income, in particular with regard to institutional quality.

(i) The traditional approach to tackling the resource curse was the Dutch disease hypothesis (Auty and Gelb (1986), Auty (1994), Benjamin, Devarajan and Weiner (1989)). Dutch disease is the combined influence of two effects: the appreciation of a country's real exchange rate caused by the sharp rise in exports and the tendency of a booming resource sector to draw capital and labour away from a country's manufacturing and agricultural sectors, raising their production costs. Together these effects can lead to a decline in exports of agricultural and manufactured goods and inflate the cost of non-tradable goods. Subsequently, several studies (Neary and van Wijnbergen (1986), Fardmanesh (1991), Mikesell (1997)) found that in the period 1971-83 some oil exporters did not show a significant shift of labour and capital away from manufacturing toward resource sectors, although their agricultural sectors often suffered (Benjamin, Devarajan and Weiner (1989)). Since then numerous studies have tried to identify alternative channels through which resource revenues could harm economic growth.

(ii) One school of thought is that resource-abundance may reduce the incentives to accumulate skills and invest in human resources (Birdsall and Jaspersen (1997), Auty (2001)) and to accumulate private capital (Buffie (1993), Stevens (2003)). The concentration of resource revenues on the public sector (Auty (1998a) and (2003)) could also delay difficult decisions on economic reforms and thus jeopardise economic development. These features tend to reduce investment efficiency, cumulate economic distortions and retard diversification (Auty and Gelb (2001)).

(iii) Another explanation of the poor performance of resource-rich economies could come from the high volatility of resource revenues associated with the dynamics of, for example, oil prices. Several studies consider the impact of the volatility of public revenues and expenditures on economic growth (Lane (2003), Afonso and Furceri (2008)). In general, oil-exporting economies experience higher volatility in their public sector and external balances. Auty (1998b) and Mikesell (1997) identified higher degrees of trade volatility in regions with high shares of

1 Although not centred on oil-exporting economies, previous studies have examined the economic impact of resource windfalls. Stevens (2003) includes historical references from as far back as the 14th century.

2 More recently these results have been challenged. Van der Ploeg and Arezki (2008) show that much of the empirical evidence for a negative effect of natural resource dependence on growth performance does not survive after extending the sample period and allowing for the endogeneity of explanatory variables. Simultaneously they are able to show the negative impact controlling for endogeneity in countries with low degree of openness to trade.

primary exports. This could be the source of increasing investor uncertainty and could impede the implementation of a balanced fiscal policy, thus retarding economic growth.

Auty (2001) also links the larger volatility of revenue incomes to the inability of governments to properly manage public surpluses, implying for example a tendency to conduct pro-cyclical fiscal policies and an unproductive use of funds. Haussmann and Ribogon (2002) take this research further and link the “curse” to the impact of demand volatility on incentives for the risk-averse investor. Van der Ploeg and Poelhekke (2007) show that the positive effects of resources on growth can be swamped by the indirect negative effects arising from income volatility, and that this effect is larger in landlocked countries with ethnic tensions.³

(iv) This last result points to another school of thought, which emphasises the political economy effects of resource abundance as an explanation of the “resource curse”. Natural resource rents can be a source of conflict, political instability, corruption, weak institutions, inequitable distribution of wealth and policy failure, especially in the case of factional political states that are associated with heterogeneous societies (Easterly and Levine (1997), Karl (1997)). Governments may prefer non-transparent methods of deploying the rents in order to maximise the scope for political manoeuvring, while interest groups, such as foreign investors or state officials, fight to retain oil revenues and create barriers to change (Carneiro (2007)). Favoured channels for deploying rents are trade protection, job creation in the public sector and over-extended public expenditure. Market discipline may be eroded and governments in resource-abundant countries are under less pressure to align their interests with the majority (Auty and Gelb (2001)). The empirical literature has addressed two aspects of this issue: the impact of resource rents on the quality of institutions and the impact of institutional quality on income.

Sala-i-Martin and Subramanian (2003) and Van der Ploeg and Arezki (2008) are able to identify a significant negative indirect effect of natural resources on the quality of institutions. The first study uses the “rule of law” and several alternative related indexes as a measure of institutional quality. Van der Ploeg and Arezki (2008) allow for interaction effects and provide evidence that the natural resource curse is particularly severe for economic performance in countries with a low degree of trade openness. They also argue that bad trade policies are highly correlated with bad fiscal policies.

The impact of institutional quality on economic growth in resource-exporting economies is shown in Mehlum, Moene and Torvik (2006) and Boschini, Pettersson and Roine (2007). Natural resources push aggregate income down when institutions are prone to unproductive influence activities (“grabber friendly”), while more resources raise income when institutions are “producer friendly”.

³ As natural resources are mainly exported by sea, landlocked countries usually have higher shipping costs (Limi (2006)).

CURRENT ACCOUNT BALANCES

Current account balances of oil exporters exhibit a higher volatility than those of emerging market economies due to oil price movements, and in times of high oil prices show high surpluses (Chart 3). The latter has been particularly pronounced since the beginning of this decade. While emerging markets on average have had

gradually rising current account surpluses since 2000, reflecting developments in Asia in particular, oil exporters’ surpluses initially surged and then remained at high levels.

Country-specific developments are notable. Nigeria’s and Saudi Arabia’s current accounts are subject to particularly strong fluctuations, with

sometimes large deficits in the 1980s and 1990s. This is explained by their particularly high dependency on oil exports, which since 1980 have averaged well above 80% of total exports of goods and services (compared to an average of 56% for the top ten oil exporters). Russia's current account balance is less volatile, reflecting the fact that since 1980 oil exports have averaged only 34% of total exports. Recently this value has been much higher, at well above 40%, and the lower average value since 1980 is due partly to low oil prices in the 1990s and partly to the slump in oil production following the collapse of the Soviet Union. Algeria's current account is also more volatile than in emerging market economies in general (but somewhat less than in other oil exporters). In the mid-1990s the civil war in Algeria also had a noticeable impact as the current account displayed deficits in several years.

Over the past few years, current account surpluses have been particularly high in Middle Eastern and North African oil exporters like Saudi Arabia and Algeria, while Russia's surplus

has been much lower and declining over the past two years. While import growth is buoyant in all oil-exporting countries, albeit masked in some cases by even faster growing revenues and thus high current account surpluses, Russia's import growth has been particularly strong due to strong economic activity and possibly also owing to a somewhat more flexible exchange rate policy than, for example, in Saudi Arabia that allowed for a limited appreciation of the Russian rouble (see sub-section 3.2.2).

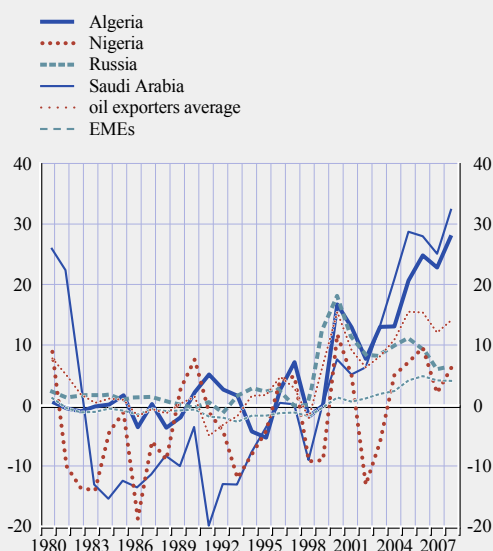
INFLATION

Over the longer term oil-exporting countries have had a significantly better record on inflation than emerging market economies in general (Chart 4). Their inflation was much lower during the 1980s, when many emerging market economies faced high inflation rates, and – if one excludes the specific case of Russia⁸ –

8 Russia suffered extremely high inflation in the early 1990s which, given Russia's relatively high weight in the average figure, would distort the overall picture of inflation developments in oil-exporting countries.

Chart 3 Current account balance

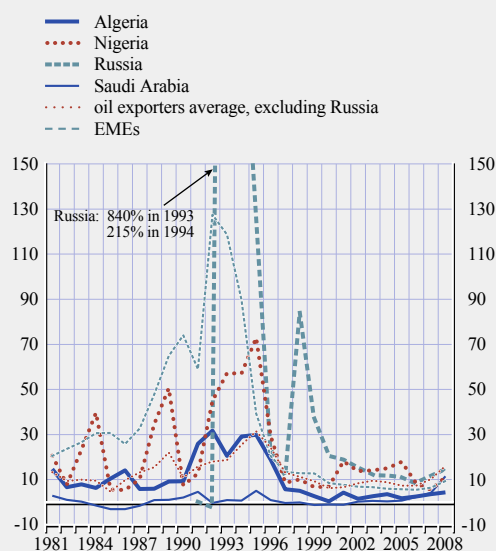
(percentage of GDP)



Source: IMF.
Notes: Averages weighted by GDP in PPP terms. 2008: projections.

Chart 4 Inflation

(annual percentage changes)



Source: IMF.
Notes: Averages weighted by GDP in PPP terms. 2008: projections.

were also lower during the 1990s. Russia, like other transition economies, saw a burst of inflation at the beginning of the transition process after the liberalisation of prices and again after the financial crisis of 1998, since when it has seen protracted disinflation. Nigeria is another oil exporter with high and volatile inflation. This contrasts with low and relatively stable inflation in Saudi Arabia (and other oil exporters on the Arabian Peninsula).

The relatively stable inflation performance of oil exporters over the long run, compared to emerging markets in general, may be explained by the lower degree of fiscal dominance of monetary policy – frequently a root cause of high inflation in emerging and developing economies. Given the significantly higher level of public revenue as a result of income from oil (see Chart 7 in sub-section 2), oil exporters can finance higher public expenditure without incurring budget deficits. Moreover, as many oil-exporting countries have accumulated financial assets on which they can draw to temporarily finance budget deficits, the inclination to resort to monetary financing of budget deficits is lower.⁹ Another factor that has contributed to relatively low inflation in a long-term perspective, is exchange rate regimes. Most oil-exporting countries – in particular in the Gulf region – have pegs or tightly managed floats to the US dollar, and have thus “imported” monetary discipline and credibility.

Since the beginning of the current decade, however, average inflation of oil exporters has exceeded the average for emerging market and developing countries, reflecting improved inflation performance among the latter and, in the wake of high oil prices, mounting inflationary pressure in all major oil-exporting countries – including the four under consideration here. As a result of the exchange rate regimes, monetary conditions have been relatively loose and monetary policy has been constrained in curbing inflationary pressure, placing a particular burden on fiscal policy to maintain macroeconomic stability (see sub-section 3.2 for a more detailed discussion of recent policy challenges).

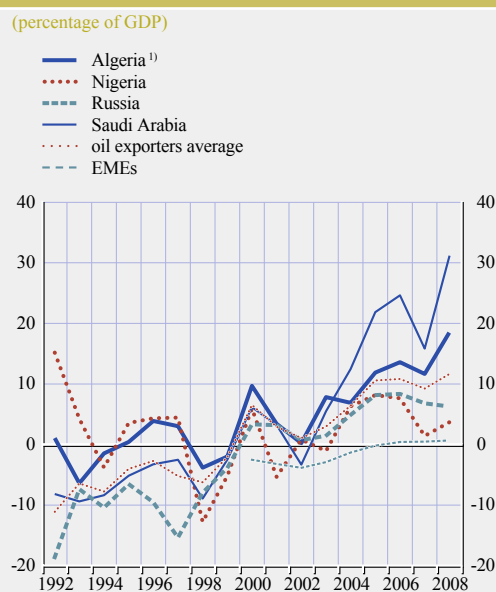
2.2 FISCAL PERFORMANCE

GENERAL GOVERNMENT BALANCE-TO-GDP RATIO

The general government balance-to-GDP ratio of the four countries under review has been highly volatile and has improved dramatically since the turn of the century. Oil prices have been the key driver of their fiscal performance (Chart 5). While emerging and developing countries have also seen an improvement of their fiscal balances over the last decade, oil exporters have outperformed them, exhibiting – sometimes large – surpluses, thanks to rising oil prices. However, some events not related to oil prices have had an impact on long-term budget performance. The collapse of the Soviet Union in the early 1990s was followed by a long period of transition, during which fiscal performance was poor. Thus, Russia’s general government balance-to-GDP ratio

⁹ A particularly striking example is Kuwait, which following the Iraqi invasion in 1990 could refinance the re-construction of the country by drawing on its reserve fund. Public debt, which had spiked to 200% of GDP in 1991, was reduced rapidly (to 35% of GDP only ten years later, in 2001).

Chart 5 General government balance



Source: IMF.
Notes: Averages weighted by GDP in PPP terms. 2008: projections.
1) Central government balance.

was deeply and steadily negative until 1999. More surprisingly, Algeria's public finances were not as affected as might have been expected in the period of civil war (1992-99).¹⁰ Nigeria's fiscal performance has been highly volatile, also due to the political environment. For instance, a dramatic deterioration was observed in 1998 when Nigeria's ruler was overthrown. In recent years too, Nigeria's budget performance has remained more volatile than in other oil-exporting countries. This is largely due to the conflicts in some oil-rich regions (Niger Delta), which disrupt oil production. In Saudi Arabia, the fiscal outcome has closely mirrored the average of oil exporters, although since the turn of the century the budget surplus has been much higher than the average.

PUBLIC DEBT-TO-GDP RATIO

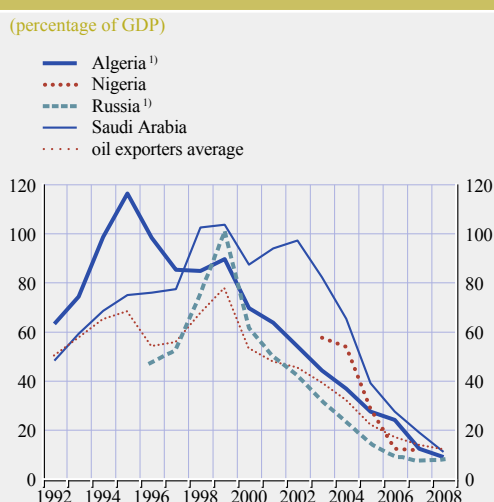
The average gross public debt-to-GDP ratio of major oil-exporting countries reached almost 80% in the late 1990s. This increase reflected, among other things, difficulties in reining in relatively high expenditure when oil prices fell after earlier oil price booms, in particular in the 1990s. Since the beginning of this decade, however, public debt has plummeted in the

wake of rising oil prices (Chart 6). Oil exporters used windfall revenues to significantly and rapidly reduce their – in some cases very high – public debt, and fiscal vulnerabilities have receded. Public indebtedness peaked in the late 1990s, except in Algeria where the decline started in the mid-1990s from a very high level (120% of GDP). In the late 1990s Russia was also highly indebted (around 100% of GDP in 1999) following the financial crisis of 1998. The increase in oil prices in recent years enabled Russia to sign an agreement with the Paris Club on the early repayment of all its external debt of USD 22 billion.¹¹ In Nigeria the decline in public debt was not mainly the result of high oil revenues but of a debt rescheduling.¹² Owing to its oil wealth, Nigeria was not included in the list of highly indebted poor countries (HIPC) eligible for 100% debt relief from official lenders, the IMF and the World Bank, but Nigeria's public debt was rescheduled by the Paris Club in 2005 with a 60% write-off, reducing public debt abruptly from USD 30 billion to USD 12 billion.

GOVERNMENT REVENUE

General government revenue (as a share of GDP) of oil-exporting countries is higher and more cyclical than in emerging and developing countries due to the importance and volatility of oil revenues (Chart 7). Government revenues increased from around 30% of GDP on average at the end-1990s to above 40% recently in the wake of rising oil prices, despite the concomitant sharp rise in nominal GDP, which raised the denominator of the revenue-to-GDP ratio. Among oil-exporting countries, Nigeria distinguishes itself by having the highest fluctuations, while Russia and Algeria mirror

Chart 6 General government gross debt



Sources: Haver Analytics and IMF.
Notes: Averages weighted by GDP in PPP terms. 2008: projections.
1) Central government debt.

10 This may be explained by the fact that the civil unrest and terrorist activities took place mainly in the northern part of the country where the bulk of the population is located, which is far from the Saharan desert where oil is extracted (e.g. the city of Hassi Messaoud).

11 This operation represented the largest repayment ever made to the Paris Club creditors. Under the previous rescheduling agreements of 1996 and 1999, debt to the Paris Club creditors was to be repaid between 2006 and 2020.

12 The opacity of fiscal data for Nigeria before 2003 makes an assessment of public debt difficult. Fiscal analysis was complicated by a multiplicity of off-budget funds. Therefore the public debt data for Nigeria indicated in Chart 6 start from 2003.

Chart 7 General government revenue

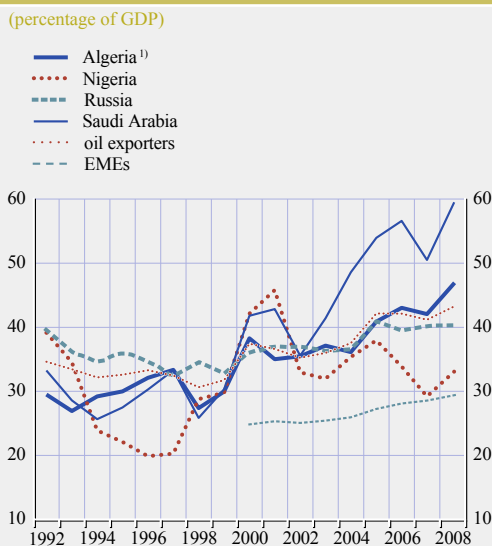
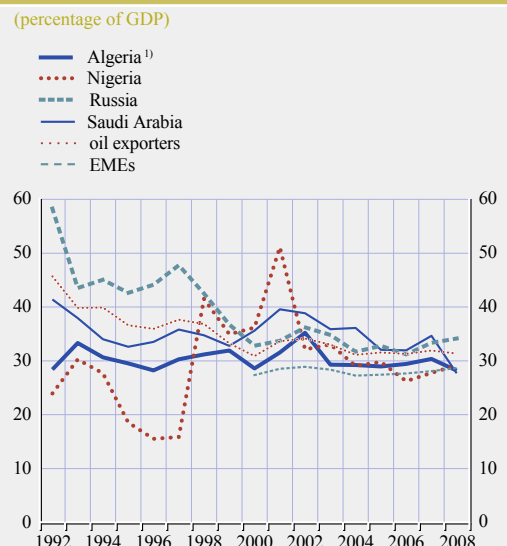


Chart 8 General government expenditure



the average for oil exporters. The sharp and steady increase in oil prices in recent years until mid-2008 did not have a noticeable impact on Nigeria's public revenues as a percentage of GDP, in part due to production problems and unrest in the Niger Delta region. Relatively strong economic growth in 2002 also drove the revenue-to-GDP ratio down. By contrast, in Saudi Arabia general government revenue as a share of GDP has increased sharply since 2002, and has remained well above the average for oil exporters. This is due in part to oil production increases. Saudi Arabia is the country with by far the largest spare capacity and, unlike other oil exporters, could therefore significantly raise production when prices were rising, thus benefiting both from higher oil prices and increased production. It is also due in part to somewhat more moderate economic growth compared to other oil exporters, so the increase in the denominator of the revenue-to-GDP ratio was less pronounced.

GOVERNMENT EXPENDITURE

General government expenditure has stood at above 30% of GDP since the turn of the century, which is somewhat higher than in emerging and developing countries on average (Chart 8). Thus the increase in oil prices in recent years until mid-2008 did not translate into a noticeable increase in public expenditure as a share of GDP, notwithstanding significant fiscal expansion (see sub-section 3.2.1). This is due to the substantial nominal GDP increases in recent years. The higher average expenditure level in the early 1990s was driven by the collapse of the former Soviet Union, followed by a deeply negative real GDP growth rate in Russia (-15% in 1992, see Chart 1), which sharply increased expenditure as a share of GDP. The high volatility of Nigeria's expenditure-to-GDP ratio reflects sharp fluctuations in output and revenue (see above).

