Social Policy and State Revenues in Mineral-Rich Contexts *

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* Paper commissioned for UNRISD project on "Social Policy in Mineral-rich Countries." Geneva. August 2008

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Acronyms

CPIA	Country policy and institutional assessment
ECLAC	Economic Commission for Latin American Countries
FDI	Foreign direct investment
GDP	Gross domestic product
HDI	Human development index
ICMM	International Council of Mineral and Metals
IMF	International Monetary Fund
IR	Insecurity regime
ISR	Informal security regime
MDCs	Mineral-rich developing countries only
TNC	Transnational corporation
UNCTAD	United Nations Conference on Trade and Development
UNRISD	United Nations Research Institute for Social Development
WHO	World Health Organization
WSR	Welfare state regime

Acknowledgements

This paper was discussed in the workshop on "Social Policy in Mineral-Rich Countries" organized by UNRISD on April 2008. The authors are grateful to Anthony Hall (commentator), the workshop participants and the UNRISD staff who read the paper, Diego Sanchez and Tanja Muller. All comments and questions greatly improved the quality of this paper.

Summary

The expansion of extractive industries in developing countries, dominated by large investments, has produced divided opinion and reaction among scholars, policy makers and civil society with regards to its impact on host-countries' economic performance, governance and peace. Facing that division, the expectation is that the inflow of resources the industry is producing might create opportunities for mineral-rich developing countries to use social policy, both for mitigating the negative effects, as well as enhancing the chances to increase their citizens' social welfare. This article looks at political economy features of mineral expansion and reviews the 'resource curse' literature with social welfare lenses. The authors address the linkages between mineral expansion and social policy examining three aspects that underpin the basis on which relies such an expectation. First, the extent to which state revenue and mineral export dependence are connected. Second, the likely effects that mineral wealth may produce on social expenditure level and composition, and on the promotion of new social policy initiatives. Finally, the role that government quality plays in determining mineral revenue capture and expenditure. The approach followed for that examination combines correlation, regression and cluster analysis applied to 74 countries which level of export dependence on minerals (fuel and metals) has been superior to 10 per cent in the period 1995-2005. Results of that analysis suggest that the evidence is not conclusive about a general pattern among mineral-rich countries with regards to the linkages between mineral wealth, state revenue and social welfare. However, the negative association between state revenue and level of mineral export dependence, and the positive association between state revenue and social policy found in that analysis – together with insights from case-based literature – are indicative of the necessity to analyse the relationship between mineral wealth and social policy within an integrative framework. This paper concludes outlining such a framework and bringing together concepts developed around welfare regimes and factors produced in a mineral-led development strategy. It also suggests that the inflow of mineral taxes could produce the basis for transformative social policies and social development, which would overcome the underinvestment in social services and social protection so far seen in most of mineral rich countries. In order to do so and to make it sustainable, states need also to consider the use of those financial inflows in transforming their economic and institutional structures.

Introduction: the political economy and social policy regimes of mineral-rich countries

The expansion of the world economy since the 1990s, driven in particular by countries such as China, India and some transitional economies, has produced an increased demand for mineral resources – fuels, metals and ores. Given the mineral potential found in developing countries and the increased constraints for developing mining activities in West-Europe and North America (Otto et al. 2007), among the major structural changes which took place in the mining industry within the last decade are those regarding the transfer of exploration and development activities and expenditures from the developed to the developing countries. According to UNCTAD's (2007) last report on foreign direct investment (FDI), inward FDI flows in the 2003-2005 period in the mineral sector of developing economies reached 76.1 per cent. This fact, together with the recent *boom* of mineral commodities prices and the disparate outcomes that mineral wealth has produced on mineral-rich countries, have opened up avenues for new enquiries about the extent to which mineral wealth can constitute a source of economic development, with special accent on the fiscal revenue that mineral development can produce for the host developing countries. That has also generated expectations with regards to social development, hoping that the inflow of mineral taxes will produce the basis for transformative social policies, which would overcome the underinvestment in social services and social protection so far seen in MDCs.

At the same time, other observers have feared that a significant inflow of investments in the mineral sectors might in fact imply a *curse* and have argued that the sole availability of large amounts of fiscal resources is not enough to produce development. Instead, how beneficial – or damaging – it could be depends on the capacity of the state to control, extract and allocate resources, as well as its ability to generate consensus around a development strategy based on the exploitation of mineral resources. To date, literature on mineral wealth and development has revealed differences between non-mineral and mineral economies, and the balance of contributions has tended to agree that mineral wealth has been more harmful than helpful.

Thus, the two concerns about the relationship between transformative social policies and mineral development are:

i) whether revenue from mineral extraction can constitute a sustainable way to implement and finance social policies, and promote progressive welfare regimes.
ii) whether the exploitation of mineral resources undermines the allocation of resources in the economy and the political balance needed to maximise social development and balanced growth.

In this paper, we challenge the determinism of the resource curse hypothesis and suggest that these two concerns can be addressed by assessing the implications of the political economy characteristics of mineral sectors for social welfare, and the extent to which the exploitation of mineral resources has produced the expected effects on government revenue and expenditure. Our approach narrows the universe of study to the group of mineral-rich developing countries only (MDCs hereinafter), aiming to reveal the extent to which the level of mineral export dependence influences social policy making. With that purpose, this paper provides a cross-country analysis of the

linkages between state revenue and social policy in contexts of mineral-wealth and presents a framework to identify those linkages and the effects of a mineral-led development strategy on welfare regimes.

Mineral resources economic dependence and 'mineral-rich countries'

A clear understanding of what constitutes a mineral-rich country has hardly been achieved in the Development literature. The consensus has been to take on some measure of economic dependence on the mineral commodities in question and assessed most frequently through the share of mineral exports in either (total) exports or in GDP. Even in those cases, the boundaries diverge among contributors without much explanation about how they were established and, in practice, a baseline point of 10 per cent share of the mineral sector in total exports has been agreed.

In this paper we also adopt that definition[1] in order to review what has been said about MDCs and to provide statistical analysis of the relationship between state revenue and social policies. Nonetheless, we also provide insights on additional criteria that need to be incorporated in order to understand more accurately the implications of identifying a country as "mineral-rich."

From a social policy perspective, the distinction between a 'mineral-export dependent economy' and a 'mineral wealth-led *developing* country' is important. The difference points to the necessity of going beyond macroeconomic arguments in favour of the mineral sector expansion as a financial source for the development of a welfare state and to explore additional arguments regarding the ways in which mineral development can affect other spheres of a welfare regime in ways that can either enhance or off-set the real or potential macroeconomic benefits. Such a broader perspective – that simultaneously explores the macroeconomic, institutional and socio-political effects of mineral development - suggests that social policy needs to incorporate a more holistic analysis of the effects that mineral wealth produces in a country, and of the extent to which such wealth should be considered as the basis for a development strategy.

Social policy and welfare regimes. Underlying concepts

In development contexts, social policy is a building concept that has evolved over time according to changes in the ideological, political and economic frames in which societies develop. As an applied policy arena, it refers to the state role in enhancing their citizens' capabilities through access to social services, coping with risk and reducing their vulnerability and poverty. This implies, as UNRISD suggests, to conceive social policy as 'a key instrument that works in tandem with economic policy' and which ensures equitable and socially sustainable development taking into account the political contexts within which they are formulated and implemented (Mkandawire 2004:3-4). It also implies that the role of the state in social welfare

[1] We also adopt UNCTAD's (2007) definition of extractive or mineral industries: 'primary activities involved in the extraction of non renewable resources, which are marketed for productive purposes. Those *economic minerals* include: energy minerals (oil, gas, coal and uranium), metallic minerals, and non-metallic minerals (industrial and construction minerals and precious stones).

provision in developing countries is not narrowed to social service delivery. Instead, the state's role in social policy is holistic in its nature, addressing "traditional" social welfare issues such as health, education and social security, and also "non-traditional" social protection and growth-enhancing issues (UNRISD 2006). Furthermore, as Hall and Midgley (2004) remark, at addressing livelihood concerns, social policy involves a cross-sector, integrated and holistic approach that links with human rights. In that understanding, the set of institutions that are needed to achieve social policy goals is broad. Notwithstanding the importance of the state, its role is intertwined with the market's, communities' and international organizations' (Arjan de Haan 2007; Gough et al. 2004; Esping-Andersen 2001).

On the basis of that broad conceptualization of social policy, our analysis of the linkages between mineral-wealth and social welfare, recalls the 'organizing concept' of *welfare regimes* introduced by Esping-Andersen (1990, 1999, 2001) which reflect how traditional social welfare policies are constructed, how they influence the general social structure and are a stratifying system in its own right. As such welfare regimes are characterized by a public-private mix for the formulation and delivery of social policies; consequently, state and market activities are interlocked.

In so far as social policies are in essence framed within a *rights-based approach* and can be seen as 'an extension of social rights' (Esping-Andersen 1990:3), a welfare regime goes beyond the "expenditure" view and brings about a dimension of welfare-input *de-commodification*; that means to understand a welfare regime in terms of the rights it grants and to recognise those *social rights* in terms of enabling people to make their living standards independent of pure market forces. Therefore, the definition of a welfare regime is underpinned by the state's history of nation-building and the family's role in social provision.

