Nationalizing South African mines: an enonomic assessment

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Synopsis

Nationalization is high on the policy agenda in South Africa. This paper considers the case for nationalizing the local mining sector from an evidence-based perspective, which is derived from theoretical considerations and related to the known features of the South African mining sector and economy. A strong case against nationalization emerges, which can be summarized as follows. The mining sector is competitive and therefore a poor candidate for public ownership. Furthermore, the resources sector does not dominate the South African economy nor does it create the risk of a decrease in the competitiveness of the industrial sector via the unintended adverse impact of an appreciating real exchange rate due to a commodity boom (Dutch Disease). Nationalizing the mining sector will cost the government more than it receives. This is not only a bad idea in itself, but it will limit the scope for distributive policies on the national budget. The contemporary international experience demonstrates the risks of fiscal imprudence. Finally, nationalizing the resources sector will undermine support for those very market-based institutions required to achieve a higher long-run growth trajectory.

Keywords
nationalization, South Africa, mining sector.

Introduction

A highly contentious debate on nationalization has moved to the top of the South African policy agenda over the last eighteen months. This debate has divided opinion at all levels of society, as well as between large groups such as the business community (largely opposed) and organized labour (lately in favour) and government (deeply divided to the highest level). More recently, the United Nations Conference on Trade and Development recommended either nationalization of mines or high taxation of extractive industries in countries where such industries are an important source of government revenue (Maswanganyi, 2012).

The issues at stake are of the first order of importance for the future of the economy, and include (at a high level of abstraction): (i) the desirable role of the state in the South African economy, (ii) the fiscal risks or benefits of nationalization, (iii) the efficiency of the mining sector in South Africa, and (iv) the attractiveness of South Africa for local and international investors. This paper analyses each of these issues in turn.

Economic development and the role of the state

The transformation of modern society by what has become known as the industrial revolution is one of the most remarkable events in history. Previously, and for almost all of history, children lived the same lives as their parents and grew richer, if at all and rarely, by accumulating more inputs such as more land, more cattle, and more labour.

But this model has some obvious limitations. An entire society cannot prosper this way: there are too few farms to go around and too few labourers, and the gains of some seem to require losses by others. One cannot imagine an entire society becoming six times richer over the course of a century along this path. And yet, that is what the average South African experienced since 1870 (Maddison, 2003). In South Africa the division of these gains has been notably unequal, with the rise in income for the white population much more than six times over the last century and that of the black population much less. In addition to being unequal, the local rise in prosperity has been modest in comparison to that of other industrializing countries. Average incomes in the United Kingdom are seventeen times

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higher today than during the late eighteenth century, and in Hong Kong the current generation is thirty times wealthier than their grandparents.

It is one of the great discoveries of modern economic science that the tremendous rise in income witnessed since the eve of the industrial revolution cannot be attributed to using more land, or to a more intensive exploitation of workers, or even to a rapid accumulation of capital (Solow, 1956; Easterly, 2001). Instead, the bulk of the long-term rise in prosperity has been due to a rise in labour productivity; to put it less formally, the rise in wealth is due to working smarter, not harder or with more inputs. It is not easy to work more productively and requires not just specialization but also adaptability and the use of technological inventions to improve the productivity of our labour. A society that moves along this path of economic development is transformed every generation, with children living lives very different from those of their parents and grandparents. Economic development is not in the first instance about rising prosperity, it is about this process of transformation whereby society moves along the path of ever-increasing productivity.

But the process of economic development – which transforms society with rising labour productivity due to specialization and the appropriate use of technology and capital – requires far more extensive co-operation than was required in pre-industrial society. Workers in a developed society depend on others for almost all of their needs and pay for these goods and services with the compensation they earn from their productive labour. It is clear that the process of economic development requires not just transformation in the lives of its individual members, but also a very extensive degree of co-operation amongst them. In fact the co-operation is much wider than local or national boundaries, forming the basis of the modern concept of globalization.

There is more than one way to organize the requisite co-operation implied by the process of economic development. At one extreme a government can try to arrange the entire system of co-operation at the national level. The failure of planning at this level is too well documented to list here and the details are not relevant to the discussion at hand. It is sufficient to note that allowing markets (instead of national plans) to allocate resources was one of the five characteristics shared by all 13 international economic growth success stories of the post-war era (Commission on Growth and Development, 2008).

An economy where resources are largely allocated on markets, that is to say on the initiative of the private sector, is not without planning, but the planning in such an economy is decentralized. Firms are amongst the most important areas of planning in a market economy. These firms are at the heart of the process of economic development described above: much of the extensive co-operation that goes with rising productivity occurs in and between firms. Nationalization of firms in a developing county is therefore a topic of critical importance as it affects a central part of the process of economic development.

Formally, nationalization is the compulsory acquisition by the state of previously private firms. In constitutional states, such as South Africa, there are legal guidelines that determine the compensation government must pay in such cases. Governments do not have an unimpeded choice between 'models' of nationalization; instead the legal framework within which they operate will determine the available options.