3 KEY FISCAL POLICY CHALLENGES STEMMING FROM HYDROCARBON DEPENDENCE

Sub-section 1 of this section briefly reviews the fiscal challenges that are common to hydrocarbon-dependent (and in fact all commodity-centred) economies, irrespective of the level and direction of movement of prices. Sub-section 2 discusses in more detail the policy issues that have emerged in the wake of high and rising oil prices since the beginning of the decade until mid-2008, and briefly touches on the change of perspective in view of the sharp turnaround in oil prices since then.

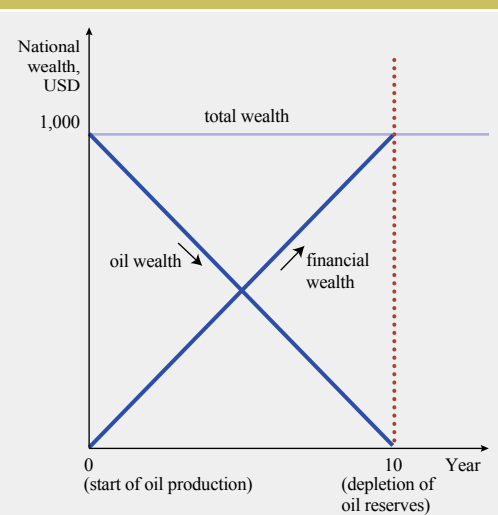
3.1 GENERAL CHALLENGES

Fiscal policy in oil-exporting countries faces specific challenges related to the fact that oil revenues are exhaustible, volatile, uncertain and largely originate from abroad.¹³ The challenges tend to be greater the larger the share of oil revenues is in the government's overall revenues and the larger the oil sector is in the economy. The specific features of oil revenues pose challenges in both the long and the short term – intergenerational equity and fiscal sustainability in the long term, and macroeconomic management and fiscal planning in the short term.

3.1.1 LONG-TERM ISSUES: INTERGENERATIONAL EQUITY AND FISCAL SUSTAINABILITY

In the long term the challenge stems from the exhaustibility of oil reserves and concerns the issues of fiscal sustainability and intergenerational resource allocation.¹⁴ The principal policy options to address these challenges are to save oil revenues in order to accumulate financial assets or to invest in physical assets (i.e. use them for capital expenditure). To avoid a sharp adjustment of fiscal policy once oil reserves are exhausted, and to secure national wealth¹⁵ for future generations, one option for oil-exporting countries is to accumulate financial assets during the periods in which they produce oil. After the end of oil production, the revenues from these assets can be used to replace oil income and to

Chart 9 Preserving national wealth through financial asset accumulation



Assumptions: Ten years oil production, constant production of ten barrels p.a., constant price of USD 10 per barrel, i.e. constant oil revenue of USD 100 p.a.

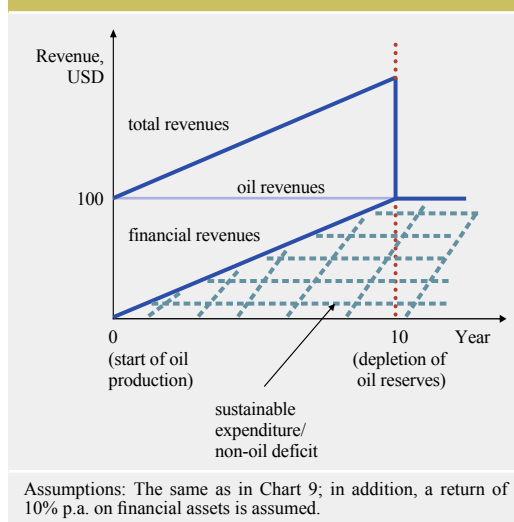
maintain levels of expenditure. Oil wealth is thus gradually transformed into financial wealth, leaving the country's overall wealth unchanged and preserving it for future generations. Charts 9 and 10 illustrate – based on this reasoning and using highly simplified assumptions – how the stock of national wealth is preserved for future generations and how the sustainability of fiscal revenues is maintained.

13 See Barnett and Ossowski (2002). The following considerations are mainly based on their comprehensive overview and analysis of operational aspects of fiscal policy in oil-exporting countries. See also Medas and Zakharova (2009), who further develop the topic.

14 Fiscal sustainability is achieved if in the “post-oil age” the same amount of public goods (level of expenditure) can be provided as in the “oil age” without resorting to deficit financing of public expenditure. Intergenerational equity requires citizens in the “post-oil age” to enjoy the same amount of public goods as the generation in the “oil age” without bearing a higher fiscal burden (e.g. in the form of taxation). This implies that achieving intergenerational equity is more demanding than ensuring fiscal sustainability. If oil revenues are replaced by tax revenues, this would ensure fiscal sustainability but not necessarily intergenerational equity.

15 It is assumed that oil and gas are publicly owned and revenues from their extraction accrue to the government, which is the case in most oil-exporting countries.

Chart 10 Maintaining fiscal revenue sustainability through financial asset accumulation



Intuitively, this reasoning is straightforward and makes a strong case for persistent overall fiscal surpluses to accumulate financial assets.¹⁶ However, deriving concrete policy conclusions from theory, making them operational and, even more so, implementing them is challenging. For example, estimating the oil wealth of a country, defined as the present discounted value of future oil revenues, is surrounded by significant uncertainty regarding the underlying assumptions. There is uncertainty about the future path of oil prices, about oil reserves, and about the costs of extracting them. For example, in the long run, an extreme case to be considered could be technical innovations largely replacing oil as a primary energy source, or significantly enhancing efficiency in the use of oil, which would greatly reduce the value of oil reserves or even make them obsolete. Given such uncertainties, prudence in the design of fiscal policies is deemed important, in particular from the point of view of long-term considerations.¹⁷

In principle, capital expenditure and the accumulation of physical assets could represent an alternative to the accumulation of financial assets in preserving national wealth for future generations and ensuring fiscal sustainability. This would reduce the need for persistent fiscal

surpluses and thus allow more expansionary policies. In particular, investment in physical infrastructure and in social infrastructure, e.g. education and health, is generally seen as beneficial in this regard, as such expenditure can be conducive to diversifying the economy away from hydrocarbons, developing the private non-oil sector and thus also creating a basis for generating tax revenues.¹⁸ The question of whether to save oil revenues and accumulate financial assets or to spend them on productive investment boils down to the respective rates of return on the alternative uses and on their relative volatility.¹⁹ While the rates of return on (usually foreign) financial assets depend on the type of investment and conditions in global financial markets, rates of return on (domestic) capital expenditure are much harder to identify, more uncertain and tend to depend on various country-specific factors.²⁰ Among other factors, such as the stock and quality of existing public capital and thus the marginal return on additional investment, governance and, in particular, levels

16 See Alier and Kaufman (1999), who, based on an extension of the non-stochastic overlapping generation model, make the case for persistent fiscal surpluses in an economy with non-renewable resources on intergenerational equity grounds.

17 See, for instance, Bjerkholt (2003), who suggests a conservative approach to fiscal policy (the “bird-in-the-hand” rule) to counter the uncertainty of a country’s oil wealth by limiting non-oil deficits to the return on accumulated assets. Chart 10 illustrates this approach. Norway’s fiscal rule comes closest to implementing it in an oil-exporting country (see Section 4). A somewhat less conservative approach is the so-called permanent consumption rule (see Balassone, Takizawa and Zebregs (2006)). According to this approach, the optimal non-oil deficit is equal to the return on the present discounted value of oil wealth (which is less than the annual flow of oil revenues, i.e. also in this case financial assets need to be accumulated). The “bird-in-the-hand” rule has the advantage that it does not require estimates of oil wealth. The permanent consumption rule has the advantage that it allows for some “frontloading” of public expenditure, which may be more appropriate for countries with large development needs, e.g. in infrastructure.

18 For attempts, progress and rationale for economic diversification in GCC economies, see Sturm et al (2008).

19 If oil revenues were spent on productive investment rather than saved, in Chart 10 revenues from financial assets could be replaced by tax (or other public) revenues.

20 Empirical studies find that the marginal product of public capital can be much higher than that of private capital, roughly equal to that of private capital, well below that of private capital or in some cases even negative. See Romp and de Haan (2007) for a recent review of the literature on public capital and economic growth.

of corruption have been identified as factors determining the productivity of public investment and its impact on economic growth.²¹ Indeed, analysis of the effects of public capital expenditure on non-oil real GDP growth and private investment in the four countries under closer consideration in this paper suggests that

the impact varies from country to country and that public investment may not always yield the desired positive effects (Box 2).

21 See for example Haque and Kneller (2007) and Tanzi and Davoodi (1997), who provide empirical evidence that corruption *increases* public investment but *reduces* its productivity and effect on economic growth.

Box 2

THE IMPACT OF A SHOCK TO PUBLIC INVESTMENT IN SELECTED OIL-EXPORTING COUNTRIES

A number of recent studies have investigated the relationship between public investment and productivity and growth using vector autoregressive (VAR) models.¹ A great number of studies have applied VAR modelling to estimate the impact of public investment in developed economies.² However, research for developing countries is more limited, possibly due to the lack of sufficiently long time series.³

Based on data from the IMF World Economic Outlook database for the period 1980-2008, a three-variable VAR model is constructed and estimated for the four countries under closer consideration in this paper: Algeria, Nigeria, Russia and Saudi Arabia. The variables in the VAR are the logarithmic growth rates of real public investment, real private investment and real non-oil GDP.⁴

The p-th vector autoregressive model in standard form can be written as:

$$X_t = c + \sum_{i=1}^p A_i X_{t-i} + \varepsilon_t$$

where $X_t = [\Delta \log \text{pub}I_t, \Delta \log \text{priv}I_t, \Delta \log \text{noGDP}_t]$ is the (3x1) set of variables, A_i is a matrix (3x3) of autoregressive coefficients, c is a vector (3x1) of intercepts and the vector ε_t (3x1) represents the residuals following a white noise process. The lag length of the model is selected according to the usual information criteria.⁵

The equations in the VAR model can be estimated separately by using OLS. The OLS estimates are, under general conditions, consistent and asymptotically normally distributed. If all variables are stationary, the estimated impulse responses will also be consistent. The variables used in this

1 This methodology replaces the traditional production function approach, being more flexible with respect to the possible relations and interactions between the variables.

2 Kamps (2005), Pina and St Aubyn (2005), Afonso and St Aubyn (2008), Pereira (2000).

3 Jayaraman (1998) for Fiji; Valadkhani (2004) for Iran. See Belloc and Vertova (2004) for a good literature review on the crowding-out hypothesis in developing countries.

4 Many of the studies used as a reference also include other variables, e.g. inflation rate in Valadkhani (2004), taxes and real exchange rate in Afonso and St Aubyn (2008), and population in Kamps (2005). The estimation here is limited to these three variables on several grounds. First, the relations estimated by these previous studies between other variables and GDP growth are often found to be insignificant. Second, these three variables are the only set of variables common to the majority of the consulted studies. Third, the small number of observations available for the four countries constrains analysis.

5 The maximum number of lags has been restricted to three, and, according to the criteria consulted, not more than two lags are included in any of the cases.

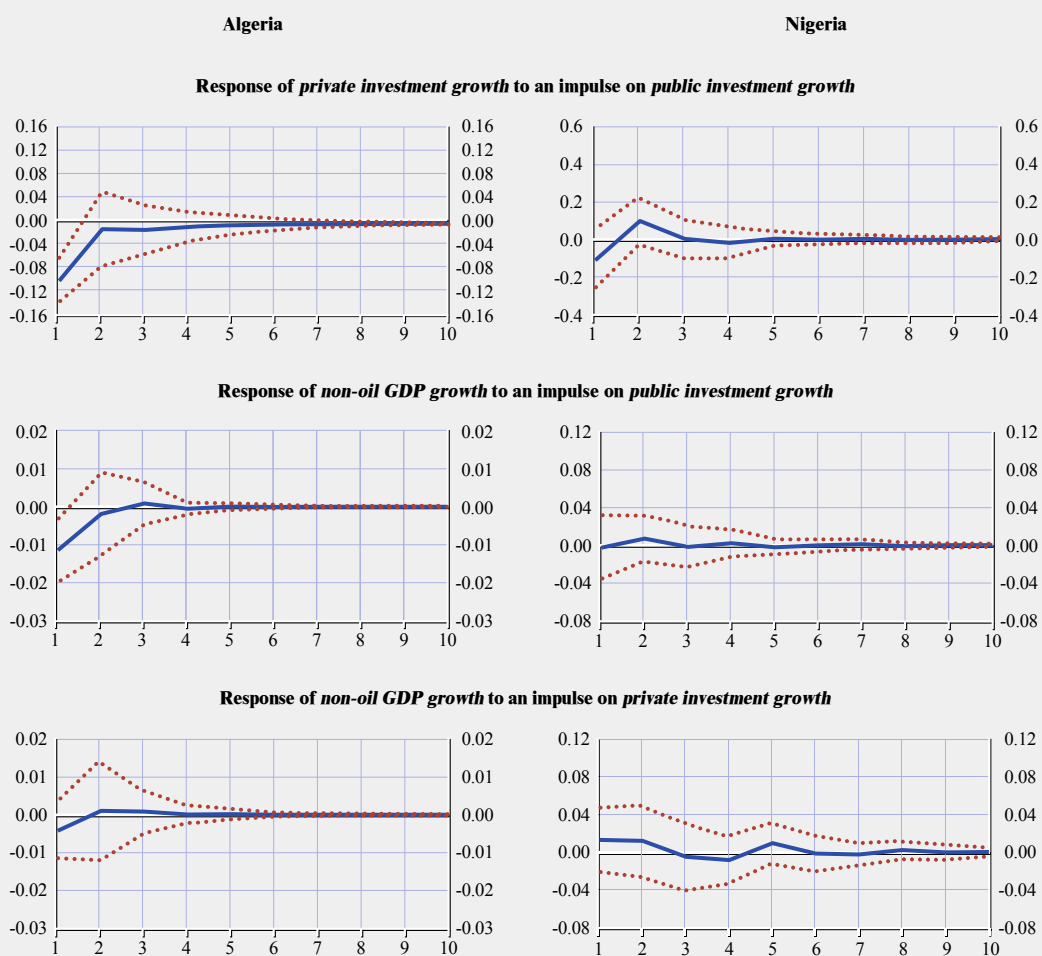
box may easily be assumed to be stationary since they are constructed from logarithmic growth rates of series in levels.⁶

Chart A below shows the responses of private investment and non-oil GDP to a one unit shock to public investment in period one, and the response of non-oil GDP to an equivalent impulse to private investment.⁷

6 One could raise the possibility of the variables in levels being non-stationary and cointegrated. Unfortunately, with the limited number of observations, the results of the cointegration test cannot be reliable. See, for example, Hjalmarsson and Österholm (2007) for an evaluation of the performance of the cointegration tests. Instead, it is assumed that there is no economic reason to believe in a long-run relationship between the variables, as most of the related literature has traditionally done. See, for example, Pereira (2000), Pereira and Roca Sagales (2001), Voss (2002) and Afonso and St Aubyn (2008).

7 In order to compute the responses, the Choleski decomposition of the matrix of covariances of the residuals is imposed. The selected order of variables assumes that public investment growth has a contemporaneous effect on private investment and non-oil GDP growth rates while these two variables only have a lagged impact on public investment growth. Similarly, private investment growth may induce a contemporaneous effect on non-oil GDP growth while the impact of a shock to non-oil GDP growth on private investment growth will start one period after the shock.

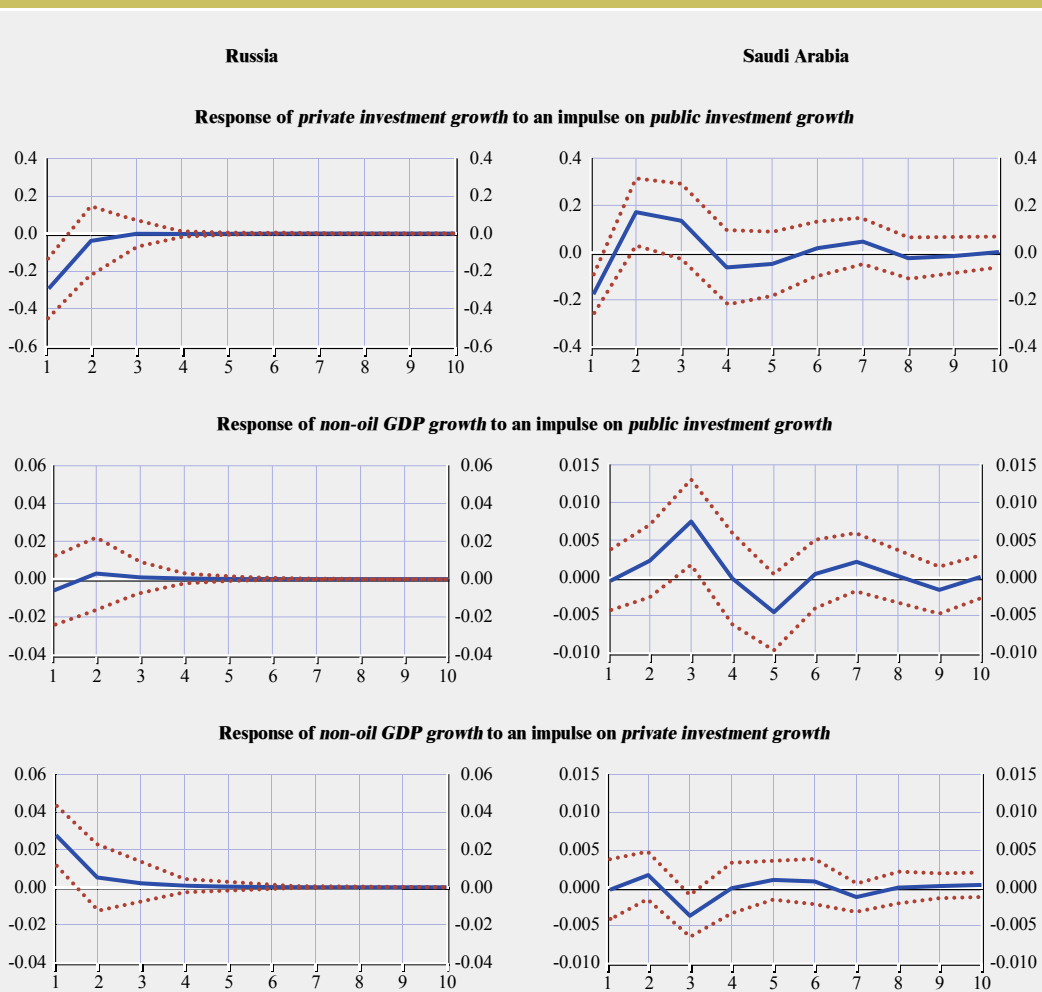
Chart A Responses to impulses on public and private investment



Source: Own computation.

Two main conclusions can be drawn from this analysis. (i) A strong positive effect of a shock to public investment on private investment and non-oil GDP growth is observable in none of the countries. This tends to support caution in suggesting that physical and financial assets are substitutes and that public investment can yield similar results as saving oil proceeds. (ii) The pattern of behaviour differs across countries. While in Saudi Arabia some positive impact of increased public investment on private investment and non-oil GDP growth is noticeable over time, Russia, in particular, seems to be a case where public investment has a potential to crowd out private investment. A 1 percentage point rise in public investment growth would induce an immediate decrease in the growth rate of private investment of around 0.3 percentage points. Moreover, in Russia – more than in the other oil exporters examined here – private investment, unlike public investment, has a positive impact on non-oil GDP growth. The results for Algeria and Nigeria are somewhere between Russia and Saudi Arabia.

Chart A Responses to impulses on public and private investment (continued)



Source: Own computation.

