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**TRANSNATIONAL CORPORATIONS, EXTRACTIVE INDUSTRIES  
AND DEVELOPMENT: IMPLICATIONS FOR POLICIES**

Note by the UNCTAD secretariat\*

**Executive summary**

The role of transnational corporations (TNCs) in extractive industries has attracted renewed attention in recent years, partly due to increased demand for commodities (especially from fast-growing emerging economies) and resulting higher prices. The role of TNCs in the extractive industries of developing countries has evolved over time, reflecting various factors. In hard-rock mining, the involvement of TNCs has taken the conventional form of foreign direct investment (FDI). In the oil and gas industry, closed to FDI in many countries and dominated in terms of world production by State-owned enterprises (SOEs) in developing countries, it has often taken the form of agreements between States and TNCs. Reflecting in particular the desire of some developing countries to access natural resources, these SOEs have recently started investing abroad, adding a South–South dimension to the role of TNCs in extractive industries.

Host developing countries continue to seek a balance between creating conditions conducive to further FDI and greater TNCs involvement – bringing capital and technology – and increasing benefits to the host-country economy in terms of government revenues, production, exports and national and local development, while at the same time minimizing environmental and social costs of such investment. The issues of the distribution and use of revenues are in need of particular policy attention.

This note reviews recent trends in FDI and TNC activities in extractive industries and identifies key issues associated with TNCs in these industries. It further examines potential impacts of foreign investment on the host economy and discusses various policy options aimed at ensuring development gains from FDI in natural resources. It suggests, under each section, issues that experts may wish to discuss.

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## I. INTRODUCTION

1. At its tenth session held in Geneva (6–10 March 2006), the Commission on Investment, Technology and Related Financial Issues requested the UNCTAD secretariat to organize an expert meeting on FDI in natural resources. This note has been prepared to facilitate and stimulate the discussion at this meeting.
2. For many low-income countries, resource-related industries account for most inward FDI. The current commodity boom, which started in 2003, has triggered a renewed interest in oil/gas and various metal minerals. These two groups of extractive industries – oil and gas and hard-rock mining – are the focus of this note. Issues related to the relationship between States and TNCs in extractive industries have returned to the forefront of public attention, albeit in a different context characterized by globalization, greater mutual dependence, a stronger position of State-owned oil companies competing with developed-country TNCs in third-country markets.
3. High commodity prices have provided countries with extractive industries with an opportunity to use increased revenues to advance development. In the past, many resource-rich economies performed worse than resource-poor countries, leading economists to debate the issue of the “resource curse”.<sup>1</sup> Concerns have resurfaced about the negative effects of oil, gas and mineral projects, sometimes suggesting “that the best course of action for poor States would be to avoid export-orientated extractive industries altogether” (Ross 2001, p. 17). The causes of the alleged resource curse have been analysed and examples and policy recommendations for improved performance have been proposed. Given the growing role of FDI in mining and the growing use of agreements with TNCs for oil and gas exploration and extraction, more attention is needed on the role of TNCs in this context.
4. This note first examines trends in extractive FDI and identifies the main players. In some instances, reference will be made to FDI in the primary sector, as a proxy for extractive industries.<sup>2</sup> Second, it explores development implications of extractive FDI in the context of a globalizing world economy and discusses policy implications and suggests a set of issues that experts may wish to debate during the meeting.

## II. RECENT TRENDS

### A. The resurgence of FDI in extractive industries

5. Extractive industries were once the largest sector for FDI. Until the 1950s, the bulk of FDI was located in developing countries and was associated with primary commodity production. The geographical distribution of European outward FDI often reflected colonial ties (Cantwell 1991, p. 191), while United States TNCs invested mainly in oil in West Asia and in oil and hard rock mining in Latin America. Since then, the relative importance of the primary sector has declined to only 5-6 per cent of global FDI in 2003. In absolute terms, however, primary sector FDI has continued to grow since 1970 – it increased by 400 per cent during the 1970s, by 350 per cent during 1990s and by 400 per cent from 1990 to 2003. Rising prices of oil and other commodities have also generated increased investment activity

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<sup>1</sup> See e.g. Stevens 2003, p. 5, UNCTAD 2005a and ICMM et al. 2006.

<sup>2</sup> Agriculture, forestry and fisheries, which are also part of the primary sector, account for less than 1 per cent of all primary-sector FDI from the European Union and the United States, the main sources of such FDI.

(box). Mineral exploration expenditures in the world trebled between 2002 and 2005. Spending on exploration for base metals and minerals like copper and tin as well as for precious metals like gold and silver reached \$4.2 billion in 2004 and \$5.8 billion in 2005.<sup>3</sup> In 2004 and 2005, the record levels of FDI inflows into Africa continued to be tilted towards natural resources, particularly in the petroleum industry (*WIR05*, p. 41; *WIR06*, p. 45).<sup>4</sup> In 2005, the ten largest recipients in Africa are rich in oil or metal minerals, and in Latin America, most countries with natural resources saw increases in FDI in primary industries.<sup>5</sup>

#### **Box. Commodity booms and FDI**

High sustained prices typically stimulate investment, including FDI. But commodity prices tend to undergo short-lived swings in times of shortage or oversupply. High commodity prices leave oil and mining companies with more funds for investment. They also enable junior companies to raise exploration funds from capital markets.

The present boom is already longer than previous commodity booms. On the demand side it was caused by the strong growth in developed economies and very fast growth rates of developing Asia. These countries are going through a stage of growth that is particularly intensive in the use of raw materials. Between 2000 and 2005, China's share of global demand growth for petroleum was 28 per cent; for copper 95 per cent, for steel 84 per cent and for aluminium 50 per cent (Radetzki 2006b, pp. 9-10). Meanwhile, the supply response has been slow. In 2005 and 2006, despite full capacity utilization by OPEC, oil prices remained high and disturbances to production (due to storms, leaks of pipelines or political tension) pushed them further up.<sup>a</sup> Some predict that prices of metal ores and oil will start gradually falling in 2007-2008 from the current levels, but that it will take time before they return to pre-boom levels.<sup>b</sup>

The current boom has generated huge profits for companies in extractive industries and large revenues for governments. It has also generated FDI in extractive industries in the form of cross-border M&As among firms in developed countries as well as greenfield FDI in the many developing countries and economies in transition that opened (or re-opened) to FDI during the 1990s. A growing but still relatively small part of extractive FDI originates from developing-country TNCs (*WIR06*).

*Source:* UNCTAD.

<sup>a</sup> Speculative activity has also added to the current demand for metals and energy (UNCTAD 2006).

<sup>b</sup> See e.g. Radetzki 2006b, EIU 2006, and Mining Journal Online, Countries and Commodities Reports, various issues retrieved from [www.mining-journal.com](http://www.mining-journal.com) on 24 July 2006.

