

**Oil in Egypt, Oman, and Syria:  
Some Macroeconomic Implications**

**Randa Alami**

---

**Oxford Institute for Energy Studies**

**WPM 30**

**October 2006**

The contents of this paper do not necessarily represent the views of  
the Oxford Institute for Energy Studies or any of its Members

*Copyright © 2006*

*Oxford Institute for Energy Studies*

(Registered Charity, No. 286084)

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior permission of the Oxford Institute for Energy Studies.

This publication is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, resold, hired out, or otherwise circulated without the publisher's consent in any form or binding or cover other than that in which it is published and without similar condition including this condition being imposed on the subsequent purchaser.

ISBN

1 901 795 49 7

978 1 901795 49 3

## CONTENTS

<b>1. Introduction</b>	<b>2</b>
<b>2. Egypt: an emerging regional gas player</b>	<b>6</b>
2.1. Main developments in oil and gas financing	6
2.2. Macroeconomic impacts	17
<b>3. Oman: a typical small state?</b>	<b>23</b>
3.1. Main developments in oil and gas financing	23
3.2. Macroeconomic impacts	32
<b>4. Syria, the unlikely oil state</b>	<b>37</b>
4.1. Main developments in oil and gas financing	37
4.2. Macroeconomic impacts	44
<b>5. Country experiences compared</b>	<b>48</b>
5.1. Main organisational features	48
5.2. Support from domestic finance	50
5.3. Interactions with the rest of the economy	52
<b>6. Summary and conclusions</b>	<b>56</b>

<i>References</i>	59
-------------------	----

### Tables

Table 1	Egyptian concession contract models	8
Table 2	Companies in Egyptian O&G by ownership and segment	9
Table 3	Syrian oil sector: a brief chronology	40
Table 4	Syrian oil contracts 1975–2000	41
Table 5	Main organisational features of O&G	48
Table 6	Main sources of finance by industry segment	51
Table 7	Impact of O&G on the economy	53

### Figures

Figure 1	Egyptian oil and gas production	6
Figure 2	Omani oil and gas production	24
Figure 3	Government and PDO spending	26
Figure 4	Syrian oil and gas production	38

## Abbreviations

AMF	Arab Monetary Fund
APICORP	Arab Petroleum Investment Corporation
CCGTs	Combine Cycle Gas Turbine(s)
CNPC	Chinese National Petroleum Company
ECA	Export Credit Agency
E&D	Exploration and Development
EIB	European Investment Bank
EGAS	Egyptian Natural Gas Holding Company
EGPC	Egyptian General Petroleum Company
ENI	Ente Nazionale Idrocarburi
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GFCF	Gross Domestic Capital Formation
IFC	International Finance Corporation
IEA	International Energy Agency
IMF	International Monetary Fund
IOC	International oil company
IPO	Initial Public Offering
JV	Joint Venture
LNG	Liquified natural gas
LPG	Liquified petroleum gas
MEES	<i>Middle East Economic Survey</i>
NGL	Natural Gas liquids
NOC	national oil company
O&G	oil and gas
OAPEC	Organisation of Arab Petroleum Exporting Countries
OECD	Organisation for Economic Co-operation and Development
PDO	Petroleum Development Oman
PSA	Production Sharing Agreement
NOC	national oil company
SOE(s)	State Owned Enterprise(s)
SPC	Syrian Petroleum Company
UNCTAD	United Nations Conference on Trade and Development
bcm	billion cubic metre
b/d	barrels per day
mt/year	million tonne per year
tcf	trillion cubic feet
£E, £S, RO	Egyptian pound, Syrian Pound, Omani Riyal
€	Eur

## **ABSTRACT**

This study considers the experiences of Egypt, Oman, and Syria in managing their oil and gas sectors. All three countries depend on the technological and financial leadership of international oil companies to deliver output, and displayed openness and flexibility to retain them. Sectoral policies were often amplified by macro-economic policies. In Oman and Egypt, financial and fiscal reforms allowed governments to reduce their vulnerability to oil revenue volatility. Their sectors can rely on a more diversified composition of financial flows. Both are mobilising more local resources and human capital. Syrian output rose successfully without recourse to commercial bank lending, but its government remains vulnerably dependent on oil revenues. Its poor record on technical progress and on financial development constrained both sectoral development and economic growth. All three countries continue to experience sectoral imbalances, particularly in the downstream. Although general, these conclusions reveal a need for focusing on qualitative aspects of oil dependency. Perhaps oil and gas represent an evolving range of opportunities and problems rather than a blessing or a curse.

## 1. INTRODUCTION

Like many other industries in developing countries, oil and gas (O&G) have regularly used a mixture of domestic and external finance. The financial challenges faced by the sector have rarely been about closing financing gaps because of two inherent characteristics. Firstly, O&G have been an enabling factor for developing countries wishing to access international capital markets, partly because of the industry's strategic importance, and partly because of the implicit guarantee of income from sales. Indeed, like other extractive industries, O&G have attracted foreign investments even where and when other sectors in the host economies failed to do so. Secondly, particularly in the upstream, international oil companies (IOCs) have provided much of the capital costs required, either through in-house finance, or indirectly via their ability to access international capital markets. International private capital tends to play a more prominent and direct role in the natural gas chain, especially in export projects.

Hence, the specificity of O&G financing lies in the mix of the players who deliver the output, namely host countries, international, and national oil companies. These groups differ in their use of and access to domestic and international capital flows. The capital intensive nature of the industry and its large capital requirements mean that international capital markets are and will remain influential determinants of the financial terms secured. Industry segments relying on international capital will be vulnerable to changes in capital market conditions and foreign investors' attitude to risk, while those limited to domestic finance will depend on the strength of domestic financial systems.

Aggregate levels of spending and investment in O&G tell us little about the mix of agents operating in the sector, their relationship to each other, or the method of financing used. The mere presence of IOCs cannot explain framework within which they are participating. Likewise, the nature of oil dependency is poorly described by aggregate country data about export earnings or government revenues from oil and gas. Such data cannot tell us if the sector has been a leading engine of growth, or whether it is an enclave. They do not capture qualitative changes over time. At any one time, two countries may be equally dependent on O&G for export and budgetary revenues, but differ profoundly in their sectoral policy and in the support the rest of the economy gives to and receives from those sectors.

The aim of this paper is to explore qualitative aspects of oil dependency, and to consider whether sectoral policies, including those regarding methods of financing, amplify or constrain the performance of O&G. The paper does not rely on any formal model of economic relationships between the oil and non-oil sectors. Nor does it carry out any formal test of inherent links, for example of the impact of O&G on price levels or exchange rates. Rather, it follows through three country experiences in the Arab region, focusing on the overall macroeconomic significance of O&G, and more specifically their articulation with their domestic fiscal and financial systems. Case studies are a useful approach for following changes in industrial structures and fiscal practices among Middle Eastern producers and elsewhere.

Indeed, this was the approach followed in Alami (2005). That paper related recent changes in Arab financial structures to current trends in international finance, and tested them in the case of Qatar. It argued that successful financing of Qatari LNG deals reflected excellent terms secured by the package, but also benefited from the increased flexibility of international lenders towards natural gas projects and their growing readiness to finance them. However, the Qatari experience in building their natural gas industry also demonstrated that expanding production is neither a problem-free nor a costless process. The concomitant rise in domestic public debt put strain on the Qatari domestic credit system, and the subsequent resort to external borrowing resulted in a substantial, albeit temporary, debt burden. Thus, successful O&G development also depends on the management of the non-oil economy, particularly of the domestic financial system.

The financial success and fragility experienced by Qatar cannot be generalised into a representative financing path for other countries in the region, or indeed for Qatar itself at other points in time. This fact constitutes another justification for a case study approach, which is useful for taking into account the variety in industrial structures, financial systems, and fiscal practices across oil producers and over time. Therefore, this paper compares interactions between the oil and non-oil economies in three countries of the same region, namely, Egypt, Oman and Syria.

All three countries, along with Qatar, were small crude oil producers in the 1980s and, compared with the leading exporters, they remain so, despite increasing their production levels during the 1990s. As a by-product of their efforts to increase oil output, these countries discovered new or additional natural gas reserves and subsequently natural gas production has accounted for much of the rise in sectoral output. Another similarity between these producers is that they adopted sectoral strategies in which IOCs played a leading role, largely due to the modest operational capacity and experience of their national companies. Moreover, this paper will argue that, whereas among larger producers it is more common for national oil companies and/or super majors to dominate O&G

production, smaller producers tend to experience the participation of a wider range of IOCs both in size and origin.

In addition to similarities in the upstream, the case studies illustrate variations over time in relations with the IOCs, and in the overall investment climate, both being important determinants of sectoral performance. The countries also differ in the way in which government and private finance have supported O&G. Syria is an interesting example of output expansion without recourse to international capital markets. Egypt's case indicates that access to international finance also depends on other aspects of economic performance. Likewise, the availability of domestic finance for O&G improved where fiscal regimes improved their ability to cope with the instability of oil revenues and where financial systems were successfully reformed. Further, the interactions of O&G with the economy also reflect country-specific effects. Hence, the small size of Oman and Qatar's population means that economic activity, including O&G, generates significant financial outflows in the form of labour remittances.

To capture these developments, this study considers each economy in turn, looking first at the main developments in O&G, and then considering interactions with the economy. Thus, the rest of the study is organised as follows. Section 2 looks at Egypt, Section 3 at Oman, and Section 4 at Syria. Differences in the availability,<sup>1</sup> coverage, and quality of information available in each case mean that the contents of each of the analyses will vary. For example, the Omani government is the only one which publishes regular data on its contribution to its national oil company, and is the only one to distinguish the contributions to current and capital budgets. For Egypt there is a lack of data on or discussion of condensates and Natural Gas Liquids in Egypt whereas in Qatar and Oman revenues accruing from the sales of these products were part of the publicly available details of LNG projects. These sales were said to help finance government participation and/or investments in the natural gas chains. Notwithstanding the unevenness of coverage, Section 5 takes stock of the three national paths followed. It compares experiences in terms of three areas where the relation between O&G and the rest of the economy is important: the overall industrial structure and the terms of contracts with IOCs, the ability of O&G to rely on domestic finance and the management of government and economic dependency on oil and gas revenues. In conclusion, Section 6 argues that the complexities and differences in experience across time and across countries suggest that it is time to abandon the simplistic idea of O&G being either a blessing or a curse.

---

<sup>1</sup> This paper attempts to use to most recent reports where available. Most annual reports of the central banks and the oil companies for 2005 have not yet been released.

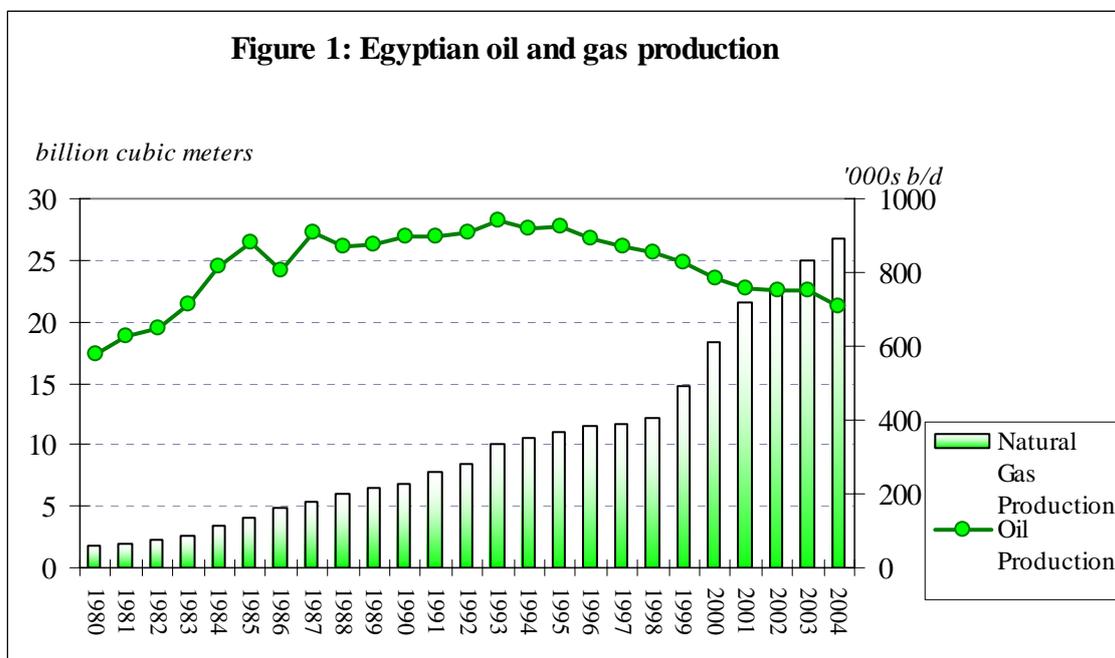
This exercise in comparing country experiences is neither comprehensive nor exhaustive. Among the omissions is an examination of any wage effects from the oil sector on the rest of the labour market. The labour market effects mentioned here are limited to observations about skill acquisition and job creation. Similarly, the paper does not assess either downstream policies or domestic markets for petroleum products. Since the latter are subsidised in most developing countries the problems thereby created (for example, for market efficiency and budget balancing) are arguable the same regardless of whether the country is or is not an oil producer and so, despite their importance, are outside the scope of this paper.

## 2 EGYPT: A RISING GAS PLAYER

### 2.1 Main developments in O & G

Although Egypt has been an oil producer for 100 years, this section concentrates on its experience over the last three decades. Fossil fuels have provided the country with much of its energy consumption needs and a significant proportion of exports and government receipts for some time. Perhaps the most notable recent change has been the increased share of natural gas in production and exports. With LNG exports coming on stream in 2005, Egypt is adjusting its economy and oil and gas (O&G) sector towards becoming an important regional gas exporter.

As shown in Figure 1 below, Egypt managed to expand oil output rapidly through the 1980s, from 580,000 b/d in 1980 to a high of 924,000 b/d in 1995 (BP, *Statistical Review of World Energy 2005*). Recent additions to reserves helped to reverse the gradual fall after 1993. Active exploration and drilling activities and the opening up of new provinces led to a number of finds, but these mostly consisted of small wells.<sup>2</sup> Total crude output therefore weakened again to around 708,000 b/d in 2004 (BP, *Statistical Review of World Energy 2005*). Ministerial and industry sources continue to differ widely in their optimism. The former sees Egyptian crude reserves lasting another 20-30 years (*Arab Oil & Gas Directory 2001*) as opposed to 10-13 years quoted elsewhere. Note that Egypt also now produces 70,000-90,000 b/d of condensates, with current production boosted by gas discoveries.



Source: BP's *Statistical Review of World Energy 2005*

<sup>2</sup> The Minister of Petroleum noted that, since 1999, there have been respectively 83 and 44 oil and gas discoveries (*al-Ahram Weekly* 22–28 May 2003). In 2004, 16 oil discoveries were announced (*American Chamber of Commerce in Egypt* 2006).

Like many of its neighbours, Egypt in its search for more crude uncovered substantial reserves of non-associated gas, initially in the Gulf of Suez and the Western Desert, and subsequently in the Nile Delta and the Mediterranean basin. This led to a rapid and seemingly continuous expansion of proven reserves from less than 400 bcm in 1990, to 1220 bcm in 2000, and 1850 bcm in 2004 (BP *Statistical Review of World Energy 2005*).<sup>3</sup> The share of non-associated gas in total production, already significant because of three major fields in the Gulf of Suez, should be sustained by production from the Nile Delta and Mediterranean reservoirs. Total gas output has also risen rapidly over the last 20 years. Output almost doubled from 5.3 bcm to 10 bcm between 1987 and 1993, doubling again to 25 bcm by 2003. In parallel, domestic consumption has grown to about 29–30 bcm in 2004–2005,<sup>4</sup> making Egypt one of the largest markets in Africa and the developing world.

The 1973 petroleum law, which converted all existing production contracts to Production Sharing Agreements (PSAs), defined the orientation of the sector towards partnership with IOCs. Both IOCs and the government have been active in the sector all along. 1994 saw the introduction of seven significant amendments. These amendments introduced environmental considerations<sup>5</sup> and more flexibility about production shares, bonuses, and other contract parameters (*Arab Oil & Gas Directory 1998*). The current model contract, published on the websites of the two state entities – the Egyptian General Petroleum Company (EGPC) and the Egyptian Natural Gas Holding Company (EGAS) – is similar to the main template introduced in 1994/5. As of 2001, the recovery rate is negotiable and, although the preferred rate is 20%, it can reach up to 40%. Table 1 summarises the main operational elements of upstream contracts.

In 2002/3, these templates were further amended to establish terms for natural gas operations as distinct from those for oil. Furthermore, in line with ministerial desires to promote Egyptian participation in the sector, two items have also been added: contractors are required to give preference to local qualified personnel if appropriate; and they must earmark a special budget for training and spend at least \$50,000 for that purpose.

In the 1998–2001 bidding round, the ministry was ‘pleased’ to be able to award four E&D (Exploration and Development) licences to local firms. Finalising concession agreements still involves 13 stages, seven approvals, the signatures of the President and of the Minister of Petroleum, and publication in Egypt’s Official Gazette (*Arab Oil and Gas Directory 2001*).

---

<sup>3</sup> The national gas company (EGAS) put these reserves on 1 July 2004 at 65 tcf compared to 58–59 tcf in industry sources (www.egas.com; also see *International Petroleum Encyclopaedia 2004*).

<sup>4</sup> Data on domestic consumption was provided to OIES by the Marketing Department of the Ministry of Petroleum in September 2005.

## Table 1: Egyptian Concession Contract Models

---

### Oil concession

- \* At commercial discovery, the contractor is awarded a development lease of up to 20 years. EGPC must approve any re-selling of licences awarded.
  - \* A production company must be established within a month of commercial discovery. It is governed by the bylaws of shareholders (EGPC and the contractors).
  - \* Egyptian legal provisions for environmental protection apply to all operations.
  - \* Royalty is at 10% of well-head output. It is paid by the EGPC.
  - \* Corporate income tax is due from the contractor. In effect, it is deducted from the EGPC's share of output.
  - \* Contractors pay bonuses on signature, development, production and on contract extension. Production bonuses range from \$2–6 million for output ranges of 50,000–150,000 b/d. In the 204 template contract, production bonuses are said to be 'competitive' for production rates ranging from '3,000 BOPD or its equivalent' to '10,000 BOPD or its equivalent'.
  - \* The recovery rate is set at 20% for E&D costs, but is negotiable. Operational costs are totally amortisable.
  - \* The EGPC's share of profit oil is normally 80–85%, this usually being for output over 50,000 b/d. The exact share is negotiable, previously being set, for example, at 65–73 percent for the first 10,000 b/d.
- 

### Gas concession

- \* At commercial discovery, the contractor is awarded a development lease of up to 20 years.
  - \* A production company must be established within a month of commercial discovery. It is governed by the bylaws of shareholders (EGPC/EGAS and Contractor).
  - \* In 1993, the price of gas sold to EGPC was set at \$3/MBTU, the pricing formula being linked to the spot price of Suez Blend. In February 2001, the reference oil was changed to Dated Brent, with the price bank set at \$1.50–2.65/MBTU.
  - \* The contracts now provide for bonuses to be paid for gas activities as well (see above).
  - \* The contractor is liable to pay income tax, but this is normally paid in output.
  - \* All costs relating to exploration and field developments are recoverable.
  - \* The EGAS share of profit gas is usually 70–75%. Shares are negligible and vary according to production levels.
- 

**Source:** Arab Republic of Egypt 2003; Arab Petroleum Research Centre 2001; EGPC, September 2004.

The Egyptian side of the sector has undergone significant transformations. The Egyptian General Petroleum Company, the national oil company (NOC), was established as a holding corporation in 1976, owning at that time 12 State Owned Enterprises (SOEs), and participating in dozens of others. Investment Law No.43 of 1989 put some distance between the ministry and sectoral entities, though the former still approves changes in boards of directors.<sup>6</sup> The ministry is moving towards focusing

---

<sup>5</sup> As of 1991, all projects and contracts were to integrate environmental impact assessments in planning and implementation.