Perceived corruption in selected oil-exporting countries

	Saudi Arabia	Algeria	Russia	Nigeria
Corruption Perception Index score	3.4	3.0	2.3	2.2
Country rank	79	99	143	147

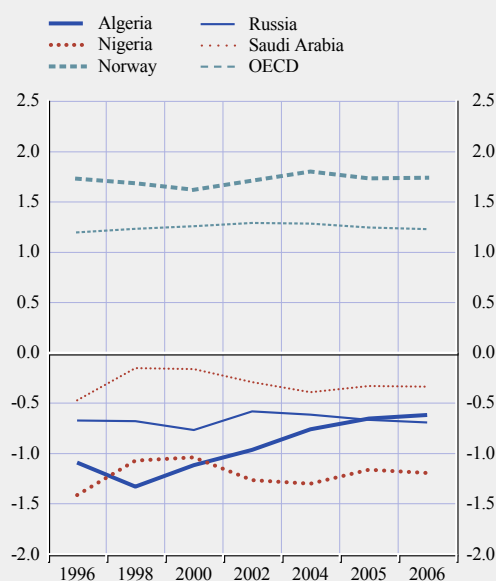
Source: Transparency International.

Notes: Data for 2007. 180 countries have been examined. The score relates to perceptions of the degree of corruption as seen by business people and country analysts and ranges from 10 ("highly clean") to 0 ("highly corrupt").

Memorandum: Norway: score 8.7, country rank 9.

A possible explanation for public investment not having an unequivocally positive impact on private investment and non-oil GDP growth may be levels of governance and, in particular, corruption prevailing in the countries under consideration, which may impede the usually expected positive effects of public capital outlays from being achieved.⁸ All four countries have relatively low governance levels, well below OECD levels (and far below Norway, which is the oil-exporting country with the highest level of governance and can thus serve as a benchmark, Chart B). Among the four countries under consideration, Saudi Arabia has the best performance in terms of governance, while Nigeria has the poorest, while Algeria shows some improvement from low levels over the past decade. This evidence is broadly supported by Transparency International's corruption perception index, both in terms of an overall low performance of the four countries under consideration and in terms of the relative positions of the four to each other (see the Table above). This analysis points to a possible dilemma of fiscal policy in less developed oil-exporting countries with regard to public investment. Countries with a high need for public capital outlays given their relatively low stock of public investment, which would imply a high return on such investment in principle, also have relatively low governance levels, which tends to reduce the return on public investment in practice.

Chart B Governance indicators of selected oil-exporting countries



Source: World Bank.

Notes: Indicators for 2006. Arithmetic unweighted OECD average. The six governance indicators are measured in units ranging from -2.5 to 2.5, with higher values corresponding to better governance outcomes.

⁸ See main text above and the literature quoted there.

To sum up, the uncertainties surrounding the effects of public capital expenditure on productivity, future output and government revenues, and the difficulties in distinguishing between capital expenditure and current expenditure,²² warrant some caution in how far capital expenditure can be a substitute for the accumulation of financial assets in achieving intergenerational equity and financial sustainability in oil-exporting countries.²³

The two alternative policy options briefly outlined here – accumulating financial assets and capital expenditure – assume that oil is produced and revenues are received, so only their use has to be decided. A possible third option to preserve or maximise national wealth is to keep oil in the ground and produce at a later stage. This option appears attractive if the expected return on “oil in the ground” is higher than both the return on financial assets and on capital expenditure. This would in particular be the case if a country expects rising oil prices in future, while at the same time adverse conditions on global financial markets dampens returns on financial investment and returns on capital expenditure are low, e.g. due to low governance levels or administrative capacity.²⁴ The respective returns on the use of oil revenues constitute the opportunity costs of leaving oil in the ground. The major risk involved in pursuing this option is that the future value of oil in the ground is uncertain and may be reduced by, for example, technological progress which enhances energy efficiency and the development of alternative energy sources, making future oil demand and thus prices lower than expected. If such a scenario materialised, “frontloading” oil production would have been the better option.

3.1.2 SHORT-TERM ISSUES: MACROECONOMIC MANAGEMENT AND FISCAL PLANNING

The short-term challenge for fiscal policy in oil-exporting countries stems from the volatility and unpredictability of oil prices, which was particularly evident in 2008 with large swings in oil prices (from USD 99 per barrel in January to a peak of USD 147 in July and down to USD 34 in December). This means that public

finances are dependent on a volatile variable that is largely beyond the authorities’ control. This poses a challenge to both macroeconomic management and fiscal planning. The volatility of oil prices, and hence government revenues, tends to contribute to a pro-cyclical pattern of government expenditure, and to abrupt changes in government spending, which may translate into macroeconomic volatility and reduced growth prospects. Indeed, pro-cyclicality has been a feature of fiscal policy in oil-exporting countries, as evidenced by the empirical analysis in Box 3. This makes a case for smoothing public expenditure, which is further supported by the other potential fiscal costs of volatile expenditure policies. For example, during a period of rapidly rising expenditure, these costs may include a reduction in the quality and efficiency of spending due to constraints on administrative capacity or the realisation of projects with little marginal value added and difficulties in containing and streamlining expenditure following an expansion. In periods of rapidly declining expenditure, moreover, viable investment projects may be interrupted.

22 Following normal budget conventions, e.g. the salary of a teacher is current/consumptive expenditure, while construction costs for a public swimming pool are capital expenditure. However, it might be reasonable to think that expenditure on the former has a more beneficial effect on future economic growth and public revenues than the latter (“investing in brains instead of concrete”). Current expenditure in the education (and possibly also the health) sector could therefore be akin to capital expenditure in the narrow sense, contributing to the accumulation of human capital and thus future economic growth. Sachs (2007), for example, sees human capital as another long-lasting asset that oil exporters can invest in, alongside financial and physical assets (or leaving oil in the ground, see next paragraph).

23 Instead of classifying capital expenditure as productive spending, whose effect on future revenues is indeed highly uncertain and may therefore not theoretically underpin its deficit financing, capital expenditure may also be regarded as more akin to spending on durable consumption. According to this view, governments undertake capital spending not because capital is productive, but because government capital provides social benefits for many years. Barnett and Ossowski (2002) suggest that this view of capital spending may provide a rationale for higher non-oil deficits. Conceptually, while this view would be compatible with intergenerational equity considerations (as also future generations enjoy the social benefits), spending oil revenues on “durable consumption” would not necessarily ensure fiscal sustainability (as no future tax revenue is generated).

24 See Stevens and Mitchell (2008) on this option in the context of oil-exporting countries’ depletion policies.

In general, targeting a particular level of overall budget balance is rendered difficult by oil price volatility. Moreover, the overall budget balance-to-GDP ratio has to be interpreted with even greater caution in oil-exporting countries than in industrialised economies,²⁵ and cannot be considered a reliable indicator of the course of fiscal policy. In a period of rising oil prices, for example, the deficit (surplus)-to-GDP ratio may decline (rise) in spite of expansionary fiscal policies featuring expenditure increases or a reduction in non-oil revenue. Higher oil revenues (and higher oil GDP) would mask the fiscal expansion. Conversely, in a period of falling oil prices the deficit (surplus)-to-GDP ratio may rise (fall) in spite of budgetary consolidation in the form of expenditure reductions and an increase in non-oil revenue. An assessment of the underlying fiscal policy stance on the basis of the overall balance could therefore be

misleading. For this reason, other indicators are needed to guide fiscal policy and to assess the underlying fiscal stance, such as the non-oil balance/non-oil GDP ratio, an indicator which isolates the budget balance from oil price developments.²⁶ Non-oil balances cannot replace conventional fiscal indicators, like overall or primary balances, but they complement the analysis of fiscal developments in oil-centred economies.

25 In advanced economies, structural budget balances are computed to assess the fiscal stance corrected for the cyclical impact on the government's budget revenue and expenditure side. In many oil-exporting countries, tax systems and unemployment insurance schemes are underdeveloped or do not exist so far. Therefore automatic stabilisers do not at present play a significant role in oil-exporting countries, and computing a structural balance would provide limited insight (and in most cases not be possible due to data constraints).

26 See Medas and Zakharova (2009). See also Sturm and Siegfried (2005) on fiscal indicators in oil-exporting countries in the context of fiscal convergence criteria for the GCC countries.

Box 3

PRO-CYCLICAL FISCAL POLICIES IN OIL-EXPORTING COUNTRIES

This box provides empirical analysis on the pro-cyclicality of fiscal policy in oil-exporting countries. A panel of 19 oil-exporting countries for which data is available for the period 1965-2005 has been selected.¹ The sample is split into two sub-periods, 1965-1984 and 1985-2005, the first covering the first two oil price shocks and the second covering the beginnings of the recent oil price hike.

The pro-cyclicality of fiscal policy is estimated by taking public consumption as the variable that represents changes in fiscal policy.² Cyclical fluctuations (output gaps) are modelled by comparing actual production data with the Hodrick-Prescott smoothed series.³ A panel data

1 Algeria, Angola, Bahrain, Republic of Congo, Ecuador, Gabon, Indonesia, Iran, Kuwait, Libya, Mexico, Nigeria, Norway, Oman, Saudi Arabia, Syria, Trinidad and Tobago, United Arab Emirates and Venezuela. The data source is the World Development Indicators provided by the World Bank.

2 The pro-cyclicality of fiscal policy in developing economies has been object of numerous studies. See for example Riascos and Vegh (2003) and Ilzetzi and Vegh (2008). There is an interesting discussion on the appropriate fiscal variables to capture the cyclical behaviour of fiscal policy in Ilzetzi and Vegh (2008). Many studies use the fiscal balance as the indicator of fiscal policy, but because of the high dependence of this variable on revenues from resource exports, it does not appear to be the right variable to be analysed in the case of oil-exporting countries. Public consumption is used here, owing to data availability. It might perhaps be more appropriate to analyse the cyclical behaviour of total public expenditure, thus also capturing the role of public investment. However, no data are available for total public expenditure for the period 1965-1984. The model has also been estimated for the second sub-period using the total public expenditure growth rate (deflated using the GDP deflator) as the dependent variable. This, however, does not change the broad picture. The estimated coefficients attached to the output gap are quite similar, although slightly larger, to those shown here for public consumption growth.

3 Although this is a methodology widely accepted in the literature, there is some debate about the appropriate measure of the gap. As shown in Scott (2000), the different alternatives to measure the gap will not normally lead to significant divergences.

model is then constructed and estimated which includes the reaction of the growth rate of public consumption to alterations in the output gap.

Among the great number of studies consulted, there are a few that only include fiscal variables in the panel (Manasse, 2006). In this analysis trade openness is included in the form of growth rates over GDP, as this variable is present in the majority of studies about the pro-cyclicality of fiscal policy (Lane (2003), Alberola and Montero (2006), Woo (2008)).⁴

Three different estimation methods are used in the table below. The first column represents a linear model estimated using fixed effects. The second column describes the estimation of the fixed effects model in the presence of an autocorrelated (AR) error term. The presence of serial correlation in the error term might be induced by the omission of dynamics in the static model. A dynamic version of the model estimated through a version of the Generalised Method of Moments (GMM), which includes one lag of the dependent variable to control for this possibility, is presented in the third column.⁵

The results point to pro-cyclical behaviour of fiscal policy over the whole period 1965-2005, which seems to have been even more pronounced in the second sub-period. The estimated coefficients are not only larger, but their levels of statistical significance are also stronger. Thus, the analysis confirms that pro-cyclical conduct of fiscal policy – frequently identified in the literature as a problem in oil-exporting countries – is indeed a feature over a relatively long period of time, with no signs of abating.

4 There are also a great variety of control variables representing other determinants of pro-cyclicality, such as economic structure (Lane (2003), Woo (2008)), political institutions (Alesina and Tabellini (2005), Turrini (2008)) and level and dispersion of education (Woo (2008)). Because of the lack of consensus and weak significance of control variables in previous studies, they are not included in the model. As a robustness check, the model has been estimated with a more extended set of control variables often used in the related literature and with the output gap alone. The direction of results is not altered with this exercise. For the sake of brevity, these results are not shown here. In any case, all the factors that reflect heterogeneity among countries but that are time-invariant will be included in the idiosyncratic term of the panel data model.

5 The coefficients have been estimated using the one step version of the GMM estimator proposed by Arellano and Bond (1991). The one step procedure is relied upon rather than the two step, based on the findings in Judson and Owen (1997), and applied to the length of the cross-section and time dimensions of the dataset.

Panel data estimation of pro-cyclicality of fiscal policies in oil-exporting countries

	Dependent variable: Change in public consumption					
	Sample: 1965-1984			Sample: 1985-2005		
	Linear	AR	D-GMM	Linear	AR	D-GMM
P cons (lag)			0.0084 (0.057)			-0.1039* (0.058)
<i>ogap</i>	0.2265** (0.112)	0.1685 (0.123)	0.3664*** (0.129)	0.4072*** (0.138)	0.3929*** (0.149)	0.8467*** (0.226)
<i>Trade</i>	0.00916** (0.004)	0.0100** (0.004)	0.0069 (0.004)	-0.0300 (0.024)	-0.03435 (0.025)	-0.0454 (0.027)
R within	0.024	0.022		0.031	0.029	
<i>Obs</i>	342	324	306	338	319	299

Notes: Standard errors in brackets.

*, **, *** denote statistical significance at 10%, 5% and 1% respectively.

3.2 POLICY CHALLENGES IN THE CURRENT DECADE

Since the beginning of this decade, and in particular since 2003, oil-exporting countries' budget balances have been characterised by high surpluses (see sub-section 2.2, Chart 5). While this may be perceived as, and indeed is, a very favourable fiscal outcome for the countries concerned, in particular compared to sometimes significant budget deficits in previous years, this situation poses some challenges of its own. The key challenge has been to calibrate fiscal policy between competing short and long-term objectives and pressures, in particular cyclical and intergenerational equity considerations, domestic political pressures and international considerations. This challenge has been mitigated somewhat since mid-2008, when oil prices started to fall sharply and the global economy slowed down significantly, alleviating inflationary pressure in oil-exporting countries which had previously been the "dark cloud" in an otherwise very favourable macroeconomic environment.

3.2.1 FISCAL POLICY AND THE REAL ECONOMY

Fiscal expansion in booming economies

Over recent years oil-exporting countries have enjoyed buoyant real GDP growth (see Chart 1 in sub-section 2.1) accompanied by high current account and fiscal surpluses (Charts 3 and 5). Real GDP growth has been driven by domestic consumption and investment, with public investment playing a major role. In

addition to private consumption, which has been bolstered by high consumer confidence as a result of high oil prices, expansionary fiscal policy has been a key driver of the economic expansion of recent years. Indeed, fiscal expansion is the key mechanism in most oil-exporting countries for "injecting" oil revenues into the economy (see Chart 11).²⁷ As in most major oil-exporting countries upstream activities in the oil sector are controlled by state oil companies (e.g. Saudi Aramco in Saudi Arabia) oil revenues accrue directly and completely to the government. Thus, the use of oil revenues is a fiscal policy decision, and it is via public expenditure that oil revenues impact the domestic economy, including inflation.²⁸

Fiscal policy has been expansionary over past years, as evidenced in public expenditure growth and the development of non-oil deficits. The fiscal expansion has been masked by high and rising surpluses, as increasing expenditure

27 See e.g. Husain, Tazhibayeva and Ter-Martirosyan (2008). They show – based on panel VAR analysis and the associated impulse responses – that once fiscal policy changes are removed, oil price shocks do not have a significant independent effect on the economic cycle.

28 In the case of Saudi Arabia, typically about 93% of Saudi Aramco's profits, which has the monopoly of oil production in the country, are transferred to the government in the form of royalties and dividends which is a legacy of the company's history as a private American company before being fully nationalised in 1980 – see Myers Jaffe and Ellass (2007). Retained earnings are used to finance the company's normal operations. While Saudi Aramco has a high degree of operational independence, all strategic decisions are taken by the Supreme Petroleum Council, so oil income and its use are ultimately controlled by the Saudi Government. Furthermore, the company is used for quasi-fiscal activities – see footnote 31.

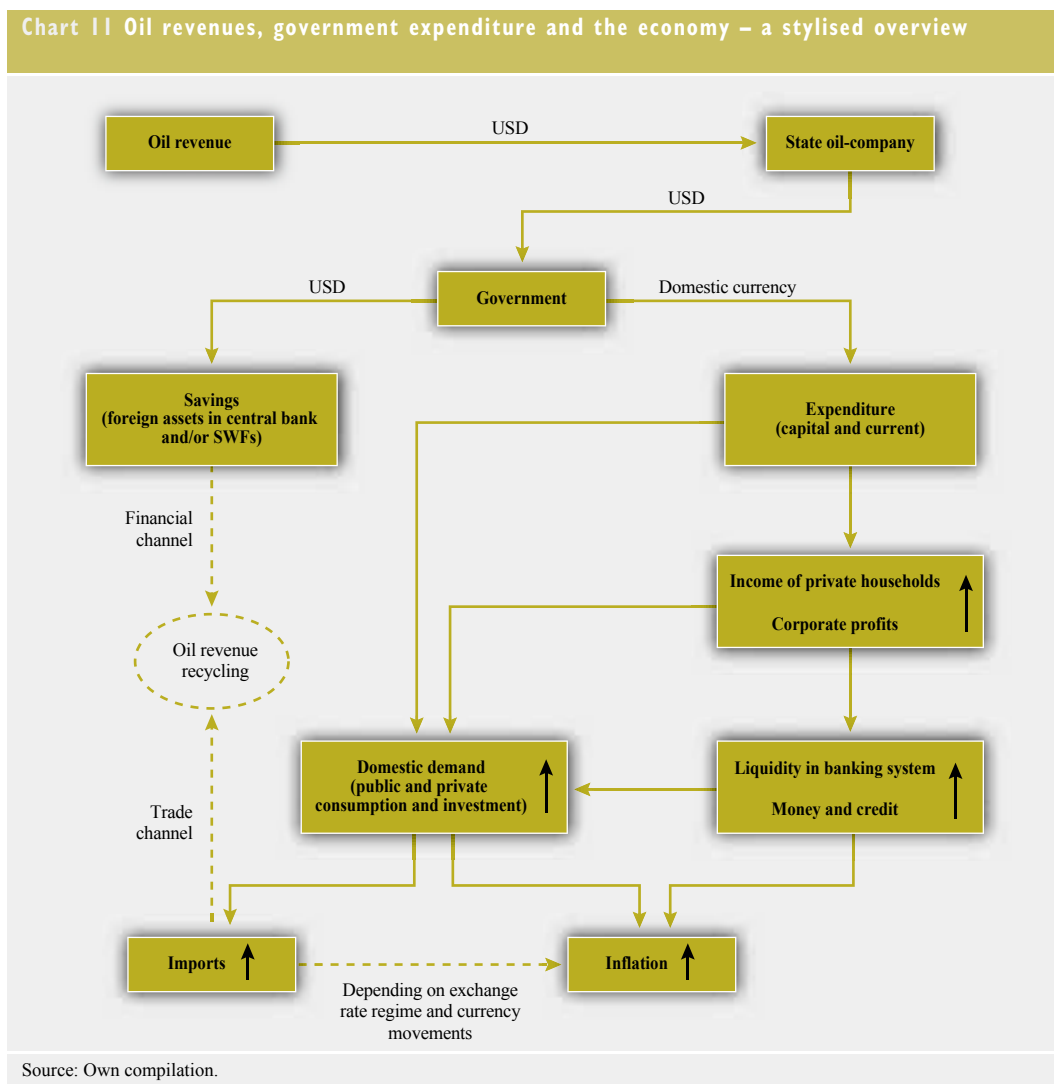
Table 2 Real increases in public expenditure in selected oil-exporting countries

(percent; year-on-year)						
	2003	2004	2005	2006	2007	2008*
Algeria	-6.1	13.1	20.2	11.3	9.1	14.8
Nigeria	12.1	2.4	11.6	3.4	12.3	18.1
Russia	5.6	5.5	20.2	9.3	19.4	20.1
Saudi Arabia	4.5	17.0	11.3	10.3	12.0	-0.9
Oil exporters average	5.4	10.0	20.8	12.5	10.6	14.6

Sources: IMF (* projections) and ECB staff calculations.