6. Judging from data on the outward stock of FDI in extractive industries for the United States (the only country where such data exist), by 2005 developing countries accounted for 43 per cent of the stock, higher than in the pre-nationalizations period (table 1).<sup>6</sup> Oil and gas accounted for 71 per cent of the total FDI stock in extractive industries (and for 84 per cent with FDI in supporting activities to extraction) (figure). Within mining, FDI in copper,

<sup>3</sup> "Mining exploration spending triples since 2002", *Reuters*, 10 November 2005.

<sup>4</sup> In 2004, the share of this industry exceeded 60 per cent of total inflows in Angola, Egypt, Equatorial Guinea and Nigeria. It has also accounted for the largest share of FDI in Algeria, Libya and Sudan in recent years.

<sup>5</sup> In Colombia and Ecuador, FDI in oil and gas registered strong increases in 2005; in Venezuela, such investment amounted to \$1 billion and it increased also in Argentina and Trinidad and Tobago. FDI in mining was buoyant in Argentina, Chile, Colombia and Peru (*WIR06*). In Bolivia, uncertainties surrounding the implementation of its restrictive new 2005 law relating to oil and gas led to declines in FDI (*WIR06*, pp. 71-72).

<sup>6</sup> As regards the European Union's FDI in extractive industries, 31 per cent of it was located in developing countries in 2002 (Eurostat 2005, p.117).

nickel, lead and zinc was the largest, accounting for 36 per cent of such FDI, followed by gold and silver (25 per cent).

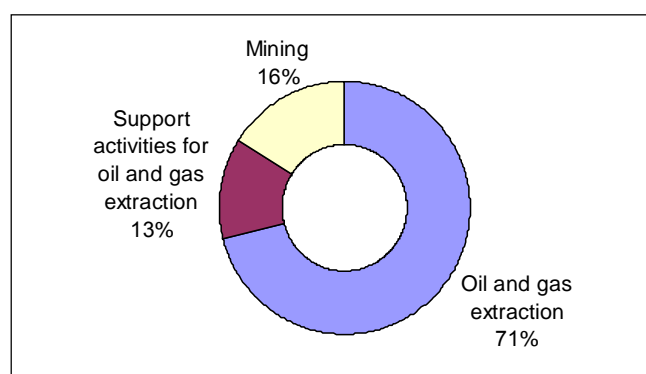
**Table 1. United States FDI stock in extractive industries, 1966-2005**  
(Billions of dollar and per cent)

Item	1966	1977	1982	2000	2005
Total stock, \$ billion	18	34	63	72	114
Stock in developing countries, \$ billion	7	3	19	37	50
Share of developing countries in total (in per cent)	38	10	31	51	43

*Source:* US Department of Commerce, Journal of Current Business, various issues.

*Note:* Until 1982 petroleum data refers to all petroleum-related activities, and since 2000 to extraction only.

**Figure. United States FDI stock in extractive industries, 2005**



*Source:* United States, Department of Commerce.

## B. Main players

7. Until the 1970s, FDI in extractive industries was mainly undertaken by TNCs from a few developed countries. The international oil industry was dominated by seven TNCs, most of which were from the United States.<sup>7</sup> These were fully integrated oil companies involved in extraction as well as the transportation of oil and the production and marketing of petroleum products. During the 1960s, they were joined by State-controlled companies such as Compagnie Française des Pétroles (France) and ENI (Italy). The situation changed with the emergence of the Organization of the Petroleum Exporting Countries (OPEC) and nationalizations after 1972, when a large number of countries established State-oil companies, changing the ownership picture in the oil industry (Yergin 1991). Similar developments occurred also in the mining sector. For example, in the case of copper, the share of the seven leading TNCs fell from 70 per cent of world production (excluding socialist countries) in 1948 to 23% in 1981 (UNCTC 1983, p. 208), as such countries as Chile, Peru, Zaire and Zambia took over private holdings and established State-owned

<sup>7</sup> The “seven sisters” were: Standard Oil of New Jersey (now ExxonMobil); Royal Dutch Shell; British Anglo-Persian Oil Company (now BP); Standard Oil of New York (now part of ExxonMobil); Texaco (now Chevron), Standard Oil of California (now Chevron), Gulf Oil (now part of Chevron, BP and Cumberland Farms).

enterprises (SOEs). The emergence of smaller mining companies also reduced the dominance of the major ones. Thus, in the early 1980s, the participation of TNCs was in many developing countries limited to minority holdings and non-equity agreements with SOEs. During the 1990s, several countries reopened to FDI in mining and privatized their mining SOEs.

8. Meanwhile, other developed countries have emerged with significant outward FDI in extractive industries, notably Australia, Italy, Japan and Norway. Some developing countries (e.g. Brazil, China, India) have also started to invest abroad in these industries (*WIR06*). Hence, the role of traditional TNCs is now different from before, especially in oil and gas, where SOEs of developing countries are the key players. In fact, wholly or partially State-owned companies control as much as 90 per cent of the world's oil and gas reserves. Some of these companies have become outward investors, fuelling South-South FDI. Nine of the 100 largest TNCs from developing countries are in extractive industries (*WIR06*). In copper and iron ore, Codelco (Chile) and CVRD (Brazil), respectively, are the world's largest producers.

9. Among the 25 leading oil and gas companies in 2003 (annex table 1), 15 were SOEs from developing countries or the Russian Federation, and three had minority State ownership – Petrobras (Brazil), ENI (Italy) and Lukoil (Russian Federation).<sup>8</sup> The remaining seven companies were developed-country TNCs. The 25 leading mining companies are shown in annex table 2, ranked by their share of world mining production. Developed-country TNCs dominate the list with 16 entries. Seven companies are from developing countries and the remaining two are Russian. In contrast to the oil industry, private companies play the dominant role in mining. The exceptions are Codelco (Chile), Alrosa (Russian Federation) and KGHM Polska Miedz (Poland). Mining TNCs are generally smaller than oil TNCs, and most of them operate in several hard rock minerals.<sup>9</sup>

10. The United Kingdom is the largest source country of FDI in the primary sector (with a stock of \$132 billion in 2004), followed by the United States and (\$88 billion) and Japan (\$62 billion) (table 2). China has advanced to a place among the major home countries with the stock of \$6 billion. Other developing countries on the list now include the Republic of Korea (\$1.8 billion), Kazakhstan, Brazil and Morocco, with a stock of less than \$0.5 billion.<sup>10</sup>

11. Developing countries used to be important hosts of FDI in extractive industries. However, nationalizations from the 1950s to the 1970s triggered a shift of FDI in extractive industries towards developed countries, facilitated also by new discoveries of oil deposits in some developed countries. In the 1980s, FDI in the primary sector recovered. Some developing countries have privatized State-owned assets via sales to foreign investors and/or opened up to greenfield FDI.<sup>11</sup> Others have started to exploit their riches with the participation of FDI. The share of developing countries in the United States outward stock in extractive industries increased from 10 per cent in 1977 to 43 per cent in 2005 (table 1).<sup>12</sup>

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<sup>8</sup> In the case of Petrobras, the State controls the majority of the voting power. Regarding ENI, only the Italian State can hold shares representing more than 3 per cent of its share capital.

