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Benefiting the Resource Rich: How Can International Development Policy Help Tame the Resource Curse?

Gøril Havro and Javier Santiso
January 2011

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Summary

While natural resource revenues ought to enable development, past experiences with the 'Paradox of Plenty' have shown that mineral and oil wealth often represents a curse rather than a blessing, inducing slower growth and higher levels of poverty. Many resource rich countries have high poverty rates and are among recipients of international aid. This paper looks at how lessons from successful resource rich countries can provide lessons for resource management. It also considers how international donors can act to facilitate such processes.

Norway and Chile are small open economies with high concentration in petroleum and copper, respectively. Yet the interaction between good institutions and fiscal policy, facilitated by the use of resource funds, has allowed both countries to largely escape the resource curse. Both countries have prioritised institutional development before engaging in heavy resource extraction. Maintaining a broad tax base, developing linkages to the rest of the economy, investing in human capital, and engaging in political consensus-building have helped retain incentives that limit rent-seeking.

Many countries facing high inflows of natural resource rents also have weak institutions. For these countries, strengthening institutions through developing the skill and efficiency of civil servants and committing to transparency and accountability can help change the pay-offs from engaging in corrupt practices or rent-seeking. Yet in many cases, large-scale institution building might be beyond these countries' immediate capacity, leaving an important opportunity for international donors. Aid, in the traditional sense, is not the solution to the resource curse. Once the natural resource revenues have started flowing, resource rich countries are not primarily in need of further financial inflows. Fostering long-term development here is rather a question of technical support and capacity building, support for international anti-corruption mechanisms and imposing transparency and legal requirements on national companies operating in these countries.

Keywords: resource curse; oil wealth; copper; natural resource management; revenue; governance; accountability; state capacity; international development policy; Chile; Norway.

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Contents

Figures

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Acronyms

DAC	Development Asistance Committee
EITI	Extractive Indistries Transparency Initiative
GDP	gross domestic product
LDCs	Least Developed Countries
NBIM	Norges Bank Investment Management
NGL	natural gas liquids
NGO	non-governmental organisation
NPD	Norwegian Petroleum Directorate
ODA	overseas development aid
OECD	Organisation for Economic Cooperation and Development

Introduction

It has become a generally recognised fact that being naturally endowed with the resources that other countries desire – such as oil, diamonds and copper – tends to make your people poorer, your leaders more corrupt and your country more likely to suffer from conflict. In general, the consequences of resource-led development tend to be negative, inducing slower growth, barriers to economic diversification, poor social welfare performance, and high levels of poverty, inequality and unemployment.

Since wealth is normally considered a benefit for those who own it, this irony – coined 'the paradox of plenty' by Terry Lynn Karl (1997) – has intrigued many. Yet while intellectually fascinating, the paradox has brought about some very real human consequences. Its array of negative effects have thwarted human development and kindled escalating social tensions in some of the world's most vulnerable countries. With the high commodity[1] prices seen in the early 2000s, more countries came to benefit from, and depend on, sizeable natural resource exports. Strong growth in China and India led to improvements in raw-material exporting countries' terms of trade and attracted complementary finance. The financial crisis and the ensuing fall in commodity prices illustrated the vulnerability of these countries' resource dependence. Yet the challenge is not primarily low commodity prices. In resource-rich countries, where institutions are often fragile, avoiding the so-called 'resource curse' and capitalising on the resource revenues is crucial to sustainable growth.

Finding ways in which the international community can help resource rich countries tackle this impasse can improve not only the development in these countries, but also contribute to international security and improve global access to scarce resources. For resource rich countries as well as for international donors, therefore, the management of natural resources is both an indisputable factor in the development effort, and a problem which cannot easily be solved by aid in the traditional sense.

Norway's and Chile's experiences show that natural resource wealth can be a blessing rather than a curse, if the economic and institutional parameters are well-adapted to the task. These two countries have not continued growing *despite* natural resources. Rather the contrary: to a large extent their resource management has *enabled* increased growth and development. The success of the two countries is explored in this paper. It was to a large extent made possible not only through well-adapted macro-economic policy choices but through reliable and knowledgeable civil servants implementing the policy, through a relatively well-developed business community and through investment in human capital.

These are important messages for other resource rich countries currently battling to manage their resource revenue, but it also sends a message to the international

1 The paper focuses on extractive industries, as these types of commodity exploitation have been most clearly affected by the natural resource curse (Isham *et al.* 2005).

development community. The institutional and educational preconditions are not present in many of the countries currently enjoying high inflows of natural resource rents. Investing in these areas is crucial to sustainable resource-led development. Directing international assistance towards them is one of the best options for helping people living in these countries out of poverty.

Countries which themselves have successful experiences with natural resource management can also make important contributions through technical aid, provided this involves real capacity building and human capital development. Today, the contribution to international development is often measured – and compared – through measures like the share of overseas development aid (ODA) in terms of GDP. However, in the case of resource rich countries, other means are more effective in contributing to these countries' growth. Support for development in resource rich countries cannot be measured by the amount of direct aid, but by technical support and capacity building, political support for institutional processes like the EITI and money laundering regulations, and demands put to extractive industry companies operating internationally. The international community can play a pivotal role in laying down the framework conditions for the transparency requirements in natural resource exploitation, an issue with repercussions for institutional quality in resource rich countries. Home countries for international corporations also have an important role in the regulations they impose on their companies and the extent to which their markets are open to other products from resource rich countries.

1 Background: the resource curse, what it means for development and where to look for knowledge

1.1 Literature review: Dutch disease, volatility and rent-seeking stall growth and development

The natural resource curse has fascinated a great number of researchers, and has generated substantial academic effort. Because of its impact on the economic development of the concerned countries, international organisations, NGOs and donor governments have also contributed to this literature.[2] Although there are studies arguing the contrary (Lederman and Malloney 2008; Brunnschweiler and Bulte 2008a; Brunnschweiler and Bulte 2008b; Stijns 2001;), the overwhelming majority have found that hard commodity wealth[3] has negative consequences for the country in question.

The effects of natural resource wealth have been found to affect a country's economy through a wide range of patterns. Notably, it appears that such wealth is lowering economic growth (Sachs and Warner 2001; Leite and Weidmann 1999; and Gylfason *et al.* 1999), exacerbating the risk for conflict and civil war (Ross 2003; Collier and Hoeffler 2005) and non-democratic tendencies (Tsui 2005; Ross 2001a), giving rise to heightened social divisions and weakened institutional capacity (Isham *et al.* 2005; Ahmad and Singh 2003), poverty (Ross 2001b), inequality (Engerman and Sokoloff 2002), corruption (Leite and Weidmann 1999; Vicente 2006), negative savings rates (World Bank 2006) and low levels of research and development (Maloney and Rodríguez-Clare 2005).

While econometric studies have identified these overall trends, there are large cross-country differences. In fact, several countries have done well despite a high proportion of oil or minerals in their exports. Norway and Chile, which are studied in detail in this paper, are such countries. Indonesia and Botswana are other emerging country examples. Furthermore, many of the current developed countries were once large exporters of natural resources, and some, including Norway, Australia and Canada still rely heavily on natural resource exports. This has led a large number of academics to conclude that it is not the natural resource phenomenon alone which has negative effects, but the combination of natural resource wealth and deficient institutions (Robinson *et al.* 2006; Mehlum *et al.* 2006; Collier and Goderis 2007a; Boschini *et al.* 2007; Kolstad 2007), fractionalisation (Hodler 2006) and open democratic systems without sufficient checks and balances (Collier and Hoeffler 2006). Botswana, which is abundantly endowed with natural resources but has experienced the most remarkable economic performance in Africa, is a good illustration of the importance of institutions (Iimi 2007).

2 For an overview of the literature, see Rosser (2006).
3 The same effect is not found for soft commodity exporters (Collier and Goderis 2007b).

Substantial efforts have also gone into describing the progression and mechanisms of the curse. The resource paradox has largely been explained by a mixture of economic, crowding-out effects, volatility effects and rent-seeking arguments. We can separate between two main frameworks, one emphasising the economic effects and the other focusing on political economy mechanisms, although the two are frequently overlapping.

The economic effects are primarily transmitted through Dutch disease and thus the crowding out of non-resource sectors (see Corden and Neary 1982). The high demand for commodities, especially when coupled with high commodity prices, leads to crowding out of the remaining sectors as the exchange rate appreciates, or as wages in the commodity sectors are bid up (Gylfason and Zoega 2001). Companies in non-resource sectors thus see costs increase relative to those of their competitors. This mechanism has been referred to when explaining the lack of development in commodity-rich countries such as Venezuela and Nigeria (Rodríguez and Sachs 1999).

As dependence on one or few commodity exports increases, the economy faces negative impacts from higher volatility (Sala-i-Martin and Subramanian 2003; van der Ploeg and Poelhekke 2007). Natural resource supply is relatively inelastic in the short run (Hausmann and Rigobon 2003). At the same time, resource extraction makes up a large part of GDP, and in most cases an even larger part of government revenues. Volatility in oil and mineral prices, therefore, can have large impacts on the overall economy and on government budgets, causing higher uncertainty and lower growth. In addition, oil and mineral extraction involves less learning-by-doing and fewer backward and forward linkages, due to often considerable technological differences between the industry requirements and the host country capacities (Hirschman 1958). In this sense there are fewer potential benefits to overall growth from spill-over effects and cluster developments. High incomes from the commodities sector also tend to go hand in hand with lower levels of overall investment, which again has a negative impact on growth. The low investment levels can be a consequence of higher economic volatility – which increases the uncertainty of returns – or lower saving rates due to higher inequality. In addition, investment will suffer from the detrimental effects that resource wealth can have on institutional quality.

Political economy outcomes are also affected by discoveries of natural resource wealth, as the incentives facing political and economic actors change. Primarily, resource wealth spurs higher economic rents, thus increasing the returns from rent-seeking: weak and unreliable institutions coupled with increased opportunity for acquiring spoils through lobbying activities or corruption decreases involvement in productive activities (Mehlum *et al.* 2006; Kolstad 2007). At the same time, increased opportunity to depend on patronage politics coupled with increased profitability (rents) of staying in office (Robinson *et al.* 2006), absence of fiscal controls (Karl 2007), and an accentuation of transparency and accountability problems, contribute to ineffective governance and higher corruption levels. Resource wealth might for instance trigger excessive external borrowing based on future resource income (Manzano and Rigobon 2001), serving the short-term popularity of the government, as well as its political muscle, while increasing long-term risks. In addition, the political economy dynamics of resource wealth tend to

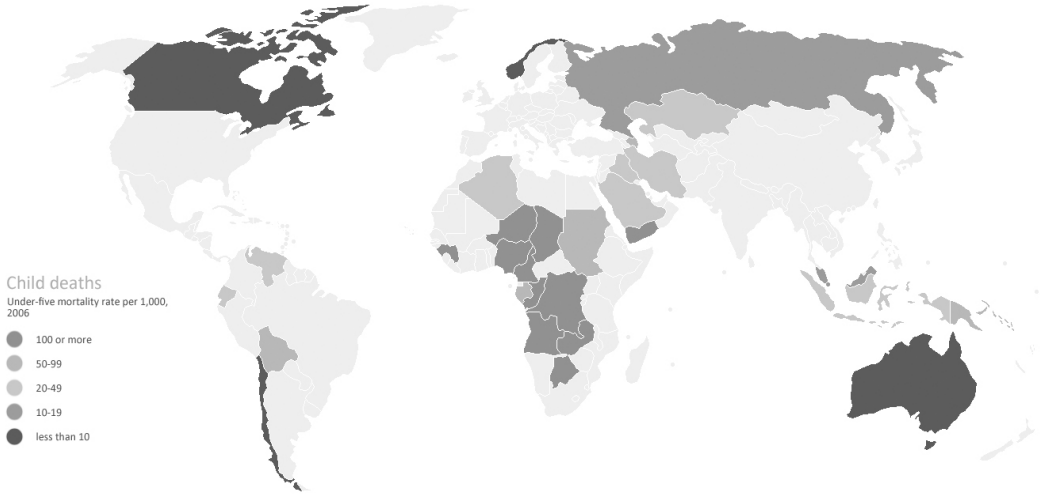
aggravate social tensions and conflict (Ross 2003; Collier and Hoeffler 2005). For example, Collier *et al.* (2003) find that the risk of a secessionist civil war increases by 8 per cent when the natural resource endowment is double the world average. Competition for rents can exacerbate already existing conflicts, and provide the parties with the financial means to purchase arms and building the military organisation.

As these different transmission channels interrelate, the chance of a resource curse increases. Collier and Goderis (2007a), for instance, have written an econometric paper where a large number of potential channels are taken into account. They have found that no one channel can explain the resource curse on its own. However, when high consumption and government expenditure is combined with trade restrictions, resource curse prevalence *is* accounted for, while good institutions allows a country to escape the curse.