Notes: Average weighted by GDP in PPP terms. Figures for growth in real public expenditure are calculated by deducting annual CPI inflation rates from the year-on-year growth rate for nominal general government expenditure and net lending of the IMF WEO.

Chart 11 Oil revenues, government expenditure and the economy – a stylised overview



has not kept pace with revenue growth. Public expenditure growth in oil-exporting countries has been buoyant, with double-digit increases in real terms in every year since 2004 (Table 2). As public debt has fallen sharply (see Chart 6), interest expenditure has come down, so it may be assumed, although no concise data are available, that primary spending has risen even faster. Among the four countries under consideration, expenditure growth was highest in Russia and Algeria. The spike in Russian

spending in 2007-08 was related to parliamentary and presidential elections taking place in 2007. In 2004 Algeria launched a USD 55 billion public investment programme, later augmented to USD 155 billion (120% of 2007 GDP), focusing in particular on social housing and transport infrastructure. Saudi Arabia also recorded significant fiscal expansion, centred on an ambitious investment programme, with projects worth USD 350 billion (93% of 2007 GDP) underway or being planned, including

Table 3 Trends in non-oil deficits in selected oil-exporting countries

	2003	2004	2005	2006	2007	2008*
Algeria ¹⁾	-27.9	-30.1	-34.7	-36.0	-36.9	-39.5
Nigeria ²⁾	-	-24.0	-27.0	-29.0	-28.0	-32.0
Russia ³⁾	-3.9	-2.9	-5.1	-4.5	-5.5	-7.2
Saudi Arabia ¹⁾	-46.7	-45.8	-50.9	-52.7	-59.2	-51.5

Source: IMF (* projections).

1) Central government fiscal balance as a percentage of non-oil GDP.

2) Consolidated government non-oil primary balance as a percentage of non-oil GDP.

3) General government non-oil balance as a percentage of GDP, excluding one-off tax receipt from Yukos.

the establishment of up to six “economic cities”.²⁹ The projected decrease in public expenditure in real terms in 2008 is related to a spike in inflation (see sub-section 3.2.2). Expenditure growth was relatively moderate in Nigeria until 2008, pointing to the effects of a newly introduced oil-price based fiscal rule in fostering fiscal discipline (see Section 4). However, the release of a portion of the country’s windfall oil savings to the three tiers of government in the course of 2008 points to risks to fiscal discipline.

The development of non-oil deficits (see above on this indicator) also points to the expansionary course of fiscal policy (Table 3). While levels are not directly comparable, owing to different definitions, the trend towards fiscal expansion is clear in all four countries. Non-oil deficits rose sharply in Saudi Arabia and Algeria as a percentage of non-oil GDP. In Russia, for which no computation of non-oil GDP is available, the non-oil deficit-to-GDP ratio increased from 3.9% of GDP in 2003 to a projected 7.2%

in 2008. In Nigeria, the non-oil primary deficit as a percentage of non-oil GDP increased only moderately between 2004 and 2007, with a relatively sharp jump projected for 2008.

Fiscal expansion via expenditure increases in recent years has focused on capital outlays (Table 4). Growth in capital expenditure between 2003 and 2008 exceeded increases in current expenditure (and thus total expenditure). As a result, the share of capital expenditure in

29 The establishment of six economic cities is a key element of Saudi Arabia’s investment programme. Each economic city is intended to focus on specific economic activities and industries. The economic cities are seen as key to fostering diversification and re-balancing growth between the country’s regions. Unlike in the smaller Gulf oil-exporting countries regional disparities are an issue in Saudi Arabia. The cities are primarily to be established in regions which have not benefited from the buoyant activity in recent years. To realise its ambitious investment programme, Saudi Arabia, like other oil-exporting countries, increasingly utilises public-private partnerships (PPPs) in areas that traditionally were domains of public investment. While PPPs can increase efficiency, e.g. in procurement and by resorting to private sector innovation and management skills, they also involve risks. They may, for example, give rise to contingent liabilities and reduce fiscal transparency, unless governed by strong institutional frameworks.

Table 4 Capital expenditure in selected oil-exporting countries

	Capital expenditure					Memorandum: Real total expenditure increase 2003-2008 (%)
	% of total expenditure		% of GDP		Real increase 2003-2008 (%)	
	2003	2008	2003	2008		
Algeria	37.1	40.5	10.9	11.5	104.5	87.4
Nigeria	16.6	33.3	3.1	4.4	145.5	22.6
Saudi Arabia	14.4	25.9	4.8	6.9	195.1	63.6
Russia	13.1	14.7	4.6	5.0	109.7	87.5

Sources: IMF and ECB staff calculations. 2008 data are IMF projections.

Notes: Algeria and Saudi Arabia: central government. Nigeria: total federal government and extra-budgetary expenditure. For 2008 capital expenditure includes large-scale infrastructure projects (financed by state and local government). Russia: gross public fixed capital formation.

Table 5 Current expenditure in selected oil-exporting countries

	Current expenditure					Memorandum: Real total expenditure increase 2003-2008 (%)
	% of total expenditure		% of GDP		Real increase 2003-2008	
	2003	2008	2003	2008	(%)	
Algeria	72.9	59.5	21.4	16.9	52.8	87.4
Nigeria	83.3	72.9	15.3	9.6	7.4	22.6
Saudi Arabia	85.6	74.1	28.5	19.7	41.5	63.6
Russia	NA	NA	NA	NA	NA	87.5

Sources: IMF and ECB staff calculations. 2008 data are IMF projections.

Notes: Algeria and Saudi Arabia: central government. Nigeria: total federal government and extra-budgetary expenditure. Russia: general government.

total expenditure and as a percentage of GDP increased over the past five years. The most pronounced increase in real terms was in Saudi Arabia, while it was more moderate in Algeria and Russia. Given that these two countries exhibited the highest overall rise in expenditure, this points to dynamic increases in current expenditure as well.

Indeed, current expenditure was also raised to a non-negligible extent in all four countries, although, given the even faster expansion of capital expenditure and fast nominal GDP growth its share in total expenditure and as a percentage of GDP declined (Table 5).³⁰ For example, between 2003 and 2008 outlays on public wages increased by 75% in Algeria and expenditure on subsidies in Saudi Arabia rose by almost 30%.³¹ The degree and pattern of fiscal expansion is also observable in the

elasticity of public spending with regard to changes in public revenues (Box 4).

30 Current expenditure increases appear very moderate in Nigeria. While indeed some fiscal moderation is observable in Nigeria, not least as a result of a fiscal rule, Table 5 may underestimate growth in current outlays, as only federal government and extra-budgetary expenditure is reported. However, as Nigeria is a federal state with substantive public spending at regional level, current expenditure is not fully captured.

31 The budget figure for subsidies in Saudi Arabia tends to vastly underestimate the degree of subsidisation in the country. Direct subsidies in the budget accounted for less than 1% of GDP in 2007. However, Saudi Aramco, the state oil company, sells domestic fuel at below market prices, which is an implicit subsidy estimated at 11.5% of GDP in 2007. This implies that the subsidy is prima facie borne by Saudi Aramco. However, as it reduces the profit transferred by the company to the government, it ultimately has a fiscal cost in the form of reduced oil revenues. Similar indirect subsidies exist for water and electricity, for example. Saudi Aramco is one example of the quasi-fiscal activities conducted by state oil companies in many oil-exporting countries. Nigeria's NNPC also subsidises domestic fuel to redistribute oil proceeds to the general population. Russia's Rosneft has been tapped as a tool for regional development in remote regions. See Baker Institute (2007).

Box 4

THE REACTION OF PUBLIC EXPENDITURE TO CHANGES IN PUBLIC REVENUE IN OIL-EXPORTING COUNTRIES

This box presents the elasticity of public expenditure in ten major oil-exporting countries with respect to public revenues for the period 1998-2007 (see Table). The period is sub-divided into 1998-2002 and 2003-2007 in order to compare, in particular, public expenditure in the wake of high and rising oil prices since 2003 with the previous 5 years, in which oil price movements were more moderate. The elasticities of total public expenditure and those of the sub-components public capital expenditure and public current expenditure with respect to total public revenues have been computed. As oil revenues account for a significant share of total public revenues in

Public expenditure elasticities in oil-exporting countries

(with respect to public revenues)

	Period	Elasticity of		
		public expenditure	public capital expenditure	public current expenditure
Algeria	98/02	0.823	1.040	0.743
	03/07	0.880	1.401	0.577
Iran	98/02	0.779	0.843	0.724
	03/07	0.991	0.588	1.208
Kuwait	98/02	0.407	0.024	0.455
	03/07	0.677	1.040	0.610
Libya	98/02	0.834	1.266	0.713
	03/07	0.785	1.363	0.379
Nigeria	98/02	0.665	0.564	0.700
	03/07	0.918	1.125	0.837
Norway	98/02	0.695	0.060	0.744
	03/07	0.457	0.940	0.418
Russia	98/02	0.884	1.249	0.822
	03/07	0.864	0.699	0.886
Saudi Arabia	98/02	0.649	0.438	0.677
	03/07	0.675	1.558	0.360
United Arab Emirates	98/02	1.090	0.740	1.362
	03/07	0.417	0.512	0.330
Venezuela	98/02	0.889	0.950	0.852
	03/07	1.079	1.173	1.036
Non-weighted average	98/02	0.772	0.791	0.783
	03/07	0.774	1.051	0.691

Sources: IMF WEO database and ECB staff calculations. Data for Norway: "Statistics Norway".

Notes: Public capital expenditure is gross public fixed capital formation. Current expenditure has been computed as the residual from total public expenditure and gross public fixed capital formation. Data are for general government with the exception of Algeria (central government). The table shows the relative change in total public expenditure, public capital expenditure and public current expenditure with respect to changes in total public revenues. The formula used is the "average elasticity" computed as $(\Delta \text{expenditure} / \Delta \text{revenues})^*$ (average revenue / average expenditure).

major oil-exporting countries, changes in total revenues are driven, in particular, by changes in oil receipts, so the reaction of expenditure to changes in total revenues can be considered a good proxy for the reaction to changes in oil revenues.

The average elasticity is 0.77 for total expenditure over the past 10 years, slightly larger for capital expenditure (especially in the second sub-period) and slightly smaller for current expenditure (also especially in the second sub-period). This confirms that, with the rise in oil prices since 2003, the main focus of expenditure increases has been capital outlays, while current expenditure has also increased significantly.

Saudi Arabia, Algeria and Libya are the countries with the highest elasticity of capital expenditure to revenue changes since 2003, reflecting the large public investment programmes in these countries. In Saudi Arabia the marked contrast to the period 1998-2002 is noteworthy (as also the case in Kuwait).

The highest elasticities of total expenditure to revenue changes since 2003 are observable in Venezuela and Iran, reflecting very expansionary fiscal policies in those countries (see also Chart 13). Moreover, increases in current expenditure were more pronounced than in other major oil exporters. In Russia, the elasticity of current expenditure since 2003 is also high and exceeds the elasticity of capital expenditure.

The countries with the lowest elasticity of total expenditure to revenue changes since 2003 are Norway and the UAE. In Norway this reflects generally conservative fiscal policies with a high inclination to save oil proceeds (see also Section 4). In the UAE the private sector is more developed than in other Gulf oil-exporting countries, so the investment spree of the past years has been less driven by public expenditure than elsewhere in the region.

Reacting to falling oil prices and the global economic downturn

The intensification of the global financial turmoil, the subsequent acceleration of the economic downturn and the concomitant sharp fall in oil prices in the second half of 2008 changed within a few short months the set of issues faced by fiscal policy in oil-exporting countries in the short run. Since then inflationary pressures have been on the decline, mitigating some of the conflicts between competing fiscal objectives analysed below (sub-section 3.2.3) that have complicated the conduct of fiscal policy over the past few years. In the short run, the sharp and rapid fall in oil prices has brought to the fore the question of *whether* oil-exporting countries can continue with various spending programmes initiated over the past years, in particular in the area of public investment, or *whether* they need to adjust spending to dampened revenue prospects. In the medium term, the question is *how* they could adjust if the fall in oil prices is not temporary but more persistent.

A key issue in the short run is how far oil prices can fall without oil-exporting countries incurring budget deficits. This “fiscal break-even” oil price indicates at which level of oil prices budget balances would turn from surplus into deficit at a given level of expenditure. This level varies from country to country, depending on, for example, the level of public expenditure and the share of oil revenues in total public revenues (see Table 6, which provides an overview of estimated fiscal break-even oil prices for 2009). Saudi Arabia and other Middle Eastern and North African oil exporters exhibit relatively low fiscal break-even oil prices, whereas, for example, Russia and, in particular, Iran have much higher thresholds (i.e. their budgets are less resilient to recently lower oil prices). Countries that have embarked on a relatively

strong fiscal expansion in recent years face the greatest risk of running deficits in the rapidly changing environment.

This does not imply that oil-exporting countries need to avoid deficits and adjust fiscal policies instantly. Most oil exporters are in a position to maintain levels of spending reached in recent years, as they have brought down public debt to low levels and have accumulated – sometimes large – foreign assets. These can be used to bridge a period of temporarily low oil prices and to avoid pro-cyclicality of fiscal policy, which is a key challenge for fiscal policy in oil-exporting countries in view of large, unpredictable swings in oil prices. The stabilisation function of oil funds (see sub-section 4.2) has been introduced to address exactly such a situation and to prevent abrupt adjustments in expenditure and pro-cyclicality.

To the extent that public spending initiated over the past few years has been identified as useful (e.g., in order to diversify the economy or upgrade infrastructure – see sub-section 3.2.3 on development-related spending needs), continuing the spending programmes would help to stabilise the domestic economy and

Table 6 Fiscal break-even oil prices for selected oil-exporting countries

Country	USD per barrel
Algeria	56
Iran	90
Kuwait	33
Libya	47
Nigeria	78
Russia	70
Saudi Arabia	49
United Arab Emirates	23

Sources: IMF, Goldman Sachs (Nigeria, Russia).
Note: Estimates for 2009.

contribute to global stabilisation efforts. At the same time, lower oil prices and tighter budgets may prompt the reconsideration of some of the planned investment projects and possibly the postponement or cancellation of marginal projects whose value added is not self-evident.

The authorities in Saudi Arabia have indicated that they do indeed plan to go ahead with spending plans, as evidenced, for example, in the budget for 2009, which foresees a significant increase in spending relative to the 2008 budget, in spite of sharply lower revenues, and, for the first time since 2004, includes a projected budget deficit. Algeria does not intend to alter its fiscal stance in 2009 either, and plans to go ahead with the implementation of the public investment programme. It is therefore likely to exhibit a budget deficit in 2009, for the first time since 1999, while the government develops fiscal contingency plans for the event that oil prices remain low over the medium term. In Russia fiscal policy is also still set to remain on an expansionary path, with an explicit fiscal stimulus package coming on top of an already expansionary budget for 2009, even though capital outflows and reductions in foreign exchange reserves owing to central bank efforts to limit currency depreciation may eventually limit the scope for fiscal expansion and budget deficits.

If oil prices were to remain at relatively low levels compared to the past few years for a protracted period of time, however, oil exporters would inevitably have to adjust fiscal policy or run the risk of accumulating large public debt again.³² Adjustments could take place on the expenditure and the revenue side. On the expenditure side, current outlays and expenditure on marginal investment projects could be reduced without impeding longer term growth prospects or diversification efforts. On the revenue side, the introduction or expansion of taxes could be envisaged to ensure fiscal sustainability. Broadening the revenue base by developing an efficient tax system would in any case be beneficial over the medium term by reducing the strong reliance on oil receipts

(see Table 1) and enhancing the control of authorities over public revenues, which are still largely beyond their control. The almost complete absence of taxation is particularly striking in Saudi Arabia and other GCC countries.³³ At the same time, distortions and disincentives to work, save and invest through the introduction of new taxes or the increase of existing taxes need to be minimised, in particular in order to avoid taxation becoming an impediment to efforts to enhance economic diversification.

Making the necessary fiscal adjustments may nevertheless be difficult, as evidenced by the experience of the 1980s and 1990s. Many oil-exporting countries ran persistent budget deficits and accumulated large public debt (see sub-section 2.2) as they neither sufficiently reined in spending that was increased during the 1970s nor developed alternative sources of revenue.

3.2.2 FISCAL POLICY AND INFLATION

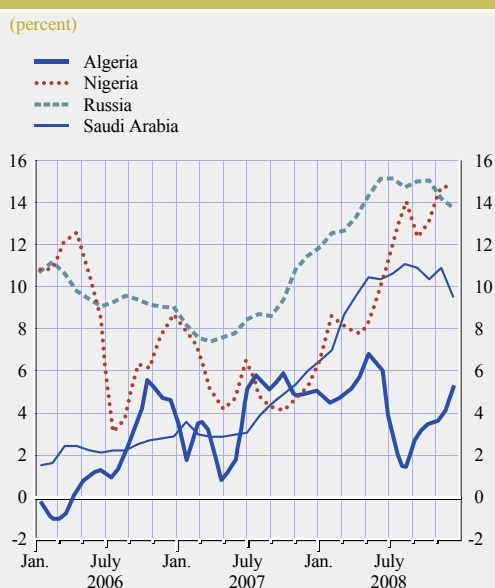
Inflationary pressure in the wake of the economic expansion

While the overall macroeconomic backdrop for oil-exporting countries has been favourable since 2003, with high economic growth and large fiscal and current account surpluses, rising inflation has emerged as a “dark cloud” in their economic performance. As discussed in sub-section 2.1, in the past inflation in oil-exporting countries had generally been somewhat lower than in emerging market economies in general. However, they have seen rising inflation, in particular in 2007-08, in line with global and emerging market developments, and in some oil-exporting countries the rise in inflation has been particularly pronounced (Chart 12).

32 Given medium-term projections of global oil demand and supply, which suggest a tight global oil market (see for example IEA (2008)), a scenario of very low oil prices over a protracted period of time currently does not seem to be the most likely one, but also cannot be ruled out.

33 At present GCC countries do not levy personal income taxes or general consumption taxes. The introduction of a VAT, co-ordinated among GCC countries, is under discussion.

Chart 12 Recent inflation developments in selected oil-exporting countries



Source: Haver Analytics.

In Russia the protracted disinflation process, which brought inflation down to single-digit rates in 2006, has reversed, with inflation almost doubling in one year between mid-2007 and mid-2008 to around 15%. Saudi Arabia, where average inflation over the past decades was at very low levels of between 0% and 2%, has seen prices gradually creep up since 2005. Since mid-2007 inflation has surged, with monthly inflation rates (year-on-year) of above 10% during most of 2008. Saudi Arabia thus followed the trend seen earlier in smaller Gulf oil exporters like the UAE and Qatar. Nigeria has also experienced rising inflation since mid-2007. Although high at around 12%, inflation is still relatively moderate compared to the even higher (and more volatile) inflation rates of the past (see Chart 4, sub-section 2.1). In Algeria inflation has also been on an upward trend since 2006, albeit at still relatively moderate levels. However, inflationary pressure in Algeria and other oil-exporting countries may not be fully reflected in headline figures owing to widespread subsidies and administered prices, in particular for energy and food, and deficiencies in CPI baskets.³⁴ Subsidies imply that rising oil and

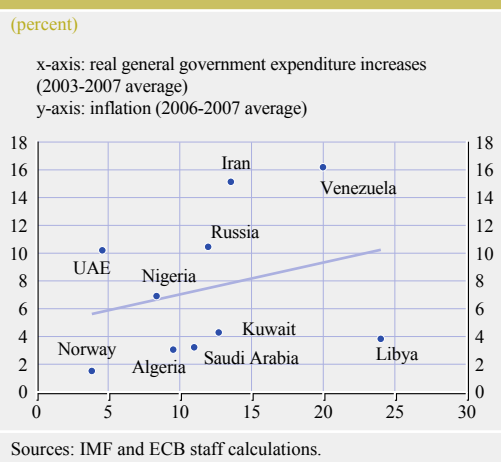
food prices do not immediately translate into rising headline inflation, but are absorbed by the government budget. Unlike some non-oil-exporting emerging market and developing countries, which had to reduce oil and food subsidies in view of their rising burden on the budget in the wake of high and rising global commodity prices in past years, oil exporters, given their favourable fiscal position, can afford to maintain subsidy schemes, in spite of the economic distortions caused by such schemes.