<sup>9</sup> For example, Anglo American is active in coal, copper, gold and nickel, and BHP Billiton has interests in coal copper, iron and nickel as well as in oil.

<sup>10</sup> Data for South Africa are not available.

<sup>11</sup> Examples include Chile and Zambia (copper), Ghana (gold), Peru (base metals), Argentina and Bolivia (oil).

<sup>12</sup> During the past 15 years, the Russian Federation and other CIS countries have also emerged as destinations for FDI in extractive industries. In 2004, the stock of primary FDI in these countries was \$21 billion, rivalling the stock in a traditional mining country, South Africa (\$20 billion) (*WIR05*, p. 260).

**Table 2. Outward FDI stock in the primary sector, selected major home countries, latest year**  
(Billions of dollar)

Country	Year	FDI stock
United Kingdom	2004	132
United States <sup>a</sup>	2004	88
Japan	2004	62
Netherlands	2000	51
Canada	2003	31
Italy	2003	30
Norway	2003	20
China	2003	6
Australia	2003	4
Germany	2003	2
Austria	2003	2
Republic of Korea	2002	2

Source: UNCTAD FDI/TNC database.

<sup>a</sup> Excluding FDI in service activities related to extractive industries.

### C. Regional patterns

12. The geographical pattern of extractive FDI is greatly influenced by the availability (and quality) of natural resources. Many countries in Africa and in Latin America and the Caribbean are abundant in oil, gas and various minerals. West Asia is abundant in oil and gas, while most countries in other Asian regions are less endowed in this regard. Countries in West Asia are generally closed to FDI in oil, while many countries in Latin America and Africa opened up to FDI in extractive industries during the 1990s.

13. *Africa's* endowments of minerals are very rich. The continent has near world-monopolies in chromium, diamonds and platinum, a high proportion of the world's cobalt, gold and manganese reserves and extensive reserves of bauxite, coal, copper, nickel and uranium. North African countries, Gabon and Nigeria have long been major oil producers and LDCs like Angola, Chad, Equatorial Guinea and Sudan have emerged recently as important producers. Thus, minerals and oil represent a key locational asset for FDI in Africa. The top ten FDI recipients in Africa, accounting for three-quarters of inflows in 2004, all have large mineral and petroleum reserves (*WIR05*, p. 41).

14. In *Latin America and the Caribbean*, Argentina, Bolivia, Brazil, Colombia, Ecuador, Mexico, Peru, Trinidad and Tobago, and Venezuela all have oil and gas deposits. Chile is the world's largest copper producer, and the Andean countries possess large reserves of oil and other resources (see e.g. ECLAC 2002). The reopening to FDI took place during the 1990s.<sup>13</sup> It was wide-spread in hard-rock mining but varied from country to country in petroleum.<sup>14</sup> As a result, primary FDI has increased significantly. Strong investment in extractive industries should continue for some years, judging from new projects announced by TNCs between January 2004 and May 2005 (*WIR05*, p. 283). The planned value of these projects in non-oil mining was \$9 billion and in oil and gas \$23 billion.

<sup>13</sup> Although the development of the landmark Escondida copper mine in Chile started already in the 1980s.

<sup>14</sup> For example, Mexico remains closed to petroleum FDI, while Brazil opened partly, allowing partnerships with a state-owned company to develop or exploit certain areas (ECLAC 2001, p. 151).

15. Within *Asia*, most *West Asian* countries are abundant with and highly dependent on oil (and to a certain extent gas). The share of oil and gas in total exports is very high, varying from 56 per cent (in 2002/2003) in the United Arab Emirates to 86 per cent in the case of Yemen.<sup>15</sup> Saudi Arabia is the world's largest exporter of crude oil, and the Islamic Republic of Iran, Iraq, the United Arab Emirates and Kuwait are among top ten developing-country oil exporters. However, most of these countries are closed to FDI in oil.<sup>16</sup> In the *East, South and South-East Asia*, with few exceptions, countries are poorly endowed with minerals, oil and gas. Main commodity exporters include Indonesia, Papua New Guinea and Viet Nam. China and India have significant deposits of oil and other minerals but have preferred to keep those industries under national control. Thus, inward FDI in these industries has generally been of little importance for most Asian countries, either because of policy choices (West Asia) or of a lack of natural resources.

16. Some CIS countries are also rich in natural resources. The Russian Federation is the second largest oil exporter after Saudi Arabia and the largest gas exporter. Kazakhstan and Azerbaijan are richly endowed with oil and gas. Kyrgyzstan has gold, Tajikistan aluminium and Turkmenistan gas and oil. Ukraine is well endowed with iron ores and has developed downstream processing capacities, permitting it to export iron and steel in processed forms.

17. In light of the trends outlined above, experts may wish to consider the following questions:

- What is the relationship between commodity prices and the pattern of global FDI in oil and non-oil mining? How is it affected by the cost of exploration and extraction?
- What factors explain the different level and forms of TNC involvement in different resource-rich economies, and in different extractive industries?
- What specific factors are likely to influence prices in the coming years?
- Where are the greatest future prospects for resource extraction, and what role are TNCs likely to play in this context?

### III. DEVELOPMENT IMPLICATIONS

18. The impact of FDI on host developing countries needs to be considered in the broader context of the role of extractive industries in development and poverty reduction. Theoretically, natural resources should facilitate development as revenues from these resources can help overcome two constraints to economic growth: a low level of savings and a shortage of foreign exchange. In reality, however, with few exceptions<sup>17</sup> most mineral- and oil-abundant countries have performed worse in terms of growth and poverty reduction than resource poor countries. Many are poorer today than they were 20-30 years ago.<sup>18</sup> Natural

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<sup>15</sup> Other countries with the level of dependence in between these two ranges are Bahrain, the Islamic Republic of Iran, Iraq, Kuwait, Oman, Qatar and Saudi Arabia.

<sup>16</sup> Still, TNCs often play a role in the oil sectors through production-sharing agreements, buy-back contracts and service agreements.

<sup>17</sup> Often cited successes among developing countries include Botswana, Chile, Malaysia and South Africa.

<sup>18</sup> For example over the past three decades the economic growth of Saudi Arabia has failed to keep pace with population growth, resulting in decreased per capita income. The same was the case with the United Arab



resource extraction has also been associated with social conflict and political instability in a number of countries.

19. Large revenues from extractive projects can create distortions in the economy with negative socio-political consequences. Frequently cited reasons for the so-called “resource curse” include long-term deterioration in the terms of trade of raw materials vis-à-vis manufactured products (see e.g. Radetzki 2006a), revenue volatility caused by fluctuating prices and export volumes, the “Dutch Disease”, rent-seeking and corruption. While there is no single explanation of the curse, it is clear that improved governance is central to turn revenues from exploiting resources into sustainable development gains.<sup>19</sup>

20. The role of TNCs in the exploration of natural resources remains controversial. On the one hand, many developing countries want foreign companies to bring in the capital, technology and expertise needed to exploit their natural endowments. On the other hand, they are eager to reap maximum benefits from their natural resources and are reluctant to surrender potential rents from these resources to foreign companies. There are also concerns that potential economic gains from the extraction of resources (with or without foreign participation) may be outweighed by adverse environmental or social implications.