The role of social policy in the design of a welfare state regime that facilitates the exercise of those rights to people has been explored further by accentuating the role of communities in shaping welfare regimes and recognising the relationships between rights and correlative duties within all forms of welfare regimes (Gough et al. 2004). In an extended version of Esping-Andersen's model, Gough and collaborators elaborate on three forms of welfare regimes:

> A *welfare state regime* [which] reflects a set of conditions where people can reasonably expect to meet their security needs via participation in labour markets, financial markets and the finance and provisioning role of a 'welfare state'. […] An *informal security regime* [which] reflects a set of conditions where people rely heavily upon community and family relationships to meet their security needs, to greatly varying degrees. […and] An *insecurity regime* [which] reflects a set of conditions which generate gross insecurity and block the emergence of stable informal mechanisms to mitigate, let alone rectify, these. (op cit. p. 34, italics are our emphasis)

Following Sen's (1985) approach and the conceptual developments thereafter, those welfare regimes produce a certain type and amount of welfare outcomes, namely measures of well-being that can be approximated through sets of indicators which translate the effects of social policies on improving human capabilities. The achievement of those welfare outcomes relies on a 'social responsibility matrix' which identifies four institutional locus (state, market, communities and individuals) operating at two scales (domestic and global).

The social policy framework for MDCs presented in Section 4 builds on this theoretical reflection on welfare regimes. It aims to provide an analytical tool useful to understand the ways in which mineral wealth affects the configuration of welfare regimes as well as to make explicit the extent to which social policy financed by state revenue coming from mineral sectors can affect the structure of the welfare-mix. In that integrative framework, based on previous contributions on the subject (for our purpose conveniently summarized by Gough (2004), Mkandawire's (2004) edited volume and Arjan de Haan (2007) we define social policy that we adopt in this paper combines and has the following central elements:

i) It is a public policy oriented to social welfare goals, namely the enhancement of human development by ensuring the satisfaction of the basic needs and the well being *in principle* of all citizens and in practice of the majority.
ii) It operates through a wide variety of policy instruments across a number of sectors. Thus, it includes social protection or safety nets and also growth-enhancing measures – particularly oriented to socially disadvantaged groups in order to shape solidarity, but also ensures universal provision so as to build national identity.
iii) Although its formulation and implementation is carried on by a wide range of actors, normatively – and ideologically – the systematic and deliberate intervention of the state is fundamental.

In order to assess the significance of mineral-wealth for state revenue and social policy, we present in the following sections a review of social welfare outcomes in MDCs.

1. Mineral expansion and development outcomes in developing countries

There are a number of features that characterise the mineral sectors and support the multiple assumptions made about their possibilities to constitute a source of economic and social development for mineral rich developing countries. The complexity involved in making a cross-country comparison of the linkages between mineral wealth and welfare is underpinned by strong differences among MDCs in terms of their economic and welfare indicators, somewhat regardless of their levels of export dependence. For instance, among the 36 MDCs whose level of dependence is relatively high (with ratios higher than 30 per cent of exports), 21 have reached relatively high levels of human development (measured by the HDI in a range of medium high and high values) whilst the rest falls in the category of low HDI despite its mineral wealth. Similarly, the average of GDP per capita ranges between US$ 666 in the Democratic Republic of Congo and US$15397 in Seychelles while their level of mineral dependence only varies in 5 points, and growth rates per capita for countries like Turkmenistan and Azerbaijan differ by more than 6 points although their mineral dependence differs only by 2 points. Similarly, between countries that have almost the same mineral export ratios (like Nigeria and Algeria), the poverty gap can go from less than 1 to more than 60, while HDIs can diverge by 100 percent .

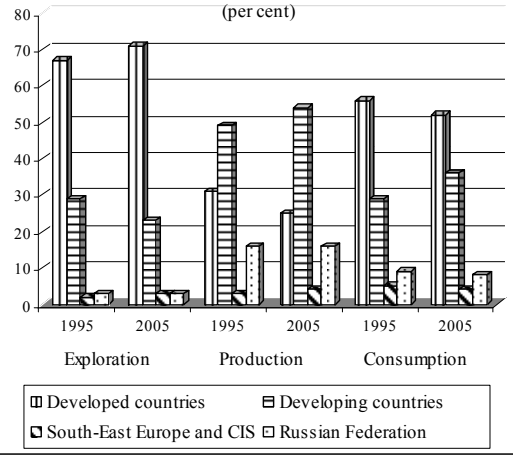
Those differences among MDCs call attention on the risks of generalization either in terms of being favourable to a positive view of mineral wealth or a negative one. That is particularly true for any direct causal relationship between mineral wealth and development outcomes – for instance, in countries like Bolivia where FDI in mineral

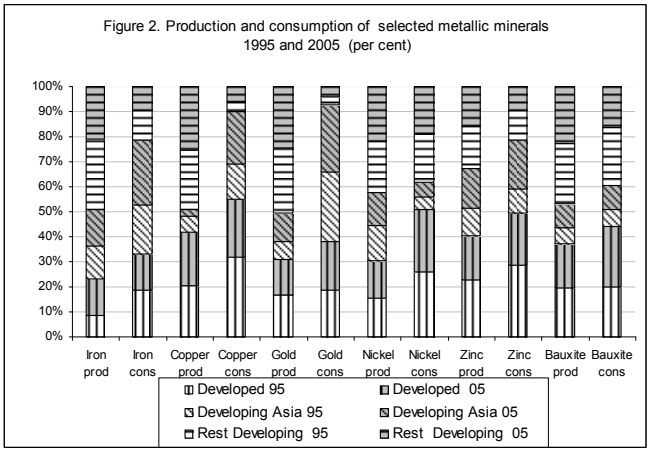
sectors did not grow significantly in the analyzed period, a medium high HDI can also be explained by other factors like foreign aid.

In spite of those differences, there are some commonalities among the mineral sectors of all MDCs which regard 'who' the main players are in a mineral wealth-based development strategy, and 'how' such a strategy is implemented – i.e. the conditions under which mineral development happens in particular national and global contexts. A view on both issues requires that we look not only at the MDCs' domestic conditions, but also at the transnational characteristics of mineral sectors. Whilst the former informs about the intrinsic MDCs' institutional and structural endogenous factors of development, the latter give account of exogenous factors underpinning the margins of manoeuvre that MDCs have due to the dependency of mineral-rich economies on global markets, foreign direct investment (FDI) and global actors (transnational companies and international organizations).

The global markets scenario dictates that most mining and hydrocarbons (fuel and gas) projects operate on the basis of economies of scale and, hence, led by large investors. According to UNCTAD's most recent World Investment Report (2007), while over the past quarter century the share of FDI in natural resources and manufacturing has declined, since 2004 there has been a rebound of FDI in the extractive industries. Figure 1 shows that, in the case of hydrocarbons, exploration has increased in developed countries whilst production and consumption has decreased over a span of 10 years. In that sector, figures for developing countries have moved in the opposite direction. By the contrary, as can be observed in Figure 2, most of mining investment has been directed to satisfy the increasing demand coming from developing Asian countries (whose demand for metals has begun to exceed that of developed countries) as well as of developed countries .

Figure 1. Exploration, production and consumption of oil and natural gas, by region, 1995 and 2005
(per cent)





Source: Based on UNCTAD (2007) data

As a result of the trend observed since the early 1990s to move the production of minerals into developing countries, there has been a significant movement of the major corporations into new areas of South America, Southeast Asia and Africa in order to expand their access to mineral areas currently under exploitation and to increase exploration efforts.

2. Mineral wealth and welfare. Discussions of and challenges to the resource curse thesis

The "resource curse" thesis that emerged in the early 1990s (c.f. Auty 1993, 2001; Sachs and Warner 1995) suggests that abundance of natural resources generates distortions in the economic and political structures of the countries in which the resources are based. In its economic dimension the thesis tries to explain a certain pattern of poor economic performance observed in mineral-rich countries since the 1970s and elaborates on the *Dutch disease* effect (see below), enclave economies and lack of diversification, the crowding-out effects on human capital, and, more recently observed, on the effects of natural resources depletion and environmental damage caused by mineral exploitation. In its political dimension the thesis hinges around: the conflicts within national and regional societies that are provoked by the eagerness among different groups to benefit from mineral rents; the impact of corporations on national sovereignty; and claims about a range of other negative effects on governance issues related to taxation basis, the state-citizens relationships and corruption.

Although the thesis has subsequently been contested on methodological and empirical grounds (see Rosser 2008 forthcoming and the references therein) concluding that there is no enough evidence for a deterministic negative relationship between natural-resources-wealth and development, the multiple claims that have been made about the ironic misfortune of mineral-rich countries challenge the counter-claim of the potential that mineral wealth has to foster social policy and social welfare.

Implications of the resource curse economic dimensions for social policy

Dutch disease and weak sector diversification

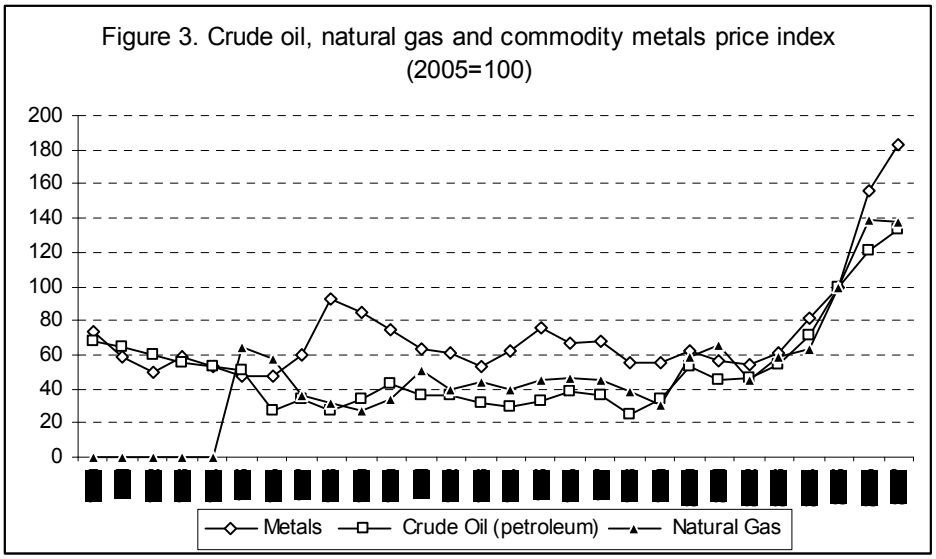
The Dutch disease effect suggests that mineral wealth originates patterns of over-consumption and low-return investments established during boom periods, which are difficult to sustain through subsequent downswings. Concomitant to this are distortions in exchange rates and wage levels that feed through the economy, crippling the growth of non-mineral tradable sectors such as agriculture and manufacturing and, hence, concentrating the economic structure around economies of enclave of finite duration.