In the South African case, courts will determine the appropriate compensation should the government nationalize the mining sector. While the market value of the companies is an important input in this process there are also factors to be considered, notably:

1. The current use of the property
2. The history of the acquisition and use of the property
3. The market value of the property
4. The extent of direct state investment and subsidy in the acquisition and beneficial capital improvement of the property
5. The purposes of the expropriation.

These factors might lower the amount of compensation below the current market value of the relevant firms. However, in the case of South African mines these considerations would offer little scope for a large wedge between compensation and market values. The reasons are as follows:

1. South African mines are currently operated under competitive conditions that drive them to attain considerable efficiency. There is little incidence of mines being held simply for speculative purposes
2. There is a separate legal process for people who were forcibly removed from their land during Apartheid, rendering this consideration of little relevance to the nationalization of mines
3. There is little recent history of net subsidy or other direct support to the mining sector
4. As argued below, the nationalization of mines will not achieve any pressing social need, which renders that consideration irrelevant as far as the calculation of compensation is concerned
5. The South African government has signed a number of international investment treaties by which government has committed itself to full compensation in the event of expropriation (Keeton and White, 2011). This is relevant given the international composition of the mining companies' shareholders. For example, at the end of 2010 year, nearly 53% of AngloGold Ashanti's shareholders were American, with roughly another 12% residing in the United Kingdom, and all these would have to be compensated adequately for their holdings
6. Finally, the shareholders of South African mines include large public and private sector pension funds. Any nationalization without compensation would pass the cost of nationalization on to current and future pensioners in all sectors of the economy.

Nationalization of South African mines would represent a major change in the role of the state in the local economy. From the international experience there does not appear to be any one level of state participation that yields predictably better outcomes in terms of economic development (Commission on Growth and Development, 2008). There are certainly examples, especially from East Asia, where government seems to have played a supportive role in the rapid industrialization of countries like Korea and Singapore. But there are many more cases (especially in Latin America and Africa) where government intervention held back economic development (Tanzi, 2000; Easterly, 2001).

On this topic, a 'Developmental State', and the potential for nationalization of the mines to promote that agenda is an important part of the policy debate (ANCYL, 2010, for example: paragraphs. 56, 59, 50, 70, and 85). The concept of a 'Developmental State' is not an economic one and has been imported to the sub-field of 'Political Economy' where non-mainstream economists in particular use it. While it is not a theory in the usual sense of that word, the concept typically refers to a government that takes an active and leading role in the economic development of a country.

The East Asian success stories of the post-war period provided the examples upon which this literature developed. Whatever the 'Developmental State' means, though, it has not been associated with a strong case for nationalization, or even large state ownership of productive assets. Caldenty's (2009) summary of key characteristics of 'Developmental States' included the following:

'*...this did not imply that it [Developmental State] made heavy use of public ownership. Rather, the developmental state tried to achieve its goals through a set of instruments such as tax credits, breaks, subsidies, import controls, export promotion, and targeted and direct financial and credit policies instruments that belong to the realm of industrial, trade, and financial policy*.' (Caldentey, 2009, p. 30).

In the South African literature, proponents of the Developmental State concept such as Turok (2010) have emphasized the capacity for planning, the boldness to take decisive policy action, and the democratic nature of the 'Developmental State', but not state ownership or nationalization. And the Commission on Growth and Development, which studied the common features of the 13 post-war growth success stories, also warned against a preoccupation with the size of government to the detriment of a discussion about the effectiveness of government (Commission on Growth and Development, 2008, p. 30). While the Commission recommended that government take an active part in the process of economic development, their advice was not sympathetic to nationalization. Instead they recommended a risk-management approach to policy-making, which entails small policy adjustments that would allow reversal if the results are undesirable (Commission on Growth and Development, 2008, p. 31). Neither this result, nor the 'Developmental State' literature, provides support for the proposed nationalization of a large sector, such as mining in South Africa†.

The absence of a strong justification for nationalization in development economics demonstrated above is reflected in the research agenda of economists more broadly over the last twenty years. A generation ago, readers of the first edition of the New Palgrave Dictionary of Economics found an insightful essay on nationalization by M.V. Posner (1987), with cross-references to entries such as privatization, public utility pricing, and socialism. Twenty years later, only an essay on privatization by John Vickers (2008) appeared in the massively expanded second edition of the New Palgrave, with nationalization nowhere to be found.

In South Africa, the policy debate followed a similar trajectory (see, e.g., the account in Parsons, 1999), as policy-makers proceeded with modest privatization during the mid-1990s, having abandoned any further mention of possible nationalization shortly after the political transition.

To understand the debate that has since emerged in South Africa one needs to look beyond the development literature to a small body of literature that lists uncontroversial empirical results of broad generality (or stylized facts) that are correlated with the succession of nationalizations and privatizations in the post-war era, for example Chang *et al.* (2010) as well as authors who studied predictors of nationalization as in Duncan (2006) for a range of major minerals, and in Guriev, Kolotilin, and Sonin (2011) for oil.

