

Booming Mineral Resources and the Imperative of Economic Diversification

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Abstract: This paper reviews the various problems that can arise in an economy when it is endowed with an abundance of natural resource and therefore addresses the need for economic diversification and the role of the government in this process. The paper commences by outlining the relationship between the resource curse and the Dutch Disease and then reviews other economic effects associated with a resource boom. The paper discusses the benefits to economic development that arise from being resource abundant but goes on to outline many of the adverse impacts of resource abundance and then emphasises why there is a need for economic diversification in such economies and how the government can facilitate this. The paper concludes by noting that economic diversification is the best avenue for developing economies that are resource abundant as it will provide economic sustainability and reduce the risk of vulnerability.

Keywords: Resource Curse, Dutch Disease, Deindustrialisation, Economic Diversification, Resource Boom

1. Introduction

In 1995 a seminal addition to the literature was made by Sachs and Warner (2001) which detailed the negative implications of resource abundance on an economy’s long run growth potential. The literature has since presented a host of explanations and empirical cases as to why resource abundant economies often experience retarded growth over time.

This paper discusses the imperative of economic diversification in an economic environment where there is a strong windfall improvement in revenues. The rest of this paper progresses as follows: Section 2 discusses the relationship between the Resource Curse and Dutch Disease. Section 3 discusses the various opportunities natural resources offer for the economic development process in a mineral rich economy; Section 4 provides some theoretical details on the Dutch Disease and other economic effects of a resource boom. Section 5 outlines one of the main impacts of the Dutch Disease, i.e. deindustrialisation whilst Section 6 addresses the need for economic diversification in mineral rich economies. Section 7 outlines the role of government in the economic diversification process, and Section 8 concludes the paper.

2. Resource Curse (RC) and the Dutch Disease (DD)

In considering the economic effects of a resource boom, it is important to distinguish between the Resource Curse (RC) and the Dutch Disease (DD). Both the Resource Curse and the Dutch Disease arise as a

consequence of a boom in the tradable good. The Resource Curse thesis, however, focuses on why resource poor countries tend to have a higher growth rate than resource rich economies. The DD in contrast focuses on the deterioration in the non-tradable segment of the economy triggered by a resource boom. Larsen (2004) uses a matrix to distinguish the economic effects of the RC from the economic effects of the DD (see Figure 1).

		Resource Curse	
		No	Yes
Dutch Disease	No	Overall growth and diverse export base.	Stagnant growth, but diverse export base
	Yes	Overall growth, but strongly contracted manufacturing sector	Stagnant growth, and strongly contracted manufacturing sector.

Figure 1. A matrix to distinguish the economic effects of the Resource Curse and the Dutch Disease
Source: Larsen (2004)

3. Resources as a Basis for Economic Development

This section discusses that subset of the literature which emphasises the role that natural resources can play to improve the economic development prospects within an economy.

The Vent for Surplus theory was introduced into the economics literature by Adam Smith but was refined by Myint (1958, 1965). With the Vent for Surplus theory, it is initially assumed that prior to the entry of the economy into the international trade arena, its resources are not fully employed. On entering into international trade, the export of natural resource goods can increase without a decline in domestic production. In this way, the foreign market, which acts as a vent for the natural resource good, results in an improvement in domestic welfare (Myint 1965).

The Staple theory of economic growth provides a macro-dynamic view on how a natural resource can lead to economic development. This school of thought emphasises that economic development in less developed communities usually commences with natural resource booms which attract inflows of capital and labor. The theory argues that with a resource boom, economic rents are utilised to help develop the infrastructural base of the community which hosts the natural resource. Some portion of the profits is also diverted into the formation of support industries. The staple school specifies that the greater the degree of linkages with the rest of the domestic economy the greater the economic benefits of producing and exporting the staple good for the host economy.

A number of gains accrue to an economy which has benefited from a resource boom. For example, there is an increase in export revenues which helps to stimulate the growth of incomes in the domestic economy, which leads to an expansion in the country's non-tradable sector, including banking and finance, health and education structures. Expanding export revenues also help to furnish economies with the wherewithal to import more investment goods. This in turn can help to strengthen the production of a wider range of goods and help promote the pace of urbanisation.