The political effects of sectoral economic concentration – together with a dominant presence of TNCs – are reckoned to trigger political contests for capturing easily identifiable revenue and to induce in governments biased spending based on a political pressure to rapidly channel that revenue into the domestic economy (Auty and Gelbb 2001). Cases explored by Auty (2008) illustrate that the distribution of revenue has fed the over-expansion of bureaucracy, and induced patronage and graft that has corroded the quality of government. Revenue has also been transferred to powerful-vested interests in the industrial sectors – furthermore these interests, once entrenched in government, then oppose any move towards more redistributive reforms precisely because they benefit from the existence of inefficient schemes of revenue distribution (Ross 2001).

The implications of all the above for the development of social welfare schemes and policies are straightforward. First, the Dutch disease effect, if not managed successfully with tight monetary policy (as recently suggested by IMF 2007) or restrictive macroeconomic policy (as Sarraf and Jiwanji 2001 illustrates in Botswana), will offset the benefits derived from expansionary periods. Second, enclave economies and lack of diversification will reduce the chances to produce a more sustainable basis that could continue to support a public social welfare regime beyond the life of the mineral economy. A further effect might also be to undermine the basis of informal security regimes particularly if employment opportunities (both in formal and informal sectors of the economy) are reduced in the long run. Third, inefficient schemes of revenue distribution imply a waste of fiscal resources, strengthen the inefficient basis of regressive income distribution that characterises many MDCs and further consolidate the economic bases of political power of those interest groups resisting pro-poor redistribution.

Export-dependence and foreign exchange volatility

The export-dependence of mineral-rich countries make of their economies strongly vulnerable to the types of external shock and price volatility that characterise mineral commodities in global markets (see figure 3). Furthermore, the concentration of the upstream segment of minerals and energy value chains in some specialized developed countries – for instance, the United Kingdom and Canada for the processing of gold and the oil refineries in the USA and western Europe – in addition to reduce the share of value that MDCs can obtain in the value chain, it reinforces the lack of sector diversification noted in the prior section.



Source: Based on IMF-DOTS, January 2005, ESDS International, (Mimas) University of Manchester

Attempts to increase national control over these external conditions and to reduce the profit outflow towards foreign shareholders, banks and downstream processing plants explain in part the history of nationalisations in the mineral sectors. However, it is not possible to make simple generalisations regarding the relative success or failure of this history across developing countries. In the fuel sectors there seems to be some tendency towards national (public) companies which, even if they are not be able to influence significantly the external conditions of global markets, have been able to reduce the effects of external shocks in the domestic economies. The management capabilities developed in some of these public corporations – some with public-private partnerships – might be at the core of this achievement (UNCTAD 2007). State or national ownership would have also helped to address certain geo-political concerns (as Jones Luong and Weinthal (2001) show in the post Soviet states). In the mining sector success through public ownership seems to be less common. The cases most cited in the literature are Botswana (for diamonds production) and Chile (for copper production) (c.f. Sachs and Warner 2001). In most other countries, even when they have undergone earlier experiences of nationalization, the period since the 1990s has seen a return to a more liberal orientation that favours private (and foreign) ownership.

It was expected that the effect of public ownership on reducing the vulnerability of domestic economies to external shocks would also produce a similar effect on social welfare. That, however, required from national governments to be accountable in the use of mineral resources and revenues. In recession periods, it also required from the workforce a certain capacity to deal with the social costs of external shocks in ways that public ownership is not a straitjacket for rejecting pro-competitiveness reform. In Bolivia, for example, Jordan and Warhurst (1992) describe how the mining union in its struggle for protecting the mining workers interests at the end contributed to increase the instability of the whole economic system.

Underinvestment and crowding out effects on human capital

Another possible effect of mineral abundance is the likely underinvestment in human capital – particularly with regards to education – induced by an apparent neglect from governments of the need for a more educated population. This suggestion has been tested in the resource curse literature by comparing the rates of investment in education in resource-poor countries as opposed to the resource-rich where the requirements for higher labour productivity in non-mineral sectors would be less compelling (c.f. Wade 1992). Gylfason (2001) provides evidence that, across countries, public expenditures on education relative to national income, expected years of schooling, and school enrolment are all inversely related to natural resource dependence. Only few cases (clearly Botswana) would have used their mineral rents to increase investments on education – with a bias towards primary and secondary education (Gylfasson 2008). The argument is, however, contested by other authors and the sector in general. In a recent contribution Stijns (2006) disputes this suggestion arguing that claims of a negative correlation between human capital accumulation and resource abundance are not robust because of weaknesses in the measurement of natural resource abundance. Through a more selective use of indicators, he found positive correlations among developing countries between subsoil wealth and human capital accumulation.

A related effect of mineral development on human capital regards poverty. Given that specific studies on the relationship between mineral resource abundance and poverty are few (World Bank 2002; Timmer 2004), much of the inference regarding the existence of a positive correlation between mineral dependence and poverty has been based on the indirect effects that other elements of the resource curse thesis (for example, conflicts or corruption) may have on producing or exacerbating poverty. In situations where social and armed conflicts are not present, and where public institutions are transparent and competent, the revenues generated by mineral sectors are, if well managed, expected to reduce poverty. The cases of Chile, Malaysia, Botswana and Indonesia are often cited as examples.

Implications of the resource curse political dimension for social policy

Conflicts

The vast literature that identifies natural resource wealth as a major cause of conflict (see De Soysa and Neumayer 2007 and the references cited therein) emerges from an interpretation of the distortions introduced by large amounts of mineral rents and revenue into national and sub-national economies. Collier's "finance for rebellion" model establishes that revenues from natural resources motivate looting and provide opportunity for financing large-scale violence (Collier and Hoeffler 2005). The "state-capacity" model (c.f. Fearon and Laitin 2003) proposes that natural-resource-dependent countries have a lower level of bureaucratic capacity because natural resource abundance leads states to become governors of rentier economies and also because dependency implicitly weakens states. Country cases often cited to illustrate the parallel evolution of mineral wealth extraction and conflicts are the Democratic Republic of Congo (Carlson 2006) and Angola (Addison 2003). Nevertheless, De Soysa and Neumayer (op cit) shows that both models can be contested if more accurate measurement of rents could be obtained. These authors argue that only in

some cases might energy rents raise the risk for civil war, while mineral rents would not have any significant effect.

Such a relationship between mineral wealth and political conflict is far from being unproblematic in its implications on social policy. Firstly, one can intuitively assert that the revenues used for financing conflicts (both for attack and defence) withdraw resources from alternative more productive or social policy use. Thus, mineral wealth, in addition to inducing conflict, crowds out overall state revenue. Secondly, induced rent-seeking behaviour and rentier economies question the role of democratic states in facilitating or impeding the emergence of conflicts. It has been argued that in African contexts, democracy has enabled regional elites to fight for looting resources (for instance in Nigeria). But, a democratic regime may also reduce rent-seeking and avoid regional conflicts via redistributive social policy.

A relatively new type of conflict observed in mining areas is that occurring between and among multinational corporations and a range of civil society and related organizations (mainly community groups, religious and human rights organizations, social movements and NGOs), with states playing a range of roles (Hinojosa and Bebbington 2008; Bebbington et al. 2007; Bebbington 2007). These socio-environmental conflicts involve competition over the rural territories and/or the non-mining resources involved (land and water), human and citizenship rights abuses, and/or dissatisfaction over the distribution of the revenues that mineral development is producing. Such conflicts may have been producing mixed effects on state revenue. They have exerted social pressure for governments to renegotiate contractual terms with corporations (for instance, in Bolivia the government increased the royalties rate in the gas sector) or to induce in corporations to enhance their contributions and/or lobby for greater fiscal transfers to mine affected areas (as in the Peruvian case where the sector rejected any increase in tax and royalty payments but offered 'voluntary contributions' to local communities whose investment would be determined by the companies). However, in so far as the mitigation and solution of those conflicts involve the deployment of state financial and human resources (e.g. via police mobilisation, establishment of coordination spaces and referendums to approve mining expansion) the utilisation of state revenue may need to be diverted from some more productive spending and, eventually, eroded if conflicts evolve to the point that stops mineral activity. That said, in many cases the companies may themselves make direct contributions to police and security forces. In the presence of so many variables and possibilities, the final implications of these conflicts for state revenues are yet to be assessed.

Governance

Perhaps the main sense in which there is a negative relationship between good governance and mineral wealth relates to the lack of transparency and corruption in the appropriation and use of state revenue that characterises many of the mineral-rich countries. Political corruption that capitalises on allocating resources to favoured constituents who, in turn, favour the politicians currently in power has been well documented, particularly in the fuel sector and Sub-Saharan African context (c.f. Karl and Cutler 2004; Shaxson 2007). It is argued that such a type of 'vicious circle' produces in governments less incentive for building up the institutional infrastructure

needed to regulate and tax other non-mineral productive sectors in the economy. In addition, the surge or exacerbation of corruption due to illicit appropriation of mineral rents would undermine the basis on which fiscal capacity rests through heightening economic and social divisions and weakening institutional capacities in both states and economies (Isham et al. 2005; Dietsche 2008).

Although cases of bad governance are not confined only to mineral sectors, or to mineral rich countries alone (Kumar 1991), the general consequence is that the implementation of sound economic policy that derives from and reinforces good governance is rarely observed among developing countries, particularly in those that are dependent on oil exports (Karl 2004). Karl finds that pre-existing factors (institutional weaknesses, authoritarian regimes etc.) underlie this pattern, and their negative effects are exacerbated when oil rents fuel the development of *rentier states*.