1.2 Development challenges: some of the world's poorest people are at risk

The paradox of plenty has very real implications for the people affected by it. Many resource rich countries, and especially the least diversified among them, have high rates of poverty. Many of them are also among recipients of international aid. Figure 1.1 illustrates this problem. Many countries considered to be resource rich have high under-five mortality rates, a major sign of development challenges. This includes African countries primarily, but also commodity exporters in other regions.[4]

Figure 1.1 Under-five mortality per 1,000, selected resource rich countries[5]

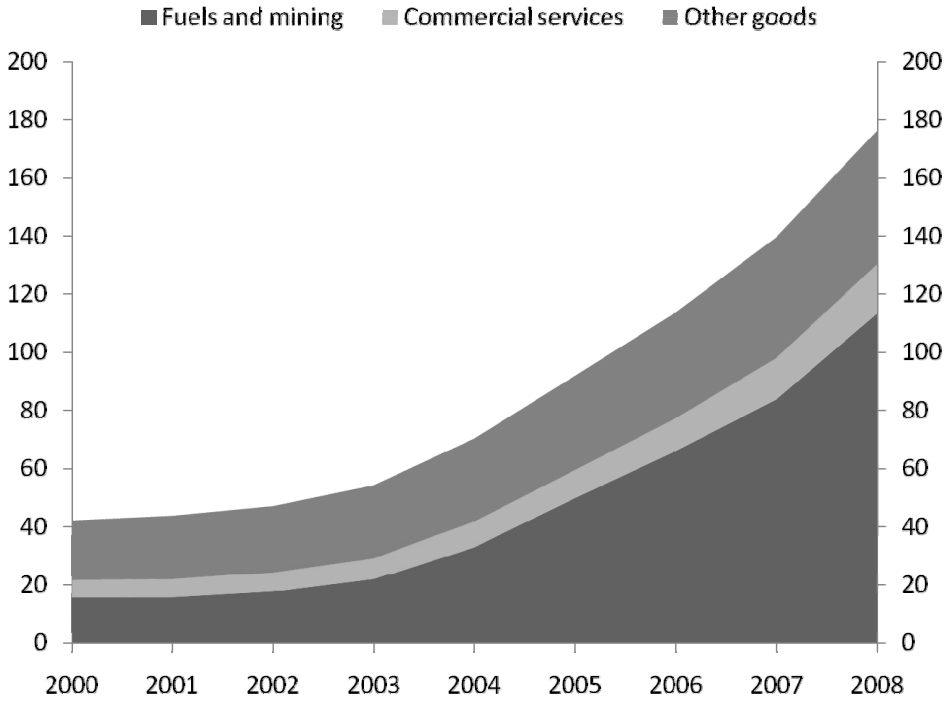


Source: UNDP (2008). Map courtesy of Wikimedia Commons. Edited by the authors.

4 For a comparison on Africa and Latin America see in particular Avendaño, Reisen, and Santiso (2008).
5 Author's selection from countries frequently mentioned in the natural resource literature.

High commodity prices put increasing pressure on some of the least developed economies, and increase the potential damage from the resource curse. The UN classifies as Least Developed Countries (LDCs) those that have the lowest per capita income, the lowest health, nutrition and education indicators, and the highest economic vulnerability (UN 2008). LDCs saw over 50 per cent of their exports consisting of fuel and mining products in 2006 compared to 7.5 per cent of total EU (EU-27) exports (WTO Statistics 2008). What is more, the proportion has been increasing since 2000, with other LDC export sectors weakening in importance (see Figure 1.2). With such a degree of specialisation, these countries have also seen the impact of decreasing commodity prices following from the slowdown in the world economy.

Figure 1.2 Least Developed Countries exports



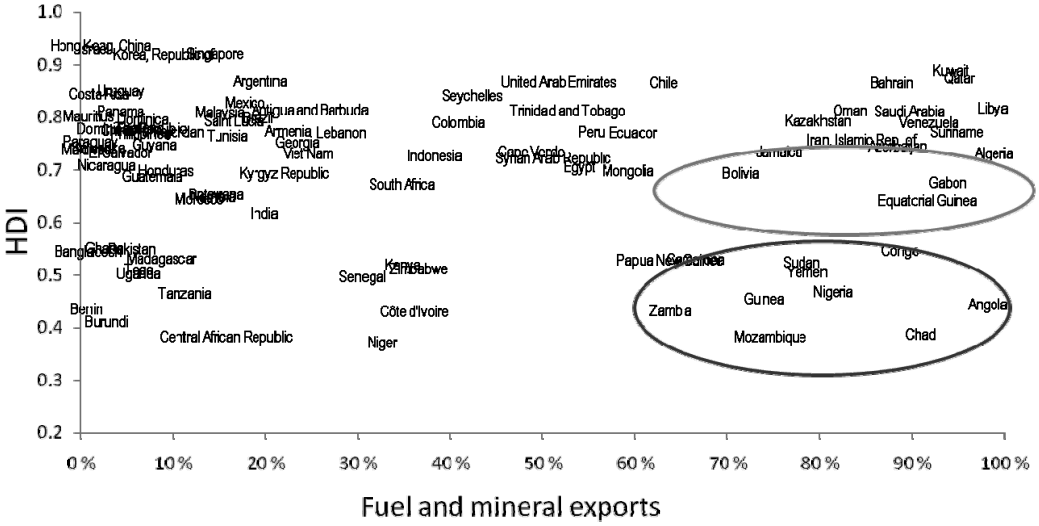
Source: WTO International Trade Statistics (2009).

High inflows can have positive short-term effects. It has been estimated, for example, that high commodity prices added nearly 2.5 percentage points to the growth of the typical African economy, both in 2005 and 2006 (Collier 2007). To get it in proportion, sub-Saharan African commodity exports were estimated to nearly 150 billion USD in 2004, according to Collier and Goderis (2007b). That is nearly 30 per cent of the region's GDP, while aid accounted to a meagre 5 per cent of GDP.

Yet, as past experiences from resource rich countries show, relying on resource revenues also make investments in institutions, human capital, infrastructure and good economic policy imperative. If oil-rich Africa lags behind other oil-exporters in the world, in terms of diversification, global market share or the overall investment climate, this poor performance can be largely attributed to weak infrastructure and institutional quality (Qureshi 2008).

A particular group of countries with poor development indicators and large resource reserves risk foregoing opportunities for growth unless natural resources are managed in a way that promotes development. As Figure 1.3 shows, there is a group of countries with high mineral and fuel exports and very low scores for human development. In addition, even for countries that are already at a higher income level, a high degree of specialisation and resource dependence can endanger the development process. Although the situation of these countries is quite different from the very poor, they still face a substantial economic challenge in resisting pressures for further specialisation. They risk lower longer-term growth and a deterioration of their institutions as resource rents become more attractive.

Figure 1.3 Human Development Index (2005) and fuel and mineral exports (% of total exports, 2006)

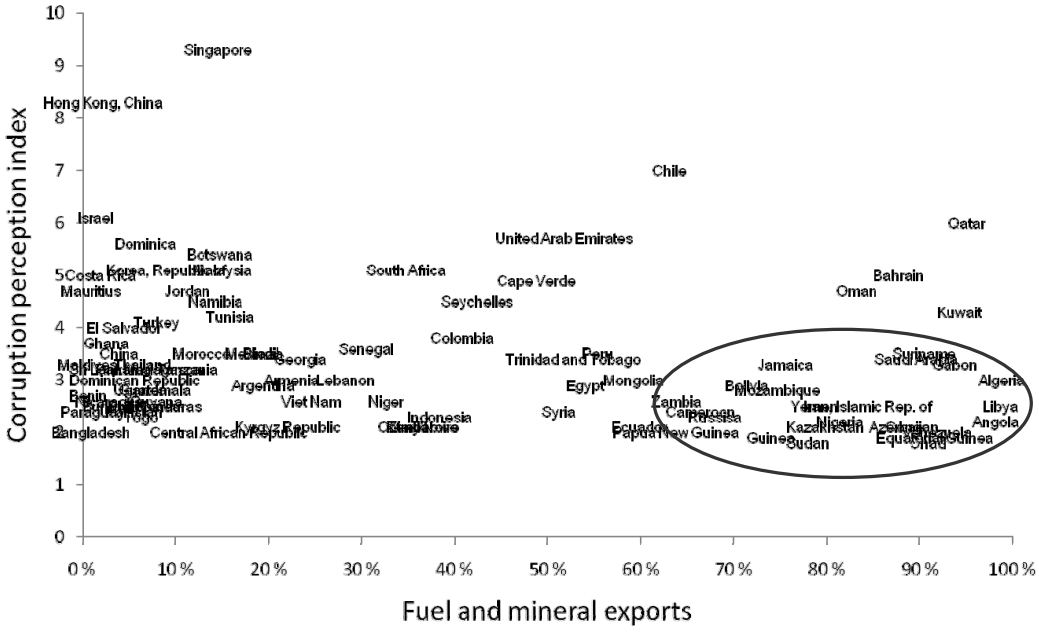


Source: WTO Statistics, UNDP (2008) and OECD/AfDB (2008).[6]

To add to the development difficulties, the corruption perception in many of the fuel and mineral exporting countries is also very high (Figure 1.4). This is an indication that a number of resource rich countries are facing a substantial challenge in dealing with their resource wealth.

6 Fuel and mineral exports represent the latest available figures from the WTO Database (2008). However, the figures from Chad, Congo, Guinea and Equatorial Guinea are approximations based on the African Economic Outlook's (OECD/AfDB) figures for African countries' three most important exports. The measure above does not include diamond exports, another commodity highly connected with the resource curse.

Figure 1.4 Corruption perception index (2007) and fuel and mineral exports (% of total exports, 2006)



Source: WTO Statistics, Transparency International (2008) and OECD/AfDB (2008).[7]

While fuel and mineral export shares have been increasing, so has the resource rich countries' specialisation in these sectors. This leaves countries more vulnerable to shocks and more dependent on the resources they are exporting. Figures 1.5 and 1.6 show the Herfindahl-Hirschmann[8] specialisation index for selected African and Latin American countries respectively (OECD Development Centre 2007, 2008). A high number shows that product export concentration is high. Not only has export concentration been growing in general. It has increased particularly in those countries that already had the highest concentration, and that are highly dependent on mineral and fuel exports.[9]

Among the most concentrated African countries, for instance, Angola, Equatorial Guinea, Chad, Nigeria, Sudan, Congo, Libya, Algeria, Gabon and Cameroon all had a high concentration in petroleum exports, while Zambia is a main copper exporter and Mozambique a main aluminium exporter (OECD/AfDB 2008). Botswana, the one highly specialised country that has seen a decrease in export concentration, is well-known for the successful management of its diamond

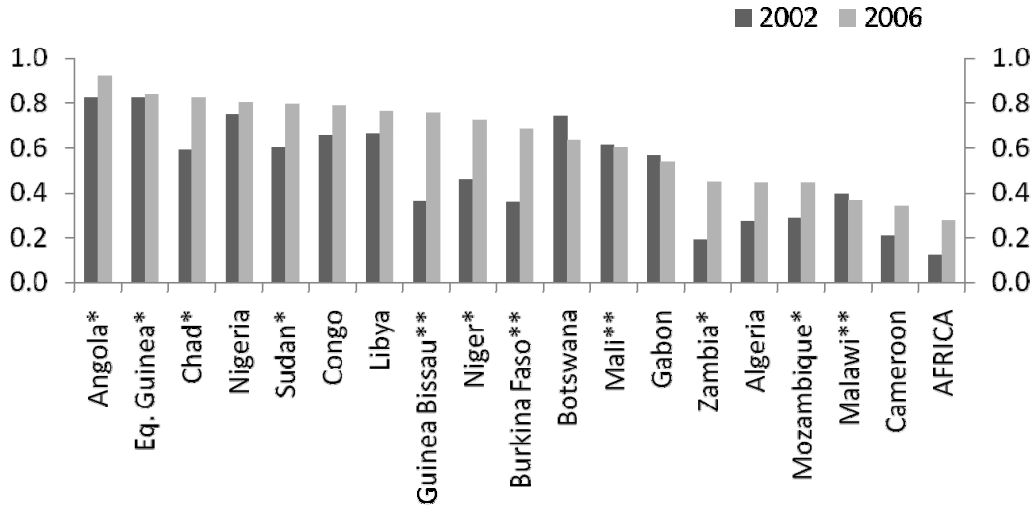
7 See note 4.

8 The Herfindahl-Hirschman concentration index is constructed to measure the sum of market shares in total exports: 0 implies an atomistic market, while high values imply specialisation (OECD Development Centre 2007).

9 Of the countries that have higher specialisation than the African average, only Guinea Bissau, Burkina Faso, Mali and Malawi are specialised in a product not pertaining to an extractive industry (OECD/AfDB 2008).

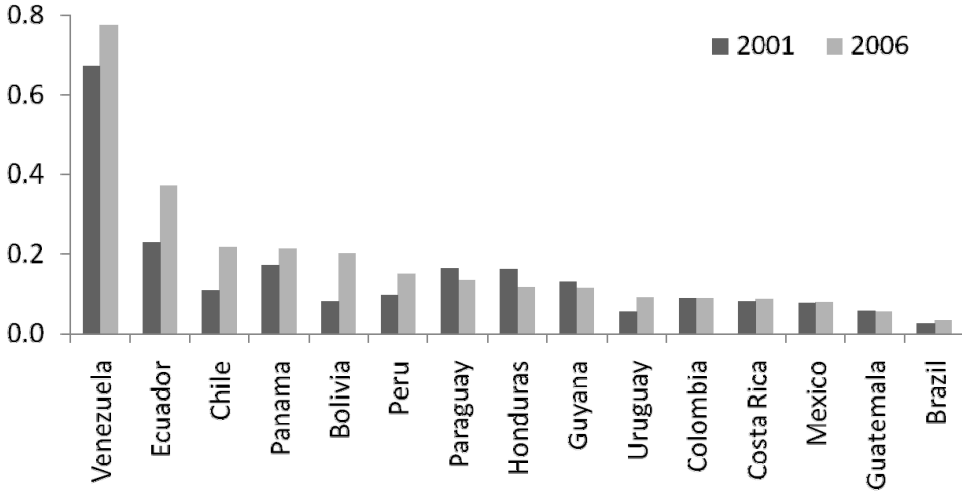
resources, and is an often-cited example of a country that is avoiding the resource curse. As can be seen from Figure 1.5, many of these resource rich countries are classified as LDCs. They also face substantial governance problems. Of the countries in Figure 1.5, only three rank above the first 100 countries (out of 179) in Transparency International's Corruption Perception Index: Botswana (38), Gabon (84) and Algeria (99) (OECD/AfDB 2008). The fall in commodity prices following the financial crisis has hit some resource rich countries hard. The Democratic Republic of Congo, for instance, had to seek assistance from the IMF following the decline in commodity prices (te Velde 2009).