<sup>6</sup> As an example, the petroleum minister approved two senior appointments at al-Fajr Pipeline Company, the regional joint venture which constructed the Jordanian–Egyptian pipeline (*MEES*, 27 September 2004).

on defining the legislative framework, and on handling final agreements with IOCS and in parliament. The rapid development of its gas industry and of new reservoir areas led to the establishment of more government entities. GASCO was established in 1997 to handle gas transmission, while EGAS was established in 2001 as a government holding company supervising all gas chain activities. The South Valley Development Corporation, limited to the development of southern Egypt and its gas wealth, was established in 2002.

The distribution of entities active in the Egyptian O&G industry are summarised in Table 2 below. It shows that the Egyptian side of the industry is still centred around NOCs and their affiliates. In the upstream, production continues to be led by IOCs – super majors, independents, or more recently other NOCs (from India, Malaysia, China). Currently there are some 25 foreign companies which are involved in the great majority of upstream contracts. IOCs therefore account for most production and exploration activities in O&G. The PSA framework and the concession agreements are reflected in the number of ‘joint companies’ responsible for production. There are only six Egyptian companies engaged in exploration and development (E&D), five of which are private entities.<sup>7</sup> The sixth is Tharwa, an SOE established in 2004, and co-owned by the three NOCs. Tharwa Petroleum was awarded five out of the nine concession agreements signed in June 2004 (*MEES* 12 July 2004).

**Table 2: Companies in Egyptian O&G by ownership and segment**

	<b>Company by activity</b>	<b>Total</b>	<b>of which SOEs</b>
Upstream	Egyptian NOCs	3	3
	Exploration and production	30	
	Concessions	36	
Midstream	Transport and distribution	9	2
	LNG	3	
	Engineering, Ancillary	9	
Downstream	Refining	8	8
	Petrochemicals	4	1
	Marketing and distribution	11	4

**Sources:** On the Egyptian Oil Sector: <http://www.emp.gov.eg/English/eps.html>. On gas: ‘Corporate overview’, <http://www.egas.com.eg>. Company information from [www.egyptoil.com](http://www.egyptoil.com) and the American–Egyptian Chamber of Commerce.

Concession agreements were aimed at increasing IOCs’ spending on E&D. IOCs’ commitments in terms of drilled wells and overall spending are therefore trumpeted by the Egyptian authorities as evidence of the success of this policy. Concessions have been a way for the EGPC and the government to front-load capital investment required by the sector to maintain output levels. However, the financial muscles of IOCs are not their only attraction from the Egyptian point of view. There is also little doubt that the Egyptian O&G has also been transformed by new seismic

<sup>7</sup> These are SAAM, PICO, EDC, EPEDCO, Forum, and Tharwa.

survey techniques, and advanced exploration and drilling technologies brought in by the IOCs. Advanced technologies, almost entirely owned and developed by IOCs, have been necessary for opening up new areas to production, particularly deep water reservoirs. This result is not specific to Egypt. According to Sandra (2005), deep water oil globally has been industry-led both in terms of technology used and volumes produced.

In contrast, the midstream and downstream remain mostly in Egyptian hands. The numbers of SOEs active in this segment listed in Table 2 are deceptively low. A closer look at the status of the companies involved reveals that most of them are either SOEs established under special investment laws, or joint ventures between public companies and multinationals. Likewise, Egypt meets much of its needs for petroleum products from eight state-owned refineries, with only one privately-built addition completed a few years ago (the MIDOR refinery). The rest of the domestic downstream has been less successful in satisfying the domestic market. Hence, despite the government's desire to maximize the developmental impact of O&G on the rest of the economy, the Egyptian petrochemical industry is still small and weak. The government is now hoping to use its gas reserves and related revenues to revive and expand this industry (*Al-Ahram Weekly*, 20–26 January 2005). These plans include expanding and diversifying Egypt's fertilizer industry, which is working near to capacity (American Chamber of Commerce in Egypt June 2003).

Private participation in the downstream, particularly in marketing, had been specifically encouraged by government regulation since 1990, with a 1997 law extending this approach to gas distribution. While many experienced local companies support the sector with equipment, engineering skills, and ancillary services,<sup>8</sup> distribution to household was almost entirely delegated to seven private companies under long-term franchises. As a result, the private sector took a leading role in building the national low pressure network of pipelines delivering gas to households and many industries. Private participation in gas distribution has been strengthening as the building of national grid at district levels takes shape. However, it will be some time before the private sector expands its contribution to mining GDP beyond the current 15 percent. Public entities, whether they are economic authorities or state companies, will continue to account for 85 percent of mining GDP in the foreseeable future (Central Bank of Egypt 2003/04; Ministry of Foreign Trade and Industry March 2006).<sup>9</sup>

---

<sup>8</sup> A prominent example is GENCO, a private holding company owning two regionally based gas distribution entities, a town gas construction contractor, and a CNG company.

<sup>9</sup> The share of private sector in agriculture is 99%, and some 87% in services (Central Bank of Egypt 2003/04).

Corporate and in-house finance remain the main mode of financing through most of the upstream. Government companies have not used international capital markets except when entering joint ventures with foreign partners. Only one multilateral loan was seen in this segment. In a deal similar to a 1995 financing package, in June 2004,<sup>10</sup> Merlon Petroleum secured a total of \$45 million in loans from the International Finance Corporation (IFC), for the development of the Mansoura and Kantara blocks (*Alexander's Gas and Oil Connections*, 29 June 2004). The blocks, relinquished by majors, revealed extensive gas reserves. Support for Merlon was said to be consistent with the IFC's support for private entities making valuable contributions to strategic sectors in developing countries, while at the same time adhering to sound social and environmental practices.

An important departure from this pattern occurred in December 2004, when the EGPC first considered debt securities placement (*MEES*, 13 December 2004), in contrast to companies such as PEMEX and Petronas which had some history of activities in financial markets. EGPC eventually launched its first export notes – in other words, future flow securitisation – on the international market in July 2005. The bonds were very well received, raising some \$1.55 billion for EGPC and securing high ratings from most credit rating agencies.<sup>11</sup> This transaction, which reflects the growing sophistication of Egyptian financiers, has added diversification and strength to EGPC's capital base and financial structure.

As to other sources of financing from abroad, aside from the participation in LNG projects, multilateral and institutional finance has taken the form of equity participation in refineries and petrochemicals. In the downstream, Arab Petroleum Investment Corporation (APICORP) has final takes totalling \$204 million in three Egyptian downstream entities (Oriental Petrochemicals, Egypt Fertilizer Company, and Alexandria Black Carbon Company).<sup>12</sup> More unusually, the National Bank of Egypt recently sold its 38 percent stake in MIDOR, Egypt's only private refinery (*MEES*, 15 November 2004). Since EGPC purchased the stake, MIDOR has been a largely public entity, with private entities (including Italy's ENPI) owning only 22 percent (*MEES*, 18 April 2005).

---

<sup>10</sup> The finance was obtained by Apache and Phoenix (IFC, accessed March 2005).

<sup>11</sup> A report in *Egypt Watch Bulletin* (American Chamber of Commerce in Egypt August 2005), reviews the structure of the deals in terms of the margins, the maturity, and the backing (in crude and naphtha forward sales).

<sup>12</sup> See APICORP 2004.

Domestic financing, which consists mostly of bank loans, now accounts for a good part of sectoral financing. The share of domestic investments in O&G rose from 49 to 54 percent between 2000/01 and 2001/02, with foreign investment accounting for the rest (American Chamber of Commerce in Egypt, December 2003). Although they tend to be minor participants in large projects, Egyptian banks do take the lead in ‘smaller’ investments. For example, Egyptian and Jordanian banks provided all the financing of the Egyptian–Jordanian pipeline project, which cost an estimated \$160 million (*MEES*, 12 July 2004).

The financing practices in the gas segment are both different and more varied than in oil. With most discoveries having occurred on the back of IOC activities, Egypt pursued its reliance on IOC leadership to meet the extensive infrastructural requirements of the natural gas chain. The access that IOCs have to additional financial resources, particularly from western capital markets, makes their presence inevitable in most developing countries gas projects, particularly in LNG and export projects.

As an example of the resources involved in this chain, the production and processing facilities at Ha’py field, a large new large reservoir, built between 1998 and 2001, cost \$248 million. Similarly, the development of the West Delta Deep Reservoir is estimated to have cost \$500–\$600 million. Bringing this reservoir on-stream required the use of the most advanced offshore technology, including sub-sea wells and distribution centres. The design of this area is centred on the Scarab Saffron fields, with allowance for tie-ins from near-by fields (Simian Sienna). The structure was slightly delayed in coming on stream by technical hitches, relating to problems of corrosion of large diameter pipelines, long step-outs, varying well production rates, and hydrate formation (*International Petroleum Encyclopaedia* 2004).

While most of these field developments are led by IOCs, the Egyptian government has also been heavily involved in building natural gas infrastructure since the 1990s, particularly in processing and transmission. The expansion of the gas infrastructure evolved geographically with reservoir discoveries, beginning with the Gulf of Suez in the 1980s and the Western Desert in the 1990s. The first phase of each expansion began with field facilities and/or moving gas onshore, with subsequent phases concentrating on moving the gas to population centres and power plants. In the period 1997–2002, the government said it spent £E25 billion on pipeline infrastructure, particularly for gas facilities, implying an annual budget of \$1–1.4 billion (Arab Petroleum Research Centre 2001). Thanks to these sustained investments, regional distribution networks have been built into a national grid that serves both domestic and export markets. Egypt now has a fairly developed gas chain from well-head to end consumer, even though the current reach is partial. EGAS is continuing

its efforts with a \$6.2 billion five year investment plan, which allows for an expansion into previously unserved areas (Sinai and Upper Egypt). It is reported that the plans for these areas will cost \$202 million and \$220 million respectively (Arab Petroleum Research Centre 2001; EIA February 2004).

In 2000/2001, the prospects for significant exports led the Minister for Petroleum to impose a moratorium on further domestic consumption of the gas produced. Egypt also decided that LNG would be the main form of gas exports, and proceeded to build the required facilities.<sup>13</sup> Discussions of this policy and of LNG projects do not include references as to how the Egyptian participation is to be financed. The same applies to the Mediterranean NGL plant: nothing has been published about the revenues from selling its output. Yet, NOCs and this segment of the natural gas chain are commonly known to be a key source of finance for export projects: volumes and anticipated revenues are usually published as part of such projects' details. Their omission in the Egyptian case is surprising. It may well be due to the political sensitivity about how much the Egyptian government has been spending on building its gas infrastructure, compared to its inflated announcements about expected gas revenues.<sup>14</sup>

Two LNG projects were launched as joint ventures, involving a wide range of IOCs, utilities, and contractors, often participating in the upstream, production, and off-taking. This pattern, sometimes referred to as 'cross pollination', is increasingly common in natural gas chains. More generally, Sorge (2004) explains the emergence of this pattern in large-scale long-term infrastructural projects as a useful risk reduction mechanism, which also 'aligns incentives and deters opportunistic behaviour'. The first project, Egypt LNG (ELNG), was established as a holding company in 2001 to build two gas production units at Idku, each with a design capacity of 3.6 mt/year. In Damietta, Spanish Egyptian Gas Company (SEGAS) was established as a joint venture to build and operate a large single unit train, with a 5.5 mt/year capacity, one of the largest in the world. The equity distribution for the two projects currently stands as follows:

– Egypt LNG:

Train 1: British Gas 35.5%; Petronas 35.5%, Gaz de France 5%, EGAS 12% and EGPC 12%.

Train 2: British Gas 38%; Petronas 38%, EGAS 12% and EGPC 12%.

– SEGAS LNG: Union Fenosa Gas 80%, EGAS 10%, and EGPC 10%.

---

<sup>13</sup> This section has been written combining the somewhat inconsistent information from the following sources: Egypt LNG, accessed February 2005; American Chamber of Commerce in Egypt, 15 January 2005; German–Arab Chamber of Industry 2003; *MEES* 12 July 2004; 13 December 2004, 19 January 2005, 31 January 2005).

The \$1.1 billion LNG project at Idku was launched in 2001. Train 1 was completed in May 2005, months ahead of schedule. The entire output of Train 1 was committed to Gas de France under a \$8 billion, 20-year sale and purchase agreement, signed in 2002. The entire output of the second train has been committed to British Gas. Having shelved its plans for its own LNG facility, British Gas intends to use the output for its LNG terminals in the USA and Italy. Against this background of interest, work on a 3.6 mt/year Train 2 began this year, with the unit to be completed by the end of 2006. Gas is to be supplied from the Simian Sienna and Sapphire in the Western Delta Deep Marine area, where Malaysia's Petronas and British Gas are the main producers. Petronas was one of the IOCs acquiring some of the fields sold by ENI in 2003.

The \$1.3 billion Spanish-led LNG project at Damietta consists of a single large 5.5 mt/year train, with a total feedstock capacity of 7.6 mt/year. The Damietta plant came on stream in January 2005, a month after schedule, due to offshore technical hitches and problems at the plant itself. The SEGAS project is linked to a series of joint feedstock and off-take agreements. Union Fenosa is committed to buy some 3.2 mt/year over the project's lifetime. It has already taken delivery of the first LNG cargo for its new CCGT plants in Spain due to come on stream in 2006. At the end of 2004, SEGAS, which is responsible for selling the rest of the output, secured three secondary sale agreements for the medium term, committing BP to take 1.1 mt/year. Petronas and British Gas will also each lift 700,000 tons/year. Feedstock contracts are managed by EGAS, which is tied to SEGAS by a tolling agreement committing it to supply the train over the project's lifetime. In the medium term (until 2008–2009), supplies will come from three sources: the Egyptian grid, 2.33 bcm/year from British Gas and Petronas and 1.45 bcm/year from ENI.<sup>15</sup>

Despite the involvement of IOCs and international developers in all segments of the chain, the financing of ELNG only reached financial closure for Train 1 in April 2004. According to the EGAS website, the delay was due to Edison/ENI's selling off to Petronas in 2003, and to the war on Iraq. Edison's move is part of major restructuring process begun in 2002, whereby the company attempted to cut its losses by divesting from non-core assets and businesses.<sup>16</sup> The overall financing was a 'classic' package commonly secured for most LNG chains and it is heavily underpinned by long-term contracts. No innovative financial instruments were used. Instead, it had the following conventional elements:

---

<sup>14</sup> See Economist Intelligence Unit, 16 October 2004.

<sup>15</sup> *World Gas Intelligence*, 29 September 2004.

<sup>16</sup> See various press releases between 2002–2004 on ENI's website ([www.eni.it/english](http://www.eni.it/english)).

- a \$418 million syndicated bank loan involving 11 international banks as mandated lead arrangers (20 banks eventually participated in the syndication);
- debt service guarantees provided by the project’s sponsors;
- repayments secured from project sales.

The project benefited from multilateral support and participation, which often feature in mega-projects outside the OECD. Participation by APICORP and the European Investment Bank (EIB) served the twin function of achieving closure and lowering the risks for private investors. Risk mitigation was also achieved by the multiplicity of partnerships in the upstream and downstream, with all the players heavily involved in the project’s overall success.<sup>17</sup>

Project costs totalled \$1.35 billion for Train 1. According to *MEES* (19 January 2005; 11 July 2005), the debt component stood at \$949 million, just under 70% of the total amount, with \$400 million funded through equity. Financing costs, including guarantees and contingencies, were around \$200 million (\$1.35 billion less \$1.15 billion). The commercial facility consists of \$795 million, including two EIB tranches of \$225 million each. Egyptian banks are participating with \$150 million. EGAS provides slightly different numbers, with the pure loan components at \$154 for Egyptian banks, \$418 for international banks, and \$378 for the EIB. The structure of the financial package combining the two sources is summarised Box 1.

**Box 1: *Global Capital Structure of ELNG project – Train 1:***

Bank facility, Egyptian	\$154 million (12 years)
Bank facility, International	\$417 million (15 years)
Multilateral (EIB)	\$189 million (12 years – Article 18 Facility)
Multilateral (EIB)	\$189 million (15 years – Euro-Med Facility)
Equity	\$400 million
Spread over LIBOR	85 bpts pre-completion 150–235 bpts post-completion

The project was mostly financed by debt. While this is not unusual for natural gas projects in the last few years, the leverage involved is above the average of 60 percent of debt used in OECD mixes (Bartsch 1998). ELNG had several credit enhancements and payment guarantees that financial analysts consider to be helpful – secure payment arrangements, the security of long-term

<sup>17</sup> See Sorge (2004) for a theoretical explanation as to how this is achieved in project finance more generally.

agreements and the strength of partners in the project (British Gas and Gas de France). The Euro-Med facility implies that the EIB loan is effectively being guaranteed by commercial banks. Export credit agencies (ECAs) are not involved directly. Rather, they are providing cover for many engineering contracts in the downstream, and production in the upstream.<sup>18</sup>

Train 2 achieved an even better package and much lower margins when it came to the market in summer 2005. The \$1.1 billion transaction was oversubscribed, involving 22 international and four Egyptian banks (British Gas, 6 July 2005). The details are provided in Box 2. As *MEES* (11 July 2005; 1 August 2005) notes, improved terms reflect a combination of good project history and implementation, but also a favourable attitude on the part of financiers. All regional projects, especially in O&G, have benefited from increased competition and appetite among international banks.

Box 2: Global Capital Structure of ELNG project – Train 2:

Bank facility, Egyptian	\$180 million (12 years)
Bank facility, International	\$411 million (12 years)
Multilateral (EIB)	\$144 million (20 years –Article 18 Facility)
Multilateral (EIB)	\$144 million (20 years – Euro-Med Facility)
Equity	\$220 million
Spread over LIBOR	60–150 bpts

By contrast, the financing of the SEGAS Damietta plant was initially an in-house matter, in other words a corporate financing deal organised by Union Fenosa, using in-house resources. ENI contributed with an inter-company loan when it acquired a 50 percent share in Union Fenosa Gas.<sup>19</sup> The \$600 million five-year credit facility was refinanced in 2005. The refinancing agreement consisted of a \$600 million syndicated bank loan, and a \$250 million (€220 million) EIB tranche, signed in December 2004.<sup>20</sup> Were it not for the location in Egypt and the EIB involvement, the SEGAS deal would be undistinguishable from European industry practice in financing majority-owned projects.

<sup>18</sup> For example, the Overseas Private Investment Corporation is to provide Apache with \$300 million in political risk insurance for its extensive E&P activities in Egyptian O&G (*Rigzone* January 2005)

<sup>19</sup> I am grateful for this information to Mr Ben Crosse of Linklaters, the advisors to Union Fenosa Gas for this deal.

## 2.2 Macroeconomic impacts

At first glance, O&G are a minor component of Egypt's macroeconomic aggregates. The share of O&G in GDP was still only slightly above 8 percent in 2002–2004, and cotton remains Egypt's leading single export. However, they have gained importance in the Egyptian economy in the 1990s. O&G exports increased from an annual average of just under \$1 billion between 1997 and 2002 to \$2.14 billion in 2005/06, and the sector's share in total exports rose from 34% to 53% over the same period (Central Bank of Egypt 2002/03; 2006). However, the concomitant output and income have always been important for government budgets and the country's energy balance. As previously mentioned, most of the O&G GDP is in the public sector, with the private sector, despite its dynamism and importance, contributing a mere 15 percent of the industry's output. Furthermore, Egypt pays substantive sums for imports of petroleum products, particularly LPG and diesel, with the 2004/05 import bill estimated at \$3.9 billion (Ministry of Trade and Industry, October–December 2004; Information & Decision Support Centre, accessed April 2006).<sup>21</sup>

At 2 percent of budget revenues in 2002/03, O&G revenues appear rather small compared to overall government activities. In reality, both transfers<sup>22</sup> and tax receipts from the EGPC and the Suez Canal have been crucial for narrowing the gap between the government primary balance and its larger consolidated budget deficit. The EGPC contributes to government coffers through direct transfers, dubbed 'Petroleum Revenues', as well as through corporate tax. These contributions amounted to over £E4 billion in 2004, falling from 5 percent of current revenues in 2001/02 to 3.9 percent in 2003/04 (*MEES*, 2 February 2004). Overall, the petroleum sector has been a reliable source of income for the state, this being corroborated by the fact that few SOEs in O&G were making losses (Arab Petroleum Research Centre 2001).