The following stylized facts drawn from this literature are relevant to the local debate:

1. Firstly, that nationalization occurs much more frequently in the natural resources sector and in utilities than in other sectors of the economy
2. Secondly, the occurrence of nationalization in the resources sector is positively correlated with the real price of these commodities: high commodity prices have been associated with nationalization and low real prices with privatization
3. Private natural resource companies typically operate with contracts that allow them to appropriate the windfalls from commodity booms. And these windfall profits encourage governments to consider nationalization
4. The integration of commodity markets internationally brings about waves of nationalization – these are often common to several countries at the same time.

Reading these four facts together gives us one possible explanation for the local policy agenda and the observed rise of nationalizations in the resources sector in Latin America in recent years. This is not to deny that President Morales in Bolivia and President Chavez in Venezuela have ideological arguments for nationalization. That the ANC Youth League also has an ideological agenda is clear; indeed they insist on it (ANCYL, 2010, paragraph 25).The argument is, however, that these ideological arguments find fertile ground when commodity prices are higher, as they have been in recent years, and the proposal then follows to nationalize those companies that are perceived to enjoy unfair windfalls from a commodity boom.

Venezuela and Bolivia also share a fifth stylized fact identified by Chang *et al.* (2010) and studied more systematically by Chua (1995), namely that endemic or rising inequality is positively correlated with nationalization, especially when the windfall gains from high resources prices are perceived to be distributed unequally.

These stylized facts can now be combined to understand the local debate on nationalization: fiscal and distributional claims have dominated the local discussion. The ANCYL plan of May 2010 for nationalizing the mines, for example, argues that '... the massive poverty challenges, unemployment and unequal spatial development realities call for an urgent focus on mineral resources' (ANCYL, 2010, par. 5).

‡The 'Developmental State' literature and the Growth Commission are both in principle open to active state participation in the process of economic development. It goes without saying that approaches to economic development more critical of the state's role in developing countries provide even less support for nationalization.

In democracies, it is not enough to propose a policy, you have to win electoral support for it. At this point, Duncan's (2006) demonstration that natural resource expropriation has been more likely under democracies becomes relevant, and Pint (1990) argued that the explanation for this lies therein that the beneficiaries of nationalization are often concentrated, notably organized labour, while the costs are diffuse and shared by current and future taxpayers. In a democratic system, there is therefore a policy incentive to pursue nationalization, possibly sacrificing longer-run economic efficiency for short-run political benefits. Unsurprisingly then, resource nationalization has also been more common in countries where the economy, and hence the tax base, are heavily reliant on one or a few commodities (Kobrin, 1984; Minor, 1994). In these cases the beneficiaries of nationalization might be more powerful politically. COSATU's recent strong support for nationalization is consistent with this theory.

The explanation for the current debate in South Africa offered in this paper is, therefore, as follows: the background is the high level of income (and wealth) inequality in South Africa (Leibbrandt *et al.*, 2010). Add to this a few years of higher commodity prices and the perception that the windfall from these prices had been distributed such that inequality was not lowered and may have increased, together with a democratic political system where a populist leader can mobilize support to serve a majoritarian goal, and we have the South African debate on nationalization.

Why ownership of corporations matters

The proponents of nationalization have not suggested that the economy will reap great efficiency gains from nationalizing the mines (a traditional justification for nationalization). Instead, and consistent with the influence of high commodity prices, the supporting arguments have been largely fiscal and ideological.

The fiscal consequences of nationalization, therefore, require a central place in the discussion of potential consequences. It is ironic that both nationalization and privatization can be motivated by the desire to improve public finances. Proponents of privatization aim at lower government debt with an associated lower interest burden on the budget and, in the case of loss-making public enterprises, a reduction in government expenditure. The argument is that privatization frees up fiscal resources that will, subsequently, be available to pursue government's many other goals.

Proponents of nationalization might also envisage greater fiscal scope as a consequence of the policy. Their argument is that the public sector's revenue from nationalized firms might exceed the tax revenue from private firms by a sufficient margin to compensate for the costs of nationalization. In such cases nationalization would increase fiscal resources.

To judge the likelihood that nationalization will be a fiscal burden or benefit, the following factors have to be taken into account.

1. Government's cost of finance, since nationalization is typically financed through government debt
2. The post-nationalization financial performance of the firms, which is influenced by the goals and incentives for the nationalized firms as well as the particular industry at stake.

Government's cost finance is a determined by a number of factors, including: the size of the existing stock of public debt; recent changes in the public debt (surpluses and deficits on the national budget); government's track record, especially on inflation; and the timely payment of debt. It follows that governments with low debt and a credible record in macroeconomic policy have a better chance to finance nationalization at comparatively low interest rates, except in cases where the cost of nationalization is itself large compared with the existing debt stock. The proposal to nationalize the mining sector in South Africa is an example of the latter case, where the state has relatively little debt at the moment and a credible fiscal and monetary track record, but where the cost of nationalization will be so large (the details are worked out later in this paper) as to impose a considerable financial cost on government.

The second factor that will determine the fiscal impact of nationalization is the post-nationalization financial performance of the relevant firms. The performance of a firm is driven by many factors, not all of which will be affected by the change in ownership implied by nationalization. However, three important factors will be affected, they are: the goals of the firm, the monitoring of corporate performance, and the speed and intensity of feedback on corporate behaviour.