Figure 1.5 Export concentration by product, selected African countries
Herfindahl-Hirschmann index



Source: OECD Development Centre Statistics (2008). Countries market with an asterisk (*) are classified as LDCs by the UN (2008). Countries marked ** do not specialise in fuels and minerals.

Figure 1.6 Export concentration by product, selected Latin American countries
Herfindahl-Hirschmann index



Source: OECD Development Centre (2008).

Latin America too, has seen export concentration increase (Figure 1.6), especially in countries with mining and fuel product exports, including Venezuela, Ecuador, Chile, Bolivia and Peru). These countries are doing far better than resource rich Africa – both in terms of their level of specialisation and in terms of per capita income and human development. Still, the increased specialisation in natural resources poses some very real economic challenges.

In sum, a number of resource rich countries have a major task at hand to improve human development. Increased inflows represent an opportunity for growth and development. Yet the paradox of plenty has shown that they might just as well pose increased difficulties, especially as many of these same countries do not have the institutional strength and capacity needed to avoid the curse. At the same time, many of the resource rich countries are specialised in one or a few commodities. This makes their economies particularly vulnerable to changes in the global market, and can represent very real future problems.

1.3 Norway and Chile have both benefited from natural resources

While findings from large empirical studies can point to some general conclusions about the natural resource curse, case studies of successful countries add an important facet in describing the exact policy mix that has supported diversified, yet resource-led, growth. In this way, they can inform future policy choices for resource-rich countries.

The experiences of Chile and Norway are interesting examples. They are both small open economies with heavy reliance on natural resources. These two economic paragons are probably the two most outstanding exceptions to the paradox of plenty, along with other OECD countries like Canada or Australia, also rich in oil and minerals (see Boulhol *et al*. 2008). In addition, their experiences complement each other due to their very different historical, geographical, mineral, social, and political setting. Chile has grown consistently, and at a faster pace than its neighbours, while at the same time benefiting from natural resource exports and developing a diversified economy. Norway, although currently among the world's wealthiest countries, was relatively poor at the onset of its oil experience. Its policy choices helped develop linkages from the oil industry to the rest of the economy, and contributed to Norway overtaking its neighbours in terms of economic output. Norway's case is also interesting due to its donor contributions to other resource rich countries.

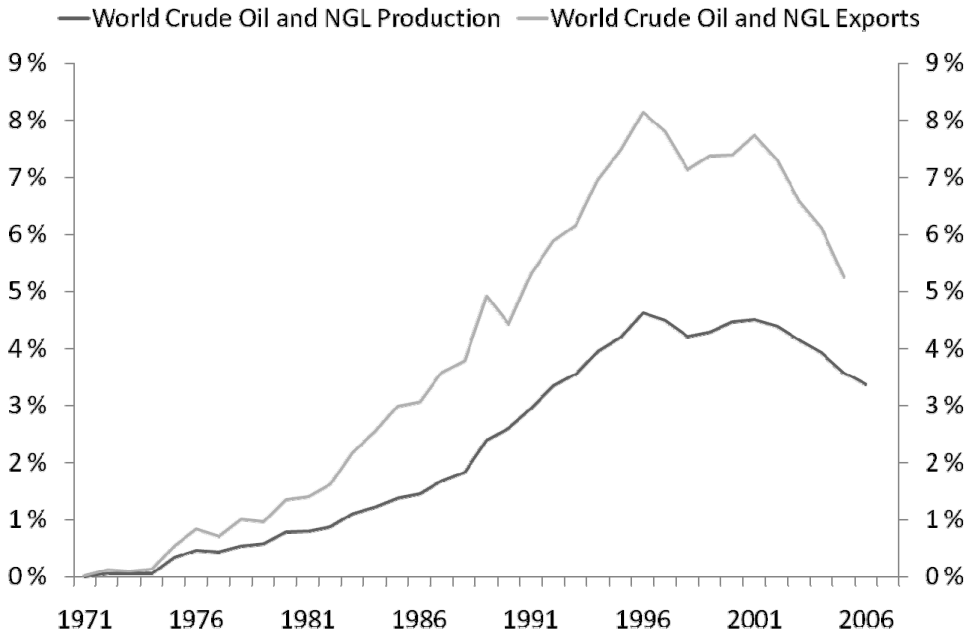
1.3.1 How to benefit from plenty: Norway

As one of the largest petroleum exporters in the world, Norway's economy is clearly marked by its natural resource wealth. After the first major oil discovery in 1968 (Al-Kasim 2006), production and exports rose rapidly, making Norway one of the world's most important oil exporters (Figure 1.7). The petroleum sector represents 26 per cent of GDP, 23 per cent of investment, 34 per cent of state revenue and 50 per cent of total exports (Norwegian Petroleum Directorate 2009). The crude oil production has already peaked, however, and natural gas liquids production (NGL) is expected to decrease, while gas production is expected to

rise further and remain high, at least until 2030 (Ministry of Finance, Norway 2007). The country is frequently cited as an exception to the resource curse (see for instance Gylfason 2001; Stiglitz 2007).

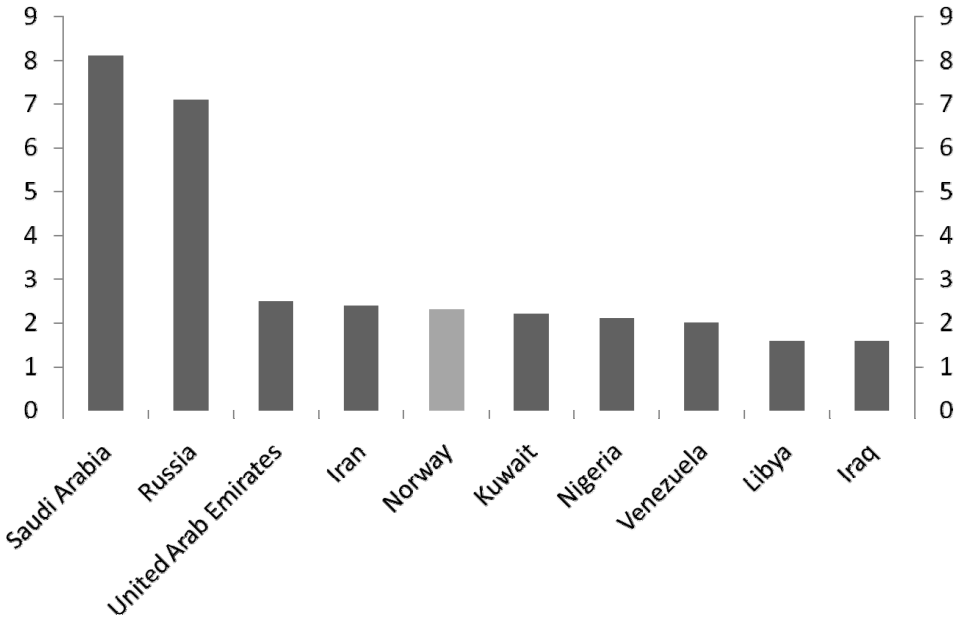
Figure 1.7

(a) Norway's shares of world exports and production



Measured in metric tons
Source: International Energy Agency statistics (2008)

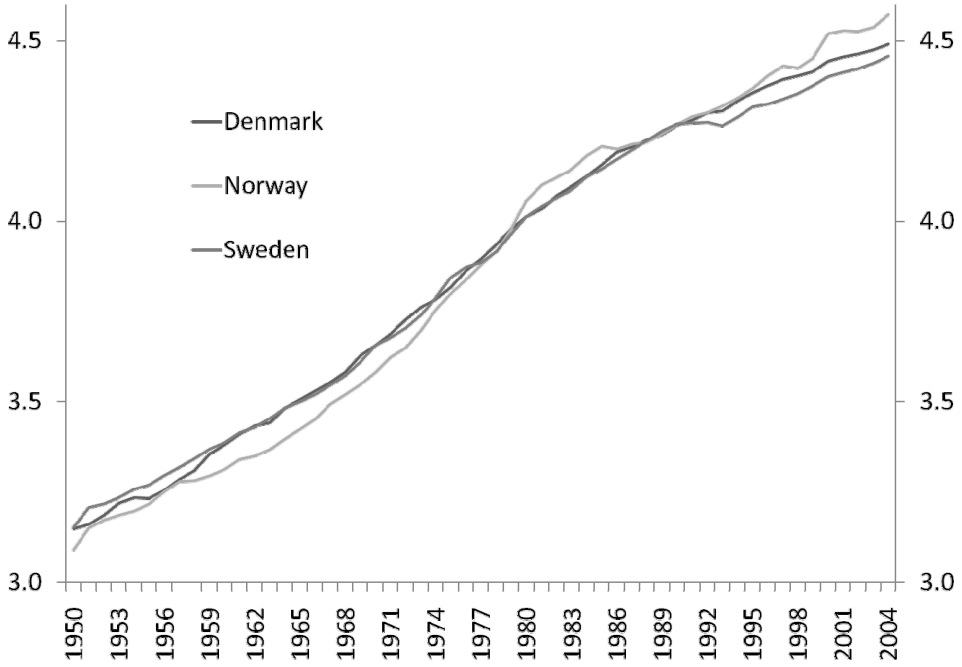
(b) World's largest oil exporters, by millions of barrels per day



Source: Norwegian Petroleum Directorate (2009)

The Norwegian story is not an obvious example for developing economies, simply because the Norwegian economy in the late 1960s – with its relatively high level of education, democratic consolidation and secure institutions – was far from that of a resource-rich LDC today. However, Norway was not a rich country by OECD standards when oil was discovered. Over the past three decades, its GDP per capita has increased from 90 per cent of the OECD average, to 150 per cent (OECD 2007a). While its experience is therefore different from that of many other resource rich countries, it has seen an astonishing performance, from which some cautious lessons can be drawn, notably the importance of sequencing, capacity building and diversification. In fact, Norway more than matched the growth rates of its neighbours in the 25 years after having found oil, and overtook the more developed Scandinavian economies, Denmark and Sweden, in terms of GDP per capita (Figure 1.8). In spite of this, and in spite of booming oil prices, the Norwegian output gap has not differed markedly from that of the its two neighbours (Figure 1.9).

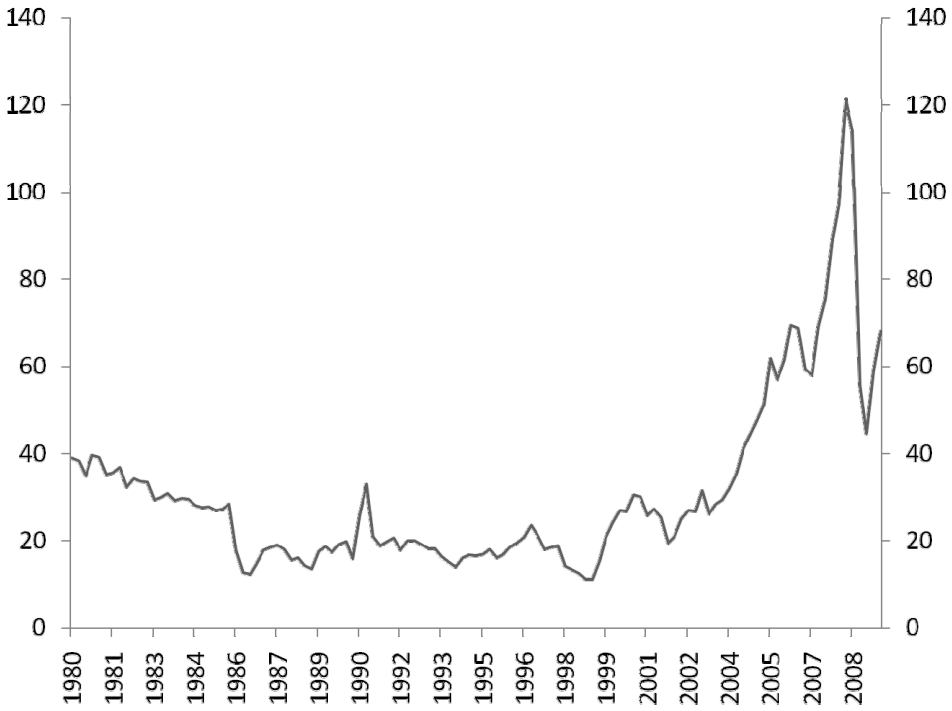
Figure 1.8 GDP per capita, Scandinavian countries. Log scale



Source: Penn World Tables (2008).

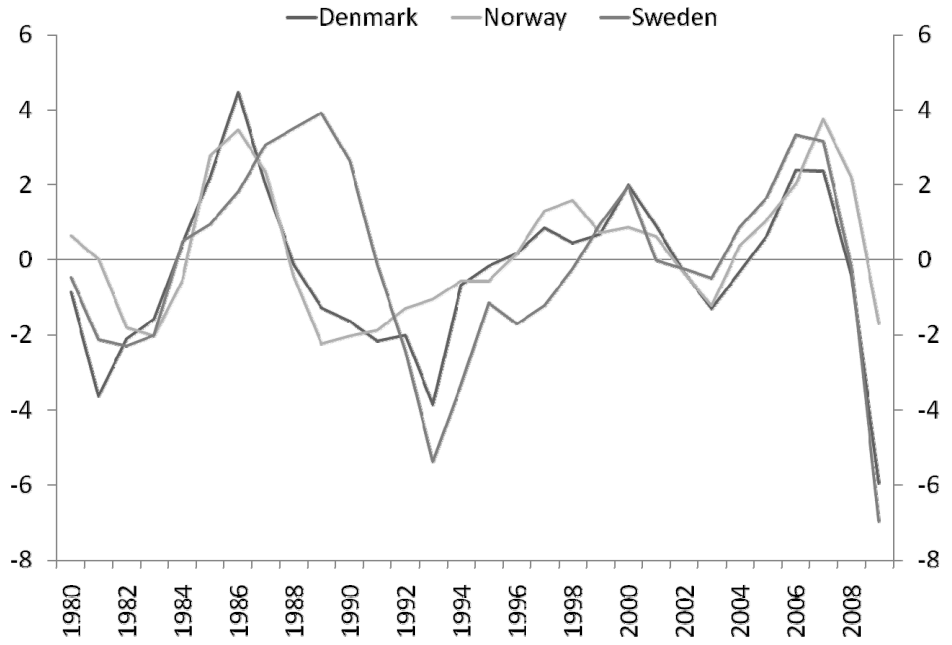
Figure 1.9

(a) Oil price. Brent Blend USD per barrel



Source: Norges Bank.