The reliance of the Egyptian government on petroleum and Suez Canal revenues is commonly interpreted as an indication of its fiscal fragility. Despite improvements over the 1990s, non-tax revenues are still a key source of fiscal revenue. Their share of GDP almost equals that of tax revenues, at 13 percent and 14 percent of GDP respectively in 2002/03 (Alba *et al.*, 2004). Furthermore, Egypt's narrow direct tax base is concentrated on indirect taxation, namely trade and

---

<sup>20</sup> See Linklaters 2004 and the EIB, 16 December 2004.

<sup>21</sup> This figure covers both crude oil and petroleum products. In the balance of payments, the latter is classified under 'intermediate goods' imports, so that the import bill for fuel appears lower at \$1.15 billion.

<sup>22</sup> The government makes an annual announcement about its 'procurement of surplus revenues' from the EGPC and the Suez Canal Company in its budgetary statements.

general sales taxes. Like many other countries in the region, Egypt reaps very little in direct income tax on individuals.<sup>23</sup>

To deal with this fiscal fragility, the government has been engaged in fiscal and monetary reforms for a good 15 years, with an emphasis on trimming the size of government commitments. That is not only because of the huge shadow these commitments cast over the economy, but also because of the large losses which the government registered in most activities in which it was involved. These reforms succeeded in reducing deficits to single digit levels (as a percentage of GDP) until the late 1990s. Since then, a combination of domestic and international events set government balances on a worsening trend. Hence, in 1998/99, the deficits on the budget sector, consolidated, and overall balance stood respectively at: -3 percent, -4.6 percent, and -0.1 percent of GDP. By 2002/03, even the overall balance deteriorated to -3.4 percent of GDP (Alba *et al*, 2004).<sup>24</sup> This latest deterioration re-emphasised the drag that is placed on government finance by food and fuel subsidies which amounted to 5.5 percent of GDP (Dodini 2003). The government, already alarmed that the cost of subsidies on petroleum products was £E14 billion in 2003/2004, watched them rise to £E22 billion in 2004/2005 (Information & Decision Support Centre 2006).

The underlying factor behind this latest deterioration lies with the rise in public investment in the late 1990s,<sup>25</sup> and the subsequent increase in interest payments due to government arrears. Most commentaries on this episode attribute the rise to 'mega-projects', such as the building new towns. These mega-projects, and the related arrears, are believed to have caused considerable pressure on the country's financial system: they involved the government in substantive infrastructural investments (Euro-Med Partnership 2004). At the same time, heavy public investments in O&G, including those related to building the gas network, is reflected in recent data showing investment in O&G to be slightly higher than O&G output at 9.8 percent of GDP (Ministry of Trade and Industry, October–December 2004).

---

<sup>23</sup> Individual and corporate income taxes were respectively a mere 1.8% and 4.2% of GDP few years ago (Nashashibi 2002).

<sup>24</sup> Since 1998/99, with the IMF's guidance, Egypt has streamlined its public accounts and adopted a three tiered classification of government balances :

- The primary balance of budget sector of the central and local governments and local authorities.
- The fiscal or consolidated balance: this equals the budget sector, plus the net effects of the activities of National Investment Bank and General Authority for the Supply of Commodities.
- The overall balance, which is the consolidated balance, plus Social Investment Funds. Although these funds are a saving and therefore reduce the deficit, the government treats them as a contingent liability.

<sup>25</sup> According to the Euro-Med Partnership (2004), government investment rose from 5 to 7.5% of GDP between 1990 and 2000.

O&G also has little to do with Egypt's external debt, since sectoral activities are mostly financed by non-debt-creating inflows. Most government spending in O&G is funded from the in-house resources of the SOEs involved, which, as argued earlier, did not resort to international borrowing. O&G activities were therefore unrelated to the heavy external debt burden the country carried until 1990. Egypt was classified as a severely indebted poor economy up to the 1991 *coup de grace* from the USA, whereby \$10 billion of bilateral civilian and military debts were written off. Since then, external exposure has been kept under tight control. In 2003/04, Egypt's foreign debts totalled \$29 billion, or 31 percent of GDP at the end of 2004 (IMF, June 2005). At this reasonable level, Egypt should have no problem in tapping international sources if it chose to (Central Bank of Egypt 2003/2004). Egypt's external exposure is seen as manageable in terms of both levels and terms of commitments.<sup>26</sup>

In contrast, domestic public debt expanded on the back of the aforementioned budget deficits. In 1998/99, Egypt had a manageable domestic public debt of about 50 percent of GDP. This is no longer the case: in 2004/2005 domestic debt was approaching 70–90 percent of GDP, depending on the sources and definitions used. This high domestic exposure means that total public debt has been pushed to alarming levels of over 120 percent of GDP in the last two years. The pressure this public debt creates is more to do with its size than with the method of financing. This method is seen as reasonable, having shifted away from involuntary instruments (mandatory deposit requirements and inflation). In 1998, around 30 percent of Egypt's public domestic debt was held through voluntary market instruments such as treasury bills (Arab Monetary Fund *et al.* 2001); by 2004, government paper, including international placements, accounted for just under 59 percent of domestic public debt (Central Bank of Egypt 2003/2004). The government began with timid issues of 3–5 year government bonds in 1995, and now regularly issues securities with 5–10 years maturity. Its latest seven-year treasury bond issue was significantly oversubscribed (*Al-Ahram Weekly*, 4–10 November 2004). The government's increasingly prudent fiscal management has been recognised by credit rating agencies. In 2003, Standard & Poor considered Egypt's public debt as carrying 'very low risk' despite its size (*Al-Ahram Weekly*, 28 August–3 September 2003). The latest IMF consultation likewise states that the implied vulnerabilities of government debt 'have not deteriorated'.

However, Egyptian financiers are less concerned about public debt than about the \$29 billion of unpaid SOE loans (*Al Ahram Weekly*, 10–16 October 2002). Plans to restructure SOE exposure were finalised in 2004, to the satisfaction of the IMF (IMF, July 2004). The banking system is also

---

<sup>26</sup> According to the IMF consultation (July 2004), 2003/4 foreign debts were estimated at nearly \$30 billion, which is around 44% of GDP, and costs only 11% of exports to service.

suffering from another portfolio of bad loans. In 1999–2000 swindling, fraudulent borrowing, and over-exposure to a few individuals led the banking system into a severe crisis<sup>27</sup>, leaving it with another \$25 billion of defaulting loans. These loans are estimated to equal 3 percent of GDP and 14 percent of total bank lending, and to have reduced the GDP by \$8–10 billion (UN Program on Governance in the Arab Region 2004a).<sup>28</sup> The banking sector has been heavily damaged by this crisis, which reflects a number of factors including cronyism, as well as the liquidity squeeze suffered by contractors because of government arrears on mega-projects. The Central Bank of Egypt's main response to the crisis has been to consolidate its regulatory supervision and to raise the capital adequacy ratios to 10–15 percent, a long way above the 8 percent required under Basle II standards.

Although the banking crisis weakened total credit growth, bank lending was still available to economic sectors. In 2002/03, industry absorbed 34 percent and 42 percent of the total amount of domestic and foreign currency credits respectively. As previously mentioned, Egyptian banks still participated in many O&G projects. The private sector remains the more important user of domestic credits: in 2004, it absorbed 83 and 77.5 percent of total domestic and foreign currency credits respectively (Central Bank of Egypt 2003/2004).

Despite the diversification and growing sophistication of financial institutions since the financial reforms of the early 1990s, the Egyptian financial system is still dominated by banks. Borrowing from banks therefore remains the single most common financing method for most sectors. Likewise, O&G tends by its very nature to use in-house finance, meaning that resort to banks or to Egypt's nascent stock markets is minimal. As previously shown, joint ventures have been the main vehicle through which the EGPC and IOCs share production in the upstream. Hence, only the downstream, particularly natural gas and petrochemicals, used non-banking institutions. O&G companies<sup>29</sup> compose only a small handful of the companies registered out of the 795 companies currently listed on Egypt's stock exchanges (where the total market capitalisation in 2004 amounted to £E234 billion). Although amounts raised through capital markets are small quantitatively, this avenue of finance is significant qualitatively, in that it already allows foreign equity participation and helps to diversify financial mixes. GAIL (the Gas Authority of India) recently acquired in this way shares in two gas distribution companies relinquished by British Gas and Shell (*Alexander's Gas and Oil Connections*, 18 May 2004). More generally, Egyptian capital markets allowed

---

<sup>27</sup> *Al Ahrām Weekly*, 3–9 January 2002, 18–24 April 2002, 10–16 October 2002.

<sup>28</sup> According to the EU's Directorate General for Economic and Financial Affairs, non-performing loans accounted for 16% of total bank lending in 2002. The IMF's (June 2005) puts these loans at 25% of total loans in 2004.

<sup>29</sup> The number of companies listed decreased in 2003 due to changes in registration rules (Central Bank of Egypt 2003/2004b).

Egyptian companies to raise £E23.8 billion in new securities issuances in 2004, mostly for the purpose of expanding their capital base. Therefore, the role of capital markets in supporting the downstream, particularly in petrochemicals, is likely to grow in importance.

O&G also has implications for Egypt's external balances on income and services. To begin with, investments by IOCs in E&D have been a key foreign investment activity, and therefore an important non-debt-creating inflow. According to the *Arab Oil and Gas Directory 2001* (Arab Petroleum Research Centre 2001), contracts awarded during the period 1997–2001 committed IOCs to invest some \$873 million in Egypt's O&G, implying an annual average of \$170 million in inward investments. As argued earlier, government investment allocations of £E25 billion in 1997–2002 imply that government investment in O&G was in the range of \$1–1.4 billion (Arab Petroleum Research Centre). Therefore, in the late 1990s, IOCs were probably providing at least 20 percent of O&G investments, and probably most of the credits needed by the upstream. Currently, annual investment by IOCs is said to be running at \$2 billion (American Chamber of Commerce in Egypt June 2004), 65 percent of which (estimated at \$489 million in 2001) went to the petroleum sector (US–Egypt Business Council, accessed January 2005).

It is not obvious from available data, however, that IOC investments are included in FDI figures. Investment figures quoted by IOCs exceed both current levels of FDI and aggregate investment. Net FDI in Egypt is said to have peaked at \$1.2 billion in 2000, falling to \$647 million and \$237 million in 2002 and 2003 respectively, thereby causing much official concern. Accordingly, FDI's contribution to Gross Domestic Capital Formation (GFCF) also declined, from an average of 7 percent of the total in 1985–1995, to 3.6 percent in 2002/2003 (UNCTAD 2004a). For the economy as a whole, investment spending has not been doing too well. Investment in recent years has fallen to around 17 percent of GDP, compared with a peak of 28 percent in 1983 (World Bank, 20 April 2004). It seems that O&G may have bucked the trend of weakening investment activity.

Until the end of 2005, accounting practices for Egypt's balance of payments indicate that profits and earnings of companies in O&G are itemised separately from FDI and from portfolio incomes: they are registered under 'Others' in the balance of payments on services. Profits repatriated by IOCs are recorded as an outflow, also under 'Others'. In 2002/2003, Egypt earned \$2.79 billion in 'Other services' and repaid \$2.53 billion. These discrepancies in accounting for O&G-related flows in the balance of payments were addressed in a joint study by the IMF and the Egyptian authorities (IMF, June 2005). The study proposed three major revisions to the way O&G are accounted for in the balance of payments. Firstly, gas exports need to be itemised separately, and crude oil sold by IOCs abroad need to be included in the trade balance. O&G exports may have been under-estimated

by some \$1 billion in recent years. Secondly, capital investments and exploration costs in the sector, including the use of retained earnings, were not recorded as financial inflows. Therefore, total FDI in Egypt had probably been under-estimated by \$2–3 billion a year. Thirdly, local payments by IOCs have been wrongly recorded as services, so that Egypt's balance on services is probably substantially over-estimated. As a result, in the Central Bank's *Quarterly Report* of February 2006, FDI is recorded at \$1.95 billion, including \$419 million of FDI in the oil sector. Similarly, a rise in the profit transferred by oil companies helped to push investment income payments up to \$387 million, and reduce the total balance on services to \$2.17 billion (Central Bank of Egypt, February 2006).

Lastly, being a capital intensive industry, O&G's contribution to employment generation is not its most important feature. The latest government call on IOCs to give priority to employing Egyptian nationals where possible, reflects its overall preoccupation with job creation. Indeed, in other FDI projects,<sup>30</sup> the general rule is that 90 percent of the staff must be Egyptian, and that nationals should receive 80 percent of the wage bill (*MEES*, 13 December 2004). Almost all FDI project descriptions and announcements, including in O&G, regularly feature the number of local jobs created.<sup>31</sup>

---

<sup>30</sup> There are many exceptions, including special status companies and free zones.

<sup>31</sup> For example, ENI is proud that 97% of the 6,000–8,000 workers engaged in constructing the Damietta LNG plant are 'recruited locally' (ENI, undated). Similarly, the government has begun a training program for upstream technicians. It also claims that the extension of natural gas distributors and the resulting need for technicians to service gas appliances has generated 10,000 jobs (Al Ahram Weekly, 4–10 January 2001).

### 3. OMAN: A TYPICAL SMALL PRODUCER?

#### 3.1 Main developments in O&G financing

Oman's oil sector took off in the mid-1970s, just as the country was being unified in the aftermath of the civil war. The sector has been a major pillar of nation building, the other one being the army. It has also been firmly founded on partnership with, if not the leadership of, IOCs. The government is frequently the major shareholder of O&G entities, and is involved in the management of the industry through the placement of ministers and ministry officials on the boards of key companies. Thirty years on, Oman can be described as a typical small producer, in that after an initial rise its production reached a plateau.

The foundation of the Omani oil sector was established in 1974 with the creation of the main upstream company, Petroleum Development Oman (PDO). The Omani government acquired a 60 percent share in PDO, held on its behalf by the Oman Oil Company, the government's main investment arm in the sector. Shell, TotalFinalElf and Partex own respectively 34, 4, and 2 percent of the remaining equity.

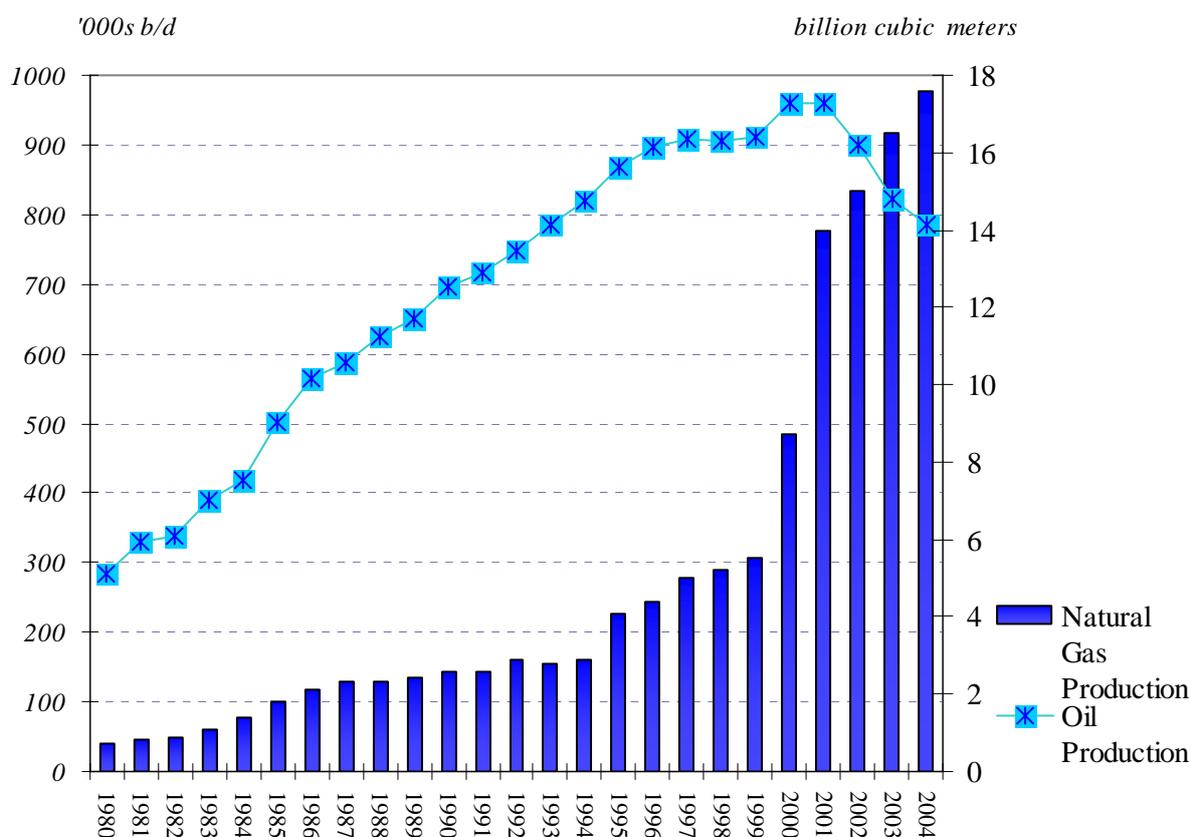
The structure of Oman's upstream has remained largely unchanged since then, with the PDO producing 90–95 percent of Omani crude. The rest of the output is produced by a panoply of IOCs, with many blocks changing hands recently. At least nine IOCs were actively exploring in the late 1990s, including China's CNPC, India's Reliance, and Occidental. Occidental advertises bringing to Oman its expertise in extending the life of maturing reservoirs.<sup>32</sup> In 2001, 16 concessions were in force (Arab Petroleum Research Centre 2001). Anadarko entered the E&D game briefly, but in 2004, it relinquished its share as part of corporate re-organisation, which required it to get rid of 'hard to grow properties' (*Oil and Gas Investor*, June 2004). Likewise, other IOCs' interests are essentially related to the importance of Omani assets in their portfolio. April 2005 saw an unusual departure from typically smooth relationships. Shell's expectation of automatic renewal of a 40-year-old concession was dashed, at a time when the company was still affected by the scandal of overestimating reserves (*Times of Oman*, 20 December 2004; *Financial Times*, 27 April 2005). The concession went instead to Occidental, which promised major improvements in yields and a \$2 billion investment plan, a programme more in line with Omani policy of maximising the use of advanced techniques and slowing the rates of decline in output (*Financial Times*, 4 May 2005; *MEES*, 18 July 2005).

---

<sup>32</sup> See 'Oman' on Occidental's website ([http://www.oxy.com/oil\\_gas/world\\_ops/middle\\_east/oman.htm](http://www.oxy.com/oil_gas/world_ops/middle_east/oman.htm)).

Oman's fierce drive to expand output moved the country from the status of a marginal producer producing 285,000 b/d in 1980 to that of a small producer with a crude output of 580,000 b/d in 1987. Reserves additions doubled the country's riches from 2.5 billion barrels in 1980 to over 5 billion by 1995. As depicted in Figure 2, these additions pushed output to a peak of some 900,000 b/d in 1999–2002. Subsequently, output continued to fall, registering 785,000 b/d in 2004 (British Petroleum 2005). The government has no illusions regarding the fact that reserves may only last for one or two decades.