At the same time though, the literature points to a number of economic problems that can arise with an abundance of mineral resources. Thus, in the 1950s some researchers such as Prebisch (1950) and Singer (1950) argued that countries which relied excessively on the export of primary goods would become worst off as there was a negative long run relationship between the trends in agricultural sector prices relative to manufactures.

Other researchers have since pointed out that large terms of trade shocks, usually associated with heavily resource based economies tended to create severe economic problems in developing economies. Consequently, there has emerged amongst economists, something of a consensus that more diversified economies carry a higher margin for error than resource dependent economies.

4. The Dutch Disease and other Economic Effects of a Resource Boom

4.1 The Dutch Disease

A significant problem with resource booms is that it leads to the Dutch Disease. The Dutch Disease refers to those economic illnesses, which involve the presence of excess demand, factor movements and a decline in favorable externalities.

The basic Dutch Disease model outlined below elaborates upon the work of Corden and Neary (1982) and Kamas (1986). In this model, national income is treated as comprising three goods. These are:

- BT: A booming tradable good,
- NBT: Non-booming tradable good,
- NT: Non-tradable good.

An increase in the price of the BT or a resource discovery in the BT sector will lead to an increase in the wages in this sector and as a consequence, resources will move out of the NBT and NT into the BT sector.

The resource boom according to the core Dutch Disease theory is associated with two effects; the resource movement effect (Re) and the spending affect (Se). These may be explained as follows. The boom in the tradable sector results in an increase in the marginal productivity of factors of production employed in the BT sector, and as a consequence resources flow into this sector from both the NBT and NT sectors. This is the Re associated with a resource boom. This movement of resources leads to a contraction in the size of the NBT and the NT sectors of the economy. Output in the NBT and the NT sectors therefore decline. All this occurs even if the income effect associated with the resource boom is ignored.

When the income effect is considered, the NT good realises an increase in demand, this is the Se of the boom. When the resources from the resource boom are spent, there is an increase in domestic aggregate demand. In the NT sector, firms' produce for the domestic market and any increases in the cost of production are passed on to domestic consumers via higher prices. Firms in the NBT sector, however, cannot do the same as they are price takers in the international marketplace (Frankel and Romer, 1999). Figure 2 illustrates the impact of a boom on wages.

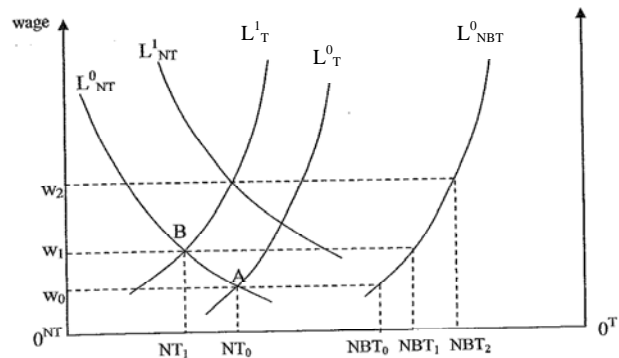


Figure 2. The impact of a boom on wages

To provide a clearer mechanical outline of the DD and its associated dynamics, let us consider the Figure 1 above. Prior to the boom, let the demand curve for labor in the T and the NT sectors be represented by L^{0T} and L^{0NT} respectively. Let the vertical axis measure the wage rate in the economy. The labour force (LF) in the economy is $O^{NT} O^T$ in size and in initial conditions $O^{NT} NT_0$ workers are employed in the NT sector and $O^T NBT_0$ employed in the NBT sector so that $NT_0 NBT_0$ workers are employed in the BT segment of the economy in initial conditions.

From a pure Re perspective, if we assume that the income elasticity of demand was initially zero, then a boom in the BT sector will stimulate an increase in demand for labor in this sector and this in turn will stimulate wages in the sector upwards from w_0 to w_1 . The consequence of this is a decline in the amount of workers employed in the NBT sector from NBT_0 to NBT_1 and at the same time the level of employment in the NT sector would decrease to $O^{NT} NT_1$.

The decline in the number of workers employed in the NBT results in a contraction in the output of the NBT sector. This is the pure resource movement effect at work. The spending effect comes into play when the workers and the recipients of the extra income from the BT sector spend their extra income. In the NT sector, this would shift the demand curve for labor to the right. Assuming that the NT sector has an income elasticity of demand that is positive, and in excess of unity, then the output levels in this sector will rise above the pre boom levels.