(b) Output gap in Scandinavian countries

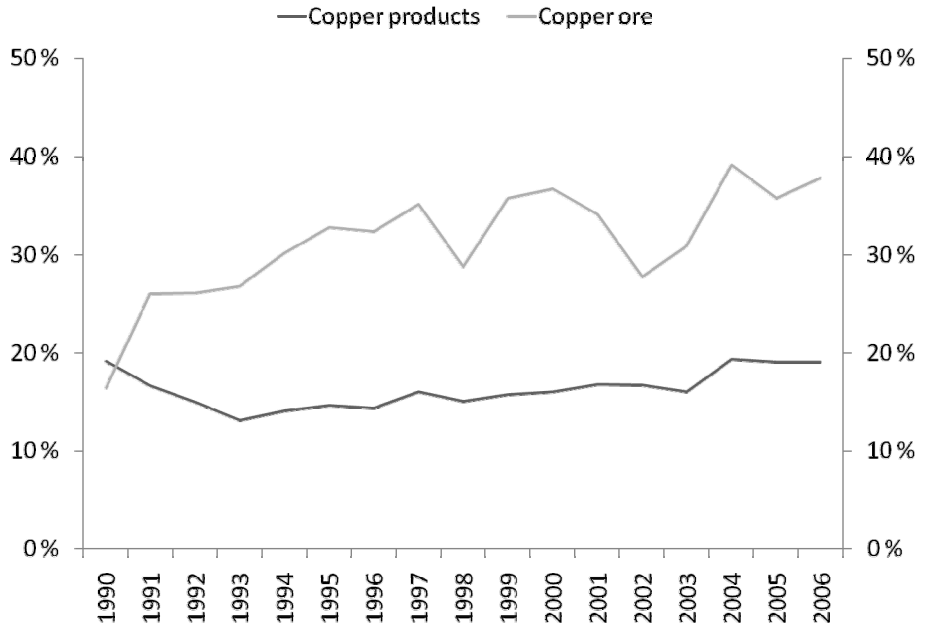


Source: OECD Statistics (2009).

1.3.2 How to benefit from plenty: Chile

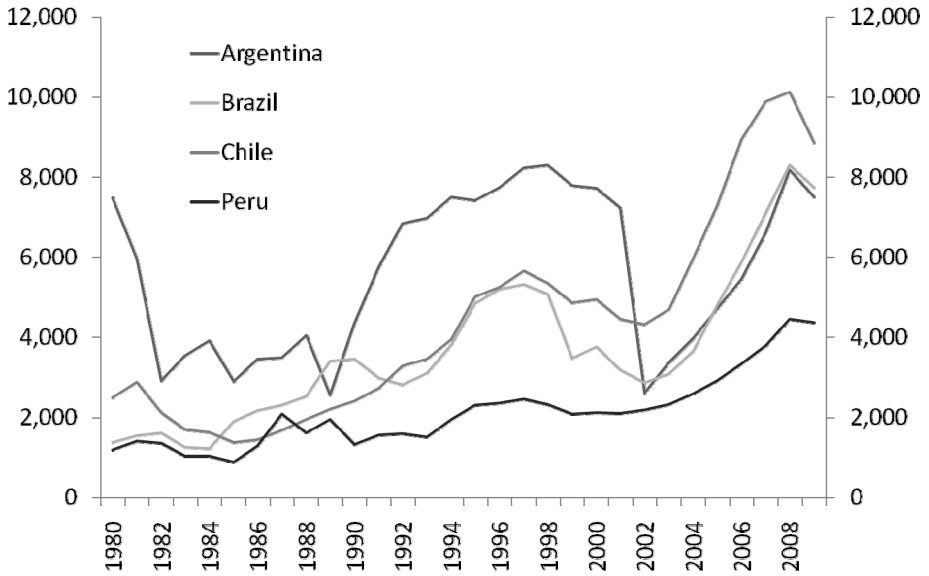
Chile is the world's prime producer and exporter of copper. In spite of being a resource rich country, and in spite of increasing its share of world copper production (Figure 1.10), Chile is among the top global achievers, in terms of economic results, since the early 80s, and has outperformed its neighbours. Especially in the period 1986–1998, Chile saw growth rates averaging 7.3 per cent, similar to those of the Asian tigers. Chile's growth and development performance is repeatedly cited as a Latin American success story (OECD 2007b; Santiso 2006; Corbo *et al.* 2005), and frequently put forward as an example of a country avoiding the resource curse (Karl 1997; Robinson *et al.* 2002; van der Ploeg 2008).

Figure 1.10 Chile's share of world copper exports



Measured in metric tons
Source: International Energy Agency statistics (2008), Penn World Tables and IMF World Economic Outlook (2008), World Bank (2008), net exports copper and copper ore. SITC 3.

Figure 1.11 GDP per capita (USD), Chile and neighbouring countries



Source: OECD Statistics (2009).

While profiting from its copper wealth, Chile has managed to diversify its economy, and develop innovative industries. In 1973, mining made up almost 90 per cent of Chilean exports, while 30 years later that share was halved (OECD Development Centre 2007). Copper-related government revenues constituted an average of 10 per cent between 1994 and 2006, a figure that has fluctuated between 5 per cent and 17 per cent (Ministry of Finance, Chile, Statistics, 2008a; Arellano 2005). In 2005 15.5 per cent of government revenues came from copper (OECD 2007b). Chile's successful diversification can be seen by the growth of other important export industries, notably wine and fruit production and development, and salmon farming, where Chile is the world's second largest exporter. In addition, Chile also produces and exports other minerals, including gold and molybdenum.

2 The importance of institutions

Norway and Chile both have a civil service reputable for its integrity and competence, reliable private sector institutions such as property rights, an independent judiciary, and independent institutions acting as checks and balances. Both have a strong Ministry of Finance, relative to the mining and petroleum ministries, and in Chile's case, relative to parliamentary minorities. These institutional strengths have helped these countries implement crucial fiscal and industry-specific policies. Both countries were 'lucky' in that institutions were already well developed before they experienced the natural resource boom. However, they have also taken important steps in entrenching and improving their institutional set-up.

Both Chile and Norway's institutions have long been well-reputed. The quality of the civil service has been seen as one of Chile's strong points. The Chilean bureaucracy's reputation as low-corruption developed in the twentieth century, and was thus already present before the high growth period. It was also marked, nonetheless, by strong centralisation, relative rigidity, and no civil society participation. Altogether, however, the long tradition of solid public administration, emphasis on the gradual process of accumulating experience and skills, and a relative degree of efficiency and transparency appears to have been central in shaping the Chilean economic reality. Reforms in 1994 and 2000 have aimed to strengthen efficiency and transparency, and to make the civil service more flexible and professional. Norway too was well endowned in terms of the quality of its institutions when oil was discovered. Several such features of the Norwegian economy have been underlined in the literature;[10] its mature democracy and consensus oriented policies, lack of corruption, firmly established institutions, with independent civil servants and depoliticised resource management, recruitment by merit and egalitarian societal structures.

Besides the institutions themselves, a favourable policymaking climate has helped implement policies important to natural resource management. While Norway has seen frequent changes in government, the policies towards the petroleum industry and its development have been relatively consensual. In addition, the centralised wage-setting system, and the economic responsibility taken by trade unions have led to an overall focus on economic outcomes, which has helped shield the economy from excessive pressures. Røed Larsen (2004) has called this part of Norway's social contract: the workforce accepts a certain moderation, knowing that it will result in higher longer-term growth. In addition, the country's relative economic equity has been helpful in promoting consensual decision-making.

The political stability in Chile, following the introduction of democracy, has been supported by the cooperative behaviour of the country's political parties. It has led to a political economy style labelled as 'possibilist', made of incremental reforms, continuism and piecemeal economic engineering avoiding the big u-turns that

10 See Boschini *et al.* (2007) for a review.

characterised the previous decades of high politicisation of both the design and implementation of the reforms (Meller 2008; Walker 2008; Santiso 2006). Most of Chile's social indicators have improved considerably, among them life expectancy, infant mortality and literacy, leaving Chile as one of Latin America's top performers (Corbo *et al.* 2005). Chile also has one of the highest levels of fiscal legitimacy in Latin America, as most Chileans believe their tax money will be well spent (OECD Development Centre 2007).

The Chilean case is particularly interesting because the foundations for successful economic policies and copper management were laid under a non-elected military regime, suppressing many democratic freedoms. The switch to democracy did not engender the use of rent distribution as political capital or election baits, but a sustained budget surplus of 1 per cent together with continued economic reforms. Both these factors are likely related to the long-term reliability and integrity of the Chilean civil service, and the general strength of institutions. It also illustrates that an unelected and undemocratic government *can* be capable of implementing credible economic policies, although the return of foreign investment and high growth rates was seen after the first stones were laid towards the return of democracy.

In Norway, a main priority has consisted in strengthening the institutional capacity of government agencies. This promotes better policy decisions, both in macroeconomic and sector-specific policy. It also allows for more informed negotiations with the petroleum industry and thus the potential to arrive at mutually beneficial solutions and to offer a good investment environment. Norway's institutional build-up and experience were helped by the already considerable capacity present within the country. This meant that it was easier to separate the legislatory, regulatory and commercial parts of the state's tasks, making administration more accountable. At the same time there was substantial focus on improving human capital within the civil service.

Institutional capacity has been reinforced by the rules and regulations governing different institutions and the checks and balances in place. While the Ministry of Finance bears the responsibility for the government revenue system, the Ministry of Petroleum and Energy is responsible for the petroleum sector as a whole, including StatoilHydro. The Norwegian Petroleum Directorate is one of its subordinate agencies, and has advisory and regulatory functions. Parliament is responsible for the budget and for the overall framework. In addition, the operational management and investment decisions of the Pension Fund is delegated to the Central Bank and Norges Bank Investment Management (NBIM), while the Ministry sets the Fund's benchmark portfolio with risk limits (Ministry of Finance, Norway 2008). Other institutional arrangements have further facilitated the implementation of a relatively tight fiscal policy. The Ministry of Finance is in a position of strength in relation to the Ministry for Petroleum and Energy, thus ensuring that priority is given to the fiscal position.

Also the Chilean system has included checks and balances, and has to some extent insulated the civil service from political pressures. The strength of Chile's institutions can be seen in the independence of some important institutions, and the checks and balances they provide. On the one hand Chile has a strong presidency. This has allowed for stronger control of the budget, as the Minister of Finance

together with the budget director, on behalf of the president, are in charge of setting spending limits and leading budget preparatory negotiations. On the other hand, the independence and political insulation of the Judiciary, the Constitutional Tribunal and the Comptroller General, are seen as important checks on the presidential power. The Ministry of Mining and Energy is responsible for the copper mining sector, including the support of initiatives to stimulate growth. The Chilean Copper Commission (Cochilco), on the other hand, is responsible for regulation and legal compliance, and advices state companies on development strategies. The National Service for Geology and Mining (Sernaceomin) advices on technical, geological and other mining-related matters, while CORFO, mentioned above, aims to promote economic development also in the mining sector.

This separation of power, particularly between the regulatory, value creation and commercial interests of the government, has been central to avoid the prevalence of vested interests and to maintain checks and balances. It is worth pointing out, however, that operating with such a number of institutions has been possible largely due to the high level of human capital available to the public services. It has been argued that dividing responsibilities between different agencies only works as long as there is a certain capacity within the state bureaucracy (Thurber *et al.* 2010). Having several organisations ensures checks and balances, but also competing research and ideology, thus arriving at the best approaches. However, countries with low capacity at the outset might be spreading their resources too thinly by attempting too sophisticated a distinction between different institutions and their tasks. Thurber *et al*. cite Angola as a good example of a country that has united the different government roles within the state-owned company Sonangol, while achieving steady growth in production and reserves. What the authors don't look at, however, is the extent to which Angola has developed *apart from* harnessing rents. The government has been able to build up technical know-how, yet the governance problems to a large extent remain.[11] While there are good reasons not to spread capacity too thinly in countries with poorly developed institutions, therefore, a certain separation of power is crucial to ensure good governance. Most particularly, it is important to insulate the civil service administering the resource policy from the political groups receiving the potential rents, to ensure independent institutional oversight and to focus on anti-corruption efforts. It's all well and good to harness institutional capacity within a single institution – but this can have clear negative effects on opportunities for and incentives to rent-seeking, and leaves more to other structures promoting good governance.

The quality of their institutions, the relative strength of finance ministries, implementation of fiscal rules, and – lately – the renaming of the resource funds as "pension funds" have all helped diffusing political pressures in Norway and Chile. While overall spending was prudent, that is not to say that lobby groups have been unable to profit from rent-seeking altogether. Norwegian spending on regional interests and industrial and farming subsidies and the accommodation of

11 A report published in February 2010 by the US Senate's Permanent Subcomittee on Investigations included information on continued corruption in Angola. At the same time, the country is still near the bottom of Transparency International's corruption index, falling on the index from 2008 to 2009.

Chilean farming lobbies can all be classified as distribution of rents to strong pressure groups. Nonetheless, these countries have both shown remarkable resilience in resisting increased spending and in entrenching policy decisions.