Starting with the firm's goals: it is conceptually difficult to define the goals of nationalized firms: in some ultimate sense the public owns these firms, but in practice the public's goals are ill-defined and often contradictory. Is the public interested in the highest net worth for the nationalized firms, or perhaps alternatives such as distributional goals or maximum employment? There are difficult trade-offs to be managed here, for example between productivity and the pursuit of equality (Sinnot *et al.*, 2010), and the political process is a highly imperfect mechanism for resolving such conflicts. Public Choice§ authors have also identified the many factors other than the public's goals that are likely to influence the decisions of managers at the nationalized firm, including political considerations, the influence of lobbyists and other special interests, the difficulty faced by the public to write 'complete contracts' for the managers, and many more (Schleiffer, 1998; Vickers, 2008).

Not only are the goals different for public firms, but so too are the mechanisms that monitor the behaviour of public sector managers (Alchian, 1977). There is no possibility for shareholder oversight with the intensity experienced on financial markets, nor the ability to tie managerial incentives to stock market performance, as an external assessment of the company's performance. Finally, there is no threat of takeover in the public sector, a threat which disciplines agents in a competitive private sector.

§Public Choice is sub-field of Public Economics where the public sector is studied using the tools of economic reasoning and the assumption that public sector decision-makers have (i) goals of their own, and do not simply pursue the goals of the general public and (ii) face budget constraints and other limits to their action which can lead to sub-optimal decision-making in the public sector. This literature has shown that government failure is a possibility in the same way that market failure is a possibility.

Mentioning potential takeovers touches on the feedback mechanism that encourages good behaviour and discourages poor corporate decisions. Apart from sidestepping the threat of takeovers, public sector managers are also not disciplined by the threat of bankruptcy. The repeated bailouts of large state-owned enterprises in South Africa in recent years are a familiar demonstration of the 'soft' budget constraints that frequently arise in these cases.

To summarize these points, managers of a nationalized firm face different and less clearly defined goals, are monitored differently and possibly less effectively, and face slower and weaker feedback when they act inconsistently with the public's goals. For these reasons, the nationalized firms are likely to be less efficient from an economic perspective and, hence, more likely to be a fiscal burden. This likelihood rises the more competitive the private industry was prior to nationalization. Nationalizing a competitive private industry is likely to lead to less efficient public firms after nationalization, and a greater likelihood that the nationalized firms will be a financial burden for government. Although this is a theoretical result, we will see its empirical echo in the discussion of nationalization's track record.

The current turmoil in the European Union shows the importance of the fiscal consequences of nationalization. It is also important for the additional reason that government's budget is the main vehicle of redistribution in most countries, including South Africa. Of course, it is possible for the nationalized firms to pursue distributional goals on a limited scale, by for example cross-subsidization schemes or softer employment policies (Vickers, 2008). But the net financial benefit of nationalizing the firms will affect government's ability to pursue all its goals, including the social assistance by which government provides effective poverty relief and redistribution to 15.2 million South Africans and which accounts for almost 11% of the national budget (National Treasury, 2011b, p. 38).

Finally, Biais and Perotti (2002) have argued that the choice between state or private ownership will not just affect the outcomes of productive activity, but also shape society's political incentives. Widespread private ownership encourages the public to support the institutions of private property and contract rights that support specialization and market co-operation, the two key features of rising prosperity identified above. Conversely, state ownership creates dependence on government and lowers the support for these key market institutions. From this perspective, one of the adverse long-term consequences of nationalization is that it undermines the support for market institutions.

The track record of nationalization

Controversy over the track record of nationalization is a notable feature of the current South African debate; for example, an ANC task group studied the outcomes of nationalization as well as different models of nationalization internationally. The outcome of this research was published early in 2012 (ANC Policy Institute, 2012) and was based on the assumption that a careful enough study of particular cases will reveal the contribution of nationalization to subsequently favourable or unfavourable outcomes**. It is an assumption that is very widely held, but leaves the analysis with two related and serious shortcomings. The first problem is that these cases studies cannot isolate the particular effect of the change in public ownership from the many other changes that are necessarily occurring in any actual historical case. From this follows the second problem inherent to the case study methodology, i.e. the inability to articulate a counter-factual (or benchmark) analysis of what would have happened in the absence of the change in public ownership.

To identify the outcomes of nationalization from real world examples, we need to look beyond individual cases to answer the question as formulated by Sam Peltzman 40 years ago; we wish to discover the following '... if a privately owned firm is socialized, and nothing else happens, how will the ownership alone affect the firm's behaviour?' (Peltzman, 1971). When we observe the outcomes of nationalized coal mines in the United Kingdom we do not know how much of the outcome to attribute to (i) the evolution of the coal market, which is a function of global forces, as opposed to (ii) developments elsewhere in the British economy, including (iii) the labour movement, (iv) the efficiency of the public sector, and of course, (v) the impact of nationalization.

In addition to the two methodological problems discussed above, a third difficulty is that certain firms are prone to be nationalized while others are likely to be in the private sector (Meggison and Netter, 2001). In industries where market failure is serious and frequent, we have a prior expectation to find public ownership of the firms (or single firms). So-called natural monopolies are an example. This challenging problem is not relevant in the case under consideration though, as the mining sector in South Africa shows none of the features of a natural monopoly. In fact, competition is robust not just locally, but across international borders.