**Figure 2:** Omani oil and gas production



**Source:** BP, *Statistical Review of World Energy 2005*

Oman's difficult and peculiar geology, and its scattered and small fields have posed a costly challenge to the country. Since 2000, its stated production policy has been to expand production and reserves at the same rate as that at which existing reserves are depleted (Sultanate of Oman, 2002). In addition to aggressive and sustained exploration campaigns, the PDO has confronted its situation by centring its corporate development strategy on advanced technology acquisition. For more than a decade, it has embraced the latest technological developments and adapted them to Omani conditions, both in reserves management, and in recovery and production methods. By 1998, Oman

was among the first countries in the region to have an on-line, real time, computerised production system for all fields and operations (Arab Petroleum Research Centre 1998). By 2001, the PDO was using several advanced techniques, including removing salt from oil structures, designing trilateral and quadrilateral wells, and using water injection to stop the decline in the production in some fields (Arab Petroleum Research Centre 2001). The PDO continues to build up its technological skills, establishing in 2003 a study centre and a dedicated Enhanced Oil Recovery (EOR) directorate in 2004, which manages many EOR projects (Petroleum Development Oman 2004a). These efforts have already slowed the rate of output decline (*MEES*, 18 July 2005).

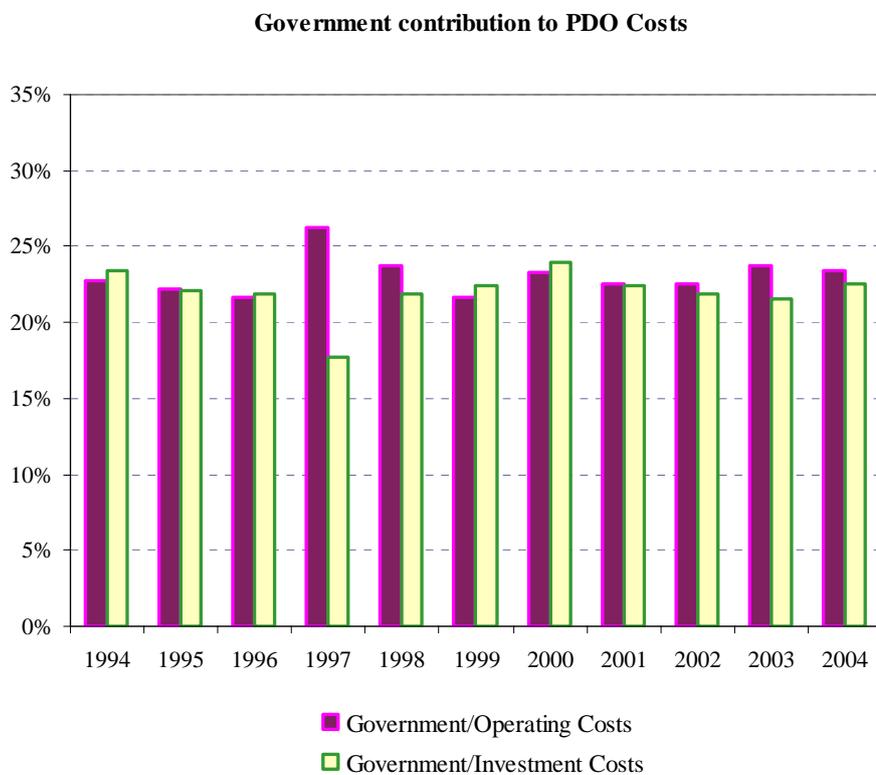
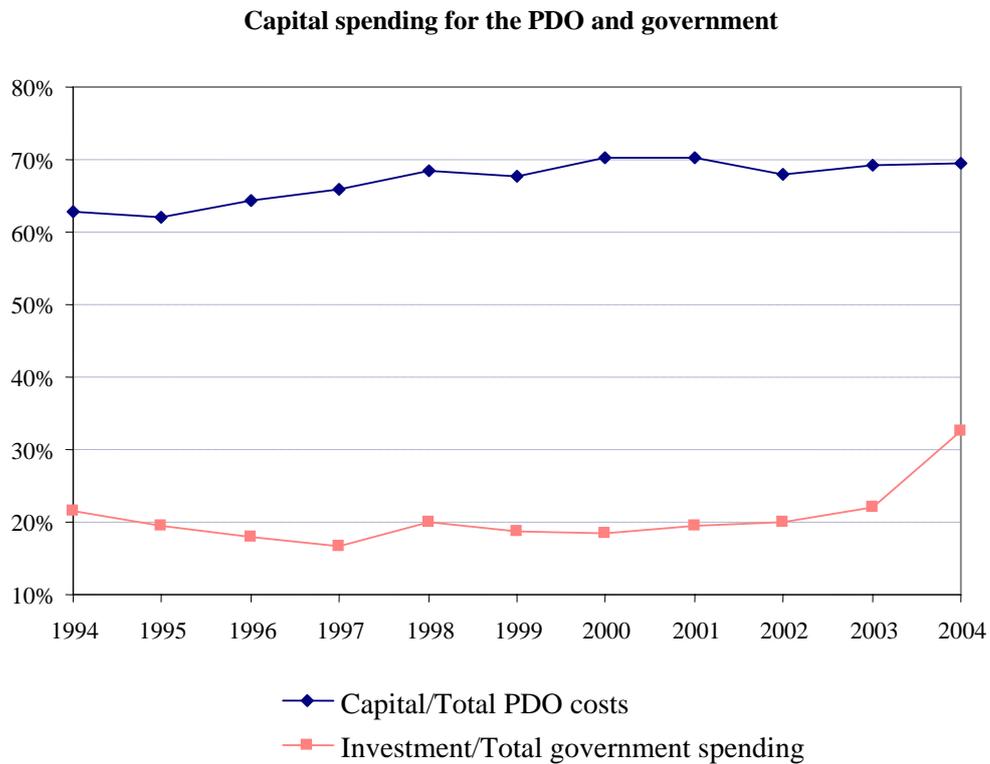
According to PDO's 2004 *Annual Report*, its high capital costs require the company to spend \$1.14 billion in capital expenditure out of an annual total expenditure of \$1.64 billion. Unit costs have experienced a steep upward curve, with levels for 2003 and 2004 climbing to \$6.34 per barrel and \$6.79 per barrel respectively. The Omani government makes direct contributions to PDO's budgets. According to published budgets,<sup>33</sup> this contribution rose from RO240 million in 1994 to RO374 million in 2004. Figure 3 shows that in that period, around 20–23 percent of PDO's spending came from the government. Government contributed a similar proportion of PDO's capital and operating costs (amounting to RO257.4 million and RO116.6 million, respectively, in 2004). The government's investment into the gas sector does not end here. Its investment in gas exploration and transport, as well as in LNG and condensates were respectively RO52.4 and RO56.4 million in the first two quarters of 2004 (Central Bank of Oman, September 2004).<sup>34</sup>

---

<sup>33</sup> Data for this section are taken from PDO and the Omani Central Bank's annual reports 2000–2004.

<sup>34</sup> These amount to \$136.5 and \$146.7 million at 2004 exchange rates.

**Figure 3: Government and PDO spending, 1994–2003**



**Source:** Petroleum Development Oman, 2003 and 2004; Central Bank of Oman, 2000, 2002, 2003 and 2004; *MEES*, 26 January 1998.

Omani private participation in the upstream is extremely limited. There are only two Omani companies active in E&D, usually as sub-contractors to the PDO and others.<sup>35</sup> In fact, one of them, Mazoon, formed a 50:50 joint venture with a wholly owned subsidiary of China's CNPC, forming Daleel Petroleum. Daleel secured \$40 million from an IFC loan, to help it meet the projected \$165 million it needs for field development. This rare instance of multilateral support for O&G has been justified by the dearth of Omani private expertise and entrepreneurship in the country's O&G sector. Otherwise, Omani private O&G entities rely almost exclusively on in-house financing.

Foreign participation in most O&G segments has taken the form of closed joint stock companies. According to the Zawya database,<sup>36</sup> the Omani O&G sector now consists of 10 government and 11 private O&G companies. Five of the 10 state entities are limited liability companies, more specifically joint ventures with multinationals. With only two private Omani companies in the upstream, most of the 11 private companies are subsidiaries of foreign IOCs, such as Occidental Oman.

Having concentrated on the upstream for two decades, Omani participation in the downstream seems to have taken off timidly in the mid-1990s. By 1997, Shell Oman was sold to local investors on the newly established Muscat Stock exchange. In 2002, the Oman Oil Marketing Company acquired the 49 percent share held by BP in BP Oman, with outlets to be branded under the name of the newly formed company, Oman Oil (*Gulf Oil & Gas*, 20 October 2003). Similarly, Al Maha, a products marketing company, was successfully floated by IPO in April 2004. Al Maha was established by royal decree in 1993 as part of the country's only Refinery Company.<sup>37</sup> The government is now working on a second refinery at Sohar as well as a petrochemical complex (*Alexander's Gas & Oil*, 15 January 2004). Another key venture in this complex is a methanol plant, which has been on the drawing board since 2001. Prospects for financing the project improved recently because of rising O&G revenues, and because of equity participation by Mubadala, a UAE state owned investment company (*Gulf Oil and Gas*, 23 February 2005).

All these efforts, the use of the local capital markets, and the extensive reliance on concessions to IOCs in the upstream, demonstrate a desire to maximize the developmental impact of O&G on the rest of the economy, including the triggering of industrial development. There is little emphasis on the national ownership of reserves *per se*. Developments in the downstream coincide with the two

---

<sup>35</sup> These are Petrogas LLC and Mazoon Babwani or MB Group.

<sup>36</sup> Zawya is a website specialising in corporate, financial and economic news and information about Arab countries ([www.zawya.com](http://www.zawya.com)).

<sup>37</sup> The Ministry for Oil and Gas own 99% of the equity, with the Central Bank owning 1% (Arab Petroleum Research Centre 2001)

current focuses of economic policy: firstly, Omanisation; and secondly, privatisation, that is, involving the Omani private sector even if only by handing over assets. Omanisation policy hopes to increase the ratio of Omani to foreign employees in all sectors, particular outside the government. According to the Ministry of the National Economy, in 2002 Omanis accounted for 82 percent of employees in O&G production, and 76 percent in other segments (Global Investment House 2003), with Oman LNG putting the employment of nationals at 62 percent.<sup>38</sup> On the one hand, given its very low starting point, Oman has succeeded in speeding and deepening the educational and technical attainment of its population.<sup>39</sup> On the other hand, with a 2003 national population of 2.6 million, it is difficult to see Oman's dependency on foreign workers receding, especially if it embarks on large projects.

The weakness of the Omani private sector in O&G meant that, in order to involve it, the government's sectoral policy generally followed an infant industry approach. An industry segment would be established through setting up a joint venture with foreign companies, with the main facilities often being inaugurated by the Sultan. The government is the junior partner in practice, though usually owning 51 percent of the entity. The segment is then gradually built into a mature, and sometimes Omani-led, corporation. Subsequently, the private sector, through private banks and now more recently through IPOs, is invited to share in the ownership and management.

In searching for new crude reserves, Oman uncovered substantive reserves of non-associated gas. This led to a seemingly continuous expansion of proven reserves, from 280 bcm in 1990 to 860 bcm in 2000, and 1000 bcm in 2004 (British Petroleum 2005). The share of non-associated gas almost doubled over the period, recently reaching 60 percent (Sultanate of Oman 2002; EIU 2004a). While many new finds occurred in PDO's concessions, by 1999 exploration and production also expanded within the activities of some IOCs, including Occidental, BP, and Finland's Oyj. With the completion of many processing and production facilities since then, natural gas production almost doubled to 17.6 bcm in 2004.

Oman took some time to decide that its substantial natural gas reserves could support exports, but was quicker than Egypt in deciding to go for LNG. Oman has only one gas pipeline export project linking it to the region's power infrastructure. As of 2004, Omani gas is supplied to a power and desalination plant in northern UAE, under the terms defined in the Dolphin Energy initiative.

---

<sup>38</sup> Similarly, under a joint venture with Terasen International and Enbridge Technologies to operate and maintain a natural gas pipeline, the companies are to train local personnel to assume full responsibility for running the facilities by 2006.

<sup>39</sup> According to *World Bank Development Indicators 1995*, the primary school enrolment ratio in 1970 was a mere 3%. The current ratios are over 80% for both male and female children (World Bank, 29 September 2004a)

Dolphin Energy, which constructed the 182 kilometre pipeline, is owned by the government of Abu Dhabi (51 percent), Total and Occidental (24.5 percent each) (*Pipeline Magazine*, 24 January 2004). Oman's more substantive LNG efforts began a decade earlier.

The construction of the Oman LNG plant began two years after the royal decree establishing the company, and only after the signing of the sale and purchase agreement with Korea Gas and ('Milestones', [www.omanlng.com](http://www.omanlng.com)). Oman LNG would consist of two 3.3 mt/y or 163 bcf trains. Korea Gas was committed to take 4.1 mt/year of the output, with Osaka Gas committing to 0.7 mt/y in 1999. The outstanding 1.6 mt/year were to be taken by India's Dhabol Power Company. This arrangement collapsed with Enron in 2001, which, as argued below, forced Oman onto short term and spot markets.

Thus, during the late 1990s the country's outlook shifted towards being a gas exporter. Having relied on the technical and financial muscles of IOCs throughout, Oman, with its precarious macroeconomic balances, was obliged to continue its reliance on partnership in financing the capital intensive requirements of the natural gas chain. The scale and cost of the LNG facility involved billions of dollars and required advanced project finance arrangements. Oman had to borrow from commercial and traditional sources abroad. As with Qatar, government participation was to be financed by future cash receipts, and by revenues from associated gas liquids. Omani gas finds were particularly wet: they are expected to produce 800,000 b/d of NGLs. The Central Bank of Oman (2003) had expected the government to reap some RO160 million (\$414 million) in net revenues from the sales of oil condensates in 2004; in fact, LNG and condensates brought the government RO373.7 million (\$972 million), as LNG exports reached RO619.7 million (Central Bank of Oman, *Annual Report 2004*).

At its launch, the structure of the Omani LNG project was regarded by the financiers as 'convoluted'. The upstream segment was entirely owned by the Omani government, but was to be executed by PDO partners. These partners were to put cash upfront, in return for a guaranteed fixed return rate of 12 percent. The downstream segment, in other words Oman LNG, was established as a closed Omani company owned by the PDO and the main off-takers. This resulted in the following percentage distribution of equity: the government 51, Shell 30, Total 5.54, Mitsui and Mitsubishi 5.54, Korea Gas 5, Partex 2 and Itochu 1 (Bartsch 1998; Oman LNG 2003).

Oman LNG was funded through limited recourse financing. In an effort to emulate the Qatari RasGas financing structure, it was also anticipated that \$500 million in bond financing would be issued. However, the issuance was aborted following the East Asian economic crisis, with the

Enron collapse and the September 2001 attacks putting the finally blocking this route. RasGas bonds remain the only example of innovative financial instruments in the region's O&G industry, despite expectations of good market response to contractual structures that reflect investors' interests, and despite the linking of debt service with cash flow profiles. The financing eventually secured by Oman LNG consisted of:

- a \$500 million syndicated bank loan involving seven international banks; and
- four export credit loans involving the credit agencies of Italy, Japan, Netherlands, the UK, and the USA.

The Omani government provided guarantees indirectly through:

- the service/execution contracts of PDO in the upstream;
- the subordination of the government's commitments in the upstream to its commitment in the downstream. The government gives priority to repaying Oman LNG, and commits itself to do so within six years.

Bartsch (1998) argues that this structure still yields a satisfactory distribution of risks. The Omani government effectively lowers its revenue risks, because its overall gas revenues are likely to be larger than its equity commitments. Midstream companies are guaranteed that the government will repay in six years. Both upstream and downstream partners face the usual project risks, but their other risks are mitigated by official ECA and Omani commitments. The overall capital structure of the project at the time of the launch is summarised below.

*Global Capital Structure of Oman LNG project:*

Bank facility/syndicated loan	\$900 million (12.5 years)
Export credits	\$1100 million (12.5 years)
Shareholder equity	\$500 million
Spread over LIBOR	55–100 bpts pre-completion 45–197.5 bpts post-completion

Despite the failure to issue bonds, the structure of the Omani financial vehicle was not unsatisfactory. In fact, it secured a triple B rating at its launch. Furthermore, few other financial packages can claim to have secured such high leverage. 85 percent of the Omani package consisted of external debts or loans, compared to an average of 60 percent of debt used in OECD mixes (Bartsch 1998). After all, Oman LNG managed to achieve the credit enhancements and payment guarantees that financial analysts are arguing for, namely:

- clarity of the legal framework,
- secure payment arrangements,
- the heavy involvement of five export credit agencies (ECAs),

- the security of long-term agreements (Korea Gas and Osaka Gas), and
- the strength of partners in the project (Shell).

Beyond that, a very interesting development has been the way Oman LNG reacted to the sharp rise in market risk after the Indian off-take deal collapsed. Oman LNG quickly turned to placing uncommitted volumes on the spot market, and looked to the West rather than just the East. This coincided with improving market conditions for LNG in the Mediterranean, which enabled Oman to secure deals with French, Belgian and Spanish clients. By the time the two trains were fully operational, their output was sold out. As a result of this change of fortune, Oman LNG can now boast on its website ‘stronger than projected cash flows and debt capacity’. This success also led to improved terms when the refinancing deal was secured at the end of 2001:

- no ECA support was required; and
- the spread over LIBOR narrowed to 90 bpts for years 1 to 5 and 110–140 bpts thereafter.

In July 2004, Oman LNG secured top credit ratings (*MEES*, 26 July 2004). This success was maintained, and was one of two key factors that enabled Oman LNG to refinance the loan at still narrower margins, namely 40–70 bpts (*MEES*, 25 June 2005). The other factor has been increased interest from international banks since the end of 2004, which has led to a narrowing of margins across the region (*MEES*, 11 July 2005).

At present, there are plans for a third 3.3 mt/year train, which would bring total Omani LNG production to about 10.3 mt/year. The Qalhat LNG train is also set up as a special purpose vehicle. A major new partner in this venture is Spain’s Fenosa. In 2002, Fenosa made a commitment to take 1.65 mt/year, and acquired a 7.4 percent share in the equity (*MEES* 15 November 2004; *AME Information*, 16 September 2004). The rest of the equity is owned by Oman LNG (36.8 percent) and the Omani government (55.8 percent). Hence, the main stakeholder in Qalhat LNG is the government, with 74.6 percent of the equity, followed by Shell, Fenosa, and Total with 11, 7.4 and 2 percent respectively. The financing is currently being finalised, and include spreads over LIBOR even narrower than those secured for Oman LNG. The spread is likely to be only 40 bpts pre-completion and 55–110 thereafter. *MEES* argues convincingly that these favourable terms are due to Oman’s good track record in LNG, bankers’ enthusiasm for natural gas, and ‘unfulfilled lines of credit for Oman’ (*MEES*, 28 March 2005), to which must be added the current competitive interest of international banks for regional projects.

The reliance on spot sales highlights a crucial component of the costs of natural gas chains, namely pipelines and transport. As previously mentioned, the government now itemises such investments in the sector. At the industry level, the brunt of the first element is borne by the Oman Gas Company, an upstream public operator. LNG vessels financing is borne by Oman LNG, committing the company to substantive acquisition and running costs. According to *MEES* (14 April 2003), Oman is now chartering another LNG vessel on a long-term basis, and embarking on the construction of another two.

### 3.2 Macroeconomic impacts

Omani oil and gas are, of course, the government and country's largest export revenue source. The oil sector has been around 19–36 percent of GDP in 2000–2002, and 40 percent in 2004. O&G provided 66–76 percent of the country's foreign exchange earnings and 73–82 percent of government revenues over the same period (IMF October 2003; 2005).<sup>40</sup> The IMF indicates that O&G revenues soared to RO4,072 million in 2004, accounting for some 66 percent of government revenues and 42.3 percent of GDP. In that year the natural gas sector alone accounted for 2.6 percent of GDP (Central Bank of Oman, *Annual Report* 2004).