21. The main reason why countries have invited TNCs for the exploitation of their resources has been a need for financial capital, technology and knowledge. Extractive industries are capital-intensive. Building a large-scale base metals mine may cost over a billion dollars. Investment in the world's largest copper mine – the Escondida mine in northern Chile – totalled \$4.2 billion between 1991 and 2004 (ICMM *et al.* 2006). Constructing a pipeline, developing an oil deposit or revitalizing an ailing underinvested industry can cost billions of dollars.<sup>20</sup> Few countries, especially among the LDCs, have – or can obtain – the resources needed for such investments, and the sheer scale of the projects frequently requires TNCs to co-invest.

22. By involving foreign companies, countries hope to increase their foreign exchange earnings and government revenues from a successful exploitation of their natural resources. In some countries, inward FDI has indeed helped to halt dwindling production and export revenues, resulting from years of underinvestment and depressed world market prices. In *Ghana*, owing largely to FDI, gold exports rose three times from 1990 to 2004, increasing its share of total exports from a quarter to 37 per cent (UNCTAD 2005a, pp. 48-50). In *Zambia*, FDI was instrumental in rehabilitating the declining copper industry. The production and exports of copper as well as employment have grown significantly after initial reductions (UNCTAD forthcoming). In *Peru*, FDI contributed to the revival of mining of copper and gold during the 1990s. In other countries, existing natural resources were hardly developed at all before FDI was allowed to come in.<sup>21</sup> In oil, such countries as Angola, Ecuador, Indonesia

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Emirates. In Kuwait, per capita real GDP increased between 1980 and 2003 by 1 per cent annually, but between 1995 and 2004 it registered a decline of 3.1 per cent per year (UNCTAD 2005b, p. 329).

<sup>19</sup> See ICMM *et al.* 2006 for a discussion of the relationship between governance and the resource curse.

<sup>20</sup> For example, in the United Republic of Tanzania, increasing exports of gold to some \$700 millions in 2005 (from \$120 million in 2000), required investment of \$1.3 billion (Mining Journal Online); developing oil deposit in the Orinoco Belt in Venezuela, which permitted to halt the declining oil production, cost \$17 billion (*International Herald Tribune*, 1 June 2006); in Azerbaijan, the recently opened pipeline Baku-Tbilisi-Ceyhan cost \$3.9 billion (*The Economist*, 19 August 2006).

<sup>21</sup> Before the United Republic of Tanzania opened to FDI in mining in the 1990s, gold production mainly involved small-scale mining by hundreds of thousands of poor people. Large FDI inflows made gold mining an important industry for GDP, exports, employment and government revenues (UNCTAD 2002, pp. 11-14).

and Peru rely on agreements with TNCs to pursue exploration and sustain and increase production over the long term. SOEs in developing countries often pursue agreements with TNCs to access technologies needed to develop difficult fields.

23. However, increased production and exports do not necessarily imply a positive impact on the host economy. Key factors affecting the net outcome include how the rent is shared between the government, local communities and TNCs; and the extent to which TNCs contribute to the local economy in terms of employment, skills development, linkages and spillovers. The relative contribution of mining FDI to the overall economy often remains limited, because of weak local linkages. In developing countries, extractive-industry projects are typically export-oriented with limited value added in the host country (ECLAC 2003). They are relatively capital-intensive, limiting the potential for local employment creation, and often rely on imported inputs. In this situation, fiscal income from the mining sector is arguably the most important contribution to the local economy with the potential of providing the opportunity to accelerate development. This places the issues of the distribution and use of revenues at the centre of policy attention.

24. The sharing of revenue between investors and the State is a central issue. It is complicated by the cyclical nature of product prices, which can generate substantial windfalls from time to time, while projects require, at the outset, large and long term financial commitments. A current criticism is that a number of developing countries have provided too generous conditions for FDI projects in extractive industries, resulting in a disproportionately low share of government revenues. An important factor in this context is that, in order to allow companies to recoup a portion of the equipment costs most countries allow mines to claim large depreciation deductions in the early years of a project (Otto 2000). In Latin America, small tax payments made by foreign firms for mineral extraction have been criticized in Bolivia and Chile (ECLAC 2003).<sup>22</sup> Many countries have recently taken steps to increase the government share of revenues (see next section).

25. Other concerns associated with the involvement of TNCs include the depletion of non-renewable resources; loss of control over resources (particularly in countries experiencing severe conflict); damage to the local environment; adverse social effects; risks of increased corruption; widening income inequalities; and undermining of political stability. Many of these are not necessarily linked to FDI but rather to the extraction activity itself.

26. The environmental dimension of mining and oil and gas extraction – with or without the involvement of TNCs – is an important issue. Mining may require the disposal of huge quantities of waste rock and tailings, the latter often resulting from process involving toxic chemicals. Oil production entails risks of spills and problems of dealing with associated natural gas. The public image of mining TNCs was adversely affected during the 1990s by a number of widely publicized spills from tailings dams, including in Guyana (1995) and the Philippines (1996) (*WIR99*, p. 291). In response, many mining TNCs have sought to improve their management practices and industry-wide environmental guidelines have been adopted. Not all countries have fully elaborated environmental regulations, and for many years responsible TNCs have applied environmental practices that confirm with the standards applied in their home countries. In general, TNC activities are now more visible and the environmental issues more closely monitored. Environmental negligence may result in very large costs on the part of the companies.

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<sup>22</sup> For discussion on taxation in the Chilean mining industry, see UNRISD 2005 and ICMM *et al.* 2006.

27. In spite of the trend towards higher environmental standards, challenges remain and damages continue to occur: “empirical evidence suggest that the environmental effects of FDI in the mining sector can reduce or increase pressures on the environment, as compared with domestic investment, depending on the geographical location and whether regulatory, technology or scale effects are considered” (OECD 2002, p. 10). In Chile, FDI in copper mining has resulted in an inflow of environmentally sound technologies and the environmental performance of foreign investors has often been better than that of domestic firms during the past two decades (*Ibid*). In Ghana, on the other hand, foreign investors pressured the Government to allow exploration and mining in forest reserves, despite a national moratorium on such activities in these areas (*Ibid*). In Zambia, foreign investors are exempt from environmental liabilities for past activities and can defer compliance with environmental standards (*Ibid*). Fear of the environmental consequences can trigger opposition from environmentalists and indigenous groups to extractive projects, as e.g., in Ecuador and Peru (ECLAC 2003, p. 49).

28. Experts may wish to consider the following questions in the discussions:

- What are the main advantages and disadvantages for host countries of involving TNCs in extractive industries?
- Are there particular benefits or disadvantages from a host-country perspective of attracting South-South FDI in extractive industries?
- What are main differences between oil extraction and hard-rock mining?
- Do development implications differ between TNCs and national firms?
- How has the participation of TNCs in extractive industries affected:
  - The size and distribution of budget and export revenues from existing resources;
  - Creation of employment and local linkages;
  - Industrial diversification and infrastructure development;
  - The environment and local communities;
  - Broader social development issues.