The challenge of identifying the separate impact of nationalization remains though and cannot be answered through case studies. One approach to this problem is to identify 'natural experiments', i.e. where history itself controlled for all the other relevant factors except for the issue under consideration. To make this less abstract, consider the 35 publicly funded and 53 privately funded expeditions to the Arctic between 1879 and 1909 studied by Karpoff (2001). He was able to show that the differences in outcomes were not due to different goals, technology, or nationality. Instead, large differences in performance (measured as the number of major scientific discoveries, the absences of accidents or deaths, and the health of the participants) were observed along the private-public division of expeditions, with the private ones doing much better. What is more, the public expeditions had the advantage of better funding.

Since the transport sector has often been a target of nationalization on public-goods grounds, it is instructive to consider an industry-specific study of international airlines. Ehrlich, Gallais-Hamonno, Liu, and Lutter (1994) investigated the consequences of state ownership for

**There is, for example a literature on relevant case studies often focusing on experiences in the developed world, especially, in post-war Europe. Economic histories of this kind are useful for understanding the mechanics and some of the consequences of nationalization. More recent nationalizations in Bolivia, Venezuela, and so on have also been studied in this way.

productivity growth and cost increases in 23 international airlines. They found a productivity penalty of 1.5% to 2% per year for state ownership.

While natural experiments are a powerful solution to the challenge of identifying the counterfactual, such studies are necessarily limited to very specific circumstances. More general investigations are possible but in these cases we need data sets with variation across institutions, time, and countries or regions and this is where the nationalization literature dries up. Fortunately, we can deduce some answers from the much larger literature on the consequences of privatization (Meggison and Netter, 2001, provide a thorough review of the evidence).

While one might object to the narrowness of the Ehrlich *et al.* (1994) and Karpoff's (2001) studies, these objections fall away for the study of the 500 largest US firms by Boardman and Vining (1989), the 500 largest non-financial Canadian firms by Vining and Boardman (1992), and the 500 largest non-USA firms by Dewenter and Malatesta (2001). While these papers do not all measure the same proxies of efficiency, they all find that, after controlling for size, market share, and other firm-specific features as well as macroeconomic features that might impact on the selection of ownership, the private firms are significantly more profitable and, where measured, more productive than either mixed or outright state-owned enterprises.

Do these results hold for developing countries, especially those where the government is suspected of playing an active and positive role in industrial policy as suggested by the 'Developmental State' theory? In short, yes. Chinese state-owned and mixed enterprises are less productive than comparable private firms, as found by Tian (2000), and the same was found for Indian firms by Mujamdar (1996) and Chong and Lopez de Silanes (2005) for a cross-section in Latin America.

These results are consistent with the claim that nationalization is more inefficient the more competitive the private industry was prior to nationalization, but this claim was studied explicitly by Kole and Mulherin (1997) using another natural experiment. They studied the outcome of 17 American firms with substantial Japanese and German ownership at the outset of World War II that were nationalized for security reasons by the US government. The US government acted like a passive investor, leaving the goals and management structures as before, partly because government wanted to optimize the value of the firms with an eye towards later re-privatization, which did occur. After controlling for industry-specific features, Kole and Mulherin (1997) showed that these temporarily nationalized firms performed no differently on efficiency and profitability measures than their private competitors. Not only did these firms operate in competitive industries, but Kole and Mulherin (1997) argued that they were left to compete like private firms. The cost in terms of efficiency enters when the nationalized firms starts to operate with different goals and less competition than their private sector predecessors.

An alternative to the empirical or historical and statistical approaches described in the preceding paragraphs is to examine the preconditions for successful nationalization to determine whether a particular industry would be a suitable candidate. The critical issue in an investigation of this kind is to determine whether markets will function tolerably well in the particular industry given the usual complement of market regulations.

Markets can fail when there are very large economies of scale or large externalities, which are costs (or benefits) associated with a particular activity, but not internalized in the cost of that activity. Pollution is an example of a negative externality. The possibility of market failure has motivated a large expansion of the economic activity by government in the course of the last century and in the immediate post-war era public ownership of especially utilities was widely implemented in the developed world, some of it via nationalization. But enthusiasm for nationalization as a solution to the risk of market failure has waned as (i) the reality of government failure emerged and (ii) it became clear that sufficient regulation can ameliorate many of the risks associated with externalities (Tanzi, 2005).

The stylized facts associated with recurrent waves of nationalization mentioned above included the observation that the resources sector has often been the target of nationalization. This is due to a specific form of the externalities argument, often called Dutch Disease: i.e. the unintended adverse impact on the industrial sector of a country where a large commodity boom causes the real exchange rate to appreciate, leaving the local industrial sector uncompetitive internationally. But the relevance of this argument is restricted to those few countries where the export basket is dominated by a single or a small number of commodities and where these cause massive current account surpluses that risk appreciating the currency. South Africa is not among those countries where the resources sector causes a massive surplus on the current account, which risks local inflation or nominal appreciation, both of which might cause real appreciation and Dutch Disease. This potential externality is, consequently, no case for nationalizing South African mines.