The strong accent put on governance issues by international organisations and increasingly also by corporations reflects the prior pressure of civil society organisations around these issues (see, for instance the World Bank Extractive Industries Review, various reports of Oxfam US and Oxfam international, and recent ICMM initiatives). This convergence around governance has raised hope that it might be possible to overcome the resource curse thesis. Having recognized that these issues – and social mobilization around them – threaten the sustainability of large scale investments, corporate policy has become more aware that measures are needed not only to foster mineral sector growth but also to establish a more solid basis to ensure that this growth fosters development. The establishment of codes of conduct within the corporate sector (for instance Shell and BHP commitment to no-corruption practices), the recognition that financial organizations can and should play a role on this (World Bank 2005), and the mounting efforts deployed by civil society organisations (national and international) to produce mechanisms that increase transparency, suggest the beginnings of a new route through which a more stable basis for revenue generation and its use in favour of national development might be achieved.

Social welfare effects of transnational corporations in the mineral industry

Part of the resource curse literature has emerged from the fact that the mineral industry is, by large, dominated by large scale investments whose linkages with other economic sectors and, indeed, with local economies are scanty. In addition, in cases where those investments come from foreign corporations, the allocation of "national" natural resources for private benefit has been questioned on the grounds that those investments would have not been guaranteeing fair returns to host countries' economies. That has directed attention to transnational corporations (TNCs), particularly with regards to their effects on employment and their contribution to state revenue.

TNCs and employment

TNCs in the mineral sectors have produced mixed effects in the labour markets of host economies. The positive effects rely on the direct and indirect employment they

have created and the corresponding sources of income that improve human welfare opportunities. Those effects, however, are differentiated by the labor market segments to which they are referred. At an overall level, the large scale, the capital-intensiveness, and the finite period of time (determined by the mineral reserves) dictate the employment of a small skilled workforce that is usually well-paid (Auty 2008). Yet, the tendency of TNCs to use more capital-intensive technologies than domestic companies and the improvements in general labour productivity that is derived from the TNCs' entrance into host countries, have reduced overall employment effects over time (UNCTAD 2007).

The concentration of high skilled labour in the mineral sectors to the detriment of other sectors in the economy is one of the arguments used to suggest that a development strategy based on large-scale mineral projects generates exclusion, distorts the domestic labour market, and reduces the opportunities for further development of other productive sectors (Gelb 1988; Auty 1993; Neumayer 2004). One could presume that, in cases where high skilled labour is foreign, those effects are expected to be less severe and even to produce an opposite positive effect of "technology" transfer, as it happened in other sectors (for instance in the Korean manufacturing development), but there is no enough evidence to support that claim in a sector where the "enclave economy" character holds not only for the composition of the whole economy but also occurs intra-industry.

At a more local level, effects on local labor markets are strongly dependent on the level of development of those markets. Although companies may declare some preference for hiring local workers, given the skill requirements – often absent in the labor force of host localities – non-local workers and expatriates take advantage of job opportunities opened up by new investments. This is so, not just for the direct workforce employed by companies for their exploration and development activities, but also for indirect jobs through subcontractors. The ability of TNCs to promote the creation or strengthening of local enterprises (with the concomitant effects on employment) via subcontracting is often additionally restricted by local entrepreneurs' limited access to financial resources. This creates resentment among local populations and also expands the wage gap in domestic labor markets – part of the social protests observed in Andean countries against mining investments are an illustration of this effect (see Bebbington 2007).

Another source of negative effects on labor markets is the competition that can occur between large companies and small and artesanal miners in gaining access to mineral resources (as Hilson and Yakovelva 2007 illustrates in Ghana). Large mineral investments may also compete for the use of other ancillary resources (land and water) which reduces opportunities for agricultural development and strongly impacts employment levels in rural areas – particularly if that affects small scale agriculture which absorbs a large proportion of the labor force.

Last, but not least, are the effects on employment social benefits. Firstly, given their size, TNCs in general comply with labor regulation and, in some cases, even go above established standards. Notwithstanding that practice can be positive *per se* and induce a raise of social benefits, it also entails some negative externalities for domestic companies which, in situations where the clause of equal treatment to foreign and domestic investments applies, are penalized because smaller companies do not have

the resources needed for adopting higher labor standards. Secondly, regulatory restrictions in the labor market seems to have induced a trend towards subcontracting as a way of circumventing the direct legal requirements that companies would otherwise have to adhere to. This leads to a significant increase in the share of the local workforce that is outsourced without any guarantee that the subcontractor will comply with labor regulation.

That said, nor is there sufficient evidence to suggest that employment negative effects are exclusive to TNCs, neither that state-owned companies guarantee better working conditions than a private (domestic or transnational) company.

TNCs and state revenue

It is generally assumed that the principal benefit that TNC involvement in extractive industries will bring to host countries regards the generation of fiscal revenue. This is the assumption that justifies the significant attempts made by host governments to attract FDI as well as the efforts of international organisations to ease financial and institutional conditions in order to facilitate such investment.

In general terms the financial contributions that large-scale foreign investment brings into host economies are related to their ability to produce foreign exchange by enhancing exports and increasing capital inflows (UNCTAD 2007). TNCs can also overcome financial constraints that national governments or domestic companies may have to develop the mineral sectors (as it happened in periods after crisis or cases of failed nationalization in Latin America (ECLAC 2002)). However, TNCs show an inherent skew in revenue flows towards the economies in which the ownership of capital resides (i.e. wherever the main shareholders and banks are localized). Occasionally, TNCs have engaged in large-scale projects based on partnerships both with domestic private and public companies.

The positive effects that large foreign investments can produce on MDCs can be downplayed by the host governments' eagerness to generate additional fiscal resources, which in term shapes (lessens) their capacity to negotiate favourable terms and conditions. If, in addition, host governments are characterized by high rate of turnover, lack of transparency and corruption (as Clark and Naito 1997 noted for the case of Eastern European MDCs), negotiations between government and foreign companies become extremely difficult and entail a potential risk of substantial conflict in terms of the expectations and goals of governments – and population – and those of industry.

In those conditions the negotiation capabilities of corporations and governments vary during the course of the long-run relationships that these investments imply. Although at initial stages corporations have advantages in terms of technical information from the mine feasibility studies and the ability to assemble finance, technology, skills and market access, after investing their bargaining strength weakens vis-à-vis the host government (Auty 2008). Governments, however, have not always taken advantage of their bargaining potential and, instead, have conceded particularly favourable tax and royalty "holidays" to allow the companies to recoup their large sunk capital and to earn the target rate of return. That fact, along with technological improvements that

significantly shorten the period in which sunk capital costs are recouped, explain in part the high rate of profits obtained by corporations, as well as the re-negotiation processes – in the extreme a return to nationalization (e.g. Bolivia) – that have followed since the last boom of prices.

The entanglement of government-companies negotiations and the reactions it has produced on civil society organizations (both locally and globally) has brought into debate the constraints inherent to a weak state in those MDCs where their institutional apparatuses restraint the design of fiscal regimes more oriented to benefit national interests (see the UNRISD's 2005 'The "Pay your Taxes" Debate' for a reflection on this). That debate has also questioned the state capacity to negotiate with their citizens both capture and use of mineral rents without undermining its capacity to more broadly bargain tax arrangements that tie citizens to states. Furthermore, in a scenario where the global market conditions have changed radically, in a relatively short period, the necessity for institutional change becomes an imperative should the state be more accountable to those national interests (see, for instance, Dietsche 2008 for an overall reflection on this point).

3. What we know about the relationship between mineral wealth and social policy

The review offered above of the multiple objections to considering extractive industries a significant source of growth and development suggests a quite rather pessimistic conclusion about the role that mineral sectors can play in enhancing social welfare. Yet, the hope for a positive relationship is more than ever present in the discourse of many political actors – certainly MDC governments and international organisations – and in the reflection of not few scholars. In this section we analyze the relationships between mineral wealth and the state ability to capture revenue and use it in social services by testing three sets of connected assumptions about: the extent to which mineral export dependence affects the level of state revenue; the ways in which mineral wealth and social policy are connected; the institutional conditions under which governments mineral wealth can produce social welfare.

Methodologically, we introduce a variation to cross-country studies which compare mineral to non-mineral economies – indeed, incidentally, developed to less-developed countries – and question about a particular pattern of social policy in MDCs only. For quantitative analysis data come from the World Bank, the IMF, UNCTAD and the WHO databases (available, with restricted access, at ESDS International (Mimas, University of Manchester). Whenever possible, averages for 1995-2005 were calculated, otherwise averages are for the period of available data. Qualitative data come from authors' research.

Assumption 1: In MDCs, mineral exports dependence affects the level of state revenue derived from mineral sectors.

To test this assumption we look at the association between several categories of state revenue and mineral wealth measured by the ratio mineral exports to GDP. Although some of the mineral production is also oriented to domestic markets, our justification

for such a proxy is that, as shown in Section 1, most of mineral commodities (fuels and metals) are exported. Revenue (excluding grants) is taken as a percentage of GDP (R%GDP) in order to include the contribution of other economic sectors and, hence, to substantiate our reflexion about a mineral wealth-led development strategy.

Given the lack of sectoral data which constrains a more accurate assessment of the fiscal effects produced by companies and individuals from mineral sectors, the categories of state revenue included here are those where most of mineral earning are meant to produce changes on government revenue, namely general taxes (TR%R) as an overall effect, and taxes on income profits, and capital gains (TIPKG) and social contributions (SC) which capture most of the companies' fiscal contributions. Revenue is taken as a percentage of GDP, TIPKG as a percentage of total taxes and SC as a percentage of total revenue in order to keep implicit the contribution of other sectors (or tax payers) to the fiscal coffer.