Oman's main fiscal worries are arguably more to do with the fragility of the revenue base than with the obvious dependence on O&G revenues. Oman's consolidated budget deficit<sup>41</sup> in 2003 stood at 4 percent and 15 percent of GDP with and without oil revenues respectively. Like most other Arab countries, Oman has a very narrow direct tax base, with the government receiving a mere quarter of its revenues from taxes (UN Program on Governance in the Arab Region 2004b; Central Bank of Oman 2003). In fact, the country has no taxes at all on personal income, except a marginal payroll tax on government employees, which produced a mere 2.2 percent of revenues in 2004 (Central Bank of Oman, *Annual Report* 2004). Its tax income therefore depends on corporate taxation and custom duties. However, its efforts to improve this situation are not to be belittled: they led to a 38 percent increase in non-oil revenues in 2004, which was in excess of the 15.5 percent rise in oil revenues (Central Bank of Oman, *Annual Report* 2004).

---

<sup>40</sup> The 2003 *Annual Report* of the Central Bank of Oman indicates very similar numbers, the difference being insignificant.

<sup>41</sup> The difference between the central government budget and consolidated fiscal balance is due to off-budget operations and indirect subsidy schemes.

Indeed, Oman is an ‘early adjuster’, and has been tackling these imbalances since its 1996–2000 five-year plan. In the late 1980s and early 1990s, it had larger budget deficits (of more than 10 percent of GDP) and had built up a large external debt.<sup>42</sup> In 1994 a simulation exercise by the World Bank projected that continuing the 1990s trends could push the fiscal deficit to 57 percent of GDP, and external debt to \$17 billion by 2005 (World Bank 1994). These projections proved to be overly pessimistic: external debt peaked at \$5.9 billion in 1999, falling back to \$4.5–\$4.7 billion in 2002 (IMF 2003; UN Program on Governance in the Arab Region 2004b).<sup>43</sup> In its 2003 consultation, the IMF commended the government for using budget surpluses to repay domestic debt. Domestic public debt was reduced from 32 percent of GDP in 1998 to 16 percent in 2002. In 2001, Oman’s central government (not including other government agencies) had only \$900 million and \$623 million in foreign and domestic debts (IMF, September 2004). With the rise of natural gas and condensate revenues in the last two years, budgetary balances have been in surplus, this surplus reaching 5 percent of GDP in 2004 (IMF 2005).

It should be noted that Omani fiscal deficits include payments of an unspecified proportion of oil revenues into the State General Reserve Fund (SGRF). Payments to the SGRF may exaggerate the fiscal imbalance, since in some years the government would have had an operating surplus were it not for payments into the fund. This reserve fund was set up in 1980 to cushion the effect of the volatility of oil revenues and smooth budgetary patterns. The government also draws on the Fund if spending pushes the budget deficit above a particular level, and pays into the fund at times of revenue surpluses. According to the EIU (2004a), between 1996 and 2000 net contributions into the Fund were the equivalent of 8 months of government spending.

Oman has also been one of the leading Arab countries in the use of voluntary financing instruments to finance government spending. At a time when many governments relied on mandatory deposits by banks, Omani government spending relied in its financing on Treasury bills, RO149 (\$387.5) million of such bonds being held by banks in the surplus year of 2004. Five year Oman Development Bonds were issued from 1994: in 2004, banks held RO146.5 million worth of such bonds. During the 1990s, 23 percent of the net domestic financing of the deficit consisted of long-term bonds (HSBC Middle East 2000). Thus, fiscal needs did not choke the banking system. In fact, bond issuance helped to deepen the country’s financial system. At a time of budgetary surplus, such as today, it has been used to absorb excess liquidity.

---

<sup>42</sup> Omani external debt quadrupled from \$1.5 billion in 1983 to \$5.7 billion in 1994.

<sup>43</sup> EIU (2004a) puts 1999 external debt at \$6.8 billion. The difference could be due to external liabilities of commercial banks, excluded from IMF data, but this cannot be ascertained.

Despite its commitments in relation to the LNG project and O&G infrastructure, government shares in the balance sheets of the banking system have been distinctly smaller than the balances of the private sector. Claims on the private sector by the Omani monetary system accounted for 85 percent of total claims in 2003 (IMF, September 2004). The Omani banking system remains traditional in its exposure: all but a marginal share of loans have been personal loans (Central Bank of Oman, 2003; 2004).<sup>44</sup> Further, banks are still suffering from a high rate of non-performing loans to private clients (*MEES*, 25 March 2002; 24 May 2004). This problem continues to undermine profit margins, and forced the Central Bank to set capital adequacy levels at 12 percent, in other words above the international level of 8 percent set by the Basel Agreement.

Turning to the balance of payments, Oman's foreign revenues are inextricably linked to, if not exclusively dependent on, O&G earnings. In the last few years, Oman used rising O&G revenues to accumulate large foreign exchange reserves, a policy that is increasingly adopted by developing countries. The other main change in its balance of payments has been in the growing importance of natural gas revenues since 2000. In 2003, Oman earned 66 percent of its trade revenues from O&G (about \$7.8 billion), of which \$1.4 billion came from LNG (EIU 2004a). These revenues soared to some \$9.4 billion in 2004, with oil and gas accounting respectively for 69 percent and 12 percent of exports (Central Bank of Oman, *Annual Report* 2004).

O&G are reflected in two balance of payments outflows, namely its services and its income balances. The profits and earnings of IOCs operating in the sector have been the predominant outflow in the balance on incomes, which registered a \$620 million deficit in 2003. The Omani external balance on incomes also reflects its dependency on foreign labour. Remittances of foreign workers reached \$1.6 billion in 2003, equal to 14 percent of export earnings. Thus, while the trade balance for that year was \$5.6 billion, the country's current account surplus was only \$2.1 billion (EIU 2004a). The current situation is largely unchanged, with remittances in 2004 at RO702 or 13.7 percent of exports (Central Bank Of Oman, *Annual Report* 2004).

On the side of inflows, investments by IOCs have been the key non-debt creating flow. According to the *Arab Oil and Gas Directory 2001*, through contracts signed in 1995–2001 IOCs were committed to invest some \$524.5 million in Oman's O&G in the period up to 2009 (an annual average of roughly \$38 million a year) (Arab Petroleum Research Centre 2001). O&G investments are therefore a large component of total FDI. FDI inflows were on average \$106 million and \$60 million annually in the periods 1985–1995 and 1999–2003 respectively (UNCTAD 2004b).

---

<sup>44</sup> In December 2004, personal loans accounted for 94% of the number and 38% of the value of all loans (Central Bank of Oman, June 2005).

Another reason to believe they are a dominant inflow is the fact that investment regulations outside O&G were liberalised only in the second half of the 1990s (UN Program on Governance in the Arab Region) 2004b; Mellahi *et al* 2003). It is only in the last two years or so that foreign ownership has been permitted to reach 49 percent, with higher or full foreign ownership of projects still needing to be approved by the National Development Council. On the whole, net FDI accounted for an average of 6 percent of GFCF in 1985–1995, and 3.7 percent in 2002–2003 (UNCTAD 2004b). The EIU (2004a) claims that during the construction of the Oman LNG project, GFCF rose to 20 percent of GDP, falling to 14 percent currently. Thus, the O&G sector has been a substantive driver of investment in Oman.

In terms of the external financial position, O&G ventures have had a direct but harmless impact on the country's debt profile.<sup>45</sup> While there is little documentation of the sectoral composition of Omani external debt in the 1980s, government borrowing for Oman LNG and related facilities contributed to the temporary rise of external debt in the late 1990s (EIU 2004a; UN Program on Governance in the Arab Region 2004b). This is why official export credits rose from \$0.9 billion in 1996 to \$1.4 billion currently (OECD 2005; World Bank June 2005). Debt repayments since 2001 have also been eased by the availability of gas revenues, with total external debt falling to \$4.6 billion in 2003. The surge in O&G revenues in 2004 has been used by the government to reduce external commitments even further. Hence, Omani debt exposure is reasonable, and the use of external finance has successfully shifted from an initial focus on consumption to investment.

To be sure, Omani banks could not have provided the funding needed for the large industrial projects embarked on. In 2003, their total US dollar deposits and capital base stood at only \$7.28 billion and \$1.33 billion (Arab Monetary Fund *et al.* 2005), while in 2004 total core reserves only reached RO497 million (Central Bank of Oman, September 2004).<sup>46</sup> In other words, Omani banks are still too narrow to finance large projects. They have mainly provided indirect support to O&G through the uptake of Development Bonds and other government papers. It is only in the last few years that they were visible participants in loan syndications for Qalhat LNG and downstream projects (*MEES*, 26 April 2004; 29 November 2004).<sup>47</sup>

Oman's stock market is still too small to provide a significant financing avenue for O&G entities. Only four of the ten private Omani O&G companies are listed on the Muscat Stock Exchange,

---

<sup>45</sup> However, the IMF (2005) indicates a worsening of the trade balance in 2004/05 as a result of imports required by the gas-based industries.

<sup>46</sup> This equals \$1.29 billion at the September 2004 exchange rate.

<sup>47</sup> These are the Sohar Refinery and Sohar IWPP. The latter, a \$549 million project, included one Omani bank among the six underwriters, and four Omani banks entered as co-arrangers.

which currently includes some 125 companies.<sup>48</sup> According to HSBC Middle East (2000), Omani companies raised 24 percent of their new capital on the stock market, but clearly this is not the case for O&G. Note that the Muscat Stock Market has only begun to recover after its collapse in 1998 due to a speculative bubble. Since then, the market has gained maturity and rigour as a result of continuous reforms and regulatory upgrading (for instance, reforming settlement procedures and setting capital adequacy requirements for stockbrokers). Therefore Muscat Market's ability to support O&G should grow. Indeed, as previously mentioned, the government used the Market to involve the private sector, successfully selling two petroleum products companies via IPOs (in 1997 and 2004). Both issues were over-subscribed. However, this success cannot be entirely attributed to the attractiveness of the sector. In fact, virtually all public offerings in Arab capital markets have been over-subscribed, through a combination of excess liquidity and a dearth of real investment opportunities outside real estate. Even so, it is significant that local investors are showing interest in a key industry. Arab governments may want to increase their reliance on private savings mobilised in this way.

---

<sup>48</sup> These include Maha Petroleum Products, Natural Gas Company, Oman Oil Marketing company, and Shell Oman.

## 4. SYRIA, THE UNLIKELY OIL STATE

### 4.1 Main developments in O&G financing

It may seem surprising that Syria's O&G sector took off some 40 years ago. Oil was exported and the Syrian Petroleum Company (SPC) was established in 1968. It may be equally surprising that Syria first opened its doors to IOCs in early 1970s, and has not looked back ever since. The outward and commercial orientation of Syria's hydrocarbons sector, both in structure and financing, has created two dichotomies. First, the sector is almost completely divorced from an otherwise centrally planned, inward-looking, and heavily controlled economy, one whose transition is trailing far behind that of Eastern Europe. Second, because O&G revenues accrue directly to government coffers, the sector's articulation with the rest of the economy has been minimal. In other words, Syria has an oil-dependent fiscal balance, although it is not an oil economy.

Syria is by no means a major producer. Its proven crude oil reserves have been stagnant at some 2.5 billion barrels, with gas reserves estimated at 241 bcm (EIA, July 2004). Having been less than 200,000 b/d up to 1984, oil production, most of which consists of Syrian Light, almost tripled during the next decade before beginning to fall slightly in recent years. In 2003 it was between 510,000 and 560,000 b/d, depending on the source (See Table 4 and *Syria Report 2003*, MEES, 27 September 2004). About half of this volume is exported. It is widely believed that Syria's crude and gas reserves have reached maturity and will not last more than 10 to 14 years, a perception which the Syrian government is only just beginning to adopt.<sup>49</sup> Syrian O&G output since the 1980s is plotted in Figure 4 below.

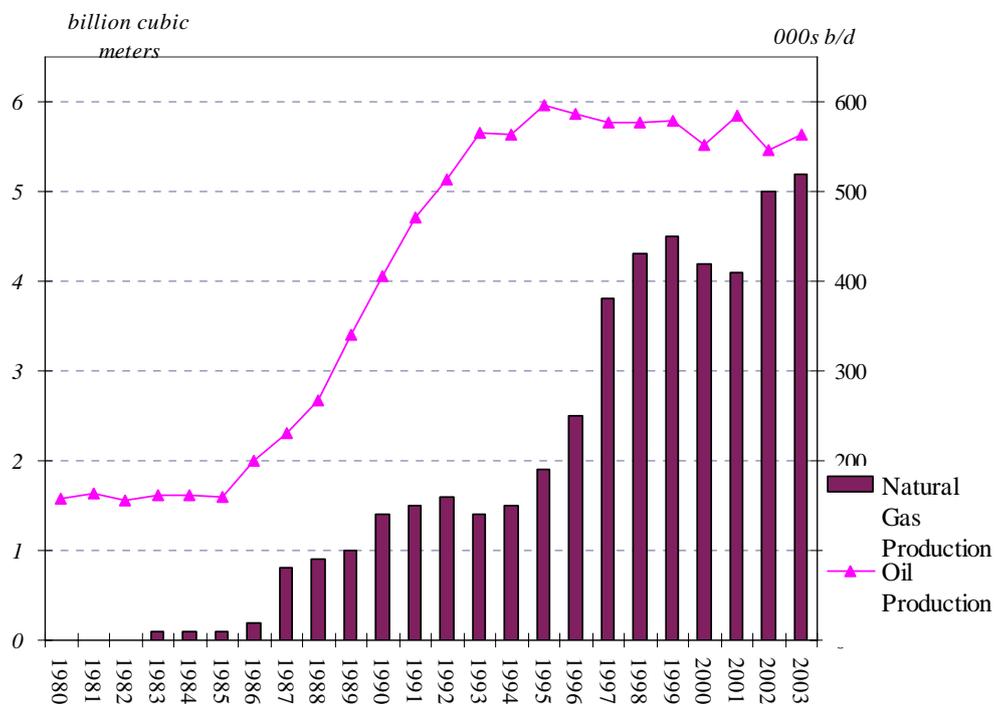
The industry's structure has changed very little since 1973–1974, except for a few recent amendments. Five SOEs compose the sector, all of them operating under the directorship of the Ministry of Petroleum and Mineral Resources. The Syrian Petroleum Company (SPC) had a monopoly over the downstream until the mid 1970s. Since then, joint ventures with IOCs and super majors have gradually eroded SPC's share of total crude output. The downstream segment consists of two refineries (Homs and Banias), and two midstream operators – Syrtol (for pipeline and transportation) and Mahroukat (Syrian Company for Storing and Distributing Products). These two were merged in 2003 to form SCOT (the Syrian Company for Oil Transport). In 2003, the Syrian Company for Distributing Gas was created to take over all gas related processing, distribution, and marketing activities,<sup>50</sup> although the SPC is still responsible for production.

---

<sup>49</sup> According to *al-Hayat* (2 September 2005), the Syrian deputy prime minister admitted to a meeting of the Syrian Economic Forum that crude exports are likely to fall drastically from 70 to 15% of exports by 2010.

<sup>50</sup> See the respective company descriptions on the Ministry's website, [www.mopmr-sy.org](http://www.mopmr-sy.org).

**Figure 4: Syrian oil and gas production**



**Source:** BP, *Statistical Review of World Energy 2005*

The chronological development of the sector is summarised in Table 3 below. In a nutshell, Syria has been relying on IOC financial resources and technical expertise since 1975, when IOCs were allocated double the area to be explored by the SPC. Whenever output and discoveries stagnated, the government responded by opening more blocks to foreign exploration, adjusting contract terms accordingly. The first round of this policy led production eventually to rise to some 250,000 b/d in 1987/1988. It brought in Shell, Pecten, and others in the form of the joint venture Al-Furat Petroleum Company (AFPC). The late 1980s round led to more discoveries and another joint venture, Deir el-Zor Petroleum Company (DZPC), was established. By 1995, output peaked at 600,000 b/d, and IOCs were complaining about contract terms. In response, a new contract was announced in 1997, helping to sustain exploration activities (Syrian Arab Republic 2002).

By that time, SPC had lost its monopoly position and become a residual producer. The SPC and DZPC together account for about a third of current output, with the AFPC producing half to two thirds of Syrian crude. However, AFPC's output has been declining since 2002 (*MEES*, 27 September 2004). The importance of the IOC presence in E&D is also reflected in the number of wells drilled. In the period 1995–2000, between 17 and 22 exploratory wells were drilled each year by foreign companies, compared to a maximum of six by Syrian companies (Syrian Arab Republic 2002). IOCs have been the lifeline that has sustained the expansion of Syrian reserves and production.

**Table 3: Syrian oil sector: a brief chronology**

Date	Decision	Position of NOCs/Industry structure	Position of International Oil Companies
1973–74	Oil sector structure established	SPC has monopoly in the upstream. The downstream consists of 2 refineries and the Syrian Company for Oil Transport.	Foreign companies are present as contractors and operate under service agreements.
1975	Open door policy in the oil sector	Production stagnates at around 150,000 b/d by mid 1970s. 50,000 km <sup>2</sup> are opened to IOCs; SPC keeps 25,000 km <sup>2</sup> . Production sharing agreements allowed.	
1982–88		Joint ventures and consortiums are formed.	Shell, Pecten and Dominex form a joint venture with SPC, Al Furat Petroleum Company (AFPC). It produces 36% of output.
1984–86		Discovery of Deir el-Zor attracts more Western firms	BP, Repsol, Tricentol, Occidental, Elf, and Total explore for oil. Market entry also through wholly owned subsidiaries. DEPC starts producing in 1990.
1988		Elf and SPC form a joint venture (Deir El Zor Petroleum) By 1988, output had risen to 280,000 b/d	
1989–91	Limits to open door policy	Discoveries stagnate. Some IOCs relinquish tracts.	Agip leaves in 1989, followed by BP, Enron, Neste, Repsol, Occidental, and Unacol.
1995		By 1995, output had risen to 600,000 b/d. SPC's production share falls further (25% of output in 1995). AFPC and DZPC produce respectively 66% and 10% of 1995 output.	
1995–2001	Opening new blocks	New E&P contracts see a small reduction in royalty. Recovery rates are higher, and SPC's production share is lowered. 12 exploration licenses awarded to over a dozen IOCs.	Medium IOCs (Tanganyika, Tullow, etc) enter, including non-Western entities. Elf establishes a subsidiary. Elf & Conoco in a service contract for a gas collection project. Veba sells to Petrofac, who resells to Stratic (Canada).
1997	Turning attention to gas	AFPC already involved in associated LPG production. Gas production doubles to 2.4 Bcm by 1997.	Marathon discovers large gas reserves and is asked to build treatment plant. SPC takes over following disagreement.
2002–03	Anticipating fall in output	Enticing firms with enhanced recovery expertise. Production falls below 600,000 b/d. AFPC's output is at 212,000 b/d.	Stratic, Indian Oil Corporation, Shell, Ocean focus on exploration Chinese, Russian and Irish operators to expand existing facilities.
2000–05	Focusing on gas production	Building pipelines and integrated processing facilities. The Syrian Company for Gas Distribution is established in 2003.	Conoco builds plant & facilities on BOT basis to collect and process gas from 6 gathering stations
2004	Efforts to extend life of mature fields  Reviving Syria's transit route function	Oil companies continue to enter and exit the sector US sanctions may affect technologies used.  Holding talks with Iraq and Iran	No new US entrants. US companies already in Syria avoid using Commerical Bank of Syria. Sino-Syrian Kawkab Company is a new PSA venture. Talks with Iraq about pipelines & ports; with Iran about downstream and human resources.

**Source:** Arab Petroleum Research Centre, 1995; 1998; 2001; EIU 2004b. Note that not all quantitative estimates derived from these sources correspond exactly to the source used to produce Figure 4.)

In each of the last two years, a dozen blocks have been open to bidding. Eight contracts for exploration (with PSAs) have been awarded, and another two for the development of existing facilities. The Ministry justifies this policy by arguing that the SPC on its own ‘will need 90 years to explore undiscovered oil’ (Syrian Arab Republic 2002), reflecting an expressed determination to explore the entire country. Yet recent efforts to attract firms specialising in enhanced recovery and drilling techniques suggest that, at best, Syria may succeed in delaying the expected depletion of proved reserves. The industry believes that most of the country’s wells have reached maturity.