4.2 Other Economic Consequence of a Resource Boom

Apart from the Re and Se, which when considered together produce a currency appreciation effect, there are a number of other effects associated with a resource boom. This section briefly discusses some of these other effects, which have graduated in the literature, to the status of stylised facts.

4.2.1 Capital to labour

The increase in the marginal productivity of labour in the BT sector leads to an increase in wages in that sector. The increase in NT sector production also leads to an increase in wages and as a consequence, the NBT sector will also have to increase its wage rates, in order to try to maintain a certain amount of workers. When wages increase, firms increase their deployment of capital so that the capital to labor ratios in the economy increases.

4.2.2 Enclave effect

The enclaviness of the BT sector reduces the likelihood of technological spillovers. The mineral sector generally has a low degree of connectivity with the rest of the economy, and thus has the potential to frustrate the holistic developmental capability of a mineral rich

economy. This low degree of connectivity is generally exacerbated by the fact that these sectors are controlled by MNCs which repatriate profits rather than reinvest it into the host economy.

Seers (1963) outlined the low degree of linkages that the petroleum industry provided, whilst Baldwin (1966) outlined a similar type of illustration for the copper industry in Zambia.

4.2.3 Income distribution effect

Specialisation in natural resources not only adversely affects the economic growth performance of economies but also adversely impacts on the distribution of income. In those resource-poor countries, there tends to be a greater element of equity in the distribution of income because land reform takes place at a much earlier stage in the economic development process, and so more households could generate an income. In contrast, with resource-abundant economies, there is usually a quicker thrust at capital intensive industrialisation efforts and this tends to foster dualistic economic structures. The resource rich sector also tends to employ a small but well paid labor force.

In particular, Lam and Wantchekon (2002) found that natural resources expanded the wage gap between the normal population and the political elite.

4.2.4 Dependence effect

Many economies, which produce and export a natural resource product become heavily dependent on it. Even so Rosser (2006) notes that dependence on oil revenues leads to the emergence of 'petro-states', that is, states that are geared towards the 'political distribution of rents' rather than promotion of private investment, production and economic growth.

In contrast, the manufacturing sector of resource poor countries tends to grow faster and tends to start a transition to manufacturing earlier than in resource rich economies (Auty and Kiiski, 2001). Hence, the petroleum sector often depends heavily on foreign multinational companies with deep pockets for investment outlays. However, this may compromise the growth potential of the economy if it is argued that the enterprise of the indigenous people conditions the pace at which economic development proceeds in the long run. In this regard, Best and Levitt (1968) have noted that:

'Dependence on imported enterprise builds into the economy an assured backwardness vis-a-vis countries whose entrepreneurial dynamic is indigenous.' (p.64).

4.2.5 Rent seeking effect

Natural resource rich economies tend to carry a high element of socially disruptive rent seeking behavior. Rent seeking and corruption, have been identified by a variety of authors (Auty, 2001; Gylfason 2001; Sachs and Warner, 1995) as core elements of what causes the

resource curse. Rent seeking behaviour absorbs the time of economic agents and, as a consequence, valuable resources are diverted away from other forms of more productive activity. Rent seeking can also collapse into corrupt practices amongst public bureaucrats.

Expansive mineral wealth has the capacity to encourage economic agents to shift away from profit seeking, P, towards rent seeking, R. Let us assume that there is an economy with a fixed stock of entrepreneurs. Entrepreneurs seeking profits from productive investments are measured along the horizontal axis from right to left and rent seekers along the same axis but from left to right (see Figure 3).