Results of ordinary least square regressions are shown in Table 1.

Table 1. Association between state revenue and mineral export dependence
(estimates based on averages for 1995-2005)

	Log R%GDP	Log TR%R	Log TIPKG (%taxes)	Log SC(%R)
Log Ratio metals & ores exports: total exports	-.095 (-1.989)*	-.045 (-.943)	-.020 (-.303)	-.075 (-.400)
Log Ratio fuels exports: total exports	-.080 (-1.670)*	. -.082 (-1.719)*	.034 (.506)	.182 (.993)
Constant	3.389 (18.753)*	2.914 (16.315)*	3.227 (12.647)*	1.838 (2.662)*
R2	0.075	0.055	0.018	0.059
N-K	52	52	52	35

Note: t-ratios appear in parentheses
* Correlation is significant at the 0.05 level

Although this first set of regressions can be taken as exploratory due to regression curves low fit, the negative association found is revealing. The necessity to include other variables to explain state revenue changes implies to take mineral revenue in a broader context. To be sure, changes in the levels of mineral exports dependence may not imply – per se – any significant effect on revenue when that revenue is weighed by a broader economic basis (for instance the GDP) which stresses the effective contribution that mineral extraction may be producing for the economy.[2] This – at least – should call the attention to question the simplistic discourse that increased mineral exploitation will be translated into significant earnings in the whole economy and an equivalent increase of state revenue.

[2] Given the large range of export dependence considered for calculations (between 10 and 100 per cent), we additionally measured the correlation for those countries with higher dependence (50 per cent or more). Results in that exercise are not different and it is only for the correlation between taxes on income profits and capital gains as a percentage of total taxes that the correlation becomes positive and significant for that sub-sample.

A straightforward question is about the causes of such a disassociation. The literature on mineral resources and state revenue has widely documented that governments in mineral-rich countries obtain fiscal benefits from mineral exploitation, especially in the long term, based on their taxation method. It also acknowledges that there are effective trade-offs between encouraging investment and reaping substantial government revenues (c.f. Garnaut and Clunies-Ross 1983). The question that remains open is, then, whether the taxation methods implemented in mineral dependent economies – and the multiple fiscal instruments that give preferential treatment to corporations (tax depreciation, tax incentives, allowable tax deductions for costs, foreign re-investment allowance, and the like (see Sarma and Naresh 2001) for an illustration in a sample of countries) – are appropriate to peg government revenues to production and profits, as O'Faircheallaigh (1998) suggests, to compensate local communities for using their resources.

The criticism made to mineral companies – and to governments for being weak negotiators – is rooted in the perception that the crowding out effect expected from levying mineral development activities has not being as substantial as it should be to ensure long-term economic benefits on host countries – and perhaps not even enough to off-set the social and environmental costs involved in such a development strategy[3]. Dealing with critics, MDCs' governments have made explicit their popular fear that excessive taxation will repel away investors and, hence, implicitly suggested that an eventual trade-off between state revenues and other benefits of mineral development (which would basically bring foreign exchange) is acceptable. A closer look at taxation issues is offered next.

Taxes and royalties

If there is a trade-off of between taxation and investment (Otto 2007), the taxation system is a domain of negotiation where – at least in theory – a sustainable positive association between private earnings and fiscal contribution is in play. Defining an optimal system for the mineral sector, however, is far from being a technical issue to be confined to government tax agencies (Davis 2007). By the contrary, design and implementation of taxation systems requires some sort of macroeconomic governance perspective where the responsibilities of state, market and civil society actors are complementary (Goolsbee 2004; Matshediso 2005). It also requires an institutional setting that facilitates the design and implementation of fiscal regimes which redirects the accountability of the state towards its citizens and produces a social contract (Diestche 2008).

[3] A criticism raised by many civil society organisations (see, for instance, the Mining and Communities network website).

Although a detailed assessment of taxation systems in MDCs goes beyond the scope of this paper, two points deserve attention. Even though most MDCs combine taxation methods including corporate taxes and royalties, there is no the ideal *one-size* tax system. Therefore, as others have suggested, 'the national tax policy for the mineral sector accommodates unique needs and capacities' (Otto 2000:18). However, increased competition, regional integration and transnationalisation in the extractive industries (Bebbington and Hinojosa 2007) have also induced over time increased implicit harmonization of basic taxation in a way that reduces competition between countries – more often in "a race to the bottom" so as to attract foreign investment.

The second point relates to the connection between taxation systems and social policy regimes. There is no particular relationship between a competitive economy capable of attracting more investment based on lower taxation rates and the welfare outcomes it may be able to generate through state revenue. For instance, whilst Sweden and Chile are characterized by low tax rates in their mineral sectors and, at the same time, have been able to develop a welfare state regime, other MDCs would have achieved the same despite – or perhaps because of – high taxes imposed to mining investments. But, even in successful cases of mineral development there are concerns about the uneven distribution of mineral revenue between host countries and foreign investors (for instance, Chile was revisiting its no-royalties policy (Otto et al. 2006) after strong debate on the inadequacy of its mining tax regime (Riesco 2005). Additionally, there is also evidence that the social policies implemented after significant economic growth have not been enough to counteract the costs associated with mineral development (see Meller et al. 1996 for an illustration on Chile).

Conversely, insecurity regimes and, more critically, externally dependent insecurity regimes can also be observed in countries with either higher or lower taxation rates. Almost by definition, a simple regression between the levels of state revenue and taxes would show the inextricable linkage between those two variables, but the evidence is less conclusive about tax systems (rates and modalities included) and state revenue. Furthermore, it does not say much about the likely implications in terms of social policy. This is further explored below.

Assumption 2: In mineral dependent economies, the linkage between mineral wealth and social policy occurs in four dimensions:
2.1 mineral wealth encourages higher levels of social expenditure;
2.2 mineral wealth produces fiscal space for social policy;
2.3 mineral wealth influences the composition of social expenditure;
2.4 mineral wealth enables new social policy initiatives to get started.

Given the scope of this assumption and the limited data available in most MDCs, the four parts of assumption 2 are tested in an exploratory way through correlation and cluster analysis, and illustrated with examples. Unless noted differently, estimates are based on averages for the period 1995-2005. For correlation analysis health expenditure per capita is taken as a proxy for the state's capacity to respond to healthcare demand of its entire population. Expenditures on health and education, as a percentage of GDP, implicitly include the proposition that changes in the ratio

expenditure to GDP reveal an effect on revenue distribution.[4] Main findings of this analysis indicate that state revenues and expenditure in social sectors are positively related, there is a certain geographical pattern in the conformation of welfare regimes and, indeed, mineral wealth reinforces such a pattern.

The results of non-parametric[5] correlation are presented in Table 2.

Table 2. State expenditure and revenue in mineral-rich developing countries

	Health expenditure per capita (current US$)	Health expenditure, public (% of GDP)	Health expenditure, total (% of GDP)	Public spending on education, total (% of GDP)
Revenue, excluding grants (% of GDP)	.624**	.743**	.477**	.691**
Tax revenue (% of GDP)	.357**	.542**	.374**	.549**
Social contributions (% of revenue)	0.287	.330*	0.239	-0.025
Taxes on income, profits and capital gains (% of revenue)	0.07	-0.161	-.297*	0.18
Taxes on income, profits and capital gains (% of total taxes)	0.203	-0.063	-0.256	.304*

Cells contain Spearman's Rho correlations.
** Correlation is significant (**) at the 0.01 level , (*) at the 0.05 level

As expected, the association between revenue and expenditure in social sectors is revealed in each instance to be positive and significant. Similar results are reported for tax revenue. The correlation of social contributions (as a percentage of total revenue) and public expenditure in the health sector is positive, but negative in the case of public education[6]. If the association between government revenue and mineral export dependence is negative (as shown in Table 1), then the mixed results for the association between negative correlations between taxes on income, profits, and capital gains (the proxy used to observe the direct contribution of mineral sectors) and expenditure in social sectors (negative in the case of health and positive in education) would suggest that the higher the mineral dependence, the lower the revenue that is captured by governments and, hence, the lower the amounts allocated for expenditure in social sectors. The evidence is less conclusive in regard to allocation of mineral tax resources among sectors, even though it seems to favour the education sector.

[4] In so far as revenue and tax revenue are both a percentage of GDP, correlation coefficients would not change if absolute values were instead used for calculations.
[5] The Spearman's rank correlation coefficient is computed by using rank scores. For each of the variables X and Y separately, the observations are sorted into ascending order and replaced by their ranks. The advantage of this type of correlation is that it works regardless of the distributions of the variables and it also reduces the effect of outliers.
[6] Although the negative association is not statistically significant in this case, it continues to be negative and becomes significant when public spending on education is measured as a percentage of government expenditure.

Some explanation to these results can be found in the social policy literature which talks about budget allocation based on the government nature (authoritarian or democratic) and also notices the role of civil society in protecting social spending, particularly in education[7]. In that sense, and bringing into consideration the hypotheses that governments in MDC would use the additional mineral budgetary resources in those sectors (and places) where more political pressure is observed, and that a significant part of that spending would go to current spending (basically wages), it is also possible to suggest that the final effect of mineral resources on the composition of social expenditure depends on the balance between social forces (for instance, between sectoral labor unions in Latin America, or some more region-based movements in Africa).