Relatively liberal trade policies may also have helped the two countries. The fact of being small open economies might have increased these economies' vulnerability in the face of natural resource wealth, but the existence of non-resource export sectors, and their lobbying against appreciated exchange rates and high inflation will also have helped the political economy incentives in these two countries. Thus, while export diversification is an advantage in itself, it can also be helpful in avoiding increased political pressure for surges in spending.

While institutions can be both hard to define and difficult to build, the experiences of these two countries show their importance also in the implementation of other important policies, a conclusion largely mirrored in the literature. Institutions form the basis in successful implementation of fiscal rules, fund management, industrial policy and diversification of the economy.

3 Policies for resource-led growth

3.1 Macroeconomic management: fiscal stability and prudence in Norway and Chile

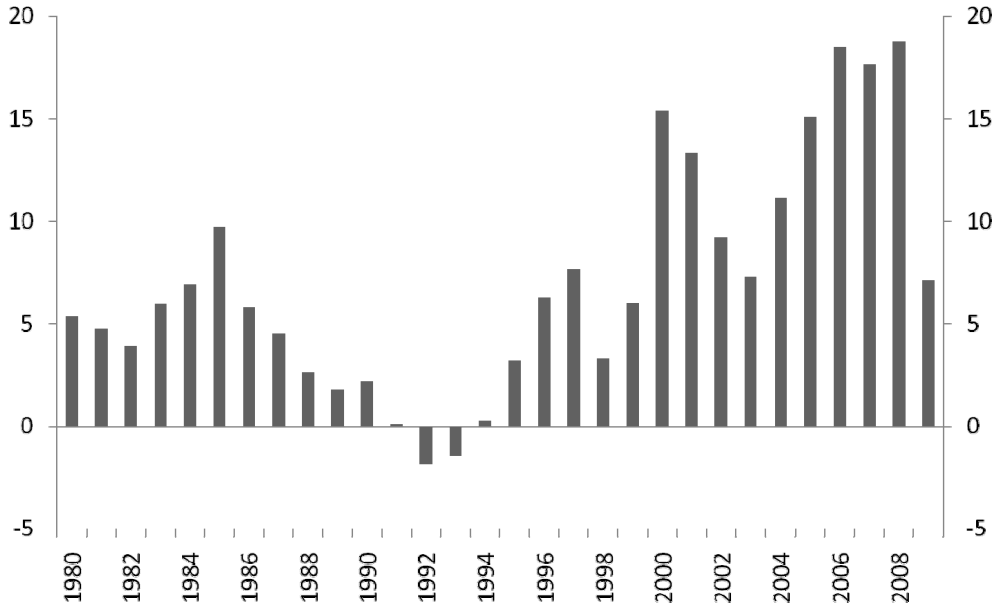
Norway's and Chile's experiences alike demonstrate the worth of fiscal prudence, supported by overall macroeconomic stability. Governments in both countries have refrained from spending indiscriminately to satisfy political pressures and achieve potential popularity gains, and have been largely able to run balanced budgets (see Figures 3.1 and 3.2). With debt-payments in the first years, and later establishment of resource funds, the fiscal prudence appears to have helped prevent inflation and Dutch disease effects related to oil and copper booms. If all the foreign currency earned as resource revenue were converted to local currency and spent, supply side limitations would have implied that increased aggregate demand could have fostered price increases and consecutive interest rate hikes, given the inflation targeting regimes, thus leaving the non-resource sectors in an anti-competitive position.

In Norway's case, increased revenues were first used to pay down government debt but as demographic concerns developed, a petroleum fund was set up in 1990, to cater for future generations' pensions and to limit excessive petroleum revenues flowing into the budget. The policy has been based on the so-called 'action rule', where petroleum earnings are being phased into the economy based on expected real return on the *Pension Fund – Global* (formerly Petroleum Fund), which was estimated at 4 per cent. The fund was valued at almost 2800 billion NOK at the end of 2010 Q2, and is invested internationally in financial instruments in 46 developed and emerging markets. While the Ministry is responsible for the fund, its direct management has been delegated to the Central Bank.

Limiting fiscal spending, and especially pro-cyclical spending, has been a priority for both countries. Admittedly, the 1970s saw large expenditure into human capital

and infrastructure in Norway, and the government increased its overall outlays by 5–7 percentage points of GDP between 1970–1985. Denmark and Sweden, however, increased spending by 20 percentage points over the same time. Even in the deep recession which hit the Nordic countries hard in the early 1990s, Norway only went into fiscal deficit twice, in 1992 and 1993 (Figure 3.1), when the economy faced a banking crisis and a negative output gap. The non-oil structural deficit remained relatively stable at around 4–5 per cent of *mainland* GDP, though in the first years of high petroleum revenue, it was higher, around 5–6 per cent (OECD 2007a). Fiscal prudence has also allowed increased stimulous in response to the global financial crisis, though the government will run a surplus also in 2009 and 2010.

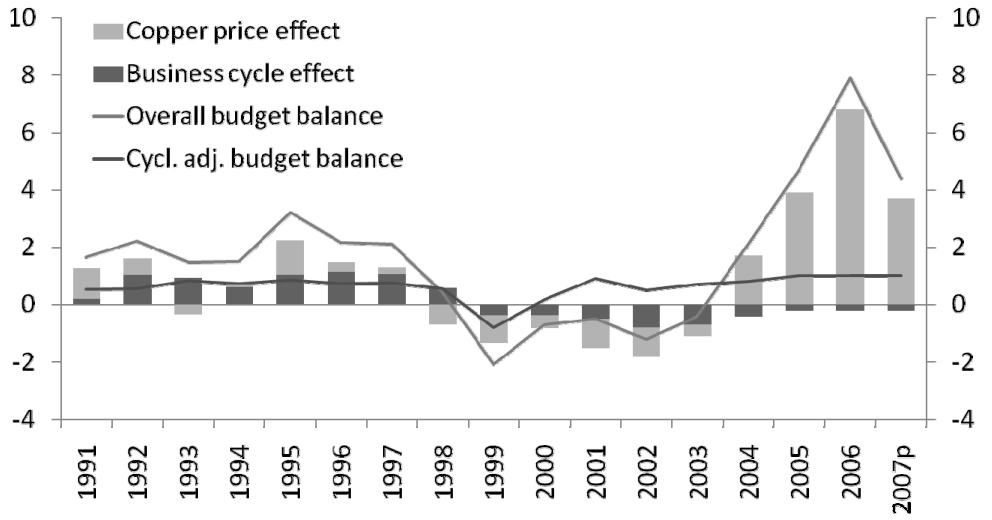
Figure 3.1 General government balance, Norway, % of GDP



Source: OECD Statistics (2009).

In Chile too, cautious fiscal policy has been one of the central pillars in its copper management. Following the introduction of democracy, successive governments have maintained a cyclically adjusted budget surplus (Figure 3.2). This was first implemented through an implicit fiscal rule, and from 2001 through an explicit fiscal surplus target (structural revenues – expenditure) of 1 per cent of GDP. Two panels of independent economic experts are asked for projections of potential output and the potential copper price, from which the copper reference price and potential output are calculated (by simple average, excluding outlayers). The surplus target was decreased to 0.5 per cent in May 2007, relieving funds to increase spending on education (OECD 2003; OECD 2007b), partly due to improved debt levels. Central government debt came down from 45 per cent in 1990 to only 4 per cent in 2007 (Ministry of Finance, Chile, Statistics 2007). Net central government debt was negative, at -20 per cent of GDP at the end of 2008. As a result of crisis spending, the surplus had decreased to 9,5 per cent at the end of 2010 Q1. (Ministry of Finance, Chile 2010a).

Figure 3.2 Budget balance



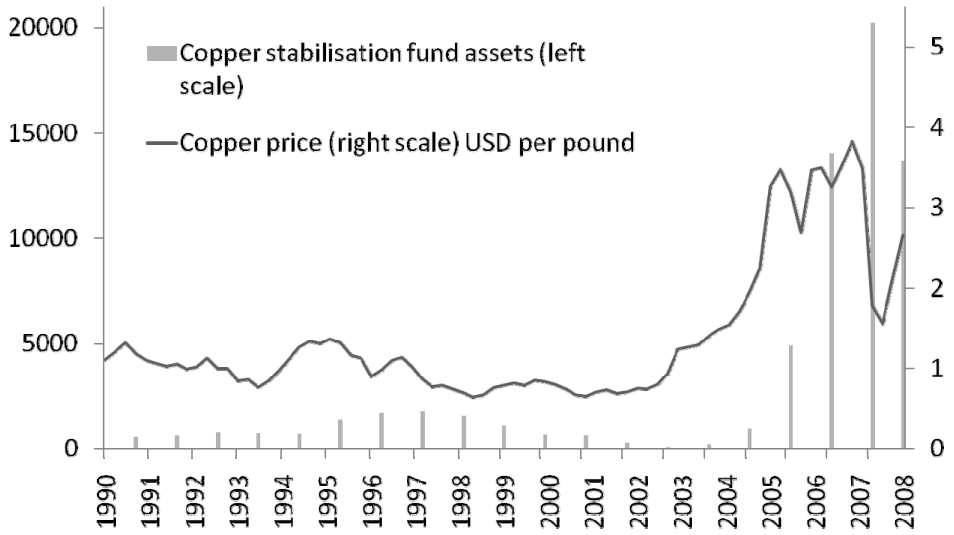
Source: OECD (2007b).

The Chilean fiscal structure was further strengthened in 2006 with the Fiscal Responsibility Law (see, for more details, de Mello 2008), where the budget surplus target is now enacted in law and where surplus earnings are allocated to the Economic and Social Stabilisation Fund, the Pensions Reserve Fund and the Contingency Unemployment Programme. The two funds replace what was previously called the Copper Stabilisation Fund. At end-2009, the sovereign funds were valued to just under USD 15 billion, down from over 20 billion at the end of 2008, due to increased spending following the financial crisis (Ministry of Finance, Chile 2010b).

As is the case with the Norwegian fund, the Chilean Economic and Social Stabilisation Fund aims to protect the economy from the effects of copper price cycles as well as economic business cycles. The Unemployment Programme has a clear counter-cyclical effect, since spending is dependent on the regional unemployment rate and would increase when the economy is in a trough and unemployment is on the increase. The Pensions Reserve Fund receives between 0.2 and 0.5 per cent of the previous year's GDP, and is for future pension contingencies.

The cyclically adjusted budget has been positive and stable, with the exception of 2009, in spite of the high copper price variation, and the Copper Stabilisation Fund assets soared in the copper price boom. The two funds are invested by the Central Bank, though the responsibility is born by the government. Investments can be made both nationally and internationally, but the government has emphasised the virtues of investing the funds abroad, both in preventing Dutch disease and avoiding overinvestment on the local financial market (Ministry of Finance, Chile 2008b).

Figure 3.3 Copper prices and Copper Stabilisation Fund assets. Economic and Social Stabilisation Fund assets from 2007



Source: Ministry of Finance, Chile and OECD.

In an economic downturn, when resource prices are decreasing, externally invested funds enable the sterilisation of returns from natural resource exports, containing exchange rate appreciation in the face of increased exports or commodity prices. The funds of Norway and Chile have served an important role in avoiding Dutch disease and also in ensuring fiscal prudence. Both Norway and Chile have been able to benefit from their past caution during the global downturn. In Norway, there were large deviations from the 4 per cent-rule in 2009 and 2010, and the added fiscal stimulous helped limiting the severity of the crisis in Norway compared to other OECD countries. Similarly, the Chilean finance ministry was able to use its copper funds to carry out fiscal stimulous and support employment despite falling copper prices (OECD 2009).

Tax policies have also helped the two countries avoiding too heavy a dependence on natural resource revenues. Keeping a large tax base has allowed for extra security in the face of commodity downturns, and has arguably kept the population more determined to hold their governments accountable. Norway and Chile have both continued to draw the bulk of their revenues from non-resource sources, thus maintaining a reliable stream of government revenue, independent of commodity price volatility. While copper revenues have been important, the Chilean state received on average 72 per cent of its income from tax revenues between 1994–2006 (Ministry of Finance, Chile 2008a) and efforts are being made to increase tax efficiency and lower the rate of tax evasion. In Norway, over 60 per cent of state revenue is non-petroleum-related. Both are therefore still dependent on commodities in fiscal terms but both have managed to use this windfall wisely and developed sound sovereign institutions to manage their wealth (on sovereign wealth funds see Reisen 2008).

While both countries have had successful fiscal policies, there are still remaining challenges. In Chile, while human development indicators have improved and

while poverty levels have come down, inequality is still high, and fiscal policy is doing little to even out the differences, a pending challenge throughout the region (OECD Development Centre 2007). So, while economic policies have received praise from observers, it has been stressed that there is scope to prioritise social development (OECD 2007b). In Norway, there has been substantial political pressure to increase spending beyond the action rule. The increased spending in 2009 and 2010 has helped the country avoiding the full impact of the global downturn, yet returning to the action rule represents a challenge for the government.

3.2 Sector-specific management and industrial policy

While maintaining fiscal prudence, Chile and Norway alike chose to direct spending to areas contributing to further diversified growth, notably human resources, infrastructure and innovation. A number of these projects have seen successful collaboration between private companies and government or public agencies. They include the Fundación Chile project and Norwegian support for petroleum-related human capital development. Fundacíon Chile is a non-profit private organisation started by the Chilean government in 1976 together with the US ITT Corporation to transfer management and technological skills for use in natural resource sectors, through undertaking R&D, adapting foreign technology and aiding the diffusion of technology. This initiative has been central in the development of non-copper industries, and thus important in Chile's successful diversification. Among its achievements are development of quality wine production and facilitation of fruit exports (OECD 2007c).

Both Chile and Norway also made more direct efforts to diversify their economy, and to support industries surrounding the natural resource sector – such as engineering and supply – as well as non-resource sectors. Norwegian policies in the 1970s were markedly interventionist in this regard. A condition for according licences was that the licensee use onshore Norwegian bases, and use Norwegian labour as far as possible (Al-Kasim 2006). Technology transfer agreements and targeted R&D efforts were agreed with companies. The legal framework emphasised *local content* until 1990, in order to develop the petroleum supply (infant) industry. Norway also pushed for state participation in petroleum investments, in spite of reluctance from many of the international companies.