Application to South Africa

The discovery of vast mineral deposits during the second half of the nineteenth century changed the development path of what would become the Republic of South Africa dramatically. An economy based largely on agriculture and services to international shipping was re-aligned to serve the rapidly expanding mining sector in the interior, especially on the Witwatersrand. Feinstein (2005) is just the latest economic historian to identify especially the discovery of gold (and diamonds to a lesser extent) as the critical moment in the country's economic history. The impact was so rapid and so dramatic that within 25 years of the discovery at Johannesburg, South Africa was amongst the small group of countries that appeared to be converging on the group of richest countries in the world (Dowrick and DeLong, 2005).

A number of factors explain the critical role of gold in South Africa's economic history[#]. The sheer size of the deposits and the value of the product extracted is the first factor. By 1911 gold mining accounted for 20% of the GDP and employed 224 000 miners. The impact of the sector went

[#]The following paragraph summarizes the factors described more thoroughly in Feinstein (2005, pp. 106–109) much further, by stimulating capital markets, services industries and especially manufacturing, such as machinery, explosives and many others. Transport was needed to and from the then-emerging industrial heartland around Johannesburg and in this way the mines gave the first motivation for the development of what would, in time, become the continent's best transport infrastructure.

Mining was also of critical importance to government and international finance in the decades after the discovery of the gold and other minerals. Today the export of ore and minerals accounts for around 25% of export earnings, but this proportion was as high as 70% in the late 1930s. At the same time, mining attracted massive direct foreign investment, allowing the economy to build capital much faster than would have been possible from domestic savings alone. The market capitalization of the sector on the Johannesburg Stock Exchange remains high and much larger in proportion to the total market capitalization of the stock exchange than mining's share in the real economy.

Although the expansion of manufacturing and particularly the services sector has caused mining to decline in relative importance for the South African economy, the sector contributed a substantial 9.5% of gross value added in 2010. While the sector's output has grown only modestly since 1994, productivity has been rising at the same rate as in the dominant financial sector (Du Plessis and Smit, 2009). Privately owned mining companies operate in a competitive environment and compete through higher productivity, as one would expect from an industry where market forces work tolerably well. Lately the sector has struggled in an uncertain regulatory environment and with the risk of nationalization a lingering reality (Financial Times, 2011). Indeed the discouraging impact of the nationalization debate on investment in the mining sector is a real cost that the economy is already paying regardless of the debate's outcome (England, 2011).

We turn now to the likely costs and benefits of nationalizing this important industry in South Africa. Internationally, nationalization of mining companies occurs typically when there is a clear financial benefit for the particular government. This is more likely when one or a few commodities account for a large part of economic activity and the tax base. In Venezuela, for example, the state-run oil company accounts for almost a half of government revenue (Hults, 2007), and in 2005, Bolivian President Morales nationalized the hydrocarbon industry (oil and gas), from which the Bolivian government gets roughly a third of its revenue, equal to 10% of the GDP (IMF, 2010).

The comparable data for South Africa is tax revenue of R17.9 billion from the mining sector in 2010, which was less than 3% of government revenue and just 0.7% of the GDP (National Treasury, 2011a).

Since the South African debate remains speculative, there is no clear indication of the valuation method that will be used to determine the compensation paid to shareholders in the event of nationalization. As argued above there is little justification for the ANCYL's claim that one possibility is to nationalize the mines without compensation. In addition to the legal restrictions domestically, there are also international requirements for compensation in the form of foreign investment treaties according to which government has committed itself to full compensation in the event of expropriation (Keeton and White, 2011). It follows that government will have to compensate the current owners of South African mines; and now it is time to see how much government will pay and what it will get in return.

Keeton and White (2011) offered the following calculation: government buys a 60% stake in the local mining companies at a cost of R970 billion. This would more than double government outstanding debt, which was R820 billion at the start of the 2011 fiscal year (National Treasury, 2011a). The higher debt stock would increase government's interest bill by R46.6 billion per year on the very optimistic assumption that government can finance the extra debt at existing capital market rates. As the current turmoil in Europe has amply demonstrated, government is likely to pay much more; an additional interest burden as low as R46.6 billion would therefore be an unlikely outcome

However, government's revenue would also rise after nationalization, since the government would subsequently claim 60% of the sector's profits in addition to the taxes it currently collects. In 2010 this would have added R20.9 billion to government's revenue according to White and Keeton's (2011) calculation, assuming that government runs the mines as efficiently as the private sector did. A project that would cost government R46.6 billion extra per year to gain R20.9 billion in revenue fails on the basic requirements of financial management and will diminish the resources government has available to pursue other goals.

Since the direct distributional impact of the resource sector is limited, while that of the national budget is extensive, it follows that nationalization will limit the scope for a more equitable distribution of income within South Africa. And these calculations do not take into account the considerable amounts in capital investment that government would have to raise to maintain and expand the mine. As Minister Manuel recently observed: 'There are no fiscal resources available through taxes or borrowing to pay for mines or to invest in them, even if government were to get these mines gratis' (quoted in England, 2011, p. 4).