To approach the effects on welfare regime (parts 2.2 and 2.4 of assumption 2) we explore more the effects of mineral wealth not just on the levels, but also the composition, of social expenditure as a way of assessing what effects, if any, mineral wealth produces on the welfare mix. Following the path traced by Powell and Barrientos (2004) and Gough et al. (2004) in their cluster analyses of welfare regimes, we use the World Health Organisation detailed data to construct MDCs welfare regime clusters. The point of departure for cluster analysis is the presumption that countries are aggregated based on their exposed welfare mix, approximated by the composition of health expenditure.[8] Five variables are chosen to picture the welfare mix, each one indicating the role assumed by institutional sectors in the provision of health – i.e. the state (whose predominance defines a welfare state regime), the market (stressing the role of private sector in an informal security regime) and international organizations (whose intervention define an externally dependent insecurity regime). Variables selected for this purpose are: the shares in total expenditure on health of 'general government expenditure' and 'private expenditure', 'external resources for health as a percentage of general government expenditure on health', 'social security spending on health as share in general government expenditure on health', and the 'out-of-pocket expenditure share in total expenditure on health'. Figure 4 shows the process of aggregation of mineral dependent economies based on their expenditure levels.

Figure 4 about here (see at the end of the paper)

In a second phase, we introduce a variable that indicates the presence of mineral wealth (the ratio mineral exports to total exports). Figure 5 shows the new aggregation of countries.

Figure 5 about here (see at the end of the paper)

The initial aggregation observed in figure 3 broadly divides MDCs in four groups which basically expose some geographical pattern together with signs of the predominant welfare regimes found by Gough and collaborators for selected group of

[7] We refer the reader to UNRISD's recent contributions in this area (UNRISD 2006:6)

[8] Selection of health as a variable to reveal the welfare mix obeys to two considerations: conceptually, health is one of the milestone variables to measuring social welfare and wellbeing, as such it is one of the main targets of social policy; empirically , health is the only variable for which data is split by sector of provision (public or private).

countries. Once the mineral-wealth variable is included, the regional pattern becomes clearer (for instance, it clearly differentiates between East European and African countries, which were mixed before) and, overall, reinforces the previously observed predominance of a particular welfare regime (for instance, a more informal security regime in Latin American countries and insecurity regime in groups of Sub-Saharan countries). That would indicate that mineral wealth does not affect significantly the welfare mix, observed otherwise without it; by the contrary, it would reinforce it.

To this point, as an overall reflection, it can be said that the evidence presented above supports a conclusion that the positive association between revenue and expenditure is indicative of MDCs state's disposition to use their fiscal resources in social expenditure. However, it does not say anything about the kinds of expenditures involved in each case and the welfare outcomes actually achieved. For instance, revenue and expenditures can go up in a period of mineral boom, but how it is distributed remains an open question: it may be allocated progressively or regressively, may be targeted to particular groups or support universal coverage. Conversely it can also be used to feed wages and bureaucracy under any type of social policy scheme without much effect on welfare. Given that possibility, we take a closer look at social insurance and social assistance programs in MDCs. Table 3 presents a list of these programs, coverage levels and some salient features.

Table 3. Social insurance and social assistance programs in selected mineral dependent economies (operating at March 2008)

Economy	Mineral export-dependence h(igh); m(edium); l(ow) a/	h(igh); m(edium); l(ow) coverage; No		Salient features
		social insurance	social assistance	
Fuel dependent				
Nigeria	h	l	no	School feeding and community development programme (WB);pilot child subsidy in process of implementation
Algeria	h	h	no	
Yemen	h		no	
Venezuela (BR of)	h	m	l	
Gabon	h	no	no	
Turkmenistan	h			pension and family allowances reform
Sudan	h	l		
Azerbaijan	h			pension reform
Equatorial Guinea	h	no	no	
Angola	h	no	no	
Russian Federation	h	m	m	pension reform
Cameroon	h	l	no	
Ecuador	h	m	m	Bono de Desarrollo Humano - cct
Egypt	h	m	l	new integrated poverty reduction programme (similar to Chile Solidario)
Cape Verde	m	l	m	social pension just being introduced (ILO STEP)
Colombia	m	m	m	Familias en Accion - upscaled cct; pension and health insurance reform in mid-1990s
Seychelles	m			
Indonesia	m	l	m	new safety nets programme -cct - and health

				insurance
Maldives	m	m		
Viet Nam	m	l	l	
Senegal	l	l	l	small programmes on vulnerable groups - community health insurance (ILO)
Lithuania	l	h	m	pension reform in 1990s a la Chile
Argentina	l	m	m	new social pension and cct
Uzbekistan	l	m	m	pension reform
Myanmar	l	no		
Kenya	l	l	m	new orphan and vulnerable children transfer programme and food security
Kyrgyzstan	l	m	m	social assistance reform (1998)
Mexico	l	m	m	pension reform in 1990s, more recently cct Oportunidades, and health insurance for poor, Progresa program

Economy	h(igh); m(edium); l(ow) coverage; No		Recent reform; highlight
	social insurance	social assistance	
Mineral and ores dependent			
Botswana	h	h	h	social assistance is dominant, pension and child grants
Suriname	h	l	l	
Zambia	h	l	l	soc insurance for civil servants only; pension reform; 4 pilot transfer programmes; reliance on food aid
Jamaica	h	l	m	new cct PATH
Guinea	h		no	
Mongolia	h	m	l	child school subsidy UNICEF
Chile	h	h	h	strong social insurance and assistance (Chile Solidario). Structural reform of pension system (1980-81)
Tajikistan	h	m	l	
Peru	m	m	l	new Juntemonos cct with community component
Ghana	m	l	l	new cct and health insurance
Cuba	m	h		
Nepal	m	l	m	new social pension universal
Rwanda	m	no	no	
Central African Republic	m		no	
Armenia	l	m	m	
Georgia	l	m	m	
Bosnia and Herzegovina	l	m		
Zimbabwe	l	l	no	
South Africa	l	no	h	social assistance is dominant, pension and child grants
Namibia	l	no	h	social assistance is dominant, pension and child grants
Benin	l	no	no	
Guyana	l	l	l	
Fuels and mineral & ores dependent				
Kazakhstan	h	m	m	pension reform

Bolivia	h	l	m	universal social pension funded by privatisation fund - recent re-nationalisation in the fuels sector undermines funding (50% of capitalization funds from fuel companies)
Mozambique	h	l	l	small social assistance
D.R of Congo	m	no	no	

a/ High dependence: >40%; medium dependence: 20%-39%; low dependence: 10%-19%
b/ cct is conditional cash transfer
Source: A. Barrientos's database.

Four aspects are of particular interest in Table 3. First, social insurance and social assistance programmes occur in almost all MDCs regardless of their levels of mineral export dependence. Similar programmes can be found in highly dependent economies (such as Botswana or Zambia) as in those with lower mineral dependence ratios (such as South Africa or Namibia). Nor are their coverage levels closely associated with the mineral basis of their export sectors. Secondly, different studies document that changes in social security systems responded to the burden of the fiscal deficit (as De Mesa and Bertranou 1997 show for the case of Chile) or to a more dominant wave of neoliberal policies (as Barrientos 2004 suggests for Latin America). In that context, if social security systems rely on employers' contributions and general tax revenues, the swings introduced by mineral cycles can create uncertainty regarding the ability of the government to collect resources, to finance such liabilities. Thirdly, in the case of social assistance programmes or universal pensions systems, although these have responded to broader agendas, once introduced in the system their reform – and eventual removal – is difficult due to political costs (Willmore 2007). Again, if those programmes are financed with taxes and mineral revenues are a significant part of the pool of revenues collected by the state (as in Chile, see Guajardo 2008), their financial viability depends on the government's ability to keep a stable fiscal coffer even within mineral downturn periods or when further possibilities of mineral extraction decline. Even in cases where the institutions directly involved with mineral exploitation are weak, strong institutions in the central management of economic policy, finance and planning are a guarantee for the good use of mineral revenue (as shown in Indonesia by Ascher 2008). However, if they are funded differently (for instance via capitalization funds as in Bolivia)[9] governments may gain more room for manoeuvre.

Fourthly, taking a longer-run perspective and considering the *enclave* character of mineral economies, it is worth recalling that, in the same way as the linkages between mineral sector and the rest of productive sectors can be improved, links between the financial resources produced in mineral sectors and the development of domestic financial markets attached to social security systems can be fostered. For instance, the positive effects of mineral development in the domestic labor market – even if these are limited by the sector characteristics –can be channelled towards the domestic financial market as it was the case in Chile (Lustig 2001; Mesa-Lago 1997).

A final reflection regards the influences of mineral wealth on the composition of social expenditure and the extent to which it may influence the trajectory of new social policy initiatives. In a context of extractive industries expansion, organized reaction of civil society groups, as well as of companies, points out the role that ideologies play in defining a particular welfare mix, together with its financial basis. Adesina (2008) documents the effects of regional groups' pressure exerted on the Nigerian government in the 1970s to launch the universal primary education programme and a range of other social investments by using mineral-based national resources. However, Nigeria from the 1990s is also a case which illustrates the perversion of the civil society due to linkages between local political elites, the civilian governors of the states and the oil companies (Meagher 2007, quoted in Adesina op cit.). In Equatorial Guinea the international community present in the

[9] The privatization process included a capitalization fund constituted on the basis of a transfer of 50% of the nominal value of newly privatized entities to finance a private pension system that would benefit Bolivian citizens above the age of 21 years.

country [at the time this paper was written] was pushing the government to extend the social protection programmes – partially financed by oil revenue – over the poorest and not just the formal workers. Recent contributions on the Andean countries context suggest that civil society organisations have shaped the social responsibilities adopted by corporations in the mining sector (Bebbington and Hinojosa 2007) and influenced the positions assumed by government regarding the relationships (and trade-offs) between mineral investment and people's rights (Bebbington and Burneo 2008). Similar effects have been observed in Eastern and South-eastern Asian MDCs regarding companies' behaviour, with the possible caveat that civil society pressure has had less effect on government[10]. On the other hand, the companies themselves have publicly declared their commitment to making the mineral sector 'a key contributor to sustainable development' carrying out initiatives that directly work with communities or others that look for good governance at national and global levels by means of private action (ICMM website[11]). For this to occur, companies, many civil society organizations and citizens alike acknowledge that an accountable and good-quality public sector is essential. We turn to this point in assumption 3.