Chilean policies have been less interventionist, given the economic orthodoxy of the Pinochet regime, although the state owns the copper giant Codelco, which has played a crucial role in the Chilean copper industry. Its support for smaller mining-related companies, has been helpful in developing Chilean human capital and supporting industries. International firms did not face any local content demands, but Codelco had an internal policy which supported participation from local engineering competence in big projects. When Codelco entered into cooperation with the big international companies, this policy meant that its smaller Chilean partners gained valuable experience. In comparison, the private Escondida mining company hardly used local mining services. Furthermore, a set of projects for the development of smaller mining firms was implemented. For instance, Corfo, the Chilean Economic Development Agency, has given credits and cofinancing to firms wishing to develop. In 1995, it provided subsidies to big firms in Chile's Second Region wishing to help in the training of suppliers.

Contrary to calls for privatisation in the literature, it seems that both these countries have been able to benefit from their natural resources, regardless of the presence of state-owned companies. After Pinochet's military coup in 1973, the nationalised copper assets remained the property of the state, and Codelco, the state copper company, was established in 1976. It remains the world's biggest copper producer and the fifth biggest metal mining company. Arguably, the nationalisation process actually generated experience for specialised workers and professional experts and increased the level of human capital (Camus 2005). At the end of the 1970s, 2,000–3,000 specialised engineers were working in the Chilean mining sector. This was a major factor in strengthening the Chilean mining industry. While in the 1970s around 10 per cent of engineering services came from Chilean providers, in the 1990s, the number had increased to 90 per cent (Meller 2003). Codelco was the company working closest with local Chilean competence, as illustrated above. In Norway, the state-owned oil company Statoil was founded in 1972. According to Al-Kasim (2006), the government also chose to allocate one of the most attractive blocks to the three Norwegian oil companies; Statoil, Saga and Norsk Hydro.[12] The presence of these companies arguably allowed Norway to develop technological know-how, as well as increasing the revenues from petroleum. In this way, they supported the local competence and industry development.

Crucially, however, the national companies have been forced to compete with international companies, and to become increasingly efficient as they gained experience. A similar strategy is today pursued by Petrobras in Brazil, a company that is inducing competition among its local suppliers, monitoring and benchmarking their performance with other peers in the international markets. The increase in international investment from the onset of democracy also influenced Codelco, which was modernised and rationalised after 1994, and which adopted technological ideas from international competitors, aided by benchmarking management practices and joint projects with international companies. This led to an increase of investment into technological development and exploration.

These examples show that industrial policy and national oil or mineral companies *can* play a role in successful economic development. That does not mean that they could easily be replicated with success in other countries and contexts. Crucially, local human capital levels were already relatively developed as state-owned companies were founded. Also, these companies have not become vehicles for private profiteering and rent-seeking, and controlling institutions and civil service have had high quality both in terms of competence and integrity. In Norway, for instance, strong industries were already present, notably in the maritime and shipping sectors and in the pulp- and paper, fertiliser and aluminium industries. Engineers and entrepreneurs could relatively easily be transferred to the petroleum industry. There was also an education system that could be adapted to the needs of the petroleum sector. Both countries have also had relatively open economies and developed financial sectors. Chile undertook rapid liberalisations of its trade

12 In 2007, Statoil merged with Norsk Hydro's petroleum division, to form StatoilHydro, a company currently held by 62.5 per cent by the state. Norsk Hydro and Saga merged in 1999.

policies in the 1970s and -80s, and has acted to promote exports through international marketing and bilateral treaties. Norway's economy has also been relatively open, with the marked exception of agriculture (OECD 2007a).

For both countries, the general business climate and, in particular, the government's relationship with industry has been important. Mutual understanding lowers risk, thus increasing the private sector's willingness to invest. In the Norwegian government's relation with business, several issues have been emphasised: the mutual trust that policy would not suddenly change, the fact that negotiations were directed towards mutual benefit as often as possible, and that the government had enough capacity to understand the details of petroleum extraction and the need for companies to make a profit. For instance, the neutrality of the tax system has been considered crucial: projects that are profitable before tax should also be profitable after tax. At the same time, experienced civil servants were at the negotiating table, people who were used to planning and dealing with big companies, and who were neither dependent on the quick development of the petroleum industry, nor prepared to draw personal benefits from it. The Chilean terms of mineral investment, both political and geological, are considered to be some of the best in the world, as remarked by the Fraser Institute annual surveys of mining companies. Free market policies, security of property rights and stable investment and political conditions made Chile a good investment prospect. This was also supported by the fact that Chile did not require royalty payments, and that the overall government take was lower than in most other mining countries.

The question of 'government take' was treated quite differently in the two economies. Norway's claims were relatively high compared to other oil producing countries, notably Britain, which also had large oil reserves in the North Sea. In comparison, Chile's tax rates were for a long time among the lowest of all copper exporters, in spite of the country offering one of the highest internal rates of return for international investors (Meller 2003). Norway's bargaining power in the 1970s was arguably much stronger than Chile's in the 1980s and -90s. This is partly due to the nature of petroleum, and the 1970s oil shocks, but also to the fact that Norway had a reputation for political stability and reliable negotiation. Chile still needed to lure international mineral companies back to the country after the previous nationalisation at a time when the copper price was relatively low in historical terms. Nonetheless, Chile's stake in Codelco, in particular, did allow the government to gain from the copper exploitation. This led to heated discussion on royalties in Chile, and particularly foreign companies' contributions were heavily debated. In 2005, a decision was made to implement a 5 per cent mining tax for annual sales over 50 000 metric tons, a tax directly channelled to support a special fund for innovation (OECD 2005).

Norway's example also demonstrates the wisdom in the 'leaving the oil underground'-argument. Seeking to avoid Dutch disease and job losses in other industries, the authorities were reluctant to move forward too quickly. They also supported non-oil sectors directly. Licensing activity from 1969 to 1978 was relatively restrictive, and abundant hydroelectric power supply meant that energy needs were less dependent on the new petroleum discoveries. It was considered important to strike the right balance between the developing petroleum industry and the remaining domestic industry and putting in place knowledgeable

institutions, policies and human capital to deal with the new windfall revenue. At the same time, spending increased through subsidies to agriculture and industry. Extraction speed was less of an issue for Chile, which had been depending on copper for centuries, and whose copper production became the world's largest shortly after independence. Nonetheless, the slow period following nationalisation, with little new international investment and a development of the Chilean copper competence, contributed to increased diversification and more sustainable growth in the Chilean copper sector as well as in supporting industries.

In a more diversified economy, where shocks to the commodity industry can be accommodated by other sectors, the resource curse is less likely to impede growth. Linkages from the extractive industry allow both increased diversification and heightened opportunity for growth due to potential spillover and cluster effects. Diversification can also help alleviating potential social tensions, as the commodity-based sector tends to represent only limited employment opportunities and often fuels regional disputes. Stimulation of research and development, and investment in education helped diversification both in the Norwegian and the Chilean case. In countries with poor infrastructure and low levels of human capital, this becomes even more important.

4 Lessons for development

Chile's and Norway's experiences show that natural resource wealth can be a blessing rather than a curse. These two countries have not continued growing *despite* natural resources, to a large extent their resource management, coupled with an assortment of supporting policies, has *enabled* increased growth and development. While both countries are largely considered successful today, they were not standing out in the same way before the boom of their natural resource extraction. Both Chile and Norway have grown faster than their neighbours over the last 30 years, while at the same time overseeing a riveting development of the resource sector.

This section looks at how the lessons from Chile and Norway can serve the development processes in other resource rich countries. It also considers how successful countries like Norway and Chile, as well as the international development community at large, can act to facilitate such processes. Both countries' experiences show the importance of prioritising institutional development before engaging in heavy resource extraction. They also show the importance of fiscal prudence and of developing of linkages to the rest of the economy.

4.1 Lessons for resource rich countries

When looking at the experiences of Chile and Norway, it is first and foremost the *interaction* of policies and institutions that stands out as the key to good resource management. Other countries, which were more economically developed than these when experiencing a resource boom, and with well-developed institutions, still saw detrimental effects on their economies. One need look no longer than to

the origin of the phrase *Dutch* disease. So institutional quality is not enough, but some level of it is crucial to implementing the policies needed to see long-term benefits from natural resource abundance. Good institutions meant that policy implementation was possible. Consensus building meant that policy could be adopted. Conservative fiscal policy prevented the dwarfing of non-resource sectors and limited the possibilities for rent-seeking. But investments in infrastructure and human capital ensured that the countries would benefit further from the resource wealth. It created venues from income other than rent-seeking and contributed to increase the consensus about policy.

Good quality, honest and efficient institutions have been central to the experiences of both countries. Even if both had a good level of institutional capacity at the onset of their resource boom, they prioritised the need for further capacity building. Norway opted for moving considerably slower with its oil extraction than was wanted by the oil companies. Simultaneously, it invested in human capital with which to power the institutions, and required companies to take part in this competence-building.

With such institutions in place, good fiscal policy could be adopted and implemented. Two points were crucial to this effect: fiscal rules, operated in conjunction with resource funds, and a broad tax-base. Fiscal rules and funds helped avoid Dutch disease, increased revenue transparency and helped prevent rent-seeking. The implementation was made easier by the fact that the management of the funds took place in separate institutions that were insulated from every-day politics (Auty 2004). Maintaining a large tax base is helpful in changing incentives, by ensuring that the government cares about the developments in the non-resource sectors of the economy. Furthermore, it raises citizens' concerns about how their tax money is spent, thus increasing demand for greater accountability and transparency.

This interaction between good institutions and stable fiscal policy has allowed both Norway and Chile to escape the most obvious effects of the resource curse. With that in place, additional policies have allowed the countries to benefit from their resources in the longer term by facilitating infrastructure and human capital investment. In Norway's case, local content requirements were helpful in developing domestic economic activity and preventing reliance on rents. It also allowed further human capital development through learning-by-doing and technological spillovers. Both Norway and Chile had a higher degree of state involvement than has often been advised in the literature. State companies harnessed the knowledge required for resource extraction and aided in the development of human capital and in building linkages to national suppliers.

To what extent can this same mixture be beneficial to developing countries? Firstly, it is clear that institutions are central to the sustainable development of a resource rich country. Institutions can be strengthened through developing the skill and efficiency of both civil servants in implementing agencies, and personnel in independent institutions with overseeing responsibilities, including NGOs. Enacting transparency and accountability standards and signing up to international initiatives such as the EITI can help governments tie their own hands and provide incentives not to increase spending to achieve political means. Such commitments, as well as cooperation with businesses and civil society organisations, can help

change the pay-offs from engaging in corrupt practices and can help constrain otherwise corruptible elements within public institutions. In addition, to achieve support for the policies enacted, they must be seen to benefit a larger part of the population. Political consensus-building around a sustainable resource policy, like that seen in the Norwegian and Chilean cases, is likely to be of great importance also in other countries. If a large part of the population and political agents understand and support the policies tied to resource extraction, this is a way in which the government can help create future incentives that will enable it to follow through the policies on which it has embarked. Redistributive policies, especially between regions, can be of great importance. This is especially the case when the electorate is fragmented, or there are strong political groups, so that the potential for conflict is high. If these preconditions are not present at the onset and institutional development does not seem evident, a less rapid extaction rate is likely to have positive effects for poorer countries.

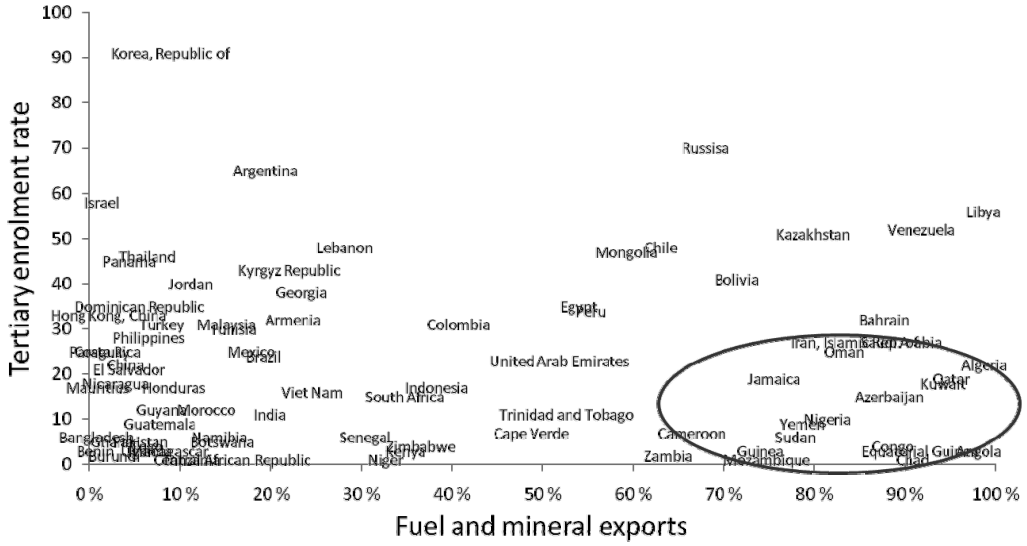
Ensuring a large tax base is a must also to resource rich developing countries. It is even more important when there are great risks of rent-seeking within the government. Fiscal rules, similarly, will be useful in any country trying to insulate a stable fiscal policy from a shifting political environment and to avoid dependence on resource rents. As concerns the use of funds, however, the case for developing countries is more complex. If institutions are already weak, it is easier for political leaders to 'raid' the fund for other purposes (Gary and Karl 2003). It has been found (Bagattini forthcoming) that even the success of these fiscal funds ultimately depends on the quality of governance and institutions. Most particularly, it is important that the funds be beyond the power of discretion of the policymaker and that the civil service be insulated from political pressure. If governments want to tie their own hands to avoid such future raids, cooperation with external agents and a high level of transparency on the fund details can be effective.