The rise in inflation has been driven by a combination of global and domestic factors. Global factors include increasing commodity prices, in particular oil and food prices, which have led to a rise in inflation worldwide. In recent years the weakness of the US dollar has been another factor contributing to inflationary pressure in many oil-exporting countries because of their exchange rate regimes (see below). The key domestic factor has been buoyant domestic demand in the wake of high oil prices, accompanied in many cases by rapid money and credit growth. Domestic demand has been stimulated to a significant extent by fiscal expansion. Indeed, some correlation is observable between real public expenditure increases in oil-exporting countries over recent years and inflation rates (Chart 13). The most pronounced outliers from the trend, the UAE and Libya, can be explained by a relatively high degree of private sector investment in driving the economic expansion (UAE) and administered prices (Libya).

While inflationary pressure is likely to abate in view of global economic and financial developments since mid-2008, the experience of the past few years sheds light on the price dynamics in oil-exporting countries and the respective roles of fiscal and monetary policies. These lessons of the years 2003-08 may again become highly relevant once the global economy

³⁴ Algeria's CPI basket was last updated in 1989 and may not reflect current consumption patterns. The Economist Intelligence Unit (2008) estimates that underlying consumer price inflation is probably around 10% to 12%.

Chart 13 Government expenditure and inflation



recovers and oil prices start rising, in particular in view of longer term supply and demand conditions in global oil markets.

Constraints on monetary policy in tackling inflation

Monetary policy has been constrained in tackling inflation due to prevailing exchange rate regimes. With the exception of Norway, which has an inflation targeting framework, all top ten net oil exporters have an external anchor of monetary policy, and most have a strong orientation to the US dollar, i.e. the currency in which oil is priced (Table 7). Among the four

countries under closer consideration here, the link to the US dollar is closest in Saudi Arabia, with a fixed parity unchanged since 1986, while Russia exhibits the most flexibility.

The nominal effective exchange rates (NEERs) of all four oil exporters under consideration have depreciated since 2002, i.e. depreciation set in at around the time when the oil-driven economic boom started (Chart 14). The nominal effective depreciation reflects the weakness of the US dollar over the past years against other major currencies and has been one source of inflationary pressure, in particular as a relatively high share of imports in oil-exporting countries originates from the EU. Russia's NEER has remained relatively stable over the past few years in view of the rouble's appreciation against the US dollar until July 2008, when this trend sharply reversed. Russia and, to a lesser extent, Nigeria have seen appreciation in their real effective exchange rate (REER) over the past years, which was driven by relatively high inflation in these two countries and, in the case of Russia, was also supported by nominal appreciation against the US dollar. In Algeria and Saudi Arabia, also the REER depreciated.

Pegs or tightly managed floats to the US dollar have contributed to inflationary pressure not only via nominal depreciation and higher import prices, but also by constraining central banks in

Table 7 Exchange rate arrangements of oil-exporting countries

	<i>De facto</i> exchange rate arrangement	Reference currency
Algeria	Managed float	USD
Iran	Conventional peg ¹⁾	Composite (undisclosed basket, presumably comprising USD, euro and yen)
Kuwait	Conventional peg	Composite (undisclosed basket, presumably dominated by USD)
Libya	Conventional peg	Composite (SDR)
Nigeria	Conventional peg ¹⁾	USD
Norway	Independent float	
Russia	Managed float	USD/EUR
Saudi Arabia	Conventional peg	USD
United Arab Emirates	Conventional peg	USD
Venezuela	Conventional peg ²⁾	USD

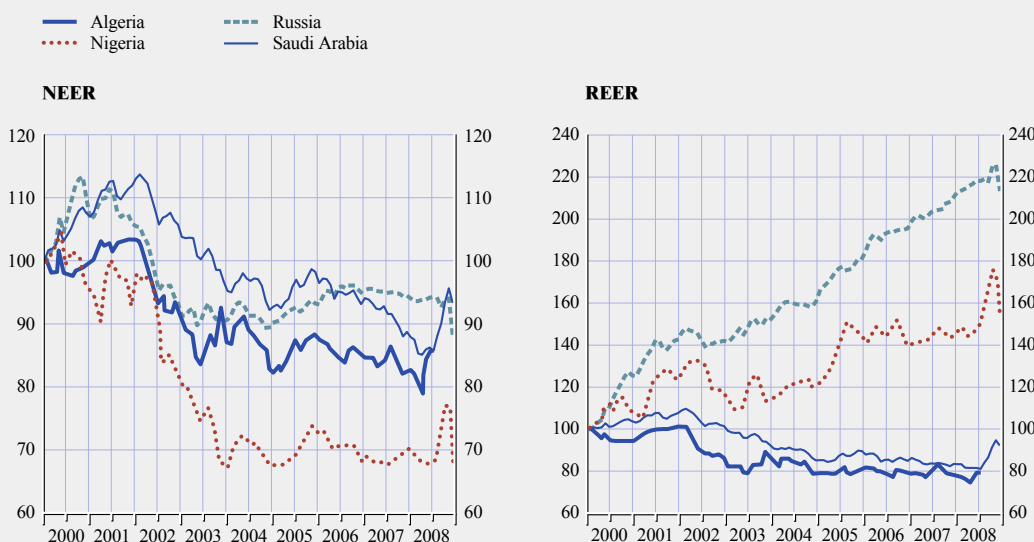
Sources: IMF, as of April 2007, update of 4th quarter 2007. Kuwait: ECB staff assessment, based on modification of the exchange rate regime of May 2007. Reference currency: as per ECB staff assessment.

1) IMF staff assessments of the *de facto* arrangements have been different from the *de jure* arrangements in the review period.

2) The country maintains an exchange rate arrangement that involves more than one foreign exchange market. The indicated arrangement is the one in the major market.

Chart 14 Nominal and real effective exchange rates of selected oil-exporting countries

(index January 2000 = 100)



Sources: Haver Analytics (JP Morgan Broad Nominal and Real Effective Exchange Rate) and IMF (IFS).

their use of interest rates to tackle rising inflation. In spite of increasing upward pressure on prices and buoyant economic growth, central bank interest rates have been raised only moderately (Nigeria, Russia³⁵) or, in the case of Saudi Arabia, have even been lowered (Chart 15). As a result, real interest rates have been declining or even turned negative, thereby contributing to rapid money and credit growth.³⁶ The room to manoeuvre in the area of interest rates depends on the degree of capital account liberalisation and the willingness to allow exchange rate flexibility. In the context of oil exporters over the past few years, this means allowing appreciation against the US dollar. This explains why Saudi Arabia and other GCC countries, with their relatively open capital accounts and fixed pegs, had to follow the Federal Reserve in lowering interest rates since September 2007, whereas Russia, for example, had a little more scope for monetary tightening, thanks to greater exchange rate flexibility.

To sum up, monetary conditions can be considered to have been relatively loose in the past years in most oil-exporting countries, including the four under consideration here.

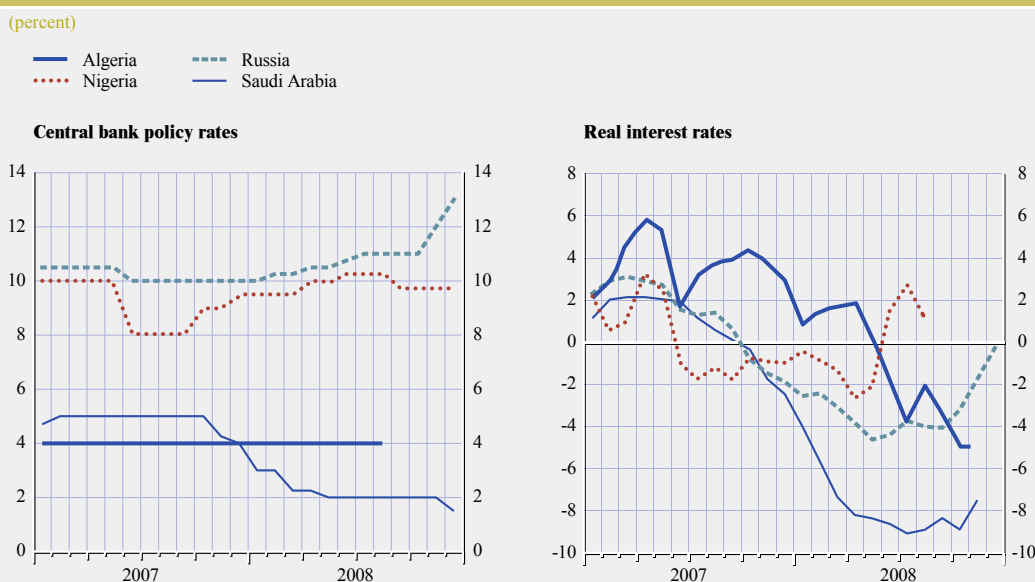
Economies that were enjoying buoyant growth and an oil revenue-driven fiscal stimulus have seen nominal and in some cases also real effective depreciation in their exchange rates and negative real interest rates. This has been the result of prevailing exchange rate regimes in combination with monetary policy in the anchor country, the United States, and the weakness of the US dollar against other major currencies.

As a consequence of loose monetary conditions and fiscal expansion, fast growing economies have faced – not so surprisingly – rising inflation, and in some cases, in particular in the GCC, sharply rising asset prices. Thus, in view of existing monetary and exchange rate frameworks, fiscal policy is the main

35 In Russia interest rates have been raised more aggressively only since October 2008 to stem the depreciation pressure on the rouble in the aftermath of the intensification of the global financial turmoil.

36 Given the constraints on the independent use of interest rates to curb inflation, several central banks tried to tighten monetary conditions by raising reserve requirements and stepping up the issuance of central bank bills to mop up liquidity. Several oil-exporting countries, in particular in the GCC have also resorted to administrative measures to contain inflation. For example, they introduced ceilings for rent increases.

Chart 15 Central bank policy rates and real interest rates in selected oil-exporting countries



Sources: Haver Analytics and IMF (IFS).

macroeconomic tool available to tackle inflation. This would have called for fiscal restraint, rather than expansion.

3.2.3 COMPETING FISCAL POLICY OBJECTIVES AND CONSIDERATIONS

While under the prevailing monetary and exchange rate regimes the key burden of containing inflation falls on fiscal policy, authorities have been facing various pressures to increase public expenditure in times of (large) budget surpluses. It is also possible to make some economic arguments for expanding public

spending in several areas. The major challenge has thus been to manage the large budget surpluses and to calibrate fiscal policy between conflicting short-term needs and pressures and competing long-term objectives. These diverse factors calling either for fiscal expansion or retrenchment are summarised in Table 8.

In the short term the most obvious conflict is between cyclical considerations (in order to contain inflation), which require fiscal restraint, and various spending pressures. These pressures can be subdivided into expenditure

Table 8 Fiscal policy considerations in oil-exporting countries in the wake of high oil prices

	Short-term considerations	Long-term considerations
Calling for expenditure restraint	– Cyclical (curbing inflationary pressure)	– Intergenerational equity (accumulating financial assets) – Fiscal sustainability (accumulating financial assets)
Calling for expenditure increases	– Distribution (sharing windfall revenues) – Development (tackling underdevelopment) – Global imbalances (recycling oil revenues)	– Economic diversification (investing in physical and social infrastructure)

pressures stemming from primarily distribution-related considerations, pressures stemming from development-related spending needs (both of which are domestic pressures) and policy recommendations in the context of the international debate about global imbalances (external pressure).

Distribution-related considerations

In oil-exporting countries, governments find it difficult to resist public pressure for higher expenditure on various items when oil prices are high and rising. The public (or segments, interest groups, lobbies etc.) may think it only fair that they should benefit from high oil revenues and demand their share of windfall revenues in the form of higher public spending. At the same time, in view of large budget surpluses (and large public assets, e.g. in SWFs), governments find it hard to argue that additional expenditure cannot be afforded. In 2007-08 higher food prices have also contributed to social pressure to increase public expenditure.³⁷

The distribution-related mechanisms can work in different ways, depending on the country's political system. In countries where elections decide political control the tendency to resort to pre-election budgets to win votes (the electoral cycle of fiscal policy) is further reinforced and constitutes the main channel for pressure to raise expenditure or lower taxes.³⁸ A recent example is Russia in 2007, when parliamentary and presidential elections led to a significant relaxation of the fiscal stance.

In countries where elections do not decide political control, as in many oil-exporting countries for example in the Gulf region, it might be assumed, at first glance, that such pressures are less relevant, given the absence of competing political parties trying to win electoral support through expenditure increases or tax cuts. However, distribution-related considerations work through different but potentially equally powerful channels.³⁹ The implicit social contract tends to be based on limited representation in exchange for refraining from taxation. The latter implies not only low or

no taxation of nationals in the narrow sense, but also the free or subsidised provision of public, merit or even private goods, such as health, education, housing, electricity and water. It also includes the expectation that nationals will be provided with employment in well-paid, secure, public-sector jobs.⁴⁰ In the presence of large surpluses and large public assets, it is more difficult to resist calls for higher subsidies, more public sector employment, higher public wages etc., given the nature of the implicit social contract.⁴¹ Recent examples of primarily distribution-driven expenditure in Gulf countries are widespread public sector wage increases (which are often granted in response to rising inflation),⁴² lump-sum payments to nationals, or increases in subsidies.

Development-related spending needs

Apart from primarily short-term distribution-driven pressures, demands for higher public expenditure are also based on what can be considered as economically well-founded arguments as regards development-related spending needs. The underlying reasoning is that many oil-exporting countries have a relatively low level of economic, institutional and human development, with large deficits in areas such as infrastructure, education and health. These are areas which are generally considered vital to economic development, private investment

37 For instance, in Algeria money was drawn from the *Fonds de Régulation des Recettes*, notably to fund subsidies for basic commodities (see Section 4).

38 The seminal contribution on the deficit bias from a political economy point of view is that of Buchanan and Wagner (1977). Later literature has increasingly looked at specific features of democratic systems that are particularly conducive to unsound fiscal policies, such as individual election systems and the degree of political polarisation (see, for instance, Roubini and Sachs (1989), Grilli, Masciandaro and Tabellini (1991), Corsetti and Roubini (1993) and Alesina and Perotti (1995)). For a more recent overview of the literature, see Schuknecht (2004).

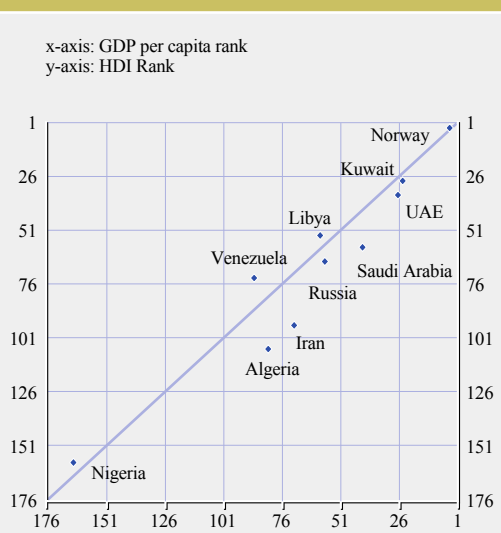
39 See Eifert, Gelb and Tallroth (2002) on the political economy of fiscal policy and economic management in oil-exporting countries.

40 For example, in Kuwait 90% of nationals are employed in the public sector.

41 As regards public assets, one reason why SWFs in the Gulf region are reluctant to provide information about the total amount of assets under management, is that authorities fear that publishing the (presumably very large) figures would reinforce pressure to spend out of the wealth accumulated in these funds.

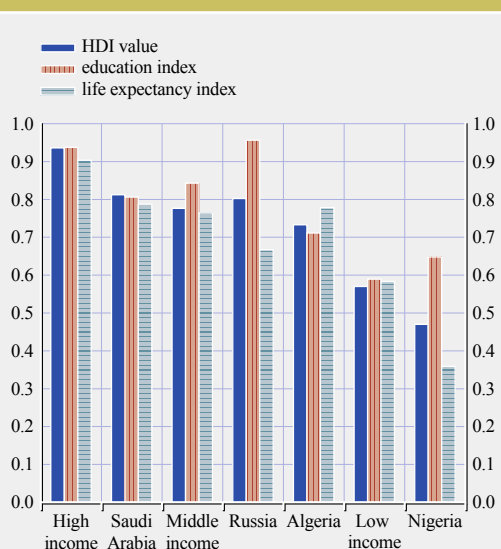
42 See Sturm et al (2008) on wage developments in the GCC.

Chart 16 GDP per capita and HDI rankings of oil-exporting countries



Source: UNDP Human Development Report 2007/2008. Data are for 2005.
 Note: Points below the 45°-line imply that the HDI rank is lower than the GDP per capita rank and vice versa.

Chart 17 Human development indicators of selected oil-exporting countries



Source: UNDP Human Development Report 2007/2008. Data are for 2005.

and, in particular, economic diversification.⁴³ The development gap is illustrated by, for example, human development indicators. Most oil-exporting countries rank lower in terms of human development indicators (HDIs) than in terms of their GDP per capita (Chart 16). Looking at selected countries and indicators (Chart 17), Saudi Arabia lags behind its peer group of high income economies in terms of HDIs, and even lags behind the middle income country average in terms of education, pointing to challenges in this area which Saudi Arabia shares with other Gulf and Arab oil exporters, including Algeria. In Russia education levels are relatively high, but life expectancy is very low, pointing to challenges in the area of health. Nigeria lags behind its peer group of low income countries in all HDIs except education.

The recent period of high oil prices and revenues provided oil-exporting countries with the financial means to narrow the gap with advanced economies in terms of, for example, physical and social infrastructure and to address the needs of a growing population. While, in

principle, an economic case can be made for higher expenditure in these areas, in practice it might be difficult to disentangle such expenditure from primarily distribution-related considerations.⁴⁴

Global imbalances and oil revenue recycling

Finally, in addition to the above mentioned domestic pressures for increased public spending, the international community has also called upon oil-exporting countries for expenditure increases in the context of the debate on global imbalances. For example, in September 2006 the International Monetary and Financial Committee (IMFC) called for “increased spending consistent with absorptive capacity and macroeconomic stability in oil producing countries”, and in April 2006 the annex on global imbalances to the G7 statement

⁴³ See, for example, Stevens and Mitchell (2008).

⁴⁴ For example, calls for higher salaries for teachers may be well justified to increase the quality of education, which is a major problem in, for example, Gulf countries, but also have a distribution component. Similarly, building a road may be part of meaningful infrastructure development, but may also simply be a means to satisfy political demands from a local community, village etc.

included a reference to accelerated investment in capacity, increased economic diversification and enhanced exchange rate flexibility in some cases in oil-producing countries. Consequently, Saudi Arabia as the world's largest oil exporter participated in the IMF's multilateral consultations on global imbalances, and in the staff report of June 2007 on the multilateral consultations the part on Saudi Arabia's policy progress and plans relevant to the IMFC strategy focuses on public expenditure policies.

