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Evidence-based Employment Scenarios

Thoughts on Employment Typologies

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August 2007

THOUGHTS ON EMPLOYMENT TYPOLOGIES

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Executive summary

Minerals (and other natural resource) exports are very helpful to development and the generation of productive employment when the rents from them are used wisely and undesirable macroeconomic effects are avoided, but in many countries they have in fact been damaging. Successful development over the medium and long run involves achieving at least reasonably high levels of investment and productivity increase as well as a strong demand for labour in productive jobs. The key to taking full advantage of minerals exports is to make sure that they foster attainment of these goals. This involves effective use of minerals rents (by either public or private agents), keeping up the incentives for investment and desirable technological change, and thinking ahead to the time when the country's current comparative advantages will no longer be adequate to underpin its further development.

Many mineral rents wind up being wasted, either through corruption and theft or through inefficiencies and other effects of rent-seeking behaviour by private and public agents. It is standard for a share of rents to be lost in this way, from outright misappropriation of funds to overpayment of employees in the rent-producing sector, to subsidisation of consumers of the product (in the case of petroleum). Waste also occurs through too-quick spending as revenues rise rapidly. Exchange rate overvaluation is a frequent result of high mineral export revenues. It encourages high consumption and discourages the production of other tradables. At worst, capital inflows can lead to appreciation of real estate and other fixed-supply assets, to a resulting Pigou effect whereby domestic savings are discouraged by the positive wealth effect and hence the anomaly of capital inflows that do not lead to real investment. Too often the 'easy life' from mineral rents discourages the learning process and the search for competitiveness in other areas. When accompanied by short-sighted politicians, it leads to a lack of thinking ahead to the stage where the current export will no longer be able to provide an adequate base for growth.

Mineral (and some other natural resource) exports tend to create very few jobs. This, together with the disincentive they create for the production of other tradables, can leave the country with a difficult employment/income distribution challenge. The export sector creates a few highly productive jobs, which tend also to be highly paid through a process of rent-sharing, but the country's labour demand curve may be very steep (price-inelastic) so that the equilibrium wage may be very low. Such a situation calls for policy-makers to think seriously about employment policy, and to foster labour demand in some combination of tradables and non-tradables, whose optimal mix depends on the specific situation of the country.

These principles can be illustrated in the experience of six minerals (or other natural resource) exporters. A degree of 'waste' of rents (in the sense of rents not being available to contribute to a healthy growth process) occurs in all countries, but has been particularly notable among the oil exporters. In Nigeria one form this took was the inefficiencies involved in attempting to spend the rents faster than the country's infrastructure could easily facilitate. In both Indonesia and Venezuela, the large amounts of money available opened the way for 'grand schemes' for expensive projects whose economic benefits were questionable or worse. Even in Malaysia it has

been argued that the generally sensible spending on land development was quite expensive.

Exchange rate overvaluation had negative effects in Venezuela and Nigeria where, as elsewhere, it fostered a binge of consumption of imported goods and created a serious disincentive for the production of other tradables, and in the latter case led also to inefficiencies associated with too-fast spending. In Brazil, overvaluation was a periodic and inadvertent result of the combination of inflation and a pegged nominal exchange rate, though policy did attempt to curtail it. With the exception of Brazil, which provided incentives for learning and development of new competencies through a variety of policy tools, the countries that suffered systematic exchange rate overvaluation were not very successful on the 'learning' front.

Each of Chile, Brazil, Indonesia and Malaysia have made at least reasonably effective use of their natural resource export rents during the period since the 1960s. (Venezuela also sustained a long period of growth on the basis of oil exports from the 1920s to the 1970s, even though this was followed by a period of failure.) The employment/distribution outcomes have been most positive in Indonesia and Malaysia. Their various experiences can be summarised as follows.

Brazil had historically used its export rents (most of which were from coffee, early on) to subsidise infant industries, mostly but not exclusively in the manufacturing sector. It was a classic case of the application of an 'industrial policy'. This process was successful from a growth point of view, and had much in common with the East Asian story of ISI¹ protection leading to international competitiveness in a range of sectors. Its truncation in the 1980s probably had more to do with the changing international financial scenario than with any inherent defect in the model. Because the protected or otherwise supported activities tended not to be labour intensive, Brazil's growth was not accompanied by any fall in its extremely high level of inequality. Chile's experience was broadly similar to Brazil's, except in the way in which new export capacities were identified. An exchange rate devaluation in the 1980s provided a neutral incentive to a broad range of tradables, out of which emerged a large number of competitive exports. Whereas in Brazil the subsidies to infant industries took the form of high prices to local consumers or fiscal transfers, in Chile they mainly took the form of high prices to local buyers (the natural result of the exchange rate policy). Though Chile provided subsidies in the form of research and development (R&D) expenditures, other forms of subsidies were much less than in Brazil. As with Brazil, the new exports were not typically intensive in the use of labour, and income inequality, which had risen sharply as the new market-friendly policies were introduced in the 1970s, did not diminish during the export boom. In both countries, a considerable level of research and development contributed to some of the new competitive exports.