#### **IV. POLICY TRENDS AND IMPLICATIONS**

##### **A. Regulating the entry of TNCs in extractive industries**

29. Policy makers need to consider whether to allow foreign companies to participate in the extraction of a country's non-renewable resources. In practice, only the largest countries tend to have the domestic sources of capital and technology that are needed. If the participation of TNCs is deemed desirable, a further question is what forms of participation are most advantageous with a view to maximizing the benefits and minimizing the costs to the country? The policy response may depend on the nature of the resources (e.g. oil/gas vs. mineral deposits), ability of domestic players to raise the necessary finance, capabilities of the domestic industry and price developments.

30. Developing countries are today generally more open to TNC participation than they were two-three decades ago. However, there are important differences between oil/gas and hard-rock mining, respectively. In the case of *oil and gas*, nationalizations in the 1970s radically changed the role of foreign oil companies in developing countries.<sup>23</sup> Many oil-rich developing countries have since retained high barriers to FDI and still rely primarily on their national, SOEs for the commercial exploitation of their resources. Frequently, these are ostensible barriers only, as TNC participation alongside national oil companies is permissible via production-sharing agreements (PSAs), service contracts or joint-venture agreements. In *hard-rock mining*, most countries do not interpose State entities, but have adopted mining codes to regulate TNC activities. Reasons for the different forms in which TNCs are regulated in oil/gas compared with in mining include sensitivities related to the control of oil and gas and the fact that rents are higher in the oil industry.

31. In Latin America and the Caribbean, reforms of the 1990s opened parts of the hydrocarbon industry to FDI, which focused on exploration and production in new regions and deep waters or involved extraction from marginal or extra-heavy crude oilfields at high cost. The most profitable deposits remain in the hands of SOEs which often have agreements with TNCs. Colombia has permitted FDI in the form of joint ventures and Ecuador and Trinidad and Tobago allow FDI in selected areas.<sup>24</sup> Most countries of the region, with the exception of Mexico, have also opened transportation (including pipelines), refining and marketing to private investment.<sup>25</sup> In natural gas, liberalization has been wider.

32. West Asia, which holds some 65 per cent of the world's proven oil reserves and where production is the cheapest in the world, remains virtually closed to FDI. However, during the 1990s, some countries began to enter into agreements with TNCs to access capital, technology and managerial expertise. In the aftermath of the Gulf War, several TNCs were returned to Kuwait under service agreements. Saudi Arabia continues to rely entirely on its SOE, Saudi Aramco, for upstream operations while allowing foreign investors to participate in downstream operations such as refining (Bahgat 2000). African oil countries as well as Indonesia have relied on TNCs through PSAs, accompanied often by joint ventures or other types of capital participation. The Russian Federation follows a strategy similar to that of some countries in West Asia and Latin America. At its centre are SOEs (Rosneft in oil and Gazprom in gas), which occasionally have partnered with TNCs when finance or technology are needed to develop difficult or remote fields.<sup>26</sup>

33. In *hard-rock mining*, opening to FDI became common in the 1990s in most mining developing countries.<sup>27</sup> Liberalization was often part of broader reforms aimed at reinvigorating declining mining industries, and took place in a time characterized by a view that mineral prices were in secular decline. As mining is a capital-intensive, high-risk activity, requiring long-term perspective, it has been common to adopt special legislation relating to foreign investment and taxation and include it in mining codes. A common feature

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<sup>23</sup> "Instead of being "concessionaires," with ownership rights to the oil in the ground, the companies were now becoming mere "contractors," with "production sharing" contracts that gave them rights to part of any stream of oil they discovered" (Yergin 1991, p. 652).

<sup>24</sup> Argentina, Bolivia and Peru privatized their State-owned oil firms, while Mexico maintains the monopoly of PEMEX in oil exploration and extraction (ECLAC 2001, p. 171).

<sup>25</sup> Venezuela remains an exception for pipelines, while some countries require private firms to sign operating contracts with SOEs.

<sup>26</sup> See "Looking to the West for new tools of the trade", *International Herald Tribune*, 10 April 2006).

<sup>27</sup> In Latin America, the trend started in Chile, with the adoption of Decree Law 600 (1974).

of the 1990s was the enactment of new mining codes or revisions of the existing ones<sup>28</sup> aimed at providing assurances and better conditions for private sector investment. They included new or stronger provisions related to environmental protection and social consequences of mining. In addition to mining codes, countries typically use mining agreements between governments and investors to regulate large projects (Otto undated, p. 28).<sup>29</sup>

34. Most countries have eased or abolished restrictions on foreign ownership of mines. In Brazil, Indonesia, Papua New Guinea and the Philippines, TNCs have been allowed to take up to 100 per cent equity ownership in mining ventures (Otto 2000, Barberis 1998). In addition, many countries have privatized SOEs, in most cases to foreign companies (e.g. Bolivia and Peru). Chile also opened to FDI, but maintained Codelco in State hands. African countries, such as Ghana, Guinea, Mali, Madagascar and the United Republic of Tanzania, have privatized their mining SOEs to foreign investors and abolished restrictions on foreign ownership. Failure in attracting FDI in spite of favourable geological conditions led many African countries to make their regulatory systems (including taxation) more attractive to investors.<sup>30</sup> The Russian Federation and other CIS countries, notably Kazakhstan, have also opened to FDI in mining. The opening-up process has been part of broader regulatory changes implemented by developing countries that have created the basic investment conditions considered by foreign investors as necessary (but not sufficient) to invest abroad, including the security of tenure, the right to repatriate profits, management control, consistency and constancy of mineral policies and predictable tax terms (Biermann 2001). Countries have also improved administrative procedures for FDI entry and applications for, and approval of, mining projects and reduced taxation levels.

## **B. Policies to enhance benefits and mitigate costs**

35. The persistent weak economic performance of many resource-rich countries begs the question of how policies can ensure wider development benefits from investment in extractive industries. In the current commodity boom, many countries are facing the challenge of how to manage and spend increased revenues without falling into the resource curse. Moreover, high profits for the companies raise questions concerning the fairness of the distribution of financial benefits from resource extraction and have led some countries to change their policies.

36. Much of the debate on avoiding the resource curse has centred on the need to improve governance in resource-rich developing countries.<sup>31</sup> Good governance for extractive industries encompasses a wide range of areas, such as good public financial management (to avoid appreciation of the exchange rate and inflation), the quality of the regulatory framework and institutions implementing regulations, control of corruption, respect for the rule of law (that is the use of public power in accordance with the law) or the ability of governments to address problems through formal institutional reforms. Good governance is key to ensuring that revenues are used to achieve wider development gains.

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<sup>28</sup> Between 1985 and 1995, 96 countries revised or planned to revise their mining codes (Barberis 1998, p. 16).