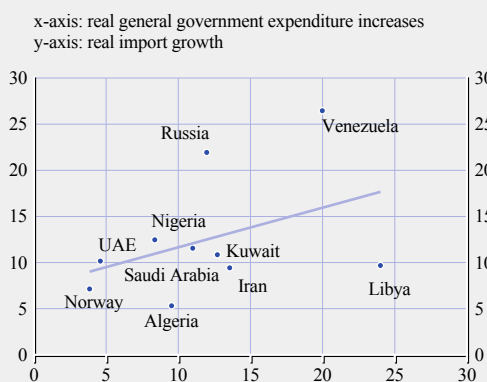
The increased focus on oil-exporting countries in the debate on global imbalance has been motivated and justified by the fact that, in the wake of rising oil prices since 2003, current account surpluses of oil exporters have become a major counterpart of the US current account deficit, alongside East Asia's surpluses. In the context of global imbalances, it is reasonable to assume that increased public spending by oil exporters will raise their imports and thus reduce or at least contain any further increase in current account surpluses, given that public expenditure increases tend to be correlated with growth in real imports, which has generally been strong over the past years (Chart 18). While the direct impact of oil-exporting countries' imports on addressing global imbalances might be limited, owing to the geographical structure of trade,⁴⁵ their import growth nevertheless constitutes oil revenue recycling via the trade channel, which helps to alleviate the adverse economic impact of higher oil prices in oil-importing countries.⁴⁶

Reconciling the objectives of increasing spending and maintaining macroeconomic stability, however, has become much more challenging over recent years in view of inflation developments and the macroeconomic environment in oil-exporting countries. The potential conflict is explicitly acknowledged in the IMFC strategy's statement that increased spending should be consistent with macroeconomic stability.

With regard to long-run considerations for fiscal policy, a potential conflict exists

Chart 18 Government expenditure and import growth

(2003-2007 averages; percent)



Sources: IMF and ECB staff calculations.

between the objective of intergenerational equity and fiscal sustainability and the aim of diversifying the economy. While the former calls for the accumulation of financial assets (see sub-section 3.1), the latter requires public investment in, for example, physical and social infrastructure.⁴⁷ Putting a high weight on ensuring intergenerational equity and long-term fiscal sustainability is consistent with short-run cyclical considerations when inflationary pressure is high, i.e. consistent with fiscal restraint, the saving of oil revenues and the accumulation of financial assets, which would also help to curb inflationary pressure. Creating favourable conditions for long-term economic diversification via public investment is consistent with more expansionary fiscal

45 While import growth in oil-exporting countries has indeed been very dynamic, the direct effect on the US current account deficit is limited, as the bulk of their imports come from the EU and Asia.

46 See the box "Oil-bill recycling and its impact on extra-euro area exports" in ECB Monthly Bulletin, July 2008.

47 Looked at in a different way, economic diversification can be interpreted as *diversification of production*; i.e. oil production is to be complemented and gradually replaced by non-oil production and thus revenues (i.e. tax revenues resulting from non-oil production). By contrast, accumulating financial assets leads only to a *diversification of revenues*; i.e. oil revenues are complemented and gradually replaced by financial revenues, without generating non-oil production. While from a purely fiscal point of view the two options appear to be broadly equivalent, the wider economic implications are quite different, in particular with regard to creating employment opportunities.

policies and the accommodation of some of the expenditure pressures mentioned above. Addressing development-related spending needs is a variation on the same theme.

3.2.4 OPTIONS TO MITIGATE CONFLICTS BETWEEN COMPETING FISCAL OBJECTIVES

Global economic and financial developments since mid-2008 have somewhat alleviated the conflicts between the competing fiscal objectives discussed above, as inflationary pressure is set to diminish, including in oil-exporting countries. Therefore, cyclical considerations in particular no longer call for fiscal restraint to the extent they did before (see sub-section 3.2.2). Nevertheless, the experience of the past few years provides some important policy lessons and points to ways to mitigate possible conflicts should they intensify again.

Assuming that monetary policy is not given a greater role in curbing inflationary pressure, i.e. that existing exchange rate regimes are maintained, two ways of mitigating the conflicts between the different fiscal objectives outlined above stand out: improving the structure and optimising the phasing of public spending.

Improving the structure of public spending

Improving the structure of public spending requires the focusing of expenditure increases on investment, while at the same time containing consumptive expenditure. Moreover, capital expenditure needs to be concentrated in those areas that represent bottlenecks in the economy and thus contribute to inflationary pressure. An example is the housing sector in Saudi Arabia and other GCC countries. Inflation in the region has been driven to a large extent by rent increases for housing, but also for commercial property. This reflects housing shortages as a result of population growth, which is due to high birth rates, a high number of young families, immigration of foreign labour and the opening of the real estate sector to foreigners in some countries. Accordingly, investment in housing projects, in particular for low-income earners, has the potential to alleviate inflationary pressure over the medium term.⁴⁸ Another example is

investment in oil production capacity, which would help to dampen upward pressure on oil prices and thus be conducive to containing global inflation pressures in the medium term, once the global economy recovers from the current downturn.

Furthermore, there is scope to contain consumptive expenditure. Although the bulk of expenditure increases over the past few years have focused on investment, and the share of capital expenditure in total expenditure has increased at the expense of current expenditure in most countries (see Tables 4 and 5 in sub-section 3.2.1), current expenditure has also risen significantly. Thus, containing public wages and cutting subsidies would offer room to increase capital expenditure without unduly raising total expenditure. In other words, focusing on development-related spending needs as described above would help to calibrate fiscal policy in a way that is more conducive to macroeconomic stability.

Optimising the phasing of public spending

Optimising the phasing of public spending entails giving priority to public spending (in particular investment) that helps to alleviate bottlenecks in the economy and increases its absorptive capacity (see above) and postponing other less urgent public investment to periods with lower inflationary pressure. Although the timing of public investment tends to be difficult to fine-tune, recent economic developments provide a good example. In 2007-08 public investment might have added to rising inflationary pressure, but it may be much less problematic from a cyclical point of view in 2009-10 in the wake of the global economic downturn, lower oil prices and receding inflationary pressure, and may even be a welcome contribution to stabilising the domestic and global economy (see also sub-section 3.2.1).

Smoothing public expenditure may also help central bank liquidity operations. Erratic

⁴⁸ See also Khan (2008).

expenditure on, for example, investment projects may lead to sharp liquidity fluctuations in the banking system (which in the past has been characterised in general by excess liquidity in oil-exporting countries), making it more difficult for central banks to mop up excess liquidity (through, for example, reserve requirements or the issuance of certificates of deposits).

Tightening monetary policy

Domestic monetary tightening would also help to alleviate conflicts between competing fiscal objectives. As mentioned above, monetary tightening at times when inflationary pressure is on the rise would require the modification of existing exchange rate regimes and policies. If monetary policy were given a greater role in containing inflationary pressure, fiscal policy would be freed from the burden of being the main macroeconomic tool for this. Monetary tightening would lead to a re-balancing of the macroeconomic policy mix, and enable higher fiscal spending without quasi-automatically contributing to inflationary pressure. Thereby, a tighter monetary policy would help to reconcile competing fiscal policy objectives. For example, it would help oil-exporting countries to lower inflation and thus achieve a domestic objective without a significant fiscal retrenchment, which would reduce their contribution to addressing global imbalances and the recycling of oil revenues via the trade channel.

4 INSTITUTIONAL RESPONSES

This section reviews the most common institutional practices of oil-exporting countries in response to the general and recent policy challenges analysed above. These institutional responses are (i) setting up budgets on the basis of conservative oil price assumptions, (ii) establishing oil stabilisation and savings funds (OSSFs)⁴⁹ and (iii) introducing implicit or explicit fiscal rules. A box provides additional information on two resource-rich countries, Norway and Botswana, often regarded as success stories due to, among other things, carefully designed institutions.

4.1 CONSERVATIVE OIL PRICE ASSUMPTIONS IN THE BUDGET

The budgets of many oil-exporting countries are based on very conservative oil price assumptions that could be regarded as unrealistically low, in particular between 2004 and 2008. Although budgeted oil prices have tended to be adjusted upwards over recent years in view of the oil price boom, the adjustment has lagged significantly behind actual price development. For example, in Algeria the reference oil price in the 2008 budget was increased to USD 37 per barrel (up from USD 19 per barrel). This practice of basing budgets on conservative oil price assumptions has both merits and drawbacks. On one hand, it is a sign of fiscal prudence and is often motivated by political economy considerations. Budgeting for relatively low revenues helps contain expenditure, as the draft budget displays only small surpluses or even deficits. If higher revenues based on more realistic oil price assumptions were used and

the initial budget showed large surpluses, it would be more difficult for the authorities to resist various pressures to increase expenditure. On the other hand, basing the budget on conservative oil price assumptions reduces fiscal transparency and increases the leeway for the executive to spend. For example, in Saudi Arabia⁵⁰ (Table 9), actual expenditure over the past years has exceeded budgeted expenditure by 15-20%. Thus, the budget as published, and the expenditure foreseen therein, tend to be different to the actual outcome. The government has full discretion over the use of the additional revenue received in the course of the year. Among the four countries under closer consideration in this paper, Russia had the least conservative oil price assumption in 2008, closest to the actual market price, which was initially even raised for 2009 (to USD 95 per barrel), contrary to other countries and the downward trend in oil prices since mid-2008, but later was revised sharply downwards (to USD 41 per barrel) (Table 10).

4.2 OIL STABILISATION AND SAVINGS FUNDS

Most oil-exporting countries have set up oil stabilisation and/or savings funds which manage part of the country's foreign assets and usually invest them more aggressively than central banks invest traditional foreign exchange

49 Oil stabilisation and savings funds are often also referred to as sovereign wealth funds (SWFs). Indeed, OSSFs usually qualify as SWFs, and the oldest SWFs are OSSFs, e.g. Kuwait's. However, not all SWFs are OSSFs, as SWFs have also been established by non-commodity exporters, such as China and Singapore, to manage foreign assets.

50 Unlike many other oil-exporting countries Saudi Arabia does not publish an explicit oil price assumption underlying the budget, but the budgeted oil revenue. Assuming a level of oil production, private sector observers estimate an implicit assumption, on which the budget is based.

Table 9 Saudi Arabia's 2007 budget versus actual outcome

	Budget (Saudi riyal, billion)	Actual (Saudi riyal, billion)	Difference (%)
Revenue	400	622	55
Expenditure	380	443	17
Surplus	20	179	793

Source: Jadwa Investment.

reserves. Apart from this investment return motive,⁵¹ the establishment of these funds is mainly driven by fiscal policy considerations. The stabilisation function of oil funds addresses the short-term challenges of fiscal policy and aims to make the conduct of policy less volatile and less pro-cyclical by de-linking public spending from oil prices. When oil prices are high, the funds may also help contain inflation and avoid over-heating in the economy. When oil prices are low, they provide a buffer for “rainy days”, as governments can draw on the fund and thus prevent sharp and potentially disruptive adjustments in expenditure. The savings function of oil funds addresses the long-term challenges of intergenerational equity and fiscal sustainability that accompany non-renewable resources. The revenue from accumulated financial assets can replace income from oil once those resources are exhausted. The funds can also be drawn upon for capital spending where there is a high return (e.g. for economic diversification) and can be used to pay down external debt.

However, oil funds pose a number of challenges of their own, including with regard to governance, transparency and accountability, and are not a panacea for the fiscal challenges of oil-exporting countries.⁵² They are not a substitute for explicit fiscal policy decisions or fiscal rules (see below) and political commitment both to smoothing expenditure and to ensuring long-term fiscal sustainability. Furthermore, their contribution to sound fiscal policies depends on the general quality of institutions and public financial management. In countries where oil funds seem to have enhanced fiscal prudence, the effect might simply be ascribed to self-selection effects. Nevertheless, there is some evidence that oil funds are conducive to reducing macroeconomic volatility.⁵³ This may be attributed to the fact that OSSFs tend to be used as a tool for neutralising the monetary impact of oil-related capital inflows (i.e. for keeping oil revenues outside the domestic banking sector).

Turning to the four countries under review, the oil fund of *Nigeria*, the Excess Crude Oil account, established in 2004, is solely a stabilisation fund. The main rationale behind the Excess Crude Oil account is to close budget deficits due to oil price volatility, and potentially to fund domestic infrastructure investments, as the infrastructure gap is a major impediment to growth in Nigeria. Oil revenues in excess of the budgeted oil price and production level are transferred into the Excess Crude Oil account, which is held at the central bank in the names of the various government entities, as Nigeria is a federal state (see below on the fiscal rule). Nigeria’s Excess Crude Oil account has increased from USD 5.1 billion in 2004 to USD 17.3 billion in 2007. The first withdrawal at the federal level was used for payment of external debt (October 2005).

The oil fund of *Algeria*, the *Fonds de Régulation des Recettes*, was established in 2000 in order to (i) restore the cushion of external reserves that had previously declined, (ii) service the stock of public debt, and (iii) smooth the longer-term profile of expenditure. The rationale behind the *Fonds de Régulation des Recettes*, a sub-account of the government at the central bank in dinars, is to act as a stabilisation fund; it does not have an explicit intergenerational transfer purpose. Since 2004 the resources have been split between a small “liquid” part and a large portfolio of fixed-income securities. Returns on reserves are ultimately transferred to the budget in the form of central bank dividends.⁵⁴ The operational features of the fund leave considerable room for discretion. The assets are used to fund domestic infrastructure investments, given the large need for infrastructure, including social housing, and

51 See Beck and Fidora (2008) on sovereign wealth funds from an investment and global financial market perspective.

52 See Fasano (2000) and Davis, Ossowski, Daniel and Barnett (2001) for a review of the international experience with OSSFs.

53 Based on a panel data set of 15 oil-exporting countries, empirical estimates of Shabsigh and Ilahi (2007) indicate a robust negative relationship between the presence of an oil fund on one hand and domestic inflation, the volatility of prices and the volatility of broad money on the other.

54 IMF (2008).

to finance subsidies for basic commodities to protect consumers from higher world prices. Revenue earned from oil prices above the assumed level is deposited in the fund. Algeria's *Fonds de Régulation des Recettes* is estimated to have reached around USD 50 billion at the end of 2007.

The oil fund of *Russia*, the Oil Stabilisation Fund, was established in 2004 following the adoption of the Budget Code of the Russian Federation in December 2003. It is a cross between a stabilisation and a savings fund with the objective of financing the federal budget deficit if the oil price falls below the reference price.⁵⁵ In addition to the unspent fiscal surplus of the previous year, the financing of the stabilisation fund held at the central bank comes from two sources: oil export duties (in excess of a reference price) and the mineral extraction tax. The legislation stipulates that when the oil stabilisation fund reaches RUR 500 billion, the revenues accumulated can be drawn upon to repay external debt, as was the case in 2005 to repay loans to the IMF and to the Paris Club and in 2006 again to the Paris Club. In addition, the government also used the fund to cover the Pension Fund deficit arising as a result of the 2005 cut in the Unified Social Tax.⁵⁶ In February 2008 the oil stabilisation fund was split between a Reserve Fund – USD 137 billion at end-2008 – with a stabilisation function (budget deficits are financed out of assets from the Reserve Fund and through borrowing, subject to a maximum limit) and a Future Generation Fund – USD 88 billion at end-2008 – with a savings function (also called the National Welfare Fund) to which the portion of income exceeding the Reserve Fund's upper limit is transferred.⁵⁷ When the Reserve Fund reaches 10% of GDP, the additional funds are transferred to the Future Generation Fund.

Saudi Arabia does not have an explicit oil stabilisation or savings fund, unlike other GCC oil-exporting countries.⁵⁸ Foreign assets are mainly accumulated by the Saudi Arabian Monetary Agency (SAMA), Saudi Arabia's central bank. The bulk of these assets are

not formally classified as foreign exchange reserves, as reported, for example, to the IMF. Foreign exchange reserves in the narrow sense, reported on SAMA's balance sheet as "Foreign Currencies and Gold" amount to around USD 32 billion (September 2008) and have risen only moderately over recent years (from around USD 20 billion in 2002). By contrast, foreign assets classified as "Investment in Foreign Securities" and as "Deposits with Banks Abroad" amount to USD 405 billion (up from USD 22 billion in 2002).⁵⁹ Investment in foreign securities are assumed to be allocated somewhat less conservatively than foreign exchange reserves in the narrow sense, without following the more aggressive investment patterns of SWFs, however. In 2008 a small sovereign wealth fund (the Saudi Arabian Investment Co., with a capital of USD 5.3 billion) was established under the management of the Public Investment Fund (PIF). Until now the fund has had a domestic focus, providing loans to and holding stakes in Saudi companies.⁶⁰

4.3 FISCAL RULES

The widespread experience with the "deficit bias" and excessive government spending driven by political economy factors in both industrialised and emerging market economies has drawn attention to fiscal rules as a possible remedy. Fiscal rules can be quantitative,

⁵⁵ Beck and Fidora (2008).

⁵⁶ Gianella (2007).

⁵⁷ Lainela (2007). According to Russia's Minister of Finance, the National Welfare Fund will be invested in foreign securities after the global financial turmoil settles down.

⁵⁸ E.g. Kuwait's fund, created in 1953, is the oldest and Abu Dhabi's fund, created in 1976, is believed to be the largest in the world.

⁵⁹ Saudi Arabia's foreign assets have not increased to the extent that could be expected, given the size of the country's oil revenues, as large parts were used to reduce the previously high public debt (see sub-section 2.2). The main counterpart of SAMA's foreign assets on the balance sheet are "Deposits of the central government and government agencies and institutions", which have also increased significantly since 2003. Furthermore, SAMA also holds foreign assets of "independent organisations", mainly the two major pension funds, which in September 2008 accounted for USD 67 billion.

⁶⁰ The PIF is under the auspices of the Ministry of Finance. Some foreign assets are also held at SAMA by the social security institutions, which currently generate large surpluses owing to Saudi Arabia's demography.

i.e. provide numerical benchmarks for one or more key parameters of fiscal policy with the aim of limiting political discretion, or procedural, i.e. aim at improving budgetary institutions and management. Fiscal rules – like oil funds – are not a panacea to address fiscal challenges and involve problems of their own, including appropriately balancing simplicity and transparency on one hand against flexibility and room for discretion on the other, ensuring effective enforcement and avoiding incentives for “creative accounting”. Nevertheless, it is increasingly acknowledged that carefully designed fiscal rules can constitute a helpful device to foster fiscal discipline. Given the volatility of oil revenues and the tendency towards pro-cyclical fiscal policies in oil-exporting countries (see Box 3), fiscal rules could be particularly useful for guiding fiscal policy in oil-exporting countries, while at the same time the choice of an appropriate numerical indicator is challenging, given the impact of oil price fluctuations on the budget.⁶¹

There are so far only few oil-exporting countries that have introduced explicit fiscal rules that target non-oil deficits, as suggested by the literature (see sub-section 3.1), most notably Norway (see Box 5), while some countries have implicit, rudimentary rules that appear less binding, often based on budgeted oil prices, that determine transfers to an oil fund. In recent years Nigeria has moved to a more sophisticated framework.

In *Nigeria*, since 2004, all three tiers of government have been operating in accordance with an oil-price-based fiscal rule, supported by a medium-term fiscal strategy (MTFS), which includes targets for the non-oil primary deficit. The key provision is that oil revenues above the budgeted level of prices and production are transferred to the Excess Crude Oil account. The constitution provides that all tiers of government – federal, state and local – share oil revenues. Oil producing states receive 13% upfront and of the remaining 87% the federal government receives 52.7%, the states 26.7%, and local government 20.6%. When the Fiscal

Responsibility Act is passed into law by the 36 states it will institutionalise the so far voluntary use of the oil-price-based fiscal rule.⁶² The fiscal rule has been instrumental in containing spending at levels more conducive to macroeconomic stability in recent years and was central to the turnaround in Nigeria’s economic performance. The rule is designed to link government spending with the long-term oil price,⁶³ thereby de-coupling government spending from current oil revenues. This reduces the volatility of public expenditure and leads to the saving of part of the oil windfall receipts.⁶⁴

Algeria’s fiscal policy is guided by a rule under which oil and gas revenues exceeding the budgeted level based on a conservative oil price assumption are transferred to the oil fund (see above). Since 2000, the state budget has consistently been based on a low oil price (USD 19 per barrel). However, based on the average for the previous 10 years the government has decided to increase the reference price in the 2008 mid-year supplementary budget from USD 19 per barrel to USD 37 per barrel. The upward revision of the oil price is still likely to leave the government with a large apparent budget deficit and a *de facto* substantial fiscal surplus in 2008.