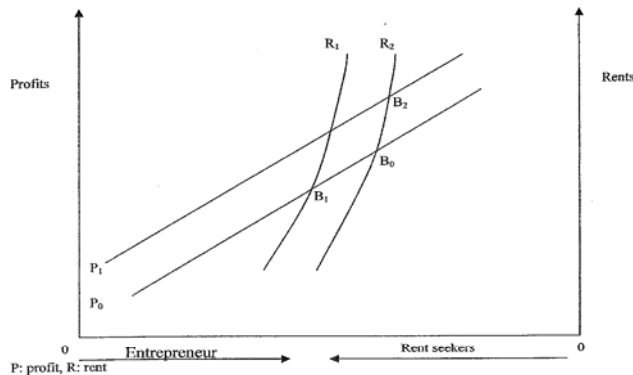


Figure 3. Rent grabbing and producer friendly institutions

The entire horizontal axis therefore shows the stock of entrepreneurs who can distribute their time between productive entrepreneurial activity and / or rent seeking entrepreneurial activity. In this regard, both activities compete for the entrepreneur's time. The lines P_0 and R_0 are the respective returns on productive entrepreneurial activity (profits) and rent seeking entrepreneurial activity, respectively. In an economy with strong institutions and well-specified property rights, entrepreneurs can make greater gains from productive activity than rent seeking, outcomes shift from B_0 to B_2 (with less rent seeking and rent seekers and on a higher profit plane, P_1). In those economies with weak institutions where rent-seeking activity can thrive, the equilibrium balance shifts to B_1 , the consequence of which is a decline in productive entrepreneurial ventures.

4.2.6 Education effect

Economies that are confident that their natural resources are their most important assets may inadvertently neglect the development of their human resources, by devoting inadequate attention and expenditure to their education sector (Gylfason et al., 1999; Gylfason, 2001).

Birdsall et al. (1999) have argued that economies can achieve rapid economic growth if they invest in those assets in which they have control over, especially

their human capital. These researchers identified that an increase in the rate of return to human capital and other assets helps to improve work efforts, savings and investment triggering a type of virtuoso cycle. In resource rich economies, however, the authors have argued that there is the temptation for governments to deviate from the virtuoso cycle.

4.2.7 Corruption and the slow pace of reform effect

In some economies, natural resource abundance tends to halt the economic adjustment process. Thus a favorable current account balance may deter an economy from engaging currency devaluation. However, it is possible that the non-mineral current account balance of a mineral rich economy may be in deficit and so the mineral abundance can actually mask deeper structural problems with the balance of payments. One of the fundamental differences between mineral rich and mineral poor economies is the relative ease with which mineral rents can be collected and distributed by the government. This easy route can reduce the urgency for political and economic reform to promote economic growth. This is termed the 'voracity effect' by Thornell and Lane (1999).

From another dimension, natural resources can help to weaken governments and reduce their tendency to focus on the provision of key public goods such as health care, education and the provision of national security. The latter is very critical for the optimal functioning of the free market.

Even more and for a variety of reasons, the local population sometimes becomes aggrieved with the resource extraction process and this prompts some form of civil disobedience amongst the rank and file of society. A weakened state loses some of the capacity required to resolve social conflicts.

Researchers such as Wantchekon (1999) and Ross (1999) have established positive correlations between resource dependence and the extent of authoritarianism in mineral rich economies. This is so, even after these authors controlled for a number of other influences such as Gross Domestic Products (GDP), human capital, income inequality and a number of other pertinent variables.

4.2.8 Savings effect and investment effect

Nankani (1979) found that resource rich countries tended to be characterised by poor savings performance, while Atkinson and Hamilton (2003) have noted that countries endowed with natural resources tend to carry a lower rate of genuine savings. Researchers such as Gylfason and Zoega (2002) have found that with an increase in the share of total output accruing to natural resources there is a decline in the demand for capital which in turn leads to a decline in the domestic rate of interest and lower economic growth. In this regard, the adverse effects of export booms can persist for a long time after a natural resource boom has subsided.

Other researchers such as Lal and Myint (1996) have noted that resource-rich economies realised a decline in the efficiency of their investment during the 1970s. Part of this was on account of sustained pressure on governments to spend the windfall gains on economic ventures that yielded low rates of returns.

4.2.9 Trade effect

Sachs and Warner (1995) find an inverse ‘U’ shape relationship between trade policy and resource dependence. The left hand arm of the ‘U’, indicates that economies with weak mineral dependence tend to have a more open economy. The trough of the ‘U’ reflects the tendency of resource rich economies to implement protectionist policies to favor their NBT sector. Sachs and Warner (2001) note that the right arm part of the ‘U’ accrues because of the tendency amongst those oil exporting economies with large deposits of crude oil to be lax on diversifying out of their dependency on the depleting energy reserve. Even so, Auty (2001) notes that the resource curse effects tend to impinge on the urgency of engaging trade reforms in such economies.