<sup>29</sup> For example these kinds of agreements are used by the Governments of Argentina, Botswana, Chile, Papua New Guinea and Indonesia. Agreements may be used if an updated mining code is lacking; to deal with complex issues arising in large projects, not adequately covered by other laws; or to reassure foreign investors (Barberis 1998, pp. 18-19).

<sup>30</sup> Campbell 2004; see also UNCTAD 2002a and 2002b.

<sup>31</sup> See e.g. World Bank 2005, p. 1.

37. For each area of governance a set of policy measures can be identified, many of which relate to fiscal management and broader macroeconomic policies rather than FDI as such (e.g. Stevens 2003, pp. 18-24). For example, to avoid appreciation of the real exchange rate leading to Dutch disease at times of high prices, it may be necessary to neutralize the impact of large windfall revenues on aggregate demand, and through it on inflation and the exchange rate. Policy responses include prudent fiscal management aimed at revenue sterilization: either by accumulating budget surpluses, paying off debt or channelling revenues into a stabilization fund to be used at times of low prices, to top up the budget when aggregate demand is insufficient and output and real incomes falling. The use of long-term funds to put aside assets for future generations is also becoming more common.<sup>32</sup> Several countries have used either stabilization or future generation funds, including Azerbaijan, Chile, Ecuador, Ghana, Indonesia, Kazakhstan, Papua New Guinea and Venezuela. (World Bank 2005, p. 84; Stevens 2003, p. 21).

38. The distribution between firms and States of revenues from extractive industries remains a controversial issue. The room of manoeuvre of a country is circumscribed by the competition from other countries. Mining is subject to complex bargaining pressures over the terms of investment and the appropriate tax regime which best reconciles the interests of the different parties (UNCTAD 2005a, p. 45).

39. In mining, a number of mineral-rich countries in Latin America have recently revised their tax regimes to increase the government share of revenues. Peru has introduced 1-3 per cent of royalty depending of mining companies annual sales, and there is a political debate about whether tax terms granted by previous governments should be renegotiated. In Chile, the Chamber of Deputies has approved a 4-5 per cent special tax on gross operating profits (ECLAC, 2004; and ICMM et al., 2006, p. 40). In Africa, South Africa is revising its mining legislation with a view to increase its revenues and development benefits from mining. The draft legislation proposes a royalty of between 1 and 4 per cent, depending on the type of mineral (UNCTAD 2005a, p. 47). In Zambia, the Government announced in July 2006, that it will enter negotiations with mining companies to review the royalties and other tax incentives contained in the development agreements signed with mining investors.<sup>33</sup>

40. In the oil industry, policy reactions to high prices have varied. A number of host-country governments have sought to increase their share of revenues by increasing taxes, renegotiating contracts with TNCs, unilaterally imposing changes to contracts and/or increasing government control over the industry. Venezuela has gone furthest: it has unilaterally introduced changes to contracts to convert them from operating service agreements to joint ventures with Government majority stake; it standardized royalties at 30 per cent,<sup>34</sup> introduced an extraction tax, and increased the income tax rate from 2007 to 50 per cent from 34 per cent in the case of the strategic associations of the Orinoco belt. Bolivia has nationalized its oil and gas resources, giving the State control and management over the production, transportation, refining, stocking, distribution, commercialization and industrialization of oil and gas. It also controls those oil and gas companies that were privatized in the 1990s. The share of private companies has been lowered from 50 per cent (as was accorded by the hydrocarbon Law approved in May 2005) to 18 per cent of the value

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<sup>32</sup> Another important policy consideration is that governments avoid using the revenue or expectations of more revenue to increase borrowing as this may strengthen the symptoms of Dutch disease through adding to the appreciation of the real exchange rate.

<sup>33</sup> "Zambia: Government Decision to Review Mining Agreements Welcome", *Times of Zambia*, 5 July 2006.

<sup>34</sup> Royalties for the operating service agreements had already been increased from 1 to 16.6 per cent.

of production (*WIR06*).<sup>35</sup> Ecuador introduced a hydrocarbon reform that would bring the Government greater control and a greater share of profit.<sup>36</sup> Other countries have left their tax regimes unchanged (e.g., Egypt, Nigeria and Kazakhstan).<sup>37</sup> Some countries (Australia, Indonesia, Norway), with more mature-producing areas, offer improved terms to encourage investment.

41. Beyond reaping a greater share of the revenue, it is also important that revenues from extractive industries are used effectively to support development priorities. Many factors behind poor performance result from institutional and policy failure. Better governance can help ensure that rents are utilized to achieve development gains. Greater transparency and full disclosure of fiscal revenues from extractive industries has been advocated under the “Extractive Industries Transparency Initiative” and the “Publish What You Pay Campaign”.<sup>38</sup> Some oil companies have started disclosing government revenues. Others are concerned that unilateral disclosure may harm them, as some host governments consider disclosure illegal. Mining industry associations have addressed the issues of corruption and revenue use, but individual mining companies seem not to have joined the debate.<sup>39</sup>

42. In the environmental area, independent environmental impact assessments and environmental management plans have long been common practice in large mining projects involving TNCs. However, many countries suffer from a lack of capacity to monitor and enforce such provisions. Such improvements take time and may require international support to raise institutional capabilities. Meanwhile, private companies may have to assume greater responsibility for their own actions. International instruments such as the OECD Guidelines for Multinational Enterprises are also relevant in this context.<sup>40</sup> It has been suggested that “a company’s willingness to implement the OECD guidelines could become a condition of eligibility for all northern government guarantees and export credits” (Campbell 2004, p. 84), and that stock exchanges on which mining companies are listed should establish corporate social responsibility disclosure requirements (*Ibid*, p. 85).

### **C. Policies of developing countries to encourage outward FDI in extractive industries**

43. Some developing countries have a deliberate policy of supporting international expansion of their state-owned companies through FDI and/or partnerships with TNCs from developed and developing countries (*WIR06*). While such overseas activities concentrate on other developing countries, some firms have ventured into developed countries through M&As. In the case of developing-country oil companies, their foreign expansion has been facilitated by large revenues from oil extraction. Companies such as ONGC (India), Petronas (Malaysia), Petrobras (Brazil), CNPC and CNOOC (China) have acquired significant assets abroad and are rapidly expanding their overseas activities. For example, activities of Chinese oil TNCs, involving exploration, production, transportation, refining and service contracts,

<sup>35</sup> This rate is 50 per cent for companies producing less than 100 million cubic feet of natural gas daily.

<sup>36</sup> Energy Bulletin, “The peak oil crisis: dividing a growing pie”, published by Falls Church News-Press, 1 June 2006, and *WIR06*.

<sup>37</sup> Sam Fletcher, “With prices high, countries revising E&P fiscal regimes”, *Oil and Gas Journal*, Tulsa, 6 February 2006, Vol. 104, issue 5, p. 22.

<sup>38</sup> See for example: [www.eitransparency.org](http://www.eitransparency.org) and [www.publishwhatyoupay.org/english/](http://www.publishwhatyoupay.org/english/).