61 See sub-section 3.1 and Sturm and Siegfried (2005). It has to be noted that most of the literature on fiscal rules and their usefulness for containing the “deficit bias” concerns countries with democratic political systems. Much less is known about the political economy with regard to public deficits in political systems where elections are not the ultimate source of political power and legitimacy. This is a topic that deserves further research. For example, enforcement of fiscal rules may prove to be particularly challenging in such an environment.

62 Most of the provisions are legally binding only on the federal government, while encouraging states to adhere to the same framework. In September 2007 a political agreement was reached under which all states are to adopt fiscal responsibility legislation (IMF, 2008), which would make the use of oil revenues received under the oil-price-based rule less discretionary and facilitate fiscal coordination.

63 The reference price for oil in the budget appears conservative even if it has increased (2004: USD 25 per barrel; 2005: USD 30 per barrel; 2006: USD 35 per barrel, 2007: USD 40 per barrel, 2008: USD 59 per barrel).

64 Budina *et al* (2007).

Russian fiscal policy is also guided by a rule under which oil and gas revenues exceeding the budgeted level, based on an oil price assumption which has become less conservative over the past few years, are transferred to the oil fund. Given, in particular, the large expenditure increases of recent years, especially in the context of the elections of 2007 (see sub-section 3.2.1), the apparently limited impact of public investment in enhancing non-oil GDP growth (see Box 2) and the upward trend in inflation since mid-2007, and in view of Russia's federal structure, an explicit fiscal rule could be conducive to fiscal discipline and macroeconomic stability and, for example, restrain mounting pressure to draw on the oil fund. Starting in the 2008 budget, Russia introduced a three-year budget regime with the aim of assuring consistency of fiscal policy and effective use of state resources.⁶⁵

Saudi Arabia's fiscal policy is conducted without any implicit or explicit fiscal rule, leaving the executive with a very high level of discretion over public expenditure (see also above).

Table 10 summarises the main features of the four countries concerning oil price assumptions in the budget, OSSFs and fiscal rules. The practices of the four (as well as other) oil-exporting countries indicate that these instruments are separate, i.e. can be used in isolation. For example, an OSSF can be established without transfers into or withdrawals from the fund being guided by any rule. Such full discretion is likely to sharply reduce the value of an oil fund in fostering fiscal discipline. On the other hand, in principle, a strict fiscal rule is feasible without establishing an OSSF as a separate entity or account. It

65 Bofit (2007).

Table 10 Overview of key budgetary institutions in selected oil-exporting countries

	Algeria	Nigeria	Russia	Saudi Arabia
Oil price assumption in the budget	USD 37 (2008) USD 37 (2009)	USD 59 (2008) USD 45 (2009)	USD 74 (2008) USD 41 (2009)	Not officially released. Private sector estimates: approx. USD 50 (2008) USD 45 (2009)
Oil stabilisation and savings fund	“Fonds de Régulation des Recettes” (since 2000) Primarily a stabilisation function (USD 50 billion)	“Excess Crude Oil account” (since 2004) Stabilisation function (USD 17.3 billion)	1) “Reserve Fund” Stabilisation function (USD 137 billion) 2) “Future Generations Fund” Savings function (USD 88 billion) (The fund established in 2004 was split in two in February 2008.)	“Saudi Arabian Investment Co.” (since 2008) Savings function (USD 5.3 billion) The bulk of foreign assets that are not foreign exchange reserves in the narrow sense are managed by SAMA (USD 405 billion).
Fiscal rule	Oil revenues above the budgeted level are transferred to the oil fund.	Oil revenues above the budgeted level are transferred to the oil fund. Under the constitution, all tiers of government (federal, state, and local) share oil revenues. An MTFS includes targets for the non-oil primary deficit.	Oil revenues above the budgeted level are transferred to the oil fund.	None

Sources: National authorities and Middle East Economic Survey (MEES).
Notes: Data on the amounts in the respective funds are end-2007 for Algeria and Nigeria, end-2008 for Russia and September 2008 for Saudi Arabia.

appears most effective, however, to combine the instruments in a consistent manner by, for example, establishing an explicit fiscal rule guiding transfers into and withdrawals from a transparent and well-governed oil fund. Oil price assumptions can play a role in designing the fiscal rule, in particular if targeting non-oil budget balances to non-oil GDP is technically too challenging or is seen as not sufficiently transparent in the specific context of a country.

Box 5

TWO EXAMPLES OF SUCCESSFUL NATURAL RESOURCE MANAGEMENT: NORWAY AND BOTSWANA

While resource-rich countries are often under-performers compared to other countries (see Section 2), some are seen as exceptions to “the rule” and have managed to avoid the “resource curse”. One is Norway, an oil/gas rich industrialised country, and another is Botswana, a southern African diamond-rich developing country, i.e. two countries at very different levels of economic development.

Norway

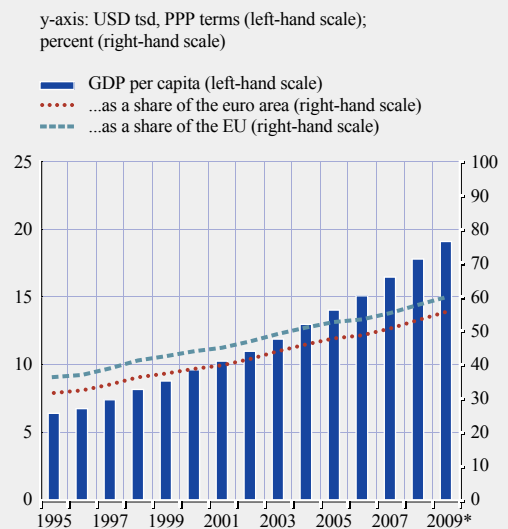
Norway is the world’s fifth largest oil exporter, the world’s third largest gas exporter and, like most other industrialised countries, faces a fiscal challenge related to the ageing of its population. Norway’s oil production peaked in 2002 and reserves are relatively limited. The fiscal policy framework currently in place is effective and conducive to fiscal discipline. The fiscal framework includes an explicit fiscal rule based on the structural non-oil budget balance and a transparent sovereign wealth fund (the Government Pension Fund-Global, GPF-G). It was established in 1990 under the name Government Petroleum Fund, but political pressures to spend more of the oil revenues led to its renaming in 2006, as the GPF-G is explicitly meant to finance future pension payments. The GPF-G is the second largest SWF in the world (USD 396.5 billion at end-2007) and is charged with investing Norway’s oil and gas revenues for future generations. The fiscal rule adopted in 2001 is aimed at keeping the central government structural non-oil deficit at 4% of the assets of the GPF-G. Put differently, only the expected real return of the fund (based on a conservative assumption) can normally be transferred to the central government budget and be used for expenditure. Deviations from the 4% fiscal rule have been frequent since its inception and are allowed under certain circumstances, as in 2002-03 when the fund was negatively impacted by the stock market decline (Jafarov and Leigh, 2007). In 2007 the government allowed the fund to increase the portion of money invested in stocks to 60% from 40%. The fund has expanded rapidly in the past few years as oil prices rallied to record levels and will eventually invest 10% of its money in real estate and 5% in private equity. Notwithstanding frequent deviations from the fiscal rule, it is seen as having been successful in promoting fiscal discipline and macroeconomic stability (see Chart 13), which has also been supported by Norway’s inflation targeting framework. Norway’s success in managing natural resource wealth can not solely be attributed to the fiscal rule and the oil fund as such, but their successful implementation and the relatively high degree of fiscal restraint over the past years may well be an expression of a number of factors that distinguish Norway from other major oil exporters. A high level of income and human development indicators, a developed infrastructure and a relatively diversified economy reduce the development-related spending needs. Mature institutions and a high level of governance in general (see Chart in Box 2) help to contain

primarily distribution-related spending pressures. Furthermore, relatively limited oil and gas reserves strengthen the case for saving oil revenues for future generations and for sustaining public finances, in particular in view of an ageing population.

Botswana

Botswana is a country rich in diamonds (75% of exports) with the fastest growing income per capita in the world (9% per annum on average over the past 30 years). Botswana is predominantly tropical and is landlocked, which the literature sees as a disadvantage (Bloom and Sachs, 1998). In the mid-1990s GDP per capita was around a third of that of the euro area, and since 2005 it has been more than half (see Chart). With only 5% of the land being arable and with water shortage being a perennial constraint, agriculture-based growth was never an option (Basu and Srinivasan, 2002). The economic achievements are particularly striking because diamond wealth is more often than not associated with rent-seeking behaviour, eventually leading to conflict to control revenues (e.g. in Angola, Congo and Sierra Leone). Botswana is the world's largest diamond producer and has enjoyed democracy and elections on a regular basis since independence in 1966, although the same party has always remained in power under the leadership of three presidents. In addition to the maintenance of a relatively high level of governance in general, the success of Botswana in advancing from the group of the world's poorest countries to the group of upper-middle income countries is due to a business-friendly environment (e.g. low tax rates) and to prudent fiscal management, with an implicit rule whereby diamond revenue is used to finance "investment expenditure", which is defined as development expenditure and recurrent spending on education and health. In 1966 Botswana established a diamond mining revenues fund under the management of the central bank which was worth USD 6.8 billion at end-2007, of which 80% is accounted for by the "Pula Fund", which is invested in long-term assets, and 20% is accounted for by a more traditional "Liquidity Fund", comprising foreign exchange reserves in a narrow sense, which is invested in the money market and short-term bonds. Prudent fiscal policy has been key for channelling diamond revenues into capital investment, with the government investing in a transparent way in infrastructure, education and health. Botswana ranks well above the average of middle income countries in terms of World Bank governance indicators and is not far from high-income countries. The success of Botswana is due to the adoption of good policies which have promoted investment and the socially efficient exploitation of resource rents (Acemoglu *et al*, 2001). As in the case of Norway, it is not the specific institutions like funds or fiscal rules per se, but their embedment in an environment of good governance and high quality institutions in general that allows them to achieve their positive effects. The fact that such an environment – unlike in the case of Norway – has been created in an African country with an initially low level of economic development is particularly noteworthy.

Botswana's GDP per capita



Source: IMF (* projection).

5 CONCLUSIONS

Macroeconomic developments in oil-exporting countries over the past few years have been favourable in view of high and rising oil prices until mid-2008, and have been characterised by buoyant economic growth (contrasting with relatively weak performance in the past, which is often attributed to the “resource curse”) and large current account and fiscal surpluses. While in past decades oil exporters fared relatively well with regard to inflation, compared to emerging market and developing economies in general, rising inflationary pressure has emerged as a mounting challenge in most countries in recent years, with monetary policy being constrained in tackling this challenge as a result of the prevailing exchange rate regimes. This has left fiscal policy to carry the main burden of macroeconomic stabilisation.

The macroeconomic backdrop of oil-exporting countries is expected to change compared to previous years, as oil prices have fallen significantly since their peaks in July 2008 in the wake of the intensification of the global financial turmoil and as the global economy has entered into a downturn. This will probably dampen oil exporters’ growth, curb inflationary pressure and reduce current account and fiscal surpluses in 2009 and, depending on the length and depth of the downturn, possibly also after 2009. Thus recent global developments have brought up a different set of economic and fiscal issues. However, medium-term projections of global oil supply and demand support the notion that oil prices will rise again, i.e. the issues explored in respect of the past few years will remain relevant over the medium-term horizon.

Fiscal policy in oil-exporting countries in recent years has been expansionary, which has been masked by high fiscal surpluses, pointing to the competing considerations and objectives which fiscal policy has been facing. These are to some extent the result of the specific long and short-term challenges of fiscal policy in resource-rich countries, owing to the fact that oil revenues are exhaustible, volatile,

uncertain and originate from external demand. The major competing considerations in the short run have been, on one hand, cyclical, i.e. containing inflation, which calls for fiscal restraint, and, on the other hand, primarily distribution-related considerations (pressures to immediately redistribute oil revenues to the general population), development-related spending needs in, for example, the areas of physical and social infrastructure (in view of the development level of most oil exporters) and international considerations (oil revenue recycling, in particular in the context of global imbalances), which call for fiscal expansion. In the longer run, fiscal restraint and the accumulation of financial assets, i.e. saving the bulk of recent windfall revenues would be warranted from an intergenerational and fiscal sustainability point of view, while the drive for economic diversification in many countries requires public investment in, for example, infrastructure and education. Whether and under what circumstances financial assets and physical assets can be regarded as substitutes is a key issue in this context. Calibrating fiscal policy in view of these considerations and objectives has been a major challenge for oil-exporting countries over the past few years.

In terms of policy responses over the past few years, major oil-exporting countries differ with regard to the emphasis laid on competing fiscal considerations and objectives. On one end of the policy spectrum is Norway, which has been characterised by a high degree of fiscal restraint and has saved most of the windfall revenues of past years, i.e. cyclical considerations (maintaining low inflation) and intergenerational objectives have clearly dominated. On the other end of the spectrum are Venezuela and Iran, two countries which have embarked on particularly rapid fiscal expansion, with indications that the focus has been less on capital expenditure than in other major oil exporters, and which have faced high and persistent inflation.

The bulk of oil-exporting countries, including those under closer review in this paper (Algeria, Nigeria, Russia and Saudi Arabia),

are somewhere between these poles. Spending has been significantly increased, but financial assets have also been accumulated. Spending increases have focused on what can be considered development-related spending needs, in particular in the areas of physical and social infrastructure, but primarily distribution-driven spending has also not been insignificant. Inflationary pressure has been increasing (i.e. cyclical considerations have not dominated), but the inflationary impact of public spending has remained on the radar screen of authorities and precipitated some restraint. In Algeria and Saudi Arabia, the diversification motive has been particularly strong, as reflected in their massive investment programmes, given the very high dependence on hydrocarbon revenues and fast growing populations in these two countries. In Russia, which has a more diversified economy and a shrinking population, diversification appears to be less of an objective. Saving for future generations has been a relevant consideration, but also primarily distribution-related considerations seem to have played a significant role in spending decisions, as evidenced in the election year 2007. Among major oil-exporting countries, Russia has been most affected by the intensification of the global financial turmoil since September 2008. This is due to, among other things, weaknesses in the banking and corporate sectors, as reflected also in a downgrading of sovereign debt.

Possible ways to mitigate conflicts between competing objectives and considerations at a time of rising oil prices include improving the structure of public spending (i.e. focusing in particular on capital spending, which alleviates bottlenecks in the economy, while containing current expenditure) and optimising the phasing of public spending (i.e. prioritising capital spending targeted at bottlenecks and at enhancing the absorptive capacity of the economy). Rebalancing the macroeconomic policy mix by tightening monetary policy in times of buoyant economic growth could also help avoid the overburdening of fiscal policy with competing objectives. This would require,

however, a modification of prevailing exchange rate regimes by allowing for more exchange rate flexibility. Apart from technical impediments in some countries to running a different monetary and exchange rate regime, concerns about high volatility and “Dutch disease” tends to hold back authorities from opting for more exchange rate flexibility, in particular as oil is priced in US dollars in international markets.

Global economic and financial developments in the second half of 2008 and the concomitant fall in oil prices have mitigated inflationary pressures in oil-exporting countries, as elsewhere, and thus conflicts between the competing fiscal objectives. In the short run, the sudden, sharp fall in oil prices has brought up a set of new issues, in particular as to whether to continue with spending programmes initiated over the past years or to adjust spending to dampened revenue prospects. To the extent that spending has been identified as useful, e.g. for diversifying the economy or upgrading infrastructure, continuing with spending programmes would help both to stabilise the domestic economy and to contribute to global stabilisation efforts. Most oil exporters are in a position to do so given that over the past years they have brought down public debt to low levels and have accumulated – sometimes large – foreign assets. These can be used to bridge a period of temporarily low oil prices and to avoid pro-cyclicality of fiscal policy. Pro-cyclicality is a key challenge for fiscal policy in oil-exporting countries in view of large, unpredictable swings in oil prices; a challenge which over the past few years has presented two very different sides.

If oil prices were to remain at relatively low levels compared to the past few years for a protracted period of time, oil exporters would have to adjust fiscal policy or risk accumulating large public debt again. Such adjustment could take place on the expenditure and the revenue side. On the expenditure side, current outlays and expenditure on marginal investment projects could be reduced without impeding longer term growth prospects or diversification efforts.

On the revenue side, the introduction or expansion of taxes could be envisaged to ensure fiscal sustainability. Broadening the revenue basis by developing an efficient tax system would anyway be beneficial over the medium term, reducing the dependence of public budgets on oil receipts and enhancing the control of authorities over public revenues, which so far are largely beyond their control.

Institutional responses to the specific challenges for fiscal policy in oil-exporting countries traditionally involve basing budgets on conservative oil price assumptions and, more recently, the establishment of oil stabilisation and savings funds and, in few cases, explicit fiscal rules. While each of these responses has its merits and its drawbacks, none is a panacea to address the specific long and short-run challenges. Norway and Botswana are examples of resource-rich countries at very different levels of economic development demonstrating that indeed specific institutions such as stabilisation and savings funds and fiscal rules can be helpful in managing natural resource revenues. Nigeria's recent experience with a fiscal rule also seems to have been encouraging. Nevertheless, the examples of other countries with profligate spending notwithstanding the existence of oil funds underline that such institutions in isolation are not sufficient to address the fiscal issues prevalent in oil-exporting countries. While they can be helpful devices, the desired effects only seem to be realised if the quality of a country's institutions and level of governance in general are conducive to responsible fiscal conduct.

BIBLIOGRAPHY

Acemoglu, D., S. Johnson and J. Robinson (2001), “An African Success Story: Botswana”, mimeo.

Afonso, A. and D. Furceri (2007), “Government Size Composition, Volatility and Economic Growth”, ECB Working Paper Series, No 849, Frankfurt am Main.

Afonso, A. and M. St Aubyn (2008), “Macroeconomic Rates of Return of Public and Private Investment: Crowding-in and Crowding-out Effects”, Technical University of Lisbon Working Paper No WP 06/2008/DE/UECE, Lisbon.

Agénor, P.R., M.K. Nabli and T.M. Yousef (2005), “Public Infrastructure and Private Investment in the Middle East and North Africa”, World Bank Policy Research Working Paper No 3661, Washington, D.C.

Alberola, E. and J.M. Montero (2006), “Debt Sustainability and Procyclical Fiscal Policies in Latin America”, Bank of Spain Working Paper No 0611, Madrid.

Alesina, A. and R. Perotti (1995), “The Political Economy of Budget Deficits”, IMF Staff Papers, Vol. 42, No 1, pp. 1-31.

Alesina, A. and G. Tabellini (2005), “Why is fiscal policy often procyclical?”, NBER Working Paper No 11600, Cambridge, Ma.

Alier, M. and M. Kaufman (1999), “Nonrenewable Resources: A Case for Persistent Fiscal Surpluses”, IMF Working Paper No 99/44, Washington, D.C.

Arellano, M. and S. Bond (1991), “Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations”, *Review of Economic Studies*, 58, pp. 227-297.

Auty, R.M. and A.H. Gelb (1986), “Oil Windfalls in a Small Parliamentary Democracy: Their Impact on Trinidad and Tobago”, *World Development*, Vol. 14 (9), pp. 1161-1175.

Auty, R.M. (1993), *Sustaining Development in Mineral Economies: The Resource Curse Thesis*, Routledge, London.