Syrian oil contracts have been changed to meet the IOCs’ terms for maintaining their upstream activities. This is clearly shown in Table 4. Royalty rates were reduced twice, falling from initial levels of 15–16 percent of wellhead output to 12.5 percent currently. Similarly, current recovery rates have finally reached the 30–40 percent that some oil majors were seeking a few years ago. In this sense, the flexibility and clarity of the contractual arrangements that have characterised the industry have helped to sustain foreign interest and presence. This policy in the upstream is also consistent with the establishment since 1972–1973 of Free Trade Zones, and with granting tax holidays to foreign investments.<sup>51</sup> As a result of its reliance on IOC partnership, Syria has been the location of more IOC activity than any other part of the region; many companies have entered and some exited the sector, with tracts frequently changing hands. As to natural gas, prevailing contract terms are probably similar to those in oil, though disagreements over rates of return have been reported (Arab Petroleum Research Centre 2001).

**Table 4: Syrian oil contracts, 1975-2000**

Period	Main type of contract
1975–1988	Production Sharing Agreement: * Royalty: 15–16% of well head output * Recovery rate: to cover E&D costs until commercial volumes discovered * Output shared in fixed proportions with SPC. Percentage related to oilfield life. * SPC's share of profit oil: 81–87% of output
1997–2000	New Production Sharing Agreement: * Royalty: 12–13% of well head output * Recovery rate: 40% up to 25,000 b/d, 30% thereafter * SPC's share of profit oil : 65–85% of output

<sup>51</sup> This point is also made by Dodini (2003). On the other hand, there have been criticisms of the tax treatment in foreign investment of goods and services acquired from abroad (EIU 2004b).

Analysts such as the Observatoire Méditerranéen de l'Énergie (2003) argue that unattractive terms are the main explanation of majors relinquishing their concessions. This argument is at odds with their long history of active – if not dominant – participation in the sector. It is more likely that the changing mix of companies in Syria reflects changes in the worldwide industry and in the corporate strategies of IOCs. Majors and super-majors are leaving Syria probably because of their current tendency to concentrate their presence geographically. Hence, they may be losing interest in relatively small acquisitions, especially where reserves are expected to be depleted within a decade or so. In other words, it is not a coincidence that by the late 1990s two groups of IOCs became visible in Syria, namely smaller companies and IOCs from Canada, Russia, and East Asia. In their search for reserves, or in their efforts to export, these companies have formed a significant cluster in the industry worldwide. This cluster tends to be particularly visible amongst smaller producers.

According to the EIU (2002; 2004b), US sanctions against Syria did not immediately lead to an exit of US companies already active in Syria. Initially, the companies merely ended direct financial transactions with the Commercial Bank of Syria, which was explicitly named on the prohibition list. The legal consequences of the sanctions are not yet clear but may include fairly serious constraints on the use of advanced American capital equipment, even if it is used by non-American oil companies. Hence, in March 2005, Devon Energy announced it needed to sell its Syrian concession so as to comply with the Syria Accountability Act (*LaSyrie.fr*, 30 March 2005). This was followed in May 2005 by the announcement by ConocoPhillips of its intentions to leave Syria so as to comply with US sanctions (*Europe Intelligence Wire*, 6 May 2005). These exits have led to a wide variety of new operators acquiring assets in Syria, among them China, France, Russia, Kuwait, India, and Iran (*AME Information*, 11 February 2006).

Dependency on foreign physical capital is not the only deficiency of Syrian O&G. The sectoral need for engineers is projected regularly in input-output tables (Syrian Arab Republic 1984; 1994; 1998; 2002), but there is hardly any analysis of precise skills required. But it is known that Syria has only two small mineral sector training institutes, which only acquired a presence on the internet in the last two years or so.<sup>52</sup> These two schools can only train school leavers at under-graduate level, and the training is limited to basic skills such as electricians and drilling engineers.<sup>53</sup> The

---

<sup>52</sup> These are the Institute of Petroleum & Mineral Resources Professions at Homs and the Institute of Petroleum Professions at al-Rumelan.

<sup>53</sup> See the few pages that constitute the institute's websites for the Homs (<http://www.mopmr-syr.org/new/comp?php?id=77>) and Baniyas branches (<http://mopmr-syr.org/new/comp?php?id=85>).

institutes are also part of the Ministry of Education's efforts to shake up the largely outdated higher education system, mainly using financial aid from the EU.<sup>54</sup> In addition, TotalElf launched a two year program to upgrade the skills and technical competence of 57 Syrian O&G engineers and operators (Total 2003).

In contrast to its diminishing role in oil production, SPC remains active in gas production, because many new discoveries fall within its concession areas. Since the late 1990s, there have been marked efforts to overcome Syria's 'logistical' problem in harnessing associated and non-associated reserves (EIA, July 2004). Until recently, most associated gas was flared, and only occasionally re-injected. Thus, since 1997–1999, the SPC has been busy awarding EPC contracts to build gathering, processing, and transport facilities in both existing and new fields. Syria's domestic gas pipeline infrastructure is only beginning to take shape. In 2003, Decree No.162 established the Syrian Company for Distribution of Gas (SCDGAZ) to co-ordinate these efforts.

Many facilities and recently constructed gas pipelines are geared to supply power stations. As in Egypt and Oman, natural gas has been central to Syria's efforts to overcome the serious power shortage it faced in the 1990s.

In sharp contrast to the upstream, funding for power stations and electricity development has come entirely from the central government and multilateral aid. The latter largely originated from Arab and pan-Arab development funds, such as AFSED, and has mostly been provided on concessional terms. Similarly, APICORP was approached in 2000 about upgrading the country's two refineries. Therefore, Syria has and will remain dependent on multilateral financing for the midstream and downstream, particularly in light of declining O&G revenues.

Finally, Syria is also likely benefit from Iraq's attempt to revive its O&G sector, and to re-access European markets. The infrastructure for this role, built in the 1940s, was surreptitiously re-activated over the years 2000–2004. In other words, Syria may well find that by the next decade, its main source of income from O&G will once again come from its role as a transit route for neighbouring Iraq (*MEES*, 2 August 2004).

---

<sup>54</sup> The EU program in the electricity sector includes the modernisation of physical equipment, staff, planning and management of various segments of the system, including information systems. The technical level of Syrian human

## 4.2 Macroeconomic impacts

Despite the central control exercised by the government on Syria's economy, its hydrocarbons industry is poorly articulated with other sectors. No significant forward or backward linkages have emerged to date. For example, its only petrochemicals plant is geared to use wet gas, while most of the country's gas reserves consist of dry gas (*Syria Report* 2003). Thus, O&G's main impact has been through its role as the government's and the country's largest export revenue source (Euro-Med Partnership 2003). While its share of GDP has been around 15–20 percent, O&G provide about half of the country's foreign exchange earnings, and 40–50 percent of government revenues.

As in the case of Oman, the fragility of the non-oil revenue base is more worrying than the dependence on oil revenues *per se*. According to the European Commission (2004), the consolidated budget deficit in 2003 stood at 4 percent and 15 percent of GDP with and without oil revenues respectively. The latest IMF *Statistical Appendix* (October 2005b) puts the overall balances for 2000 and 2003 at –1.4 percent and –2.7 percent of GDP respectively, with the corresponding non-oil balances distinctly higher at –13.8 and –17.9 percent. The central government budget is narrower than the consolidated fiscal balance, because of off-budget operations and indirect subsidy schemes. Food subsidies are a key item, and are managed through the Price Stabilisation Fund. Petroleum products are also heavily subsidised, with domestic prices fixed by the government between 1994 and 2002 (Syrian Arab Republic 2002, Nashashibi 2002). Rising world prices in 2004 were only partially passed on to industry and power. Subsidies in 2005 cost the government £S22–25 billion compared with £S4.3 billion in 2002–03, while bulk prices for diesel increased from £S1,350 per tonne in September 2004 to £S6,000 (\$115) at present (LaSyrie.fr, 3/6/05).

Syria, like many Middle Eastern countries, has a very narrow direct tax base. Its income tax base derives largely from corporate taxation, and within that from hydrocarbon fees and payments from the SPC. According to Nashashibi (2002), tax revenues in 1989–1990 stood at 24 percent of GDP. Within that, taxes on income, profits and capital gains amounted to 10.9 percent of GDP. Corporate tax is the most significant, providing 9.9 percent of GDP. Hence the highly criticised top profit tax rate of 60 percent is rarely applied or collected in reality. Most private businesses pay little tax to the state (Dodini, 2003).

---

resources and of the tools available to them is likely also to be in need of upgrading and overhauling.

O&G earned Syria \$2.1 billion in export revenues in 1992 and \$3.1 billion in 2001 (World Bank, September 2004). This represented about 70 percent and 54 percent of merchandise exports in the respective years. More recent IMF data indicate that, following world price rises, oil export earnings predictably peaked at \$4.6 billion in 2002, retreating to an estimated \$3.2 billion in 2004 (IMF, October 2005a). The corresponding oil balances rose to 17.4 percent and 9.1 percent of GDP respectively. This compares with a deficit on the non-oil goods and service balance of around -13% of GDP in 2001–2004 (IMF, October 2005b).

Profits and earnings of the IOCs operating in the sector have been the most important outflow in the balance on incomes, which has been in deficit since 1985. In 2000, the income outflows and income balance stood respectively at £558.5 and -£542 billion (EIU 2002). Earnings repatriated by IOCs rose to \$815 million and \$931 million in 2002 and 2004 (IMF, October 2005b).

Investments by IOCs are therefore a major component of non-debt inflows. O&G is a major, though declining, component of the FDI received by Syria. For example, in 2003, Syria attracted under \$42 million (only 1.2%) of inter-Arab investments compared to \$850 million in Lebanon (*AME Information*, 6 July 2004). According to the *Arab Oil and Gas Directory* (Arab Petroleum Research Centre 2001), the main contracts in the period 1994–1998 committed IOCs to invest some \$180 million in Syria's O&G, an average of roughly \$32 million a year. This constitutes just under a third of the \$108 million of FDI inflows Syria was receiving in 1992–1997 (UNCTAD 2004c). FDI flows peaked at \$270 million in 2000, before falling to \$150 million in 2003. FDI's contribution rose from 1.5 percent of GFCF in 1985–1995 to around 2 percent in 2002–2003 (UNCTAD, 2004c).

Thus, O&G investments accounted for at least a third of all foreign investments, even using the over-valued official exchange rate. In fact, the contribution of IOC investment is probably underestimated, and it has probably been rising. That is because both total and sectoral FDI levels increased in the 1990s, while overall investment has been mostly stagnant. According to official data, the share of the mining sector in GFCF, including O&G, rose in the 1990s (Office Arabe de

Presse et de Documentation, 1996). Meanwhile, investment remained around \$3 billion, with gross domestic investment's share of the GDP also stable at around 29 percent.<sup>55</sup>

Syrian economic data are very difficult to come by except on an aggregated level and in a fragmented form. The multiple exchange rate system and conversion practices add to inconsistencies in published figures, not to mention illicit flows from smuggling and unofficial labour remittances. GDP growth figures have remained suspiciously positive through most of the last two decades. Furthermore, there are no less than four different official estimates for the growth of GDP in 2001.<sup>56</sup> Therefore much caution must be exercised when using the data which is available.

In relation to the external financial position, there is no evident link between the financial requirements of Syrian O&G and the country's debt profiles. Despite its oil revenues, Syria has been a severely indebted country since the early 1990s, because of its bilateral debt to Europe and Russia. Until the summer of 2005, Syria owed Russia some \$15 billion, which mostly consisted of military and military related debts. Following an agreement in January 2005, Russia is to write off 73 percent of the outstanding amount, with payment for the outstanding \$3.6 billion to commence in July 2005 (Novosti 2005). Before this agreement, total external debt had been around \$21 billion, which is the equivalent of 97 percent of 2002 GDP (UN Program in the Arab Region 2004c). Officially acknowledged debt is now at a much lower level, 26 percent of GDP in 2005 (IMF, October 2005a).

Since the mid-1990s, negative transfers on official debts (that is, net repayments) had fortunately been offset by FDI and hydrocarbons revenues. In fact, an otherwise cash-strapped government relied on oil sales to repay outstanding amounts, thereby ending the years of effective financial autarky. The country negotiated a series of deals on its arrears to European countries and the World Bank at the end of the 1990s (EIU 2002). Bilateral lenders mostly accepted the writing-off of arrears in exchange for the resumption of payments. It is hard to imagine how this matter could have been settled without oil revenues.

---

<sup>55</sup> See the World Bank's series on GFCF in its 2002 *Development Indicators*, and its 'Syrian Arab Republic at a glance' data on the Bank's website.

<sup>56</sup> The CIA *World Fact Book* and the EU estimated the growth at 3.5–3.6%, while the IMF and World Bank estimates stood at 1.8% and 7.5% respectively (CAIMED 2004).

Syria's economy is still too fragile and its financial system too archaic to access international capital markets. Therefore, clearing debt arrears was only used to regain access to official funding. Since 2000, three types of financial flows to Syria were resumed: export credits and credit guarantees by European ECAs, fresh loans, and development aid. Clearing European debts was a necessary prelude to the EU embarking on its aid programme, with €300 million of loans assigned to Syria for the period 1998–2003 (European Commission 2004). Since Syrian official borrowing is partly directed at rehabilitating the O&G sector, its future external debt may rise on the back of sectoral needs.

While it seems oil revenues helped the country to clear its bilateral debts, they did not stop domestic public debt from rising. Government domestic exposure rose from \$5.5 billion in 1998 to \$15.5 billion in 2001, i.e. 81% of GDP (Arab Monetary Fund, *et.al.* 2003). This debt consists entirely of credit facilities from the banking system, itself composed of public entities only. Like many other observers, the European Commission (2004) argues that the domestic banking system would have been unable to finance the deficit without oil revenue inflows. The government cannot use voluntary debt instruments, because they do not exist. The banking system is in bad need of rehabilitation and modernisation. Debit cards were not introduced until 2001, and interest rates did not alter in the 22 years between 1981 and 2003. Only a couple of private bank opened branches in 2004, after an absence of 40 years. After a slow rise, the private sector share of bank credit was still no more than 33 percent of the total in 2003 (EIU 2004b).

## 5. COUNTRY EXPERIENCES COMPARED

### 5.1 Main organisational features

The main organisational features of O&G sectors in the three case studies are summarised in Table 5 below. Beginning with the upstream, all three countries are heavily dependent on IOCs for exploration, development, and production. The PSA framework has been most cordial and stable in Oman, and the terms were most changeable in Syria. In terms of IOC presence, the diversity of exit and entry patterns in all three cases suggests that access to reserves is neither necessary nor sufficient motivation for that presence. This is in line with other findings on this issue. Hence, Raja (1999) found that ‘prospectivity’ (that is, good prospects for finding large reserves) was the most important determinant of IOC entry and activity in the countries he studied. Bindemann (1999) found that tough PSA conditions did not deter the interest of super-majors in Indonesia. More recently, a Stanford University study of natural gas development in seven countries found that successful host economies are those able to create a special environment for attracting IOCs (Hayes and Victor 2005). IOCs are prepared to ignore the lack of democracy or liberalisation in the rest of the economy. The clarity of the legal framework governing their activity in gas prospecting and production is more important in practice than the way the rest of the economy is managed.

**Table 5: Main organisational features of O&G**

Country	Egypt	Oman	Syria
Upstream	Main framework: PSAs More flexibility in recent contracts, more allowance for E&D cost recovery Separate model contract for gas	Main framework: PSAs Terms mostly unchanged	Main framework: PSAs Repeated reductions in royalties and profit oil
Mid-stream	Government owns & run pipelines. Foreign investors in export projects	Government owns & run pipelines. Foreign investors in export projects	Government monopoly
Downstream	Inherited structure dominated by state. Policy of partnership with private sector, and privatisation of some segments	Domestic industry very small 'Infant industry' policy followed: create company and sell it to the private sector	State owned, small sector Foreign assistance for upgrading and performance improvements

The experiences considered here highlight two other important factors in an IOC’s decision to enter a country:

- their mastery of the technology required by the specific geology of reserves in the host country; and
- the importance of the host country’s reserves in the geographic portfolio of the particular IOC.

With respect to the first factor, the majors’ mastery of deep water technologies helps to explain their current prominence in Egypt’s Mediterranean basins. Anadarko’s expertise in mature basin

management contributed to its interest in Oman, which recently favoured Occidental over Shell for the same reason.

With respect to the second factor, IOCs differ in growth strategy at particular points in time. They tend to relinquish a particular concession primarily as part of corporate re-organisation. As seen in Syria and Egypt, contractual terms offered are a secondary consideration. Zanolovyan (2003) described IOCs as managing their presence in producer countries as a portfolio of investments, and looking to consolidate operations in a particular area. Furthermore, Arnott (2005) establishes that majors in particular seek this concentration at the sub-country level: they try to consolidate their acquisitions so as to become 'basin masters', that is, to dominate in a particular reserve area.

The case studies also show that smaller and non-Western oil companies have acquired a pivotal role in oil and gas production amongst smaller developing countries. Smaller Arab producers too have benefited from the changing strategies of Canadian, East European, and Asian firms, which are now seeking to grow via acquisitions abroad. Independent and smaller IOCs clearly played a role in reviving Egyptian and Syrian drilling activity. While there was a slight increase in the number of super-majors active in Egypt in the 1990s, many of the large gas discoveries were led by Tullow and Apache. *The Economist* (27 November 2004) named Tullow as one of the 'minnows' happy to explore smaller areas of 'curious hydrocarbon deposits', and 'to pick over remnants left by bigger fish', in other words, concession blocks abandoned by majors. On the other hand, Chinese and Indian IOCs' interests are predominantly driven by eagerness to acquire supplies.

From the perspective of host economies, maximizing revenues has not always been the most decisive factor in policies towards IOCs. Egypt and Syria responded flexibly and changed contractual frameworks in response to IOC reticence. Revenue maximization is significantly altered by the dependency of the hosts on the physical, financial, and human capital brought in by IOCs. The need for the IOCs' financial muscle is particularly felt when producers need to open up new areas. Government and NOCs allocation for E&D are too meagre in relation to the amounts required and to the risks involved. Partnerships are a way of front loading capital spending and spreading risks. As for technology, Egypt's prospects were transformed by the advanced seismic surveys techniques which IOCs brought in. In Oman, the PDO acquired advanced skills and techniques in reservoir management largely through partnership with super-majors. As experience with technology is not tantamount to mastery, continued partnership is unavoidable.

The mid- and downstream sectors in all three countries are more similar. They consist mostly of government dominated structures, particularly as far as pipelines are concerned. However, in both Egypt and Oman, private activity is noticeable. The Egyptian downstream has always had some public–private partnership, with the private sector developing in response to privatisation efforts and to the expansion of town gas distribution networks. Omani private sector activity has been induced using an infant industry approach, where the state acquires or establishes an entity, handing it over to private companies afterwards. Reflecting the absence of vertically integrated Arab NOCs, petroleum products marketing has generally been left to IOCs. IOCs therefore tend to dominate the extreme ends of O&G industries, that is, production and petrol stations. As the creation of the al-Maha Company in Oman suggests, this may well change as IOCs loose interest in retailing. Their presence in LNG projects is less unusual: by their very nature, such projects are built on international partnerships.

A cautionary note can be sounded regarding LNG projects. The positive appraisals they received have all been conducted on an isolated basis. Yet these projects are potentially natural competitors, so that LNG exports could be the subject of a fallacy of composition. Newendorp (2004) points out that, while currently there are only 15 LNG plants worldwide hardly meeting pent up demand, there could be a situation of oversupply by 2010. Demand for LNG is expected to rise from 132 mt/year at present to 173–210 mt/year, while supply projects may produce 292 mt/year by then.