<sup>39</sup> Gordon and Pestre 2002, p. 203.

<sup>40</sup> Although the observance of the guidelines is voluntary, adhering countries – home countries for most of the outflows of FDI in the world and home to key mining and oil TNCs – have committed themselves to monitoring that the Guidelines are understood and observed by TNCs (Gordon and Pestre 2002, p. 204).

spread over 46 countries, mostly developing ones, on all continents (Ma Xin and Andrews-Speed 2006, pp. 21-22). Chinese and Indian oil companies have also begun to cooperate in bidding for oil assets.<sup>41</sup>

44. There may be different reasons for governments to support outward FDI. In some cases, investment abroad may be necessary to maintain or enhance the competitiveness of the companies involved. Some countries have an interest in securing raw material supplies for their own expanding economies. For example, China has adopted a “going global” strategy to promote the international operations of Chinese firms with a view to improving resource allocation and enhancing their international competitiveness. A selective support policy has been adopted, encouraging, among others, resource extraction projects to mitigate the domestic shortage of natural resources. Energy security concerns have been a driving force of these new policy developments.

45. This trend has several implications. First, for developing countries that possess sufficient capabilities, outward FDI may represent an option to access resources. Secondly, the emergence of more home countries and TNCs searching for raw materials may raise the possibility for developing host countries “to bargain over the returns from investment” in extractive industries (UNCTAD 2005a, p. 69). Thirdly, the issue of FDI in extractive industries is becoming an issue of South-South cooperation.

#### **D. International agreements**

46. Various international agreements are relevant to FDI in extractive industries. Bilateral investment treaties (BITs) focus on the protection of investment against nationalization and expropriation, non-discriminatory treatment of foreign investors, and the settlement of disputes. The value of BITs for extractive industries FDI (and for agreements between TNCs and host States) depends on the coverage and strength of their provisions, and these vary, reflecting the periods in which they were concluded and the concerns of countries.

47. The Multilateral Investment Guarantee Agency (MIGA), an institution of the World Bank Group, provides insurance to investors against political risks of investing in developing countries. It thus enhances the legal security of FDI by supplementing national and regional investment guarantee schemes.<sup>42</sup> The Energy Charter Treaty covers the energy sector, including oil and gas industries, from exploration to end-use. Its membership includes 51 countries from Europe and Asia plus 19 observer countries from other regions (including the United States, Venezuela and Nigeria). The Treaty promotes open and competitive energy markets and security of energy supply, while respecting the principles of sustainable development and sovereignty over natural resources. It aims at strengthening the rule of law by creating common rules to be observed by all participating governments. The Energy Charter Treaty may help provide increasingly relevant, reliable and stable international frameworks for investment in the gas and oil industries of participating countries.

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<sup>41</sup> In August 2006, ONGC (India) and Sinopec (China) jointly acquired a stake in Omimex de Colombia, owned by Omimex Resources (United States) (see [www.rigzone.com/news/article.asp?a\\_id=35185](http://www.rigzone.com/news/article.asp?a_id=35185)).

<sup>42</sup> In 1999, MIGA adopted its own environmental assessment and disclosure policies, and interim safeguards policies were introduced in 2002. Following an evaluation, it recently adopted additional recommendations to enhance the development impact of projects it supports (World Bank 2005, pp. 195-200).



48. In light of the above analysis, expert may wish to address the following issues:
- To what extent, and how, do countries regulate TNC involvement in extractive industries?
  - How can regulations be devised so as to reflect the overall development strategy of the host country, while providing an adequate share of the rent to relevant stakeholders at varying levels of prices of oil and minerals? What policy instruments other than taxes can be used in this context?
  - Under what circumstances, if at all, may stabilization funds be appropriate?
  - How can governments promote deeper linkages between the extractive industry and local economy?
  - How can the extraction of resources contribute to industrialization?
  - What is the role of concerns of “national security” and “energy security” in the development of policies governing FDI in extractive industries?
  - To what extent is the encouragement of outward FDI an effective way to address concerns of developing countries?
  - What are best practices for addressing environmental concerns related to TNC involvement in extractive industries?
  - How can governments ensure that all stakeholders – local community, industry, NGOs, labour unions – are consulted on policies related to FDI in resource extraction?
  - How can home countries promote development gains from investment in extractive industries?
  - What can international cooperation do to ensure greater development gains from extraction of natural resources?
  - What role could international standards on environmental responsibility in extractive industries play?

## References

- Bahgat, Gawdat (2000). "Foreign investment and oil industry in the Persian Gulf states", in *Minerals & Energy*, Vol. 15, no.2.
- Barberis, Daniele (1998). *Negotiating Mining Agreements: Past, Present and Future Trends*, Kluwer Law, The Hague, London and Boston.
- Biermann, Johan (2001). "Undermining mineral rights: An international comparison", *The Free Market Foundation, FMF Occasional paper*, No. 10 (Johannesburg: The Free Market Foundation)
- Campbell, Bonnie (ed.) (2004). *Regulating Mining in Africa: For Whose Benefit?*, Discussion Paper 26, (Uppsala: Nordiska Afrikainstitutet).
- Cantwell, John (1991). "Foreign Multinationals and Industrial Development in Africa", in Buckley, Peter (ed.), *Multinational Enterprises in Less-Developed Countries* (London: Macmillan).
- ECLAC (various years: 2001-2004). *Foreign Investment in Latin America and the Caribbean*, (Santiago, Chile: United Nations).
- Economist Intelligence Unit (2006). *World commodity forecasts: industrial raw materials* (London: EIU).
- Energy Charter Secretariat (2006). *Energy Charter. Annual Report* (Brussels: Energy Charter Secretariat).
- Eurostat (2005). *European Union foreign direct investment yearbook* (Luxembourg).
- Gordon, Kathryn and Florent Pestre, (2002). "Moving Towards Healthier Governance in Host Countries: The Contribution of Extractive Industries", (Paris: OECD).
- International Council on Mining and Metals (ICMM), The World Bank and UNCTAD Commodities Branch (2006). *Synthesis of four Country Case Studies. The Challenge of Mineral Wealth: using resource endowments to foster sustainable development* (London: ICMM).
- Ma Xin and Philip Andrews-Speed (2006). "The Overseas Activities of China's National Oil Companies: Rationale and Outlook", *Minerals and Energy – Raw Materials Report*, vol. 21, no. 1, 2006, pp. 17-30.
- OECD (2002). *Foreign Direct Investment and the Environment: Lessons from the Mining Sector* (Paris: OECD).
- Otto, James (1998). "Mineral policy, legislation and regulation", in Mining, Environment and Development, a series of papers prepared for UNCTAD (Geneva: UNCTAD), mimeo.
- Otto, James (2000). "Mining taxation in developing countries", paper prepared for UNCTAD, November, (Geneva: UNCTAD), mimeo.
- Radetzki, Marian (2006a). "Fallacies of peak oil", mimeo.