4.2.10 Social effect

When an economy or region within an economy experiences a mineral boom the tendency is for the population in that region to expand rapidly. This is mainly because of the need of the mining project to obtain a consistent supply of labor. The increase in population increases the demand for social services, particularly health care and education. As people flock to the mining area, social ills such as crime, prostitution and general violence can increase.

The social effect of a mineral boom also seems to be heightened in ethnically fractionalised economies. Hodler (2006) illustrates that an increase in the number of groups (ethnic or otherwise) decreases the per capita incomes of each group.

5. Dutch Disease and Deindustrialisation

In the natural process of economic development, economies follow a broadly familiar trajectory. In general, as an economy matures its manufacturing sector expands at first and then contracts (relatively) whilst its agricultural sector persistently falls in relative size. The services sector expands continuously.

In the literature, deindustrialisation refers to a contraction in the relative size of the manufacturing sector in terms of a fall in its share in total value added (or a fall in the share of manufacturing employment in total employment). The early literature on deindustrialisation was germinated by Baumol (1967) but was coherently and rigorously argued by Rowthorn and Wells (1987). Rowthorn and Ramaswamy (1999) noted that this process was inevitable and could result in improved living standards via increased productivity and efficiency in the economy.

To illustrate some of the fundamental economic attributes of deindustrialisation, let A_0 : share of agriculture in total output, M_0 : share of manufacturing in total output, S_0 : share of services in total output; and let Y_L : low income, Y_M : middle income, Y_H : high income.

Prototypically, in:

$$Y_L, A_0 > [M_0, S_0] \dots\dots\dots(1)$$

$$Y_M, M_0 > [A_0, S_0] \dots\dots\dots(2)$$

$$Y_H, S_0 > [M_0, A_0] \dots\dots\dots(3)$$

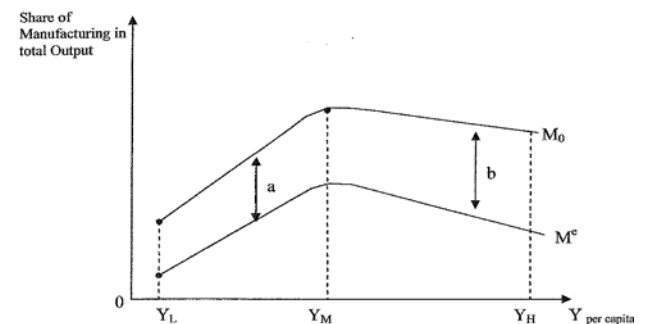
Some empirical support for this type of reasoning is found in the work of Syrquin and Chenery (1989) who found that as the per capita GDP of an economy matures, the share of its agricultural sector contracts whilst both manufacturing and services increase (see Table 1).

Table 1. Structural change norms for value added

Value added per capita (1980 \$)	300	500	1,000	2,000	4,000
Agriculture	39.4	31.7	22.8	15.4	9.7
Manufacturing	12.1	14.8	18.1	21.0	23.6
Services	32.4	34.6	37.8	41.2	44.9

Source: Syrquin and Chery (1989)

A similar relationship holds, regarding employment in the various sectors. Some researchers, such as Saeger (1997) have argued that deindustrialisation is best explained by a reference to declining manufacturing employment shares in total employment. Thus, in the natural process of development the manufacturing sector undergoes a transformation from being a subservient sector in a Y_L economy (expression 1) to a dominant sector in a Y_M economy. In a Y_H economy, the share of the manufacturing sector falls again (see Figure 4).



M' : share of manufacturing employment,
 M_0 : Share of manufacturing in total value added.

Figure 4. Share manufacturing output and employment in their respective totals

When deindustrialisation occurs in a ‘natural’ format it is associated with rising living standards. This should be intuitively clear, as deindustrialisation in this scenario would coincide with rising incomes per capita.

Significantly, a process of continued deindustrialisation will have important implications for any economy. In particular, the long run average growth rate will be determined by the slowest growing sector, a condition referred to in the economic literature as asymptotic stagnancy.