## **5.2 Support from domestic finance**

The first overall trend captured by Table 6 is that in-house financing in exploration, development and production prevails, a feature which tends to be found throughout the industry worldwide. Arab financial systems, including private institutions, are still only able to provide partial support to O&G, usually to the downstream. The second striking feature is that the Syrian O&G sector is singularly deprived of a supportive financial system. In the absence of private banking, O&G financing from Syrian sources is restricted to government allocations. Available information also gives the impression that capital spending in Syrian O&G has lagged behind sectoral needs, which may well be worsened by SPC's lack of fiscal autonomy. In contrast, consistent government support is publicised and measured in Oman. The Egyptian case is unclear in the absence of more specific data. The ability of EGAS and EGPC to cope with increased activity, and ministerial plans for infrastructural investments, suggest adequate capital allocations. On the other hand, regular and significant transfers by the EGPC to government coffers suggest negative pressures.

**Table 6: Main sources of finance by industry segment**

	<b>Egypt</b>	<b>Oman</b>	<b>Syria</b>
Upstream	IOC led. Mostly in-house finance.	IOC led. Mostly in-house finance. Direct government contribution to PDO budget.	IOC led.
	One IFC loan; Export notes in July 2005	One IFC loan	Weak in-house capacity
Downstream	Domestic bank lending (up to 50%)	Some Omani bank lending.	Only one domestic bank. Domestic banks unable to lend for large or long term projects
	International banks	International banks	
	Multilaterals, including Arab funds	Multilaterals, including Arab funds	
	A few distribution companies in stock market	A few petrochemical and distribution companies in stock market	European & Arab multilaterals
Natural Gas	Equity participation in LNG/midstream	Equity participation in LNG/midstream	In-house
	Private sector and local banks important in domestic distribution and some projects, and smaller role in LNG	Private sector and local banks important in domestic distribution and some projects, and smaller role in LNG	Government budget

However limited, the support provided by domestic and regional financial institutions to Arab O&G sectors are no longer negligible, particularly in Egypt. While in comparison Omani banks have provided only limited credit to O&G, they have underpinned sectoral financing through taking up government paper. Interestingly, both countries had serious banking crises triggered by non-performing personal loans, without this affecting O&G. In fact, these crises have probably strengthened the case for lending to industry. Today, both banking systems have more liquidity and experience which should enable them to increase their investments in local industry.

Not surprisingly, only a handful O&G companies have benefited from the nascent stock markets, which, in the case of Oman, has already had its first market crash. Nonetheless, these capital markets are an additional financing avenue that deserves to be nourished. They have already helped to raise equity and to expand the capital base of new and existing ventures in petrochemicals and petroleum products. The small but positive effect of Arab capital markets on their economies has been established more generally in recent economic research.<sup>57</sup>

Until domestic financial systems strengthen sufficiently, fresh credits from regional multilaterals and international banking syndicates will remain a dominant source of overall financing. Anyway, international partnership and syndication are the usual practice followed worldwide in the financing of LNG and natural gas chains. Oman and Egypt, in particular, were able to benefit from the more relaxed attitude of international capital markets towards these projects, an attitude which is speeding

<sup>57</sup> See for example HSBC Middle East (2000) on Oman, and al-Mashat (2004) on Egypt.

up the closures on financial deals.<sup>58</sup> The keenness of the lenders on LNG led them to help to secure finance projects on advantageous terms. But this is not necessary nor sufficient: for instance, much of the region, like the Nigerian case quoted by Newendorp (2004), is classified in categories that would have precluded the finalization of financial deals.<sup>59</sup>

### **5.3 Interactions with the rest of the economy**

Table 7 summarises the interactions between O&G and the macroeconomy as they currently stand in each case. Although in static and absolute terms, Oman has the most oil-dependent economy and government, arguably Syria is qualitatively the most vulnerable. Its sector is the least articulated with the rest of the economy, and its otherwise diverse non-oil economy has performed poorly.

The difference between the ratio of oil to GDP and the ratio of oil to government balances shows that a rentier government can exist among oil and non-oil exporters. Poor direct tax penetration seems to be a historical feature of fiscal systems throughout the region. Both Oman and Egypt managed to make improvement in these tax structures, thereby reducing government dependence on oil. More generally, Marchand and Soussa (2004) show that improvements in macroeconomic frameworks of oil economies, including Oman, have reduced the impact of oil revenue volatility on macro-economic indicators. Omani public spending can today rely on an in-built stabiliser (the SGRF), and can be smoothed through voluntary financing on domestic and international capital markets. In other words, it is important to look at the qualitative aspects of dependency on oil revenues. The same percentage shares of oil to government revenue or to GDP can indicate very different realities across oil economies, and across time periods within the same economy.

---

<sup>58</sup> See for example Burrett and Hultman (2003) and Gavin (2004).

<sup>59</sup> For example, Nigeria's first LNG train was entirely financed by equity (Newendorp 2004).

**Table 7: Impact of O&G on the economy**

<b>ECONOMY</b>	<b>Egypt</b>	<b>Oman</b>	<b>Syria</b>
<b>GDP</b>	8% of GDP	42–48% of GDP	15–20% of GDP
<b>Government finance</b>			
Budget	2% of budgetary balance	73–82% of government revenues	54–70% of government revenues
Direct taxes	13--14% of non-tax revenues	about 25% of non-tax revenues	11% of taxes on incomes
<b>Impact on public debt</b>			
domestic debt	none	none	none
foreign debt	negligible	small rise due to new projects	revenues used for settling arrears
<b>Balance of payments:</b>			
Exports	34–38% of revenues	66–76% of revenues	54–70% of revenues
Services	negligible	Remittances at 14% of exports	negligible
Repatriated profit	significant	significant	very significant
<b>Other effects</b>			
Labour skills	small build up in technical skills	very small build up in technical skills	negligible
FDI	O&G are a driver of FDI	O&G are key driver of FDI	O&G receive most of FDI.
Others	shift of power generation to gas petrochemical industry still small	shift of power generation to gas petrochemical industry still small	shift of power generation to gas

The Egyptian and Omani economies also benefited from government spending in O&G. Government investments in setting up the natural gas infrastructure were probably a pre-requisite for both economies' ability to harness gas for the domestic or export markets, particularly in view of its weak private O&G sector. Indeed, Hayes and Victor (2005) find that elsewhere, too, natural gas industries took off successfully where government undertook infrastructure construction and demand creation. More generally, the empirical literature tends to find that public investment has positive effects on private investment and economic growth where that investment is focused on human capital and infrastructure. Fawzy and El-Megharbel (2004) confirmed that this was the case in Egypt by showing that public spending crowds in private investments.

In contrast, Syrian O&G revenues merely acted as safety valves for government finances. First, oil revenues gave the government room to manoeuvre in its spending plans, allowing it recently to allocate funds for rehabilitating and modernising the economy. Second, they were used to settle external debt arrears, thereby helping the country out of its severely indebted status and opening the way to fresh finance.

Syria may soon become a moderately indebted economy when the cancellation of debts to Russia comes into effect. Egypt reached that status thanks to the US-led debt write-off in 1990–1991. A good part of those debts also consisted of military debts to the USA. Oman has probably avoided crushing debt burdens thanks to the oil revenues cushion. However, all three governments would have benefited from larger cushions to stabilise their budgets had their military spending been smaller. This source of fiscal vulnerability does not originate in the oil economy.

With regard to external accounts, the large share of O&G in the foreign exchange earnings of Oman and Syria reflects a small, agrarian, non-oil economic base in the former, and a worsening export performance in the latter. According to Albaladejo and Lall (2004), there has been a technical downgrading of Syrian exports; its few medium-high technology exports have all but disappeared. The authors add that Syria lacks data on industrial business climate and on R&D, though R&D activities are known to be negligible. Syria has only issued a very few ISO900 certificates,<sup>60</sup> while Oman has issued 11 and Egypt more than 30. UNCTAD (2005) finds that Egypt and Oman have followed a 'desirable path' of technical deepening.

The structure of O&G sectors matters significantly for their overall effect on the host economies' external accounts. Repatriated profits earned by IOCs can offset much of total IOC spending, and can absorb a large share of export revenues. EIU (2004b) suggests profit repatriation is particularly important in Syria. Because of its small native population, Oman also faces a substantive labour cost of operating its O&G sector, namely a dependency on foreign workers and the outflow represented by their remittances. Therefore, hydrocarbon exports are not the whole story, and a more complete picture requires the identification and inclusions of all the flows involved in their production.

O&G also interacts with labour markets at another level. Oman and Egypt now have many O&G companies able to implement projects to world class levels, or to provide spare parts and technical services to IOCs. Staff in private companies and SOEs are more in tune with the latest computer and engineering technologies than they were a decade ago. Educational and technical standards in Syrian O&G, however, are very weak in comparison, both quantitatively and qualitatively. This difference highlights the importance of investing in human capital and in the overall economy in order to maximize the benefits of being an O&G producer. As argued by Wright and Czelusta (2004), the O&G sector in the USA and OECD countries has been an important driver of technology acquisition, and has formed the basis of American chemical industries. This continues to be the case now since O&G is, for example, a leading user of cutting-edge information technology applications. Oman and Egypt remain dependent on IOC expertise, but they are not mere bystanders in this process.

---

<sup>60</sup> ISO900 are a class of certificates conforming with standards set by the International Organisation for Standardization (ISO). Reaching such standards is taken to indicate world class or state of the art levels of organisation or production. This particular group of standards refers to meeting the requirements for good Quality Management Systems, including commitment to quality, employee competence, process management, quality planning, product design and procedures to resolve customer complaints.

O&G has been an important reason for FDI location in all three countries. FDI in O&G was a significant element in FDI and total investment in all three cases, albeit to varying extents. Oman restricted the access of foreign investors to non-oil sectors until the late 1990s. Egypt had used special measures and economic zones to spur FDI to other sectors before extending this approach and flexibility to O&G. Egypt's non-oil economy also attracted more FDI than Syria's in both absolute and relative terms. FDI outside O&G in Syria is amongst the lowest for an economy of its size and potential. Poor human capital has probably been a key deterrent of such a low level of investment.

O&G has produced modest forward linkages in the downstream in all three countries. The refining sectors seem to have stagnated in last 10–15 years. Halabi *et al* (2002) remarked that Arab refining sectors have been under-performing for at least as long as this: even in larger oil economies, refining often has received less investment than agriculture! Moreover, an OAPEC seminar in June 2004 clearly showed that Arab refineries have much to do before they can integrate cleaner and more advanced production technologies (OAPEC Technical Affairs Department, 2004). In all three cases, the product slates are incompatible with domestic demand. As a result, petroleum products are a major import item, and large consumer price subsidies worsen the cost position for both the Egyptian and the Syrian government. Current Egyptian ambitions for petrochemicals and refinery investments refer extensively to this imbalance as a justification for the planned projects.

Currently, Egypt and Oman are hoping to create forward linkages from natural gas production through petrochemical ventures, starting with first generation chemicals. Project announcements are optimistic about their feasibility, which is usually supported by reference to rising domestic and world consumption levels. Unfortunately, discussions do not refer to the potential impact of similar plans by regional competitors on individual countries' export plans. How many methanol plants can the region take? Are there any lessons for these new comers from the experience of Saudi Arabia, which is now seeking to shift to second generation chemicals?

## 6. SUMMARY AND CONCLUSIONS

Using three case studies, this paper has highlighted the limitations of assessing O&G policy and oil dependency using quantitative concepts such as production levels or foreign exchange earnings. It has argued that the share of O&G in government finances or in the balance of payments can obscure qualitative changes in the sector's structure. It has pointed to the divergent ways in which O&G can be articulated with the non-oil economy, both across countries and across time periods. Contrary to received wisdom, oil dependent economies have improved the management of the O&G sector over the last two decades. Many countries are today more able to contribute to their O&G sectors and more able to benefit from O&G availability. This was the case in two out of the three cases considered here. More generally, the IMF's *World Economic Outlook* (September 2005) emphasises that many oil producers are currently avoiding the previous 'boom and bust' cycles, and are instead mobilising their increased revenues for macro-economic stabilisation and/or 'growth-enhancing reforms'.

As far as the industry's structures are concerned, relations with IOCs, a key focus of the mainstream literature, are not necessarily the most critical problem faced by O&G. All three countries considered here had a rich and constantly evolving history of IOC presence and leadership in their upstream. This segment's structure was essentially pegged around a PSA framework whose terms were changeable over time. This reality indicates that factors other than access to reserves are equally vital for IOCs. These factors include the clarity of the legal framework governing their activities, their mastery of the technology required by the geology of reserves in the host country and the importance of those reserves in their portfolio of investments. Moreover, Egypt and Syria illustrate the pivotal role that small and independent companies have recently been playing in sustaining production amongst smaller producers, or where concession blocks are no longer attractive for super-majors.

From the perspective of the recipients, the financial, physical and human capital brought in by IOCs have been an necessary condition for operating the upstream. Openness to international partnerships also proved crucial for developing the gas resources of Egypt and Oman: as in other countries, natural gas chains require a solid array of alliances from head well to consumer. International capital, in the form of IOCs' spending or project finance, remains the dominant component in most industry segments. This foreign capital allows recipient countries to front-load capital requirements and to spread risks, particularly when it comes to new ventures. An important corollary is that investments in O&G have tended to lead FDI and support overall investment levels in all three

economies. Unfortunately, accounting practices in relation to the balance of payments mean that the distinct contribution of O&G investment to non-debt creating flows is either unclear and/or underestimated. But clearly, the inflows were higher in instances where the host countries had a more open and flexible financial framework.

While domestic financing – mostly in-house and governmental – has played a minor role in sectoral requirements in countries considered, it was nonetheless essential for meeting overall needs, particularly when it came to the large requirements of building natural gas infrastructures. Financial sector policies amplified this role in Oman and Egypt, thereby improving their ability to support the financing of O&G operations. Financial deepening and regulatory reforms created new financing avenues for many segments and participants in the sector, including public entities. While in the 1990s improved financial systems enabled local banks to increase lending to O&G, in the last five to ten years they opened the way for some downstream companies to raise capital through the emerging local stock markets. Financial sectoral policies have been almost as helpful to sectoral performance as O&G policies themselves. Conversely, while Syria's O&G production was sustained without much recourse to either domestic or international banks, its weaker financial system constrained the development and growth of both the oil and non-oil economies.

A similar contrast exists in the realm of fiscal management. While O&G revenues constitutes over 70 percent of government revenues for both Oman and Syria, Oman succeeded in expanding its non-oil tax base, albeit modestly. And although in Syria voluntary fiscal instruments do not exist, Oman has significantly reduced its vulnerability to oil revenue fluctuations through a stabilisation fund and through government and treasury bonds. Similar fiscal and monetary practices in Egypt have also earned it recognition by international financiers, despite a recent banking crisis and other macro-economic problems. Both Egypt and Oman are nowadays attracting a wider composition of financial flows with better terms, in recognition of both improved fiscal frameworks and good sectoral performance. But in Syria, which has only embarked recently on rehabilitating and modernising its economy, oil revenues were at best a safety valve for government balances. It is still some way from being able to access international commercial finance.

The current external debt positions and/or strategies did not bear any interesting relationship to O&G. Syria predictably used O&G revenues to relieve its external debt burden, a problem which both Oman and Egypt tackled a decade earlier. Moreover, Egypt's graduation from a seriously indebted economy status had little to do with successful O&G policy. O&G has also been a crucial safety valve for Syria's trade balance, and at 54–70 percent of export earnings, O&G revenues are

similar in their importance to Omani oil revenues. Egypt has the strongest non-oil exports, although it seems that O&G exports may have been under-recorded by current accounting practices.

Egypt's non-oil economy attracted substantive foreign investments, which could hardly be said to be the case in Syria. In fact, recent research indicates that Oman and Egypt have achieved desirable, though not spectacular, improvements in the technological contents of their output and exports. This reflects policies that have given attention to human capital development and skill acquisition. These policies benefited O&G. The local labour forces are increasingly able to complement, if not supplant, foreign expertise, and are times competent enough to contribute to technical progress in the sector. In contrast, Syrian under-investment in technology acquisition and human capital development is arguably one of the most critical failures of its macro-economic and sectoral policies.

Finally, an interesting common weakness of all three cases is a relatively poor performance in the downstream. Although all three succeeded in using gas to meet their growing energy needs, they still pay billions to import most of their petroleum products. All three have plans to revive their refining, with Oman and Egypt also reviving their petrochemical investments in an effort to increase the current value added of O&G in their economies.

Creating forward linkages, issues of technology acquisition, challenges of human capital development, are all crucial aspects of O&G which are also found in other sectors. Is the O&G sector perhaps just another industry? If so, it may also be the case that it is time to move beyond the 'blessing' or 'curse' terminology which was an offspring of the specific and now superseded experience of the 1970s.

## REFERENCES

*Al-Ahram Weekly*, Cairo (<http://weekly.ahram.org/eg>),

- ‘Good to the last drop’, Issue 515, 4–10 January 2001.
- ‘The year’s hot potato’, Issue 567, 3–9 January 2002.
- ‘Ebeid’s balance sheet’, Issue 582, 18–24 April 2002.
- ‘Cleaning up the banks’, Issue 607, 10–16 October 2002.
- ‘Fuelling the future’, Issue 639, 22–28 May 2003.
- ‘S&P downgrades Egypt’s credit rating’, Issue 653, 28 August–3 September 2003.
- ‘A surprisingly solid market’, Issue 715, 4–10 November 2004.
- ‘Afloat on natural gas’, Issue 726, 20–26 January 2005.

*al-Hayat*, London, ‘Syrian deputy prime minister expects crude exports to decrease’, 2 September 2005 (in Arabic)

Alami, R, *Changing Financial Structures In the Arab World: Some Implications for Oil and Gas*, Working Paper F10, Oxford Institute for Energy Studies, Oxford, April 2005.

Alba, P., S. Al-Shawarby and F. Iqbal, ‘Fiscal and Public Debt Sustainability in Egypt’, Egyptian Centre for Economic Studies, Working Paper No.97, Cairo, May 2004.

Albaladejo, M., and S. Lall, ‘The decline of the Syrian industry: an assessment of performance and capabilities during the 1990s’, QEH Working Paper Series, QEHWPS119, Queen Elisabeth House, University of Oxford, July 2004.

*Alexander’s Gas and Oil Connections* ([www.gasandoil.com](http://www.gasandoil.com)),

- ‘Oman signs series of deals for Sohar refinery project’, December 17 2003, *Alexander’s Gas & Oil*, Vol.9, 1, 15 January 2004.
- ‘Nine Firms Bid for Oman Gas Project’, Vol.9, 11, 18 May 2004.
- ‘IFC Announces \$45 mm investment in Egypt’s natural gas sector’, Vol. 9, 13, 29 June 2004.

Al-Mashat, R., ‘Financial Sector Development and Economic Growth in Egypt 1960-1999’, Global Research Project on Explaining Growth: Country Studies, Global Development Network, 2004, [www.gdnet.org/pdf2/gdn\\_library/global\\_research\\_projects/explaining\\_growth/Egypt\\_financial\\_finale.pdf](http://www.gdnet.org/pdf2/gdn_library/global_research_projects/explaining_growth/Egypt_financial_finale.pdf) (accessed March 2005).

*AME Information* (<http://www.ameinfo.com/45376.html>),

- ‘Arab investments in Syria at US\$41.7 million’, 6 July 2004.
- ‘Arab investments in Syria at US\$41.7 million’, 6 July 2004.
- ‘Qalhat LNG partnership stakes’, 16 September 2004
- ‘Discoveries boost for Syrian oil hopes’, 11 February 2006.

American Chamber of Commerce in Egypt, Cairo,

- ‘Zeal to export fertilizer brings domestic shortage’, *Business Monthly*, Cairo, June 2003.
- *The Petroleum Industry in Egypt: Investment and Prospects*, Cairo, December 2003.
- ‘New balance of power’, *Business Monthly*, Cairo, June 2004.
- ‘Egypt becomes potential LNG supply source for US market’, *Egypt Watch Bulletin*, 15 January 2005.
- ‘Egypt Petroleum draws US investors into mega-deal’, *Egypt Watch Bulletin*, August 2005, [http://www.amcham.org.eg/BSAC/WatchBulletin/Issues/Aug105\\_print.asp](http://www.amcham.org.eg/BSAC/WatchBulletin/Issues/Aug105_print.asp).