Stabilisation and future generation funds can also be useful in developing economies, especially when the absorption capacity is small, and the potential foreign exchange inflows so large that they are bound to put pressure on the exchange rate. A fund in itself will not, however, be enough to ensure future non-resource growth. In the Norwegian case, the 'future generation' argument was used to ensure support for the fund. This argument is less convincing for economies that are currently very poor. In such economies, productive investments in infrastructure and human capital – as well as the strengthening of institutions – can be a better long-term solution than investment in external funds. Without such spending, the development of both resource industry linkages and of non-resource sectors is hampered. Figure 4.1 shows that many resource rich countries have low rates of tertiary enrolment and lack adequate infrastructure. Because markets in many countries are still underdeveloped, however, it is important that the economy be able to absorb increased spending, and that it does not go into unprofitable and largely unproductive projects. Cooperation with private sector initiatives, as seen in Norway and Chile, can help achieve this.

Other industrial policies can also be of use. Given good institutions which ensure a good implementation of the policy, local content requirements could for instance have beneficial effects. However, there is a clear need for good cooperation with operating companies to ensure that such requirements are not commercially

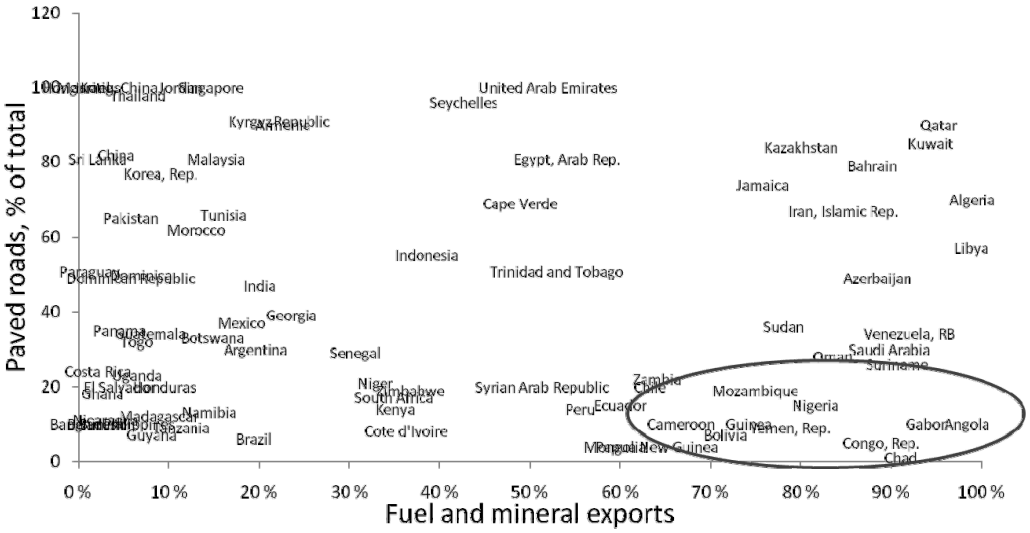
Figure 4.1

(a) Tertiary enrolment rate, emerging countries



Source: Authors based on *World Development Indicators,* World Bank (2008).

(b) Paved roads, emerging countries, % of total



Source: Authors based on *World Development Indicators,* World Bank (2008)

unviable, and at the same time to certify that they have a tangible learning impact. Standardised local content agreements worked out with experts in the field could be useful to achieve this. Policies stimulating private sector development is important to enhance growth in poor countries generally. In resource rich countries, it is a crucial complement to the development of an important resource sector. Improving business conditions through making it easier to start a business, is likely to have positive effects. Furthermore, policies minimising frictions in the financial markets, such as improved contract enforcements, effective collateral and reduction of bankruptcy costs, helps the financial efficiency and business development.

4.2 Lessons for development policy

For institutions wishing to contribute to global development, it seems clear that the resource curse is a factor to take into consideration, not in the least because many of the world's poorest countries are hit by it. The lessons from Chile and Norway underline some important points from the resource curse literature, some of which might be useful in suggesting directions for international development policy. Resource rich countries may not primarily need further financial inflows, since natural resource revenues are already flowing in. Rather, they need advice on how to build institutions which can manage these inflows, and the presence of international institutions which can help change the incentives of those in power.

Technical assistance to improve natural resource management and to avoid the resource curse has been scarce. Of all OECD DAC (Development Assistance Committee) members, only Japan and Norway mention explicitly energy and mining as a major sector in their development policy, and only Norway has set petroleum management in resource rich countries as a main priority.

Several donors are, however, carrying out projects related to natural resource management, and international institutions too have been active in this regard, although it makes up a very small part of their overall development budgets (Figure 4.2). These projects involve both support for facilities relating to mining, oil and gas, including environmental protection. A number of development actors do currently contribute on the development side of the extractive industries and can continue to do so. The increasing awareness for issues related to climate change are also increasing the importance of commodity issues in the international development community. The shifting wealth of nations also raises its relevance. Commodity rich countries have been benefiting from high export prices, and may continue to do so as the global economy recovers. The same growing presence of new global powers means that the old donor countries cannot work alone on this issue.

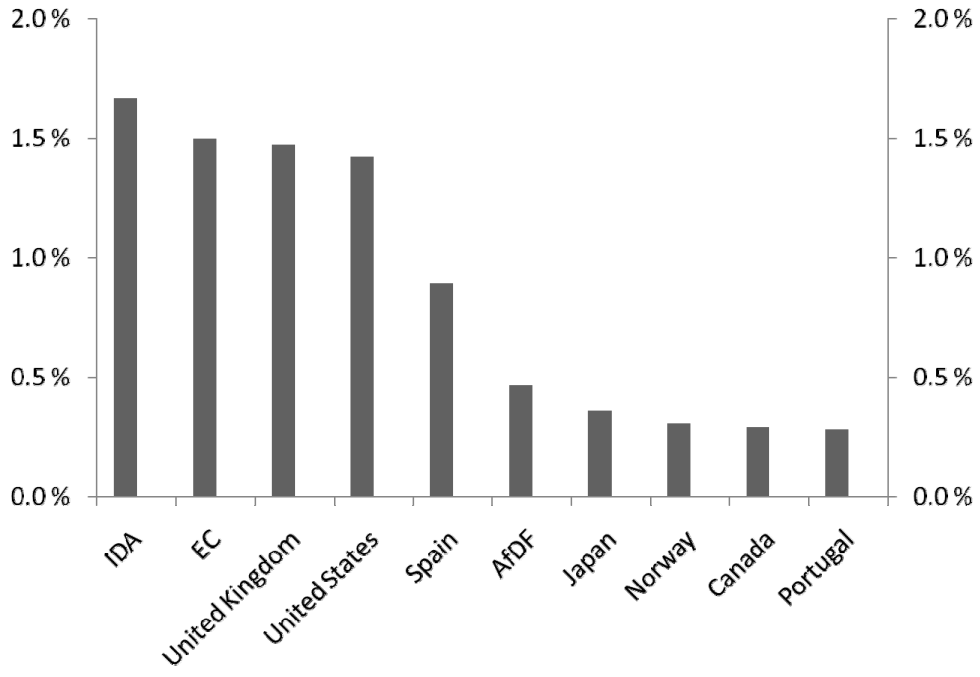
The aid is varied, and includes for instance US technical aid to Azerbaijan and capacity building aid to the Azerbaijani oil fund, Japanese aid to mining research in Bolivia, UK technical assistance to the Sierra Leone diamond sector, and Canadian support to mining regulation in the Democratic Republic of Congo (OECD DAC Statistics 2008).

Norway has been active in this area, and has put 'Oil for Development' as one of its priorities in international development policy, on the basis that the country's own experience makes it better placed to give advice to petroleum producing countries. This includes cooperation with countries like Angola, where Norway has been supporting vocational training related to the petroleum-industry, and technical aid on for instance data collection and production measurement in Nigeria, as well as support for the Nigerian EITI. It has also included major involvement in Timor Leste, with capacity building as a key focus, through macroeconomic advice, advice on petroleum taxation, and an extensive education programme. Norway has also cooperated with net importers or small exporters, where petroleum production is just starting up, such as Uganda and Vietnam.

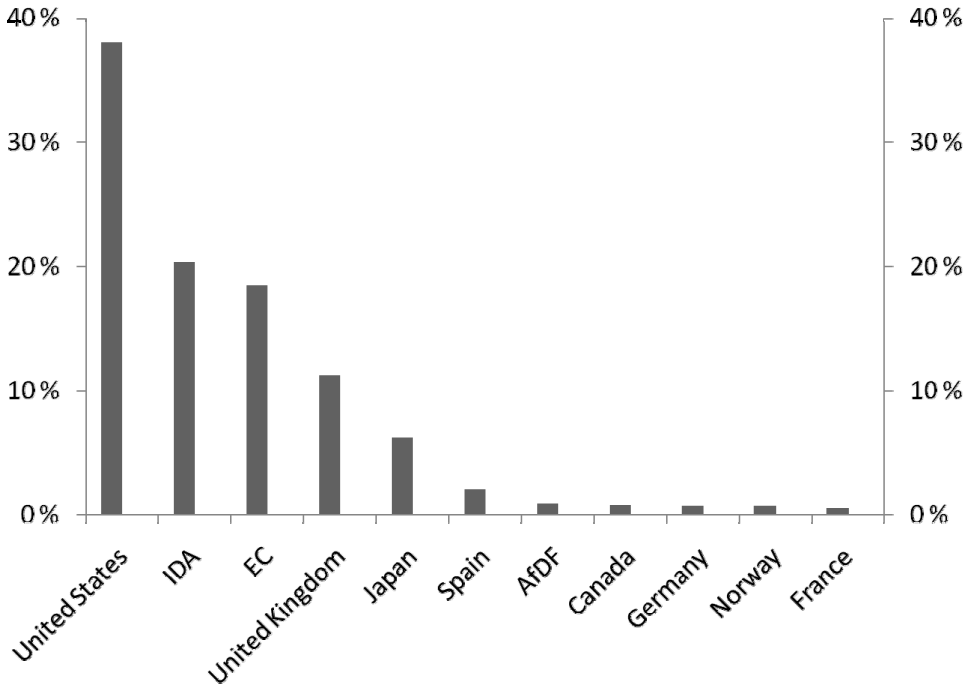
International institutions have contributed actively with mineral and petroleum-related development aid. The World Bank, for instance, has supplied technical aid to

Figure 4.2

(a) Contribution to oil, gas, mining and minerals, % of donor country's total aid 2000–06



(b) Donors' percentage share of aid to oil, gas, mining and minerals, 2000–06



Source: Authors based on OECD DAC Statistics (2008), aid purpose categorised as oil and gas, mineral/mining policy and admin. management, mineral prospection and exploration, ferrous metal, non-ferrous metals, precious metals/materials, and off-shore minerals. Average yearly contribution 2000–06.

mineral rich governments. One of the major projects implemented by the World Bank, has been the Chad-Cameroon pipeline, where the World Bank provided loan finance for the governments of Chad and Cameroon to invest in an underground pipeline from Southern Chad to the coast. Companies had been unwilling to invest in Chad, given political and economic unrest, and the World Bank and IMF's work with the Chad government was instrumental to attracting the investment of international oil companies (Lunde and Swanson 2004). In a much debated project, the World Bank used its leverage with the Chadian government to encourage and help formulate a revenue management programme, including a 10 per cent investment of direct oil revenues in a future generation fund and safeguards for use of revenues in social services and regional development, as well as an independent oversight committee (World Bank 2008).

An extractive industry-related scheme which has met with substantial interest and attention is the Extractive Industries Transparency Initiative (EITI). It is a coalition of governments, companies, civil society groups, investors and international organisations supporting revenue transparency through a set of principles working as a transparency standard for implementing governments and companies.

Most of these initiatives have been implemented only recently, so it is still difficult to draw strong conclusions about their success. The Chad-Cameroon pipeline project has met with criticism, and the Chad government failed to adhere to budget execution procedures. For instance, it increased borrowing when the oil revenues started flowing. Though the EITI has managed to draw attention to the resource curse problem, it has not yet translated into definite results in terms of improved corruption perception for the countries having signed up. It is clear that issues of governance are deep-rooted and difficult to affect. Further issues raised around the EITI involve the fact that the wealthier countries, although supporting it, have not themselves chosen to implement the transparency principles they support on paper (Gary and Karl 2003). For the initiative to be more effective, it has been recommended that it should be tied to institutions with enforcement capacity (Ölcer 2009).

From evaluations that have been carried out, the importance of governance structures have been emphasised. In 2003, the Extractive Industries Review produced a report on World Bank involvement, and advised a strengthening of transparency and governance issues and increased ensurance that poor people were addressed in the programmes. It further advised that the World Bank should not go in where governance has not been sufficiently strengthened. A review of the Norwegian petroleum development policy similarly points out that the effect has been clearest in what is termed 'virgin settings', namely where the petroleum sector has not yet been developed and petroleum revenues have not yet started flowing. The technical aid, on the other hand, is often characterised as very successful, and the reviews of the Norwegian Petroleum Directorate (NPD), the implementing agency, have been positive (Norsk Energi 2005).

4.2.1 Technical capacity building

The lessons from Chile and Norway, and their implications for other resource rich countries, suggests the comeback of technical aid. While high income countries

have traditionally supported international development through the disbursement of aid, resource rich countries in many ways represent different challenges to those of resource poor developing countries, and deserve special attention.