Because with a natural resource boom the NBT sector contracts, important concerns hinge on the magnitude of the contraction and the extent of knowledge bearing sectors lost as a consequence, as this can have adverse longer run implications. Note that if these same changes are less acute but spread over a longer period of time then it may be properly reflective of the changing comparative dynamic at work in the economy and hence are very welcome. In particular, with a resource boom, the consequent deindustrialisation of the manufacturing sector results in a loss in the positive externalities associated with a vibrant manufacturing sector. These externalities include 'learning by doing', technological progress and innovation. Note that these lost externalities are not replaced by the externalities generated by resource-based industrialisation.

A number of researchers have recognised the importance of the manufacturing sector. Sachs and Warner (2001) have noted that a diverse and vibrant entrepreneurially active manufacturing sector facilitates the economic growth process in a developing economy. Other researchers, such as Van Wijnbergen (1984), have noted that technological progress is greater in the non-sheltered tradable segments of the domestic economy. Even more, Wood and Berge (1997) found that countries which produced and exported manufacturing goods had a higher growth rate of GDP than countries emphasising agriculture. These researchers attribute this to the greater focus on human capital formation that takes place with a vibrant manufacturing sector.

6. Learning by Doing (LBD) and the NBT Sector

In the past a number of researchers have illustrated that a windfall boom can help to precipitate a decline in the LBD levels within an economy. With a resource boom and a contraction in the size of the NBT sector, LBD which would have occurred in the NBT sector is now lost. Hahn and Mathews (1964), have noted that if most economic growth is caused by learning by doing induced technological progress which moreover is largely confined to the traded goods sector (non-booming), a temporary decline in that sector may permanently lower income per head compared with what could have otherwise attained.

There is also a dynamic loss associated with the further shock to the sector with the appreciation of the real exchange rate. Sectoral shifts in the distribution of labor away from manufacturing, has been shown by Matsuyama (1992) to slow economic growth by compromising the size of the manufacturing sector.

As a consequence of all these potential problems with natural resource specialisation, many researchers and policy makers have advocated in favor of carrying a larger manufacturing sector so as to benefit from a greater element of economic growth and an improvement in the distribution of income. For these reasons, it is critical for resource abundant economies to reduce their dependence on natural resources and to pursue the diversification of their economic base.

7. The Need for Economic Diversification

Whilst there is no set consensus on the influence of natural resource abundance on the economic growth process, the prevailing reality is that for some countries natural resource abundance has promoted growth whilst for others it has not.

The need for economic diversification in mineral rich economies is exemplified for the following reasons. In the first instance, the price of mineral sector products, including crude oil tends to be cyclical and volatile and can spur boom bust episodes in the natural resource specialised economy. The impact of a 'terms of trade' shock on the banking sector of a less diversified economy works as follows. In the presence of an adverse 'terms of trade' shock, the profits of exporting firms decline. This sprouts an increase in the amount of non-performing loans carried by banks and prompts a withdrawal of deposits from the banking system. This leaves the banking sector in a vulnerable position (Narain et al. 2003).

Some researchers, for example, Mikesell (1997) identified that volatile revenues is a potential premise for the resource curse thesis in mineral rich economies. Fluctuating revenues create a plethora of problems for the development process, including making the fiscal planning process more difficult. Price and output fluctuations also lead to export revenue volatility, and this in turn puts pressure on the exchange rate. When an economy's exchange rate becomes unstable then this harms other segments of the economy, especially NBT sectors.

In societies where the oil and gas sector is dominant, there is therefore an urgent need for economic diversification. Since the early 1970s, oil-exporting countries have paid lip service to the diversification of their economies away from dependence on crude oil exports (Kubursi, 1984). Despite this, the record in general has been very poor with huge amounts of public money being poured into inefficient and uncompetitive industries. One of the few examples cited in the literature of an economy that has significantly decreased dependence on oil and mineral domination is Tunisia (Davis, 1995).

8. The role of the government in encouraging economic diversification

Development of an appropriate diversification strategy is

not a simple task. Diversification cannot be done overnight and should not be done *ad hoc*. Diversification can adopt a number of forms.

For mineral-rich economies, it is critical to engage comprehensive structural changes to facilitate the reform process, consistent with market signalling for scarce resources. This type of change includes providing labour market reform, so that the pressure of an increasing unemployment rate does not create sideways pressures to destabilise any reform agenda. There is the need to plan by improving the stock of skills of the labour force so as to improve its employability. Thus in mineral-rich economies, a significant part of the reform process must involve the longer term training of the workforce. In particular, governments of mineral-rich developing economies should provide technical and vocational training and training in management and business skills to help to build an indigenous entrepreneurial class.