Assumption 3: In MDCs, the quality of government affects the extent to which the state can capture revenue and spend it in social policy.

The first part of this assumption is tested by regression analysis of state revenues and measures of institutional and policy quality. The second part is addressed by looking at the relationships between expenditure and government quality. The proxy used to measure both institutional and policy quality is the 'country policy and institutional assessment' (CPIA) estimated by the World Bank.[12] In this latter case, given that data does not support regression analysis, we report only correlation coefficients to approximate signs of association.

Results reported in Table 4 indicate that revenue and tax revenue are positively associated with the quality of public sector management (at all levels) and the institutions which enable governments to capture revenue from all economic sectors. However, such an institutional capacity in the state would not necessarily imply a better capacity to increase the share of tax on income profits and capital gains (which significantly includes the corporate mineral sector in the more mineral-dependent countries).

[10] That was one of the main conclusions of the international conference 'Refraiming the debate' held in Manila on November 2007.
[11] See www.icmm.com
[12] The CPIA assesses the quality of a country's policy and institutional framework – that is the extent to which that framework supports sustainable growth, poverty reduction, and the effective use of development assistance (World Bank 2006:4). Given the methodology used for its estimation, we consider its validity, for studies regarding social development, is superior to alternative indicators of institutional quality.

Table 4. Association between state revenue and institutional quality in MDCs

	Log revenue excl grants % GDP	Log Tax (%Revenue)	Log Tax income profits capital gains (% taxes)
Log CPIA public sector management and institutions cluster average	.634 (2.004)*	1.564 (1.993)*	-1.158 (1.076)*
Log CPIA transparency, accountability, and corruption in the public sector rating	-.196 (-.621)	-.553 (-.829)	.002 (.403)
Constant	1.367 (2.438)*	1.367 (2.660)*	3.079 (20.280)*
R2	.239	.207	.036
N-K	22	22	22

Note: t-ratios appear below the coefficients
* Correlation is significant at the 0.05 level

The association between institutions and economic performance has been explored on diverse grounds, and this has constituted an ever more important component and contribution of the resource curse literature, with commentators tending to agree that mineral wealth has generally harmed the quality of governance structures (see section 2). In a similar line, Dietsche (2008) concludes that what hinders MDCs from building capacity and improving the quality of institutions is the ways in which fiscal regimes have been designed in the asbsence of state capacity and good institutions. However, that conclusion does not seem to be absolute. For instance, Isham et al. (2005) show that in a sample of 45 mineral export countries, institutional quality indicators tend to be poor, particularly with regards to rule of law, political stability, government effectiveness and corruption. However, they also show that those countries present relatively similar institutional standards to those observed in non-mineral countries (when measured by law and order tradition, quality of bureaucracy, political rights, civil liberties and property rights and rule-based governance). Similarly, Rosser (2006) comments on the questionable robustness of econometric studies which try to measure institutional and political factors and asks for a better understanding of the social forces that shape economic policy in resource-abundant countries. In a recent piece, Rosser (2008) also suggests that the institutional change needed to overcome the resource curse requires a far-reaching political and social change, which implies a further effort for understanding the causes of and conditions for that change.

Seeing our findings together with these comments, one could suggest that in many MDCs the institutional apparatus currently in place is *partially* prepared to take advantage of mineral development. Then, what may be needed for policy success is to address the issue of *sound* institutional and policy standards in a way that is socially acceptable. That implies to stress the mechanisms which enhance the government's functioning and, at the same time, to open space for enacting good governance mechanisms. This conclusion, rather than suggest a solely instrumental view of state policy – in particular, of social policy – what it does is to acknowledge the comparative weaknesses of MDCs states and, on that ground, to suggest that the

formulation and implementation of social policy can certainly produce not just improvements of social welfare conditions, but a transformation of the state itself. As the several contributions in the UNRISD's volume highlight (Mkandawire 2004), the protective and redistributive roles of social policy cannot be viewed in isolation from its transformative and developmental roles.

The indispensable word of caution for a conclusion of that type is about the channels through which that can happen – and is happening – in contexts of mineral expansion. Whilst in some MDCs the quality of government might be enhanced through policy and institutional (including formal and informal institutions), further structural change in the state apparatus may be needed in others. That oblige further understanding of the ways in which mineral development produces incentives, alliances and conflicts that influence the trajectories of state formation, and, hence, greater attention to its impact on governance. An accent on governance arrangements that mineral development produces enables to finally perceive how a mineral-led development strategy affects the configuration of the welfare mix – and viceversa –i.e. the extent to which the state might develop towards a welfare state or, instead, reinforce a situation where informal security regimes and even insecurity regimes might become dominant. The next section elaborates on this last reflection.

4. Framework on the linkages between state revenue and social policy in mineral-wealth contexts

With the virtues and vices that studies based on cross-country comparison have, our findings on the relationships between social policies, state revenue, human welfare and mineral wealth suggest that – at present – there is not enough evidence to support any simplistic argument about a deterministic relation between mineral dependence, social policy and social welfare. Therefore, our point of departure for elaborating a framework to address social policies in contexts of mineral-wealth is that the fiscal space opened up by the revenue captured from mineral sectors (available, for instance, in periods of mineral boom *when the taxation system allows it*) can be used for a range of social policy purposes that can range from an extension of what is already in place through to innovation, or some combination of the two.

In that sense, the mineral wealth effects on economic performance and governance issues in MDCs can be interpreted as a set of additional factors which influences the country economic, political and social structures and institutions. In that vein, whenever mineral wealth is taken as the basis of an export-led development strategy, such a set of factors conditions the effectiveness of the state, the private sector or the civil society for achieving welfare outcomes.

To be sure, should the purpose of a nation be to achieve some acceptable level of social welfare, we suggest that mineral wealth is *a conditioning factor* which, wherever it occurs, could be used in a way that best respond to established societal priorities determined by *first order factors* (such as the political consensus/disagreement on a development strategy, or level of inequality and the country level and conditions of participation in the international economy). In that sense, mineral wealth can be taken as an opportunity to achieve established societal

goals or – at the limit – to be left aside if the costs of using it are greater to the benefits it brings.

The framework "social policy in mineral-wealth contexts" (SP-MW hereinafter) proposed in this paper subscribes the general principles outlined by Esping-Andersen (1990, 1999) and Gough et al. (2004) to elaborate on welfare regimes in developing countries (see the introductory section). On that base, it expands in two directions: firstly, it highlights the notion of a *welfare mix*, that is, three (or more) welfare regimes which co-exist at the same time and in the same country. To make that welfare mix explicit, we adopt here the same three regimes identified by Gough and collaborators (op cit), namely: 'actual or potential welfare state regime'; 'informal security regime'; and 'externally-dependent insecurity regime'. The fact that one of those regimes may be dominant, does not exclude the existence of the others.[13] Secondly, the SP-MW suggests that, although social welfare policy might provide entitlements as a matter of citizenship and rights, the struggles produced by the expansion of extractive industries in MDCs shape both the composition of the welfare mix and the mechanisms of social policy delivery.

In addition to that, the SP-MW framework relies on four premises that summarises our findings presented in previous sections and approximate *first order conditioning factors* that explain, at least in part, the composition of the welfare mix in MDCs. These premises are:

1. The channels through which mineral development affects the welfare mix in MDCs are:

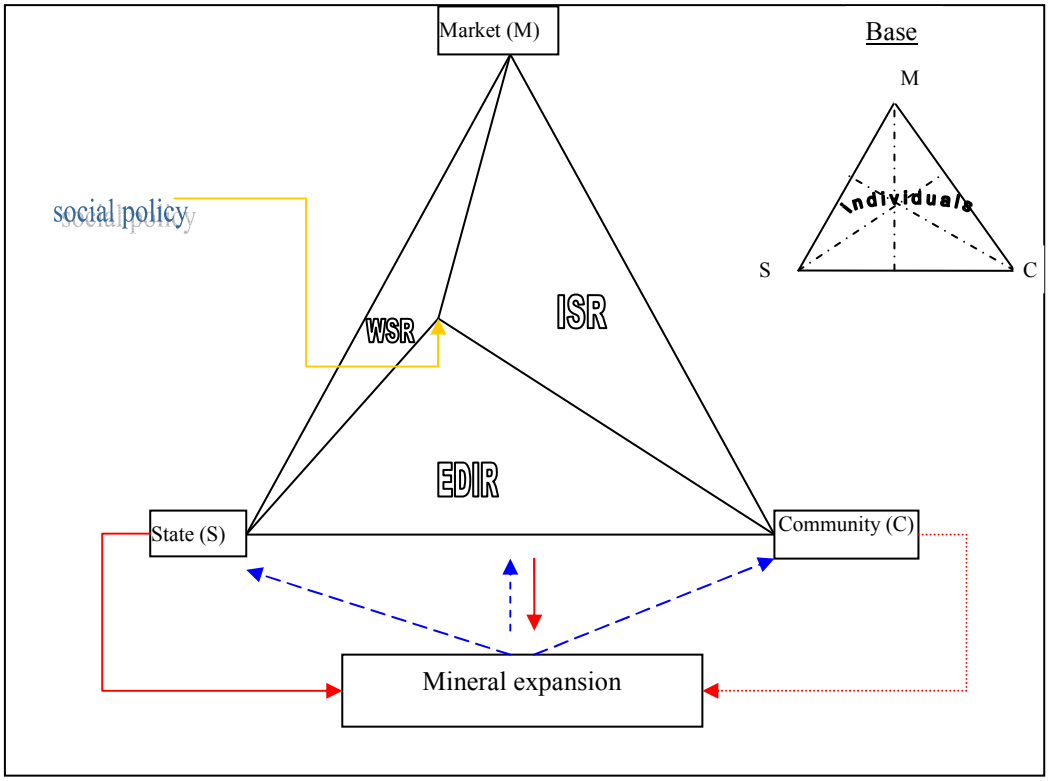
    i) Of macroeconomic nature: it creates fiscal space for social welfare provision (provided that there is a positive balance in terms of revenue-costs for the host-country); it reduces the possibilities for sector diversification; and, it introduces external dependence that produces fiscal vulnerability. Emphasis on economic diversification underneath its effect on growth and state revenue. Growth is hindered by excessive reliance on primary production in few mineral-resource-based sectors, whether by reducing opportunities for transferring labor from low-skill-intensive mining to more lucrative jobs in more high-skill-intensive occupations or by reducing the tax base. A low tax base arises from a low – and even null – workers' contribution to the fiscal coffer (as in small-scale-dominated mining sectors) or from low contributions of large scale companies, relative to the expected state revenue needed for social policy.
    ii) In the governance terrain: it changes the governance balance between state, market actors and civil society, and it brings international/multinational actors who interplay with all domestic actors both in the political and economic arenas. Concomitant to the macroeconomic effects, the political effects of excessive reliance on few mineral sectors reinforces rent-seeking behaviour both in governments and elites.