APICORP (Arab Petroleum Investment Corporation), *Annual Report 2003*, Dahrán, 2004.

Arab Monetary Fund, Arab Fund for Social and Economic Development, and OAPEC,

- *Joint Annual Arab Economic Report 2000*, Abu-Dhabi, 2001.
- *Joint Annual Arab Economic Report 2002*, Abu-Dhabi, 2003.

- *Joint Annual Arab Economic Report 2004*, Abu-Dhabi, 2005.

Arab Petroleum Research Centre,

- ‘Egypt’, *Arab Oil and Gas Directory*, Paris: 1995, 1998, and 2001.
- ‘Oman’, *Arab Oil and Gas Directory*, Paris: 1995, 1998, and 2001.
- ‘Syria’, *Arab Oil and Gas Directory*, Paris: 1995, 1998, and 2001.

Arab Republic of Egypt, ‘Oil and gas concessions in Egypt’, *Invest 2003*,  
<http://www.sis.gob.eg/eginfnew/economy/invegy>.

Arnott, R., ‘Exploration and Production Strategy: Keys to Success and Common Reasons for Failure’, presentation, Oxford Institute for Energy Studies, 20 February 2005,  
<http://www.oxfordenergy.org/presentations.php?1>.

Bartsch, U., Financial Risks and Rewards in LNG Projects, Oxford Institute fore Energy Studies, NG3, April 1998.

Bindemann, K., Production Sharing Agreements: An Economic Analysis, WPM 25, Oxford Institute for Energy Studies, Oxford, 1999.

British Gas, ‘BG group and partners sign \$880 million project financing for Egyptian LNG Train Two’, Press release, 6/7/2005, [http://www.bg-group.com/media/archive\\_2005/070606-pr.htm](http://www.bg-group.com/media/archive_2005/070606-pr.htm), accessed September 2005.

British Petroleum, *BP Statistical Review of World Energy 2005*, London, 2005.

Burrett, R. and D. Hultman, ‘Interview: A financier’s perspective of the LNG market’, LNG Supplement, *Infrastructure Journal*, 1 August 2003, [www.infrastructurejournal.com](http://www.infrastructurejournal.com).

CAIMED, Italian Dept. for Public Administration, Formez, and Campania Region Administration, *Policies for Business in the Mediterranean Countries: the Syrian Arab Republic*, 24 November 2004.

Central Bank of Egypt,

- *Annual Report*, 2002/2003 (English), <http://www.cbe.org.eg/publications>.
- *Annual Report*, 2003/2004 (Arabic), <http://www.cbe.org.eg/publications>.
- *Quarterly Report*, February 2006 (English), <http://www.cbe.org.eg/publications>.

Central Bank of Oman,

- *Annual Reports*: 2000, 2002, 2003, 2004, <http://www.cbo-oman.org/>.
- *Quarterly Report*, September 2004, <http://www.cbo-oman.org/>.
- *Quarterly Report*, June 2005, <http://www.cbo-oman.org/>.

Dodini, M., ‘Fiscal Consolidation in MED partner countries and selected structural issues’, background paper, Second Euro-Mediterranean Regional Economic Dialogue, Rome, October 2003.

*The Economist*, London,

- ‘Small Fry’, 30 October 2004.
- ‘A new scramble’, 27 November 2004.
- *Syria: Country Report*, London, August 2004.

EGPC (Egyptian General Petroleum Company), ‘Main Contract Terms’, September 2004,  
<http://www.egpc.com.eg/2004/Main%20Commercial%20Parameters.doc> (accessed February 2005).

EIA (Energy Information Administration), ‘Egypt’, Country Analysis Briefs, February 2004,  
<http://www.eia.doe.gov/emeu/cabs/egypt.html>.

EIA (Energy Information Administration), ‘Syria’, Country Analysis Briefs, July 2004,  
<http://www.eia.doe.gov/emeu/cabs/syria.html>.

EIU (Economist Intelligence Unit),

- ‘Egypt: collateral gas’, *Business Middle East*, London, 16 October 2004.
- *Oman: Country Profile 2004* (Yearbook), London, 2004.
- *Syria: Country Profile 2002* (Yearbook), London, 2002.

Euro-Med Partnership, *Syria: Country Strategy Paper 2002-2006*, European Commission, Brussels, 2003, [http://europa.eu.int/comm/external\\_relations/syria/csp/02\\_06\\_en.pdf](http://europa.eu.int/comm/external_relations/syria/csp/02_06_en.pdf)

Euro-Med Partnership, *Egypt: Country Strategy Paper 2002-2006 & National Indicative Programme 2002-2004*, European Commission, Brussels, 2004.

Europe Intelligence Wire, ‘ConocoPhillips makes plans to leave Syria’, 6 May 2005, <http://www.hoovers.com/free/co/news/detail.xhtml?COID=105905&ArticleID=NT20>, May 2005.

European Commission, *Economic Review of EU Mediterranean Partners*, Occasional Paper No.6, Directorate General for Economy and Financial Affairs, Brussels, March 2004.

Fawzy, S., and N. El-Megharbel, ‘Public and Private Investment in Egypt: Crowding-Out or Crowding-In?’, Egyptian Centre for Economic Studies, Working Paper WP96, April 2004 (in Arabic).

*Financial Times*, London,

- ‘Shell and Oman at odds over oilfield deal’, 27 April 2005.
- ‘Shell hopes loss of Omani field is just a warning’, 4 May 2005.

Gavin, J, ‘LNG Financing – Banks Pile In’, *Petroleum Economist*, November 2004, pp.19-20.

German–Arab Chamber of Industry and Commerce, ‘Egypt: SEGAS financing in its last phase’, 16 July 2003, <http://www.ahakmena.com/Details.aspx?News=697> (accessed February 2005).

Global Investment House, *Oman: Economic and Strategic Outlook*, Economic Research, Global Investment House, Kuwait, November 2003.

*Gulf Oil and Gas* ([www.gulfoilandgas.com](http://www.gulfoilandgas.com))

- ‘Rumhy opens first Oman Oil filling station’, *Gulf Oil and Gas*, 20 October 2003, <http://www.gulfoilandgas.com/wepro1/MAIN/Mainenws.asp?id=134>.
- Middle East Oil & Gas News, *Gulf Oil and Gas*, 23 February 2005.

Halabi, M., M. Maarefi, H. Qabazard, and S. Akashah, ‘Conservation and Environmental Protection in the Petroleum Industry–OAPEC Seminar’, Cairo, June 2002’, *Oil and Arab Co-operation*, vol.28, Issue 102, Vienna, 2002, pp. 9–54.

Hayes, M.H. and D.G. Victor, ‘Politics, Markets and the Shift to Gas: Insights from the Seven Historical Case Studies’, Working Paper #35, Program on Energy and Sustainable Development, Stanford University, February 2005, <http://pesd.stanford.edu>

HSBC Middle East, ‘The Economic Impact of Stock Markets in the GCC’, *HSBC Economic Bulletin* 3<sup>rd</sup> Quarter, 2000, <http://www.econresearch.com/datapak/economic/hs00q3a.html>.

IFC (International Finance Corporation), ‘IFC’s extractive industries projects FY 1993-2001’, Washington D.C., [www.worldbank.org/ogmc/files/eirprojects/Quarun.pdf](http://www.worldbank.org/ogmc/files/eirprojects/Quarun.pdf) (accessed March 2005)

IMF (International Monetary Fund), Washington D.C.,

- *Global Financial Stability Report*, September 2003.
- ‘IMF Executive Board Concludes 2003 Article IV Consultation with Oman’, Public Information Notice (PIN) No.03/126, October 2003.
- ‘IMF Executive Board Concludes 2004 Article IV Consultation with the Arab Republic of Egypt’, Public Information Notice (PIN) No.04/69, July 2004.
- *International Financial Statistics Yearbook 2004*, September 2004.

- ‘IMF Concludes 2005 Article IV Consultation with the Arab Republic of Egypt’, Public Information Notice (PIN) No.05/72, June 2005.
- ‘IMF Concludes 2005 Article IV Consultation with the Syrian Arab Republic’, Public Information Notice (PIN) No.05/138, October 2005.
- ‘IMF Executive Board Concludes 2005 Article IV Consultation with Oman’, Public Information Notice (PIN 05/165), 9 December 2005
- *The Syrian Arab Republic: Statistical Appendix*, IMF Country Report 05/355, October 2005.

Information & Decision Support Centre, ‘Value of Imports of crude petroleum and petroleum products’ and ‘Value of government subsidies to petroleum products’, Statistical Indicators, [www.idsc.gov.eg/Indicators](http://www.idsc.gov.eg/Indicators) (accessed April 2006).

*International Petroleum Encyclopaedia*, ‘Egypt’, Tulsa: Penwell Books, 2004.

LaSyrie.fr, ‘Devon Energy se retire du marché’, 30 Mars 2005, [http://www.lasyrie.fr/Economie/Actualies/Article50\\_Devon.htm](http://www.lasyrie.fr/Economie/Actualies/Article50_Devon.htm)

Marchand, L., and F. Soussa, *Oil or Nothing? Stress-testing Ratings on Oil –Producing Countries*, Standard and Poor December 2004, <http://www2.standardandpoors.com>.

Mellahi, K., C. Guermant, G. Fryans, and H. Al-Bortamami, ‘Motives for Foreign Direct Investment in Gulf Cooperation Countries: the Case of Oman’, ERF 10th Annual Conference, Marrakesh, December 2003.

*Middle East Economic Survey (MEES)*, Nicosia (<http://www.mees.com>),

- ‘Oman produces Neutral Budget But Boosts Investments’, *MEES*, 26 January 1998, no.4, vol.XLI.
- ‘Moody’s hails Oman economic growth but notes vulnerability to oil revenue’, *MEES*, 25 March 2002, no.12, vol.XLV.
- ‘Three companies short listed for LNG vessel contracts’, 14 April 2003, no.15, vol.XLVI.
- ‘Egyptian budget deficit grows to \$4.7bn in 2003-04’, 2 February 2004, no.5, vol XLVII.
- ‘Continuing difficulties at NBO weigh on Omani banking sector in 2003’, *MEES*, 24 May 2004, no.21, vol.XLVII.
- ‘Jordanian and Egyptian banks close \$160Mn Arab Gas Pipeline Financing Deal’, 12 July 2004, no.28, vol.XLVII.
- ‘Agencies Rate Oman LNG’s \$175Mn Commercial Bank Facility’, no30, vol.xlvii, 26 July 2004.
- ‘Iraq discusses oil/gas supply options with Syria’, 2 October 2004, no.31, vol.XLVII.
- ‘Fahmy endorses senior appointments at al Fajr’, 27 September 2004, no.39, vol.XLVII.
- ‘NBE seeks to sell its 38% Midor refinery stake’, 15 November 2004, no.46, vol.XLVII.
- ‘Oman’s Sohar IWPP reaches financial close’, 29 November 2004, no.48, vol.XLVII.
- ‘Banks short-listed for EGPC debt securities placement’, 13 December 2004, no.48, vol.XLVII.
- ‘Egyptian government plans to remedy poor FDI record’, 13 December 2004, no.48, vol.XLVII.
- ‘ELNG Train 2 financing to follow completion of Train 1 general syndication’, 19 January 2005, no.3, vol.XLVII.
- ‘BG, ENEL sign sales agreement for gas from second train of ELNG’, *MEES*, 31 January 2005, No.5, vol XLVII.
- ‘Qalhat LNG expects further syndication after attracting six more banks’, 28 March 2005, no.13, vol.XLVII.
- ‘EGPC buys central bank’s 38% stake in MIDOR refinery’, 18 April 2005, no.16, vol.XLVIII.

- ‘Oman pursues oil sector rebound as oil output declines slow’, 18 June 2005, no.29, vol.XLVIII.
- ‘International banks seen forcing Gulf project margins lower’, 11 July 2005, no.28, vol.XLVIII.
- ‘ELNG Train Two financing illustrates dramatic fall in margins’, 11 July 2005, no.28, vol.XLVIII
- ‘Further details emerge on ELNG Train Two financing’, 18 July 2005, no.29, vol.XLVIII.
- ‘RasGas 2/3 financings pits bank market against bond market’, 1 August 2005, no.31, vol.XLVIII.

Ministry of Foreign Trade and Industry (Egypt),

- *Quarterly Economic Digest October-December 2004*, Volume X, No.4, <http://www.mfti.gov.eg/english/Downloads/Tocdownload.stm>, accessed August 2005.
- *Monthly Economic Digest, March 2006*, <http://www.mfti.gov.eg/english/Downloads/Tocdownload.stm> (accessed April 2006).

Nashashibi, K., ‘Fiscal Revenues in South Mediterranean Arab Countries: Vulnerabilities and Growth Potential’, IMF Working Paper WP/02/67, Washington D.C., 2002.

Newendorp, T., ‘Middle East and Africa LNG Activity’, Presentation, Infrastructure Journal LNG Conference, Versailles, June 2004.

Novosti (Russian News & Information Agency), ‘Russia writes off about 75% of Syria’s debt’, 28 May 2005, <http://en.rian.ru/world/20050528/40434129-print.html>.

OAPEC Technical Affairs Department, ‘Energy Conservation and Environmental Protection in the Petroleum Industry–OAPEC Seminar’, Cairo, June 2004’, *Oil and Arab Cooperation*, vol.30, Issue 111, Vienna, 2004, pp. 116–144.

Observatoire Méditerranéen de l’Energie, *Possible Innovative Schemes to Facilitate Energy Investment in Southern and Eastern Mediterranean Countries*, Invited Paper, Euro-Med Ministerial Conference, Rome, 1 December 2003.

OECD, *External Debt Statistics 2001*, Paris, 2002.

Office Arabe de Presse et de Documentation, ‘Syrie: Economic Developments 1992-1995’, *Syrie et Monde Arabe*, Damascus, no.510, Aout 1996, pp.1–17.

*Oil and Gas Investor*, ‘Anadarko to sell up to 30MMBOE of proved’, June 2004.

Oman LNG, *Annual Report 2003*, <http://www.omanlng.com/annualreport2003/milestones.asp>.

Petroleum Development Oman,

- *Annual Report 2003*, [http://www.pdo.co.om/pdo/pdo/contents\\_page.htm](http://www.pdo.co.om/pdo/pdo/contents_page.htm).
- *Annual Report 2004*, [http://www.pdo.co.om/pdo/pdo/contents\\_page.htm](http://www.pdo.co.om/pdo/pdo/contents_page.htm).

*Pipeline Magazine*, ‘First Dolphin Gas supplies flow through Oman pipeline link’, Dubai, 24 January 2004, [http://www.pipelinedubai.copm/press/2004/pr\\_04\\_0069.htm](http://www.pipelinedubai.copm/press/2004/pr_04_0069.htm).

Raja, A., ‘Should neutrality be the major objective in the decision making process of the government and the firm?’, *CEPMLP Annual Review 3*, Dundee University, 1999.

*Rigzone*, ‘OPIC provides insurance for Apache’s Egypt development’, 19 January 2005, [http://www.rigzone.com/news/article.asp?a\\_id=19577](http://www.rigzone.com/news/article.asp?a_id=19577).

Sandra, I., ‘Deepwater oil’, presentation, Oxford Institute for Energy Studies, 20 January 2005.

Sorge, M., ‘The nature of credit risk in project finance’, *BIS Quarterly Review*, December 2004, Basle, pp.91–101, [http://www.bis.org/publ/r\\_qt0412.htm](http://www.bis.org/publ/r_qt0412.htm).

Sultanate of Oman, 'Country Paper' (in Arabic), in *Proceedings of the 7<sup>th</sup> Arab Energy Conference, Volume 6: Country Papers*, Cairo, May 2002.

*Syria Report*, 'Petrochemical industry suffers from financial constraints', Issue 11, October 2003.

Syrian Arab Republic,

- 'Country Paper' (in Arabic), in *Proceedings of the 3<sup>rd</sup> Arab Energy Conference, Volume 3: Country Papers*, Damascus, May 1984.
- 'Country Paper' (in Arabic), in *Proceedings of the 5<sup>th</sup> Arab Energy Conference, Volume 3: Country Papers*, Cairo, May 1994.
- 'Country Paper' (in Arabic), in *Proceedings of the 6<sup>th</sup> Arab Energy Conference, Volume 5: Country Papers*, Damascus, May 1998.
- 'Country Paper' (in Arabic), in *Proceedings of the 7<sup>th</sup> Arab Energy Conference, Volume 6: Country Papers*, Cairo, May 2002.

*Times of Oman*, 'Oman: Govt extends oil concession pacts', Muscat, 20 December 2004.

Total, 'Le développement humain par l'ouverture économique', 2003,

[http://www.total.com/csr2003/fr/p5/p5\\_3\\_2\\_1.htm](http://www.total.com/csr2003/fr/p5/p5_3_2_1.htm).

UNCTAD,

- 'Country Fact Sheet: Egypt', *World Investment Report 2004*, <http://www.unctad.org/fdistatistics>, 2004a.
- 'Country Fact Sheet: Oman', *World Investment Report 2004*, <http://www.unctad.org/fdistatistics>, 2004b.
- 'Country Fact Sheet: Syria', *World Investment Report 2004*, <http://www.unctad.org/fdistatistics>, 2004c.
- *World Investment Report*, Geneva and New York, 2005.

UN Program on Governance in the Arab Region (POGAR),

- *Financial Management: Egypt*, [www.pogar.org/countries/finances.asp?cid=5](http://www.pogar.org/countries/finances.asp?cid=5), 2004a.
- *Financial Management: Oman*, [www.pogar.org/countries/finances.asp?cid=13](http://www.pogar.org/countries/finances.asp?cid=13), 2004b.
- *Financial Management: Syria*, [www.pogar.org/countries/finances.asp?cid=19](http://www.pogar.org/countries/finances.asp?cid=19), 2004c.

US–Egypt Business Council, 'Overview of US Investment in Egypt', <http://www.us-egypt.org/inve.html> (accessed January 2005).

World Bank, Washington, D.C.,

- *Sultanate of Oman Sustainable Growth and Economic Diversification*, Report No.12199-OM, Technical Cooperation Unit, Country Department, Middle East & North Africa Region, 31 May 1994.
- 'Egypt at a Glance', 20 April 2004, [http://www.worldbank.org/cgi-bin/sendoff.cgi?page=%2Fdata%2Fcountrydata%2Faag%2Fegy\\_aag.pdf](http://www.worldbank.org/cgi-bin/sendoff.cgi?page=%2Fdata%2Fcountrydata%2Faag%2Fegy_aag.pdf).
- 'Oman at a Glance', June 2005, [http://devdata.worldbank.org/AAG/omn\\_aag.pdf](http://devdata.worldbank.org/AAG/omn_aag.pdf).
- World Bank, 'Syria at a Glance', [http://www.worldbank.org/cgi-bin/sendoff.cgi?page=%2Fdata%2Fcountrydata%2Faag%2Fsyr\\_aag.pdf](http://www.worldbank.org/cgi-bin/sendoff.cgi?page=%2Fdata%2Fcountrydata%2Faag%2Fsyr_aag.pdf), 29 September 2004.

*World Gas Intelligence*, 'Shifting Supplies at Egypt's SEGAS', Vol XV, No. 39, 29 September 2004.

Wright, G., and J.Czelusta, 'Mineral Resources and Economic Development', Centre for International Development, Stanford University, February 2004.

Zanovyan, V., 'Non-price determinants of investment in the global oil sector', Special Issue: Joint OPEC/IEA Workshop on Oil Investment Prospects in Vienna, 25 June 2003, *OPEC Review*, Vol.XXVII. No.3, September 2003, pp.237–250.