Auty, R.M. (1994), “Industrial policy reform in six newly industrializing countries: the resource curse thesis”, *World Development*, Vol. 22 (1), pp. 11-26.

Auty, R.M. (1998a), “Mineral wealth and the economic transition: Kazakhstan”, *Resources Policy*, Vol. 24 (4), pp. 241-249.

Auty, R.M. (1998b), “Resource abundance and economic development: improving the performance of resource-rich countries”, World Institute for Development Economics Research RFA Paper No 44, Helsinki.

Auty, R.M. and A.H. Gelb (2001), “Political Economy of Resource-Abundant States”, in: Auty, R.M. (ed.) (2001), *Resource Abundance and Economic Development*, Oxford University Press, pp. 126-144.

Auty, R.M. (2001), “A Growth Collapse with High Rent Point Resources: Saudi Arabia”, in: Auty, R.M. (ed.) (2001), *Resource Abundance and Economic Development*, Oxford University Press, pp. 193-207.

Auty, R.M. (2003), “Third time lucky for Algeria? Integrating an industrializing oil-rich country into the global economy”, *Resources Policy*, 29 (1), pp. 37-47.

Baker Institute (2007), “The changing role of national oil companies in international energy markets – Introduction and summary conclusions”, Baker Institute Policy Report No 35, March.

Balassone, F., H. Takizawa and H. Zebregs (2006), “Managing Russia’s oil wealth: an assessment of sustainable expenditure paths”, in: Russian Federation: Selected Issues, IMF Country Report No 06/430, prepared for the 2006 Article IV consultation, Washington, D.C.

Barnett, S.A. and R.J. Ossowski (2002), “Operational Aspects of Fiscal Policies in Oil-producing Countries”, IMF Working Paper No 06/184, Washington, D.C.

Basu, A. and K. Srinivasan (2002), “Foreign Direct Investment in Africa – Some case studies”, International Monetary Fund, March.

Beck, R. and M. Fidora (2008), “The Impact of Sovereign Wealth Funds on Global Financial Markets”, ECB Occasional Paper No 91, Frankfurt am Main.

Belloc, M. and P. Vertova (2004), “How Does Public Investment Affect Economic Growth in HIPC? An Empirical Assessment”, Università degli Studi di Siena, Dipartimento Di Economia Politica, working paper No 416, Siena.

Benjamin, N.C., S. Devarajan and R.J. Weiner (1989), “The ‘Dutch’ disease in a developing country”, *Journal of Development Economics*, 30, pp. 71-92.

Birdsall, N. and F. Jaspersion (eds.) (1997), “Pathways to Growth: Comparing East Asia and Latin America”, Inter-American Development Bank, Washington, D.C.

Bjerkholt, O. (2003), “Fiscal Rule Suggestions for Economies with Non-renewable Resources”, paper presented at the IMF/World Bank Conference on Rules-based Fiscal Policy in Emerging Market Economies, Oaxaca, 14-16 February 2002.

Bloom, D. and J. Sachs (1998), “Geography, Demography, and Economic Growth in Africa”, *Brookings Papers on Economic Activity*, 1998:2, pp. 207-295.

Bofit (2007), *BOFIT Weekly*, No 28, 13 July.

Boschini, A.D., J. Pettersson and J. Roine (2007), “Resource curse or not: a question of appropriability”, *Scandinavian Journal of Economics*, 109(3), pp. 593-617.

Buchanan, J.M. and R.E. Wagner (1977), *Democracy in Deficit – The Political Legacy of Lord Keynes*, New York: Academic Press.

Budina, N., G. Pang and S. van Wijnbergen (2007), “Nigeria’s Growth Record: Dutch Disease or Debt Overhang?”, World Bank Policy Research Working Paper 4256, June.

Buffie, E.F. (1993), “Direct foreign investment, crowding out and underemployment in the dualistic economy”, *Oxford Economic Papers*, 45.

Carneiro, F.G. (2007), “Development Challenges of Resource-Rich Countries: the Case of Oil Exporters”, VI International Colloquium, Macrodynamics Capabilities and Economic Development, University of Brasilia.

Corsetti, G. and N. Roubini (1993), “Tax Smoothing Discretion versus Balanced Budget Rules in the Presence of Politically Motivated Deficits: The Design of Optimal Fiscal Rules for Europe after 1992”, CEPR Discussion Paper No 682, London.

Dalamagas, B. (1998), “Fiscal Deficits and the Productivity of Public Capital”, *Revue économique*, Vol. 49(5), pp. 1241-1268.

Davis, J.M., R.J. Ossowski, J.A. Daniel and S.A. Barnett (2001), “Stabilization and Savings Funds for Non-renewable Resources. Experience and Fiscal Policy Implications”, IMF Occasional Paper No 205, Washington, D.C.

Davis, J.M., R.J. Ossowski and A. Fedolino (eds.) (2003), *Fiscal policy formulation and implementation in oil-producing countries*, IMF, Washington D.C.

Easterly, W. and R. Levine (1997), “Africa’s growth tragedy: policies and ethnic divisions”, *Quarterly Journal of Economics*, Vol. 112, pp. 1203-50.

Economist Intelligence Unit (EIU) (2008), Algeria Country Report September 2008, London.

Eifert, B., A. Gelb and N. Borje Tallroth (2002), “The Political Economy of Fiscal Policy and Economic Management in Oil Exporting Countries”, World Bank Policy Research Paper WPS 2899, Washington, D.C.

European Central Bank (2008), Monthly Bulletin, July, Frankfurt am Main.

Everhart, S.S. and M.A. Sumlinski (2001), “Trends in Private Investment in Developing Countries: Statistics for 1970-2000 and the Impact on Private Investment of Corruption and the Quality of Public Investment”, ITF Discussion Paper No 44, The World Bank, Washington, D.C.

Fardmanesh, M. (1991), “Dutch disease economics and the oil syndrome: an empirical study”, *World Development*, 19(6), pp. 711-717.

Fasano, U. (2000), “Review of the Experience with Oil Stabilization and Savings Funds in Selected Countries”, IMF Working Paper No 00/112, Washington, D.C.

- Gianella, C. (2007), "A Golden-Rule for Russia? How a Rule-Based Fiscal Policy Can Allow a Smooth Adjustment to the New Terms of Trade?", OECD Economics Department Working Papers, No 537.
- Grilli, V., D. Masciandaro and G. Tabellini (1991), "Political and Monetary Institutions and Public Financial Policies in the Industrial Countries", *Economic Policy: A European Forum*, 6(2), pp. 341-392.
- Haque, R.E. and R. Kneller (2007), "Public Investment and Growth: The Role of Corruption", University of Manchester, mimeo.
- Hausmann, R. and R. Ribogon (2002), "An alternative interpretation of the 'resource curse': theory and policy implications", NBER Working Paper Series, No 9424, Cambridge, Ma.
- Hjalmarsson, E. and P. Osterholm (2007), "Testing for Cointegration Using the Johansen Methodology when Variables are Near-Integrated", Board of Governors of the Federal Reserve System, International Finance Discussion Papers, No 915, Washington, D.C.
- Husain, A., K. Tazhibayeva and A. Ter-Martirosyan (2008), "Fiscal Policy and Economic Cycles in Oil-Exporting Countries", IMF Working Paper No 08/253, Washington, D.C.
- Imi, A. (2006), "Did Botswana Escape from the Resource Curse?", IMF Working Paper No 06/138, Washington, D.C.
- Ilzetzki, E. and C.A. Vegh (2008), "Procyclical Fiscal Policy in Developing Countries: Truth or Fiction?", NBER Working Paper No 14191, Cambridge, Ma.
- International Energy Agency (2008), *World Energy Outlook*, Paris.
- International Monetary Fund (2008), various Article IV Consultation Staff Reports.
- Jadwa Investment (2007), Saudi Arabia's 2008 budget, Riyadh.
- Jafarov, E. and D. Leigh (2007), "Alternative Fiscal Rules for Norway", IMF Working Paper No 07/241, Washington, D.C.
- Jayaraman, T.K. (1998), "Private Investment in Fiji: 1977-1994 Did Government Investment Have Any Crowding-out Effect?", *South Pacific Studies*, 18(2), pp. 57-67.
- Judson, R.A. and A.L. Owen (1997), "Estimating Dynamic Panel Data Models: A Practical Guide for Macroeconomists", Finance and Economics Discussion Paper 1997-3, Federal Reserve Board, Washington, D.C.
- Kamps, C. (2005), "The Dynamic Effects of Public Capital: VAR Evidence for 22 OECD Countries", *International Tax and Public Finance*, 12(4), pp. 533-558.
- Karl, T.L. (1997), "The Paradox of Plenty: Oil Booms and Petro-States", *Studies in International Political Economy*, 26, Berkeley: University of California Press.

Kaufmann, D., A. Kraay and M. Mastruzzi (2008), “Governance Matters VII: Aggregate and Individual Governance Indicators, 1996-2007”, World Bank Policy Research Working Paper No 4654, Washington, D.C.

Khan, M. (2008), “Inflation fight involves painful choices”, in: *Financial Times*, 11 June 2008, London.

Lainela, S. (2007), “New conditions for growth in Russia”, BOFIT Online 5/2007.

Lane, P. (2003), “The Cyclical Behaviour of Fiscal Policy: Evidence from the OECD”, *Journal of Public Economics*, 87, pp. 2261-2275.

Mabro, R. and E. Monroe (1974), “Arab Wealth from Oil: Problems of Its Investment”, *International Affairs*, 50(1), pp. 15-27.

Manasse, P. (2006), “Procyclical Fiscal Policy: Shocks, Rules, and Institutions – A view from MARS”, IMF Working Paper No 06/27, Washington, D.C.

Medas, P. and D. Zakharova (2009), “A Primer on Fiscal Analysis in Oil-Producing Countries”, IMF Working Paper No 09/56, Washington, D.C.

Mehlum, H., K. Moene and R. Torvik (2006), “Institutions and the resource curse”, *Economic Journal*, 116, pp. 1-20.

Mikesell, R. (1997), “Explaining the resource curse, with special reference to mineral-exporting countries”, *Resources Policy*, Vol. 23(4), pp. 191-199.

Myers Jaffe, A. and J. Elass (2007), “Saudi Aramco: National flagship with global responsibilities”, The James Baker III Institute for Public Policy – Rice University, Houston.

Neary, J.P. and S. van Wijnbergen (eds.) (1986), “Natural Resources and the Macroeconomy”, MIT Press, Cambridge, Ma.

Pereira, A.M. (2000), “Is all Public Capital created equal?”, *The Review of Economics and Statistics*, 82(3), pp. 513-518.

Pereira, A.M., and O. Roca Sagales (1999), “Public Capital Formation and Regional Development in Spain”, *Review of Development Economics*, 3(3), pp. 281-294.

Pina, A.M. and M. St Aubyn (2005), “Comparing macroeconomic returns on human and Public Capital: An empirical analysis of the Portuguese case (1960-2001)”, *Journal of Policy Modelling*, 27, pp. 585-598.

Pina, A.M and M. St Aubyn (2006), “How should we measure the return on public investment in a VAR? ”, *Economics Bulletin*, 8(5), pp. 1-4.

- Riascos, A. and C.A. Vegh (2003), “Procyclical Government Spending in Developing Countries: The Role of Capital Market Imperfections”, Fourth Annual IMF Research Conference: Capital Flows and Macroeconomic Cycles, Washington, D.C., 6-7 November.
- Romp, W. and J. de Haan (2007), “Public Capital and Economic Growth: A Critical Survey”, *Perspektiven der Wirtschaftspolitik*, 8, pp. 6-52.
- Roubini, N. and J.D. Sachs (1989), “Political and Economic Determinants of Budget Deficits in the Industrial Democracies”, *European Economic Review*, No 33, pp. 903-933.
- Sachs, J.D. and A.M. Warner (1995), “Natural resource abundance and economic growth”, NBER Working Paper No 5398, Cambridge, Ma.
- Sachs, J.D. and A.M. Warner (1999), “The big push, natural resource booms and growth”, *Journal of Development Economics*, 59, pp. 43-76.
- Sala-i-Martin, X. and A. Subramanian (2003), “Addressing the natural resource curse: An illustration from Nigeria”, NBER Working Paper Series, No 9804, Cambridge, Ma.
- Sarkar, H. and M.A. Hasan (2001), “Impact of Corruption on the Efficiency of Investment: Evidence from a Cross-country Analysis”, *Asia-Pacific Development Journal*, 8(2), pp. 111-116.
- Schuknecht, L. (2004), “EU fiscal rules – Issues and lessons from political economy”, ECB Working Paper No 421, Frankfurt am Main.
- Scott, A. (2000), “Stylised facts from output gap measures”, Reserve Bank of New Zealand Discussion Paper No 2000/07, Wellington.
- Shabsigh, G. and N. Ilahi (2007), “Looking Beyond the Fiscal: Do Oil Funds Bring Macroeconomic Stability?”, IMF Working Paper No 07/96, Washington, D.C.
- Stevens, P. (2003), “Resource impact: Curse or Blessing? A Literature review”, Centre for Energy, Petroleum and Mineral Law and Policy, University of Dundee, mimeo.
- Stevens, P. and J. Mitchell (2008), “Resource depletion, dependence and development: can theory help?”, Chatham House Programme Paper, London, June 2008.
- Sturm, J.E. (2001), “Determinants of public capital spending in less-developed countries”, University of Groningen, mimeo.
- Sturm, M. and N. Siegfried (2005), “Regional monetary integration in the Member States of the Gulf Cooperation Council (GCC)”, ECB Occasional Paper No 31, Frankfurt am Main.
- Sturm, M., J. Strasky, P. Adolf and D. Peschel (2008), “The Gulf Cooperation Council Countries – Economic structures, recent developments and role in the global economy”, ECB Occasional Paper No 92, Frankfurt am Main.

Tanzi, V and H. Davoodi (1997), “Corruption, Public Investment and Growth”, IMF Working Paper Series, No 97/139, Washington, D.C.

Tanzi, V. and H. Davoodi (1998), “Roads to Nowhere: How Corruption in Public Investment Hurts Growth”, IMF Economic Issues Series, No 12, Washington, D.C.

Transparency International (2007), 2007 Transparency International Corruption Perceptions Index, retrieved from http://www.transparency.org/policy_research/surveys_indices/bpi

Turrini, A. (2008), “Fiscal policy and the cycle in the Euro Area: The role of government revenue and expenditure”, EC Economic Papers, No 323, Brussels.

Valadkhani, A. (2005), “What Determines Private Investment in Iran?”, *International Journal of Social Economics*, 31(5/6), pp. 457-68.

Välilä, T. and A. Mehrotra (2005), “Evolution and Determinants of Public Investment in Europe”, European Investment Bank Economic and Financial Report 2005/01, Luxembourg.

Van der Ploeg, R. and R. Arezki (2008), “Can the Natural Resource Curse be turned into a Blessing? The Role of Trade Policies and Institutions”, Oxford Centre for the Analysis of Resource-rich Economies Paper No 2008/01, Oxford.

Van der Ploeg, R. and S. Poelhekke (2008), “Volatility, Financial Development and the Natural Resource Curse”, Oxford Centre for the Analysis of Resource-rich Economies Paper No 2008/03, Oxford.

Voss, G.M. (2002), “Public and Private Investment in the United States and Canada”, *Economic Modelling*, 19(4), pp. 641-664.

Woo, J. (2008), “Why do more Polarized Countries run more Pro-cyclical Fiscal Policies?”, *Review of Economics and Statistics*, forthcoming.

World Bank and The International Finance Corporation (2007), *Doing Business 2007: How to reform*, World Bank, Washington, D.C.

EUROPEAN CENTRAL BANK
OCCASIONAL PAPER SERIES SINCE 2008

- 78 “A framework for assessing global imbalances” by T. Bracke, M. Bussière, M. Fidora and R. Straub, January 2008.
- 79 “The working of the eurosystem: monetary policy preparations and decision-making – selected issues” by P. Moutot, A. Jung and F. P. Mongelli, January 2008.
- 80 “China’s and India’s roles in global trade and finance: twin titans for the new millennium?” by M. Bussière and A. Mehl, January 2008.
- 81 “Measuring Financial Integration in New EU Member States” by M. Baltzer, L. Capiello, R. A. De Santis, and S. Manganeli, January 2008.
- 82 “The Sustainability of China’s Exchange Rate Policy and Capital Account Liberalisation” by L. Capiello and G. Ferrucci, February 2008.
- 83 “The predictability of monetary policy” by T. Blattner, M. Catenaro, M. Ehrmann, R. Strauch and J. Turunen, March 2008.
- 84 “Short-term forecasting of GDP using large monthly datasets: a pseudo real-time forecast evaluation exercise” by G. Rünstler, K. Barhoumi, R. Cristadoro, A. Den Reijer, A. Jakaitiene, P. Jelonek, A. Rua, K. Ruth, S. Benk and C. Van Nieuwenhuyze, May 2008.
- 85 “Benchmarking the Lisbon Strategy” by D. Ioannou, M. Ferdinandusse, M. Lo Duca, and W. Coussens, June 2008.
- 86 “Real convergence and the determinants of growth in EU candidate and potential candidate countries: a panel data approach” by M. M. Borys, É. K. Polgár and A. Zlate, June 2008.
- 87 “Labour supply and employment in the euro area countries: developments and challenges”, by a Task Force of the Monetary Policy Committee of the European System of Central Banks, June 2008.
- 88 “Real convergence, financial markets, and the current account – Emerging Europe versus emerging Asia” by S. Herrmann and A. Winkler, June 2008.
- 89 “An analysis of youth unemployment in the euro area” by R. Gomez-Salvador and N. Leiner-Killinger, June 2008.
- 90 “Wage growth dispersion across the euro area countries: some stylised facts” by M. Anderson, A. Gieseck, B. Pierluigi and N. Vidalis, July 2008.
- 91 “The impact of sovereign wealth funds on global financial markets” by R. Beck and M. Fidora, July 2008.
- 92 “The Gulf Cooperation Council countries – economic structures, recent developments and role in the global economy” by M. Sturm, J. Strasky, P. Adolf and D. Peschel, July 2008.

- 93 “Russia, EU enlargement and the euro” by Z. Polański and A. Winkler, August 2008.
- 94 “The changing role of the exchange rate in a globalised economy” by F. di Mauro, R. Ruffer and I. Bunda, September 2008.
- 95 “Financial stability challenges in candidate countries managing the transition to deeper and more market-oriented financial systems” by the International Relations Committee expert group on financial stability challenges in candidate countries, September 2008.
- 96 “The monetary presentation of the euro area balance of payments” by L. Bê Duc, F. Mayerlen and P. Sola, September 2008.
- 97 “Globalisation and the competitiveness of the euro area” by F. di Mauro and K. Forster, September 2008.
- 98 “Will oil prices decline over the long run?” by R. Kaufmann, P. Karadeloglou and F. di Mauro, October 2008.
- 99 “The ECB and IMF indicators for the macro-prudential analysis of the banking sector: a comparison of the two approaches” by A. M. Agresti, P. Baudino and P. Poloni, November 2008.
- 100 “Survey data on household finance and consumption: research summary and policy use” by the Eurosystem Household Finance and Consumption Network, January 2009.
- 101 “Housing finance in the euro area” by a Task Force of the Monetary Policy Committee of the European System of Central Banks, March 2009.
- 102 “Domestic financial development in emerging economies: evidence and implications” by E. Dorrucci, A. Meyer-Cirkel and D. Santabárbara, April 2009.
- 103 “Transnational governance in global finance: the principles for stable capital flows and fair debt restructuring in emerging markets” by R. Ritter, April 2009.
- 104 “Fiscal policy challenges in oil-exporting countries – a review of key issues” by M. Sturm, F. Gurtner and J. Gonzalez Alegre, June 2009.

ISSN 1607-1484



9 771607 1148006