A second method to calculate the financial viability of nationalizing the mines is to see whether they are profitable enough to yield a positive return on investment by the government. This calculation was done for three large gold mining groups for this paper: AngloGold Ashanti, Gold Fields, and Harmony. Taking the revenue generated by the South African mines only in these groups and comparing it to the share of their market capitalization attributable to their South African operations, one can calculate the yield that government would get by nationalizing these mines at market prices. It is important to disentangle the revenues for these multinational companies, as the cost-effectiveness can vary dramatically in their portfolios, and at least for the gold mines the South African operations are typically expensive to operate on an international comparison.

In 2010 Gold Fields yielded 7% relative to market capitalization on local operations, while Harmony reported a net loss and Anglogold Ashanti a yield of 1%. Comparing these yields to the cost of government debt at around 8% and making the same optimistic assumption that this cost of finance does not rise with the dramatic rise in government debt, it is clear that nationalization is financially unjustifiable even under very optimistic assumptions.

Summary

The arguments in this paper can be summarized in the following points:

- ➤ First, the resources sector in South Africa is not subject to notable market failures nor does it pose the risk of Dutch Disease. The resources sector is competitive and therefore a poor candidate for public ownership. The international evidence suggests overwhelmingly that the nationalized firms would be less efficient in these circumstances. Nationalized mines would have confused goals, worse monitoring, and worse feedback compared with existing mines
- ➤ Second, nationalizing the resources sector will cost government more than it receives. This is not only a bad idea in itself, but it will limit the scope for distributive policies on the national budget
- ➤ Third, as a corollary of the annual fiscal burden, the project would raise government debt dramatically at a time when our debt is forecast to rise sharply for other reasons, and the international experience demonstrates the risks associated with this path.

The cost to the economy will not only be measured in the mining sector and in government finances: higher capital market interest rates will curtail investment across the board, lowering economic growth and curtailing employment growth. The balance of payments will come under more strain as international investment is discouraged. Finally, nationalizing the resources sector will undermine support for those very market-based institutions we need in order to achieve a higher long-run growth trajectory.

References

ALCHIAN, A.A. 1977. Some economics of property rights. Economic forces at work. Alchain, A. A. Liberty Press, Indianapolis. pp. 127–149.

ANC POLICY INSTITUTE. 2012. Maximising the Developmental Impact of the People's Mineral Assets: State Intervention In the Minerals Sector. African National Congress, Johannesburg.

ANC YOUTH LEAGUE. 2010. Towards the transfer of mineral wealth to the ownership of the people as a whole: a perspective on nationalisation of mines.

BIAIS, B. and PEROTTI, E. 2002. Machiavellian privatization. *American Economic Review*, vol. 92, no. 1. pp. 240–258.

BOARDMAN, A. and VINING, A.R. 1989. Ownership and performance in competitive environments: a comparison of the peformance of private. mixed and state-ownd enterprises. *Journal of Law and Economics*, vol. 32, no. 1. pp. 1–33.

CALDENTEY, E.P. 2009. The concept and evolution of the developmental state. *International Journal of Political Economy*, vol. 37, no. 3. pp. 27–53.

CHANG, R., HEVIA, C., and LOAYZA, R. 2010. Privatization and nationalization cycles. NBER working paper no. 16126. *National Bureau of Economic Research*, Boston, MA.

CHONG, A. and LOPEZ DE SILANES, F. 2005. Privitization in Latin America. Myths and Reality. Stanford University Press and The World Bank, Stanford, CA.

CHUA, A. 1995. The privitization-nationalization cycle: the link between markets and ethnicity in developing countries. *Columbia Law Review*, vol. 95, no. 2. pp. 223-303.

COMMISSION ON GROWTH AND DEVELOPMENT. 2008. The Growth Report: Strategies for Sustained Growth and Inclusive Development. Washington, *The World Bank*.

DEWENTER, K. and MALATESTA, P.H. 2001. Public offerings of state-owned and privately owned enterprises: an international comparison. *American Economic Review,* vol. 91. pp. 1659–1679.

DOWRICK, S. and DELONG, J.B. 2005. Globalisation and convergence. Globalization in Historical Perspective. Williamson, J. University of Chicago Press, Chicago.

DU PLESSIS, S.A. and SMIT, B.W. 2009. Accounting for South Africa's growth revival after 1994. *South African Economic Policy under Democracy*. Aron, J., Kahn, B., and Kingdon, G. *Oxford University Press*, Oxford.

DUNCAN, R. 2006. Price or politics? An investigation of the cuases of expropriation. *Australian Journal of Agricultural and Resource Economics*, vol. 50, no. 1. pp. 85–101.

EASTERLY, W. 2001. The Elusive Quest for Growth. *MIT Press*, Cambridge, MA.,

EHRLICH, I., GALLAIS-HAMONNO, G., LIU, Z., and LUTTER, R. 1994. Productivity growth and firm ownership: an empirical investigation. *Journal of Political Economy*, vol. 102. pp.1006–1038.