[13] Here we refer the reader to empirical literature on welfare regimes which present evidence on the existence of a welfare mix (c.f. all collaborations in Gough et al. 2004). We acknowledge comments from Anthony Hall and Tanja Muller remarking the existence of more than three regimes in developing countries.

2. MDCs have in place an institutional fiscal structure which responds (in some countries more favourably and in others less) to national priorities of social welfare;
3. MDCs compete (at regional and global scales) to attract FDI for their mineral sectors. The main instruments used for that purpose are of fiscal nature.
4. Investors' decisions regarding location are influenced by multiple factors among which taxation and political and institutional stability are essential. Geological potential, although a necessary condition, appears not to be of first order.

In essence, the SP-MW framework aims to be useful for understanding and assessing the influences of mineral wealth on the configuration of a social welfare mix and, hence, for social policy design. Thus, it helps to identify areas where social policy – understood in the broad sense in which is presented in the introductory section (see also Mkandawire 2004) – could foster, strengthen or correct paths of social welfare. Figure 6 represents that framework in the form of a pyramid where each face portrays each part of the welfare mix. The vertex of the base locates three *institutional sites* where social provision comes from, namely the state, the market and civil society. The pyramid's base represents the 'individuals' domain', which is separated from all others institutional sites to acknowledge the double role that individuals play in social policy – as subjects of and actors for. The locus of social policy is on the fourth top vertex, highlighting its instrumental role for making of the pyramid flatter (in which case individuals are more socially disperse), or thinner (in which case the social structure is more agglomerating).

Figure 6. Welfare regimes and social policy in MDCs



Mineral expansion originates in institutional sites (state, market, community) and, then, generates a set of conditioning factors for each welfare regime (represented by dot-arrows in figure 3). Those factors can be differentiated by their endogenous or exogenous nature (endogenous or exogenous to the country) in a way that allows perceiving the extent to which state, private sector or community actors can shape their influence. For example, among the endogenous factors there could be: influences on the mineral tax system, which would increase the possibilities for orienting the welfare mix towards a welfare state regime; influences on regulation which would affect informal security regimes and insecurity regimes; or/and influences on the strength or weakness of communities to shape both mineral development strategies and social policy which would affect all welfare regimes. Some exogenous factors are: the mineral corporations' strategies for investments location, the economic and social policy conditionalities from international institutions or/and the fluctuation of mineral prices in global markets.

Finally, in so far as what counts of a framework of this type is to perceive the ways in which mineral development is – or can be – linked to social policy and, in turn, to see how social policy can produce social change, it is essential to see that social policy funded by the resources generated in the mineral sector produces particular welfare outcomes and induces a process of change in the welfare mix.

Future Directions

The expectation created by the most recent mineral boom about what that would be possible to achieve with the fiscal resources derived from extractive industries has revived overwhelmingly the idea that a primary-commodity export-led growth strategy can also produce *transformative social policy*. That expectation, however, has to deal with a long history of developmental disappointments with mineral export-led strategies and, more recently, with increasing concern about the macroeconomic, governance and peace effects that are being induced.

The cross-section approach used in this paper to analyse 74 selected mineral-dependent developing countries has shown that the evidence is not conclusive with regards to a certain generalized pattern of linkages between mineral wealth, state revenue and social welfare. The implications of a general observation like this for responding to the initial concerns about what mineral wealth can contribute for enhancing social welfare in MDCs, and the extent to which mineral expansion undermines the chances of social development, is that the relationship between state revenue and social policy needs to be addressed in an integrative framework that includes both the macroeconomic and the governance dimensions of a mineral-led development strategy. The aim of this paper was to contribute in that line.

In an ideal world, specific data about mineral production, companies' profits, mineral revenue, mineral tax revenue and public expenditure of that revenue would be available for researchers and policy makers to clearly assess the real contribution of mineral sectors to development. Unfortunately, the reality is different and that adds a word of caution to any kind of statistics-based study. But, more importantly, lack of data in the extractive industries (where colossal amounts of financial resources flow) is indicative of the weak basis on which decisions about allocation of resources are

made and mechanisms for revenue capture are designed. Furthermore, claims on the perverse role of mineral revenue in fuelling bribes, conflicts and civil war constitute an urgent call for increasing transparency in the industry, a call that is also an opportunity for further research and policy advice in the sector.

Given that the concern about the linkages between mineral development and welfare are relatively new, social policy is a fruitful domain where mineral-wealth can make a contribution if the mechanisms that facilitate *informed and socially-sound* decisions are in place. In that line, country and comparative case studies on the effects of mineral expansion on welfare regimes can be insightful for social policy design. Enquiry on the effects of mineral expansion on emergence and development of domestic markets (particularly labour and financial markets) can also contribute to social policy finance and delivery. Finally, if social policy can certainly play an instrumental role and, by doing so, produce social transformation, there is much to explore about the structural and institutional conditions in which the connection between mineral expansion and social policy can lead development.

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Figure 4. Clusters1: PvtHETHE GGHETHE ExtResGGHE SocSecEGGHE OOPSTHE

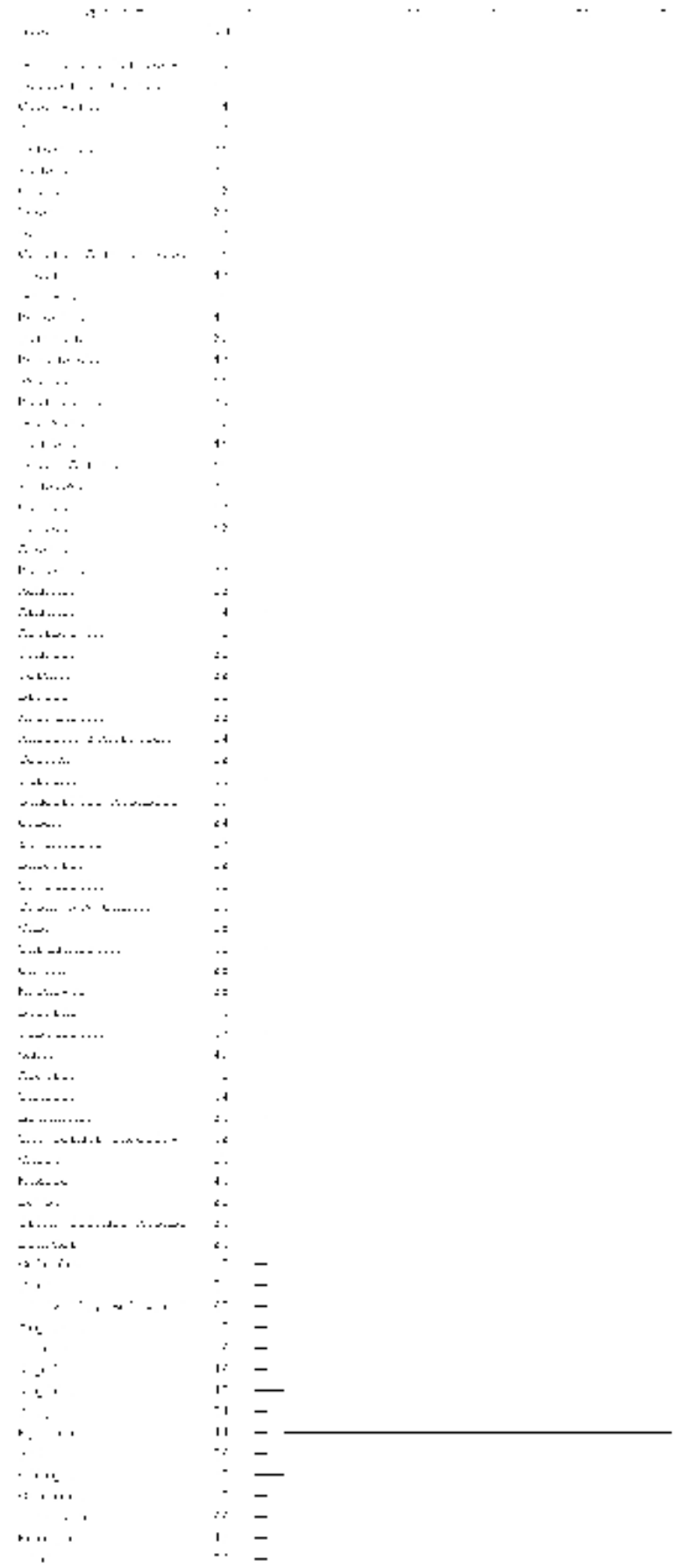

Figure 5. Clusters 2: Clusters 1 + Mineral-export dependence