- Radetzki, Marian (2006b). "The anatomy of three commodity booms", Lulea University of Technology, Lulea, mimeo.
- Ross, Michael (2001). "Extractive Sectors and the Poor" (Boston: An Oxfam America Report).
- Stevens, Paul (2003). "Resource impact – curse or blessing? A literature survey", IPIECA, University of Dundee, Dundee, mimeo.
- UNCTAD (1999 – WIR99). *World Investment Report 1999: Foreign Direct Investment and the Challenge for Development* (New York and Geneva: United Nations).
- UNCTAD (2005 – WIR05). *World Investment Report 2005: Transnational Corporations and the Internationalization of R&D* (New York and Geneva: United Nations).
- UNCTAD (2006 – WIR06). *World Investment Report 2006: FDI from developing and transition economies - Implications for development* (New York and Geneva: United Nations).
- UNCTAD (2000). *Investment Policy Review: Peru* (New York and Geneva: United Nations).
- UNCTAD (2002a). *Investment Policy Review: The United Republic of Tanzania* (New York and Geneva: United Nations).
- UNCTAD (2002b). *Investment Policy Review: The United Republic of Tanzania* (New York and Geneva: United Nations).
- UNCTAD (2003). *Investment Policy Review: Ghana* (New York and Geneva: United Nations).
- UNCTAD (2005a). *Economic Development in Africa: Rethinking the Role of Foreign Direct Investment* (New York and Geneva: United Nations).
- UNCTAD (forthcoming). *Investment Policy Review: Zambia* (New York and Geneva: United Nations).
- UNCTAD (2005b). *Handbook of Statistics 2005* (New York and Geneva: United Nations).
- UNCTAD (2006). *Trade and Development Report 2006* (New York and Geneva: United Nations).
- UNCTC (1983). *Transnational Corporations in World Development: Third Survey* (New York: United Nations).
- United Nations Research Institute for Social Development (UNRISD) (2005). "The 'pay your taxes' debate: Perspectives on corporate taxation and social responsibility in the Chilean mining industry", Technology, Business and Society Paper No. 16 (Geneva: UNRISD).
- World Bank (2005). *Extractive Industries and Sustainable Development: An Evaluation of World Bank Group Experience* (Washington, D.C.: World Bank).
- Yergin, Daniel (1991). *The Prize: The Epic Quest for Oil, Money, and the Power* (New York: Simon & Schuster).

**Annex table 1. Top 25 oil and gas companies, 2003**

Rank <sup>a</sup>	Company	Country	State ownership (in per cent)	Reserves		Output	
				Oil (Mil. bbl)	Gas (Bcf)	Oil (1,000 b/d)	Gas (MMcf/d)
1	Saudi Aramco	Saudi Arabia	100	259 400	230 600	9 045	6 900
2	ExxonMobil	United States	-	12 856	54 769	2 516	10 119
3	NIOC	Islamic Republic of Iran	100	125 800	940 900	3 852	7 640
4	PDV	Venezuela	100	77 800	148 000	2 500	4 000
5	BP	United Kingdom	-	10 081	48 024	2 121	8 613
6	Royal Dutch/Shell	United Kingdom and Netherlands	-	7 257	44 920	2 334	8 849
7	ChevronTexaco	United States	-	8 599	20 191	1 808	4 292
8	Total	France	-	7 323	22 267	1 661	4 786
9	Pemex	Mexico	100	16 041	14 850	3 723	3 244
10	PetroChina	China	90	10 997	41 147	2 120	2 407
11	ConocoPhillips	United States	-	5 171	16 060	1 241	3 522
12	KPC	Kuwait	100	99 000	55 500	2 170	1 054
13	Sonatrach	Algeria	100	10 533	148 960	1 729	7 807
14	Adnoc	UAE	100	55 210	133 348	1 200	4 242
15	Petrobras	Brazil	32	9 772	11 202	1 701	2 010
16	Pertamina	Indonesia	100	4 722	90 262	1 139	2 562
17	Eni	Italy	30	4 138	18 008	981	3 486
18	Repsol YPF	Spain	-	1 882	19 942	594	3 021
19	Lukoil	Russian Federation	8	15 977	24 473	1 622	364
20	NNPC	Nigeria	100	21 153	105 836	2 166	677
21	Petronas	Malaysia	100	7 136	98 960	731	4 172
22	INOC	Iraq	100	115 000	110 000	1 330	239
23	Libya NOC	Libyan Arab Jamahiriya	100	22 680	46 384	896	617
24	Gazprom	Russian Federation	73	13 561	988 400	221	52 244
25	EGPC	Egypt	100	1 800	31 064	375	1 611

Source: Energy Intelligence Group.

<sup>a</sup> The ranking is based on oil reserves and production, natural gas reserves and output, refinery capacity and product sales volumes.

**Annex table 2. Top 25 mining companies, 2004<sup>a</sup>**

<b>Rank world</b>	<b>Company name</b>	<b>Country</b>	<b>State ownership (in per cent)</b>	<b>Share of world mine production (in per cent)</b>	<b>Cumulative world mine production (in per cent)</b>
1	Anglo American plc	United Kingdom		5.21	5.21
2	Cia Vale do Rio Doce	Brazil	4.7	4.47	9.68
3	BHP Billiton Group	Australia		4.26	13.94
4	Rio Tinto plc	United Kingdom		3.95	17.89
5	Norilsk Nickel (MMC) JSC	Russian Fed.		2.93	20.82
6	Corporacion Nacional del Cobre de Chile (CODELCO)	Chile	100	2.52	23.34
7	Newmont Mining Corp	United States		1.67	25.01
8	Phelps Dodge Corp	United States		1.55	26.56
9	Anglogold Ashanti Ltd	South Africa	3.4	1.33	27.89
10	Grupo Mexico SA de CV	Mexico		1.32	29.21
11	Noranda Inc	Canada		1.24	30.45
12	Inco Ltd	Canada		1.23	31.68
13	Impala Platinum Holdings Ltd	South Africa		1.17	32.85
14	Barrick Gold Corp	Canada		1.08	33.93
15	Placer Dome Inc	Canada		1.04	34.97
16	Gold Fields Ltd	South Africa		0.91	35.88
17	WMC Resources Ltd	Australia		0.85	36.73
18	Freeport McMoran Copper & Gold Inc	United States		0.84	37.57
19	Harmony Gold Mining Co Ltd	South Africa		0.84	38.41
20	Xstrata plc	Switzerland		0.83	39.24
21	Lonmin plc	United Kingdom		0.82	40.06
22	Alrosa Co Ltd	Russian Fed.	77	0.81	40.87
23	KGHM Polska Miedz SA	Poland	44.3	0.76	41.63
24	Teck Cominco Ltd	Canada		0.68	42.31
25	Antofagasta Ltd	United Kingdom		0.62	42.93

Source: Raw Materials Data from Raw Materials Group, Stockholm, 2006.

<sup>a</sup> Ranked by approximate share of total value of world mine production of non-fuel minerals.

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