ENGLAND, A. 2011. Bottlenecks threaten commodities prospects. Financial Times *Special Report on South Africa*. *Financial Times*, London, 4 November 2011. p. 1.

FEINSTEIN, C.H. 2005. An Economic History of South Africa: Conquest, Discrimination and Development. *Cambridge University Press*, Cambridge.

FINANCIAL TIMES. 2011. Bottlenecks threaten commodities prospects. *Financial Times Special Report on South Africa*. Financial Times, London, 4 November 2011. p. 1.

GURIEV, S., KOLOTILIN, A., and SININ, K. 2011. Determinants of expropriation in the oil sector: a theory and evidence from panel data. *Journal of Law, Economics, and Organization*, vol. 27, no. 2. pp. 301–323.

HULTS, D. 2007. Petróleos de Venezuela, S.A.: The Right-Hand Man of the Government. *Working paper 70*. Center for Environmental Science and Policy, *Stanford University*, Stanford, CA.

IMF 2010. IMF Country Report No. 10/29. Bolivia: Selected Issues. *International Monetary Fund*, Washington, DC.

KARPOFF, J. 2001. Public versus private initiative in Arctic exploration: The effects of incentives and organizational structure. *Journal of Political Economy*, vol. 109, no. 1. pp. 38–78.

KEETON, G. and G. WHITE, G. 2011. Is the nationalisation of the South African mining industry a good idea? *Biennial conference of the Economic Soicety of South Africa*, 5-7 September 2011. Department of Economics and Economic History, Rhodes University.

KOBRIN, S.J. 1984. Expropriation as an attempt to control foreign firms: trends from 1960 to 1976. *International Studies Quarterly*, vol. 28, no. 3. pp. 329–348.

KOLE, S.R. and MULHERIN, J.H. 1997. The government as a shareholder: a case from the United States. *Journal of Law and Economics*, vol. 40. pp. 1–22.

LEIBBRANDT, M., WOOLARD, I., FINN, A., and ARGENT, J. 2010. Trends in South African Income distribution and poverty since the fall of apartheid. *Social, Employment and Migration Working Paper no. 101*. OECD, Paris.

MADDISON, A. 2003. The World Economy: Historical Statistics. *OECD Development Centre*, Paris.

MASWANGANYI, N. 2012. Nationalise commodity sectors. *Business Day*, Johannesburg, 13 September 2012. p. 1.

MEGGISON, W.L. and NETTER, J.N. 2001. From state to market: a survey of empirical studies on privatization. *Journal of Economic Literature*, vol. 34, June. pp. 321–389.

MINOR, M.S. 1994. The demise of expropriation as an instrument of LDC policy, 1984-1992. *Journal of International Business Studies*, vol. 25, no. 1. pp. 177–188.

MUJAMDAR, S.K. 1996. Assessing comparative efficiency of the state-owned, mixed, and private sectors in Indian industry. *Public Choice,* vol. 96. pp. 1–24.

NATIONAL TREASURY. 2011a. Budget Review. *National Treasury*, Pretoria, 25 February 2011.

NATIONAL TREASURY. 2011b. Medium Term Budget Policy Statement. *National Treasury*, Pretoria, 25 October 2011.

PARSONS, R. 1999. The Mbeki Inheritance. South Africa's Economy 1990–2004. *Ravan Press*, Johannesburg.

PELTZMAN, S. 1971. Pricing in public utilities and private enterprises: electric utilities in the United States. *Journal of Law and Economics*, vol. 14. pp. 109–147.

PINT, E.M. 1990. Nationalization and privatization: a rational-choice perspective on efficiency. *Journal of Public Policy*, vol. 10, no. 3. pp. 267–298.

POSNER, M.V. 1987. Nationalization. The New Palgrave. A Dictionary of Economics. Eatwell, J., Milgate, M., and Newman, P. Macmillan, London.

SCHLEIFFER, A. 1998. State versus private ownership. *Journal of Economic Perspectives*, vol. 12, no. 4. pp.133-–150.

SINNOTT, E., NASH, J., and DE LA TORRE, A. 2010. Natural resources in Latin America and the Caribbean. Beyond booms and busts. World Bank, Washington, DC.

SOLOW, R.M. 1956. A contribution to the theory of economic growth. *Quarterly Journal of Economics*, vol. 70, February. pp. 327–368.

TANZI, V. (2000). The role of the State and the quality of the public sector. Washington, *IMF working paper*, WP/00/36.

TANZI, V. 2005. The economic role of the state in the 21st century. *Cato Journal*, vol. 25, no. 3. pp. 617–638.

TIAN, G.H. 2000. State shareholding and corporate performance: a study of a unique Chinese data set. Working paper, *London Business School*, London.

TUROK, I. (2010. Towards a developmental state? Provincial economic policy in South Africa. *Development Southern Africa*, vol. 27, no. 4. pp. 497–515.

VICKERS, J. 2008. Privatization. The New Palgrave dictionary of Economics. 2nd edition. Durlauf, S., and Blume, L.E. McMillan, London.

VINING, A.R. and BOARDMAN, A. 1992. Ownership versus competition: efficiency in public enterprises. *Public Choice*, vol. 73. pp. 205–239. ◆