The government of mineral-rich economies should also seek to engage a more open market stance. By maintaining a free trade regime, the government of mineral-rich economies would nurture a process of allocating its economy's scarce resources according to comparative advantage lines. Trade policy also has a definite role to play in promoting a successful economic diversification thrust amongst resource-rich economies. The literature points to the high degree of trade openness in the handful of economies which avoided the resource curse, particularly Chile, Botswana, Malaysia and Indonesia.

A reduction in import duties associated with a greater degree of trade liberalisation can help to stimulate the growth of small and medium-size enterprises in mineral rich economies. Governments of these types of economies should also establish the appropriate institutions to monitor and disseminate information on trends in international demand patterns. In a similar vein, there will be a need to liberalise the restrictions on foreign capital flows. In particular, governments of mineral-rich economies should try to attract foreign direct investments (FDI) in areas that can help to promote access to technology in non-traditional areas of production.

Infrastructural investment and the development of a sound regulatory framework will no doubt enhance the pace at which new technology is adopted, and as such will facilitate the emergence of new comparative advantage areas outside of natural resources. Such policies have the benefit if spurring nationwide multipliers. Besides, governments should provide an adequate amount of incentives for the development of the private sector of the economy. This type of fiscal approach would require the government of a mineral rich economy to adopt modern taxation machinery, and also to augment the quantum of resources targeted at the formation of capital in the economy, both physical and human.

Mineral dependent economies should also ensure

that the budgetary price selected for their exportable mineral is not excessive. By aligning current expenditure to a reasonable estimate of the price of the mineral export good, the government of a mineral-rich economy will check the growth of the country's external debt which in turn will free up a block of resources that can be used for more meaningful productive activity within the economy (e.g., infrastructural development). Government should also engage the privatisation of national entities, so as to reduce the extent of transfers and subsidies that the government has to carry and at the same time make use of the optimal resource allocating virtues of the free market mechanism.

As part of an economic diversification agenda, the government will need to adopt a prudent fiscal stance so as not to trigger the appreciation of the real effective exchange rate (REER). By preventing the appreciation of the REER, the government is providing support for price competitiveness of the NBT sector. The World Bank (1993), drawing on the experience of the Asian tigers has identified that the most meaningful form of economic diversification must carry a strong private sector element. This means that in a resource-rich economy, there is the need to divert a large proportion of the mineral revenues so that the private sector can benefit.

In mineral-rich economies, it is also necessary to build institutions, which foster a greater degree of transparency and competition. It is also critical in any booming economy or sub-economy especially those that are drifting close to full employment unemployment that there is no rapid deterioration in social conditions. This is perhaps especially so with regards to the level of crime, as this can act as an obstacle to the investment process. Another characteristic identified in the literature is such that mineral abundant economies tend to engage unbalanced growth strategies biased towards mineral resources. This type of strategy would not create the intended economic dynamic especially in cases where the mineral sectors unexpectedly decline. Mineral abundant economies should therefore pursue more balanced growth strategies founded on investment in a wider range of industries.

To promote the pace of diversification in resource-rich economies, one policy intervention would be a Business Incubator program (BIP). A BIP in natural resource rich economies can assist companies to create jobs in the NBT or NT segment of the economy. Business incubators nurture the development of entrepreneurs, assisting them during their start-up period, when they are most vulnerable.

9. Conclusion

For developing natural resource-rich economies, the objective of the government should be to engage a growth trajectory which is not only economically sustainable, but also has the added attribute that it

promotes an improvement in the distribution of income in the macroeconomy.

Insofar as diversification reduces the risk of economic vulnerability due to the volatility of exogenous price shocks, other benefits also accrue to an economically diversified economy. In particular, the preceding discussion has highlighted that the learning by doing, technological progress and innovation benefits accrue to an economy when adequate focus is paid to the non-booming tradable sectors, particularly manufacturing. Notwithstanding the effort towards diversification, the government should also persevere to properly manage its natural resource base and exercise fiscal prudence in its expenditure patterns in order to achieve some degree of sustainability along its development path.

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