The stories of Chile and Norway show the importance of human capital to support the growth of linkages and non-resource industries, and to build institutions able to deal with the complex technical details involved in resource extraction. This is a potential source of growth also for poorer resource rich countries, yet the domestic capacity to improve human capital and strengthen institutional capacity might not be present. Carrying out such policies is difficult for countries that do not have the same starting point in terms of educational level and technical know-how. Yet this is precisely the kind of knowledge possessed by some of the more successful countries.

Several resource rich countries receive large inflows of aid per capita, even though many of them also receive large inflows from their natural resource exports (Figure 4.3). The goal must be for these countries to use their resource flows directly for development.

Figure 4.3 Aid receipts per capita in resource rich countries

Source: Authors based on OECD (DAC) Statistics (2008). Map courtesy of Wikimedia Commons. Edited by the authors.

In a number of areas there are very clear learning processes where successful countries can share their experiences and routines, including civil service, geological and tax (royalty) system capacity, management of overseas funds, implementation of fiscal rules, negotiations with companies, and human capital development in natural resource related supplier industry for instance. These suggestions must not only be seen as indications for policy action by Norway and Chile, but also for other developed or rich emerging countries with experience from extractive industries.

Policy exchanges and views on how to potentially develop linkages, can stimulate better policy decisions in poor resource rich countries. This can be accomplished both through direct technical aid, but not least in stimulating research in the natural

resource linked (engineering and economic) areas, and help develop *competence centres* in resource rich countries through exchanges between researchers, businesses and policymakers. These kinds of exchanges have been important in fostering cluster environments both in Chile and Norway, and sharing from this experience and building similar environments could have very positive effects.

Oil and mineral endowments might present a different set of challenges. Most of the existing technical cooperation has been focused on oil related endowments, like in the case of Norway's development effort. Copper could be another area where a country like Chile could deploy its international cooperation. The creation of a World Copper Institute could be a useful value added, with an institution focused in generating technical training in and for other copper rich countries, helping to generate research and innovation on copper and the related clusters that can range from explosive industries to geological and biological applied research.

Norway, as seen above, has a well of experience and a developed apparatus of international development and finances. It is therefore well-placed to give advice both on macroeconomic policy, potential resource fund management, and more technical details and capacity building in the petroleum sector itself. Its intimate knowledge of the petroleum sector allows it both to help developing capacity in other resource rich countries' public institutions, to share its own experience, and to suggest direct policies on developing linkages and reaching an optimal balance between profiting from company payments and attracting foreign investment into the sector.

Much of the same is the case for Chile, though some of its experience might be even more pertinent because of Chile's near history as a developing country, and the Chilean experience is thus closer to that of other resource rich emerging economies. Chile has itself faced many of the challenges currently experienced by developing countries, including high inequality and poverty, political turmoil, regime change and democratisation, and might be better placed to advice based on the need to balance growth stimulation with tackling social problems.

4.2.2 Institutions and governance

The importance of institutional quality suggests increasing efforts to improve governance in resource rich countries, and especially in strengthening the international framework for extractive industries, promoting transparency and accountability. The situation in resource rich countries accentuates the need to focus on governance issues, given that many of the most resource dependent also have very high corruption perceptions. In the face of rapidly increasing natural resource revenues, these countries face a challenge which is broader than the formulation of good economic policy, namely to build reliable and accountable institutions in a high corruption environment while dealing with large resource inflows.

Improving institutional quality is partly a question of institutional design, where technical aid can be of help, but it is also a question of international frameworks. While ultimately, well-intentioned donor governments are in no position to impose conditions on governments who are already receiving high inflows, they can help

adjusting the pay-offs to good transparent institutions by affecting the international environment through support for and development of initiatives like the EITI and the OECD guidelines for multinational companies and by giving incentives to and cooperating with its own businesses active in extractive industries. In such initiatives, however, it is also crucial to involve new non-OECD donors. Sequencing is also important in the cooperation perspective. Earlier involvement increases the chance for success.

An initiative like the Kimberley process has successfully stemmed the flow of conflict diamonds, for instance, and has helped stabilise fragile exporting countries. In other extractive industries too, international cooperation can pay off. Successful countries with large natural resources have large power internationally, since they are also home to many large resource-based companies. Furthermore, there is a role for supporting local NGOs to promote transparency. This support can be financial, but sharing technical knowledge is also paramount. If local watchdogs are to hold governments and operating companies to account, they need a profound understanding of the technicalities and mechanisms that take place.

Institutional capacity and accountability can be improved through exchanges with successful resource rich countries, whose experiences have helped them shape institutions to promote good governance. This includes the measures mentioned above, such as separation of powers between institutions – given that there is sufficient capacity for such a separation – fuelling all funds through the main budget, increasing transparency and accountability regulations and routines, increasing awareness of civil servants and improving meritocratic selection inside institutions. Exchanges with countries such as Chile and Norway can therefore be successful, as long as there is real willingness to improve institutions and adopt relevant procedures, and as long as there is an awareness of the different political and economic environments. Policies would have to be particularly adapted to the country in question.

However, when there is no real willingness to engage, technical assistance and exchanges are not necessarily helpful. The evaluations both of Norad's Oil for Development Programme and the various World Bank efforts in extractive industries show that support to resource rich countries whose governments are not eager to improve institutional quality is unlikely to result in success: ownership, to use one of the trendy labels in the aid industry, is needed. There is also a need to recognise that a government's decisions surrounding resource extraction are predominantly political, and that the right incentives must be present for the right policy choices to be made. A broad tax base, independent checks and balances, public awareness as to the policy choices, rules for fiscal spending and external management of the revenues can provide some of these incentives.

This, however, does not mean that international donors and development institutions should refrain from acting to improve conditions in resource rich countries with considerable institutional problems. As seen above, these resource rich poor countries are precisely the countries that are most likely to suffer the long-term consequences of high resource inflows, with severe consequences for human development. There must, however, be a shift in donor thinking. Support for development in resource rich countries is not measured by the amount of direct aid, but by political support for institutional processes like the EITI, regulations

towards own banking industry and extractive industry companies operating internationally. Today, the contribution to international development is often measured – and compared – through measures like the share of overseas development aid (ODA) in terms of GDP. However, in the case of resource rich countries, other means are more effective in contributing to these countries' growth. For instance, subscribing to EITI and developing human capital through competence exchanges would be likely to do more for development in Chad than giving direct aid. Furthermore, engaging internationally to limit the possibilities of money laundering, through increased reigning in of tax havens decreases incentives for diverting resource revenues.

Successful resource rich countries can make invaluable contributions through participating in such institutions and supporting them politically, for several reasons. Firstly, their own experiences mean that they understand both the institutional and political economy dynamics of a resource rich economy, which would allow them to make informed recommendations to improve international initiatives. Norwegian civil servants, for instance, have in-depth knowledge of the mechanisms of licensing rounds and might be able to suggest ways that international initiatives can help combat corruption in these rounds. Secondly, they are major actors internationally, and their support for international initiatives like the EITI might contribute to improve their political clout. Thirdly, as exemplified by both Norway and Chile, many successful resource rich countries are themselves home to extractive industry companies, StatoilHydro and Codelco, for instance, as well as an array of less well-known companies both in extractive and supporting industries. This last point feeds into the third area through which successful resource rich countries can contribute to development in poorer countries, namely through their knowledge of and contact with extractive industry companies.

4.2.3 Industry relations

As we have seen from the above case studies, a good relation and cooperation with business has been of great importance for both Norway and Chile. Extractive industry companies, many of them based in donor countries with a history of resource exploitation, can help lay the groundwork for development in the countries in which they operate, if given the right incentives.

While companies in extractive industries are sometimes painted as the villain, they simultaneously represent the key to sustainable development, both in terms of the employment and spillover opportunities they bring with them, and through their tax and royalty payments, which contribute to the wealth and development of the nation where the are operating. As seen from the cases of Norway and Chile, they have contributed in terms of technical spillovers, human capital formation, employment and linkages. And, as mentioned in the discussion on EITI, international companies are also important actors in the transparency environment. Stable conditions for investment are attractive for firms in extractive industries, and conflict, security and political risks prevent investment to the detriment of companies and governments alike. Successive scandals, including the Elf-case and Shell's turmoiled experience in the Niger delta, show that reputation can have very important effects. At the same time, it shows that there is a role for home governments in ensuring that companies feel constrained by legal frameworks.

Industrial relations are particularly tricky in countries where the government has less capacity to interact and negotiate with extractive industry companies. While on the one hand this is another area where advice from successful resource rich countries would be of value, there is also one main problem: technical advice, particularly related to business negotiations, might often conflict with countries' own interest in promoting national industry. Norwegian StatoilHydro was criticised in the media for mixing too closely with the Oil for Development initiative, and it was argued by some that Sweden might be better qualified to get involved in such an initiative, since it does not have strong state interests in oil related industries. This is one of the central problems in using development policy to improve the situation for resource rich countries, but it can be alleviated through transparency with business cooperation and through the involvement of several partners in an international initiative.

Altogether, there are several international development efforts geared towards resource rich countries and extractive industries, though their effects have yet to be seen. Many of these countries are also receiving large inflows of aid. At the same time, increased demand for natural resources has also heightened the geo-political stakes. While this implies that many commodity importers have an interest in stability in these countries, it also means that they are likely to push for quick development, without necessarily the development of linkages and build-up of institutions recommended by the literature, and which have been central to the success of Norway and Chile.

The three areas considered here, namely technical aid – both in economic and sector specific policy – support for institutions and governance, and good relations with the private sector, are three main areas through which successful countries can help contribute to development in other resource rich economies. The list is not exhaustive, and other lines of development support can be envisaged: supporting non-resource investment in these countries, giving initiatives to credit rating agencies' work on developing countries, spreading knowledge and giving investment credits, as well as opening markets to industrial trade from resource rich developing countries. Currently, refined minerals and petrol are facing higher tariffs than pure materials in most OECD countries (Ross 2006), a fact preventing development of natural resources in the country of extraction itself. Protection of other industries, like agriculture and manufacturing, is also making it more difficult for resource rich countries to diversify their exports.

In sum, the scope for promoting development in resource rich economies is large, but donors need to think outside the traditional way of doing development. The size of the aid contribution is not the alpha omega. Equally important is the commitment to international initiatives and standards, as well as the quality of technical advice. While commitment to development is often measured in terms of aid contribution and direction, commitment to initiatives like the EITI and the OECD guidelines for multinational companies is of as much importance in the case of resource rich countries.

Finally, it is worth considering *why* successful resource rich countries should act. In practice, development aid is based on a number of rationales, including human interest, acquisition of 'soft' power in the international policy environment, access to

resources and promotion of international stability. All these reasons also suggest that the future of resource rich countries is important. In the current international environment there is an impetus for resource rich countries to look at experiences from others, and to choose their policies accordingly. At the same time, the international development community should bear in mind the challenges faced by these countries in a situation of high revenue inflows and think in new ways about how to promote growth and development that would benefit the populations of resource rich economies. The above cases have given some ideas for such cooperation.

5 Conclusion

While large revenue inflows can certainly help contributing to development, past experiences with the 'Paradox of Plenty' have shown that mineral and fuel wealth can often represent a curse rather than a blessing. A vast literature has considered this surprising fact, and the overall conclusions tend to suggest that the countries that need development the most are also the hardest hit; those that have weak and unreliable public and private-sector institutions and high social fragmentation.

While the general trends have suggested that countries are better off without natural resources, there are examples to the contrary. Norway and Chile are two of these. Not only have they seen continued broad growth coupled with soaring income from extractive natural resources, they have also performed better than comparable neighbouring countries, and have seen vast improvements in living standards.

Studying their economic development over the past four decades leaves us with some good indications as to what policies have been successful. Responsible macroeconomic policy, and particularly fiscal prudence, rapid payment of external debt and subsequent build-up of resource funds, investment in human capital development and strong incentives for technical spillovers and broad industrial development have all been part of the package. In fact, Norway's and Chile's experiences contain decisive government action to develop natural resource related industries, often with more state involvement than what has been recommended in the literature. The clear underlying factor, however, is the quality of their institutions, which has allowed both the implementation of these policies and has prevented rent-seeking activities from prevailing and crowding out productive parts of the economy. The experiences of Norway and Chile have some important lessons for other resource rich countries. Fiscal prudence, productive investment in human capital, infrastructure and innovation, ensuring a broad tax base, separation of powers and adherence to transparency and accountability appears to be the way forward, also for other countries. However, not all countries are as well equipped when it comes to governance indicators and strong independent institutions.

Beyond the choice of policies, therefore, the case studies of Norway and Chile underline the importance of institution building: being able to rely on incorruptible and knowledgeable civil servants and a fair and effective justice system, for instance, is key to the flourishing of entrepreneurship and thus diversification of the economy. In this, sequencing has been crucial. Both countries have been

willing to slow the process of extraction while investing in capacity and institution building, education and infrastructure. Good sequencing at the onset of resource extraction can also alter the incentives of later governments, since it will be more difficult to challenge the institutions that are already set up, and since maintaining the continued performance of the non-resource sector will be more important.

Yet for a country currently faced with high resource revenues, institution building itself might be beyond its immediate capacity. There is thus a role for the international development community, particularly since some of the most resource dependent countries are also some of the world's least developed. In so doing, however, donors must be aware of the political context and the incentives facing political leaders. In some cases, impacting the international regulatory environment on for instance issues of transparency may be more beneficial than supporting a particular resource-rich country directly.

Aid, in the traditional sense, is not the solution to the resource curse. After the natural resource revenues have started flowing, these countries already see large flows entering the economy, mainly in the form of government revenue. In theory, it would not be difficult to direct these inflows to efforts conducive to development. Supporting long-term development here is rather a question of technical support and capacity building, support of international anti-corruption mechanisms and the imposition of transparency and legal requirements on national companies. This is an opportunity both for countries like Norway – with an already extensive development cooperation history, including considerable efforts in the petroleum sector – and for emerging donors, like Chile, whose experience might be closer to that of other emerging and developing countries, and who might well be able to transfer vital technical knowledge to its cooperation partners.

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