Indonesia used some oil (and other export) rents to subsidise a developing manufacturing sector, but on a much smaller scale than Brazil, reflecting its still much lower level of industrial development. Unlike Brazil or Chile, it directed a large flow of resources to small-scale (essentially rice) agriculture. These expenditures on rural

¹ Import substitution industrialisation

infrastructure and fertiliser subsidies, among other things, were highly complementary with and facilitated the quick adoption of Green Revolution varieties, with large benefits to the farmers. In the mid-1980s, when growth was threatened by macroeconomic disequilibria, the country executed a successful devaluation, which was instrumental in bringing labour-intensive clothing exports into competitiveness. With the combination of benefits to small-scale agriculture and the (later) employment creation related to light exports, Indonesia had used resource transfers (to rice) and devaluation to foster growth in two large labour-intensive sectors. As a result, wages rose and inequality remained moderate. Malaysia also used resource rents to support small-scale agriculture – mainly in the rubber sector – and later developed a labour-intensive export sector (without devaluing). As with Indonesia's, the employment and distributional outcomes were broadly satisfactory, although inequality rose during the earlier stages. This was partly because the nature of the land development programme was not such that the benefits could accrue to nearly all the small farmers, as was the case with the introduction of new rice varieties in Indonesia. In fact, rural inequality rose during this phase of development.

Both Brazil and Chile have been able to foster considerable industrial learning over their periods of industrialisation and diversification. Both have, as a result, greater potential to take advantage of future opportunities that may arise or can be developed. This is much less true of Indonesia and Malaysia, partly because they are lower income (Indonesia) or smaller (Malaysia) but also because, at least in the case of Malaysia, the EPZ2-export model offers relatively few opportunities for broader learning. As a result, some observers worry that Malaysia has not laid firm enough foundations for future growth.

Venezuela's long period of fast growth involved a good deal of ISI-type support for its manufacturing sector, leading to significant employment growth there. Despite the dominant role of oil, income inequality in Venezuela, while high, has not been particularly so by Latin standards. Although it did seek new comparative advantages in the 1970s, it selected badly, focussing on capital-intensive sectors that could not (or did not) become competitive internationally. These industries (public enterprises) plus other expenditures the government got locked into during the high oil-price period of the 1970s, contributed to relative stagnation over the next 25 years. There was neither the successful focus on more labour-intensive tradables seen in Malaysia and Indonesia nor on less labour-intensive ones seen in Brazil and Chile. This is probably due in part to the fact that oil dominates Venezuela's economy more than natural resource exports do in any of the other cited countries. But it appears also to be due to weaker policy, a less well-thought-out strategy, and errors that left too little fiscal and policy flexibility.

A successful strategy for Venezuela would presumably have had much in common with the outcomes in Brazil and Chile, in that the tradables whose competitiveness would be raised would not be very labour intensive.

² Export Processing Zone

Thoughts on employment typologies

Nigeria's factor proportions were and are closer to those of Indonesia than to Brazil's or Chile's, hence the best policy from the early oil days in the 1970s, could it have worked, would have been one focussing on raising the productivity of small agriculture. But no Green Revolution was available to be adapted from the outside, so the task would have been much harder and of less certain outcome. As it was, policy favoured education and the urban areas, but ultimately failed to significantly widen the range of comparative advantages. As a result, oil has enriched one small group but impoverished many more.

1. Minerals exports and 'Dutch disease' impacts

Mineral exports can be very beneficial at the positive end of the spectrum and very damaging at the other end. The frequency with which countries approximate the latter end is attested by the 'Natural Resource Curse' literature, which raises the question of whether, on average, countries get any net benefit at all from natural resource endowments after the various types of "curse effects" have had their impacts. That this would be an interesting question at all is *a priori* surprising, since we tend to assume that resource endowments are a good thing.

While the natural resource curse literature itself focuses mainly on the growth impacts (positive or negative) from endowments, an additional twist to all of this involves the employment (and hence distributional) impacts of such endowments. Here the starting point in the discussion of minerals exporters is the fact that the direct employment created in this sector is usually very small, thus creating the possibility that after indirect effects are taken account, the net impact on labour demand may be negative.

Whether regarding the growth or the employment/distribution impacts, it is useful to think first in terms of a very simple model, and then to complicate it.

The simplest cases involve the assumption of full employment, immediate reallocation of resources when the composition of output changes, no international capital flows, balance of payments equilibrium at all times, all goods tradable and no government. Assume a mineral export industry appears, the resource having just been discovered. It attracts capital from other sectors and creates few jobs. When it is exported, it competes with the production of other tradables. Assuming most of those are more labour intensive than it is, then total demand for labour falls. Since national income has risen (simple trade model assumption), the income of capital rises by more than national income. How much labour income falls depends on the difference in labour intensity between the new export and the other tradables whose output now falls.

When there are also non-tradables, it matters how relatively labour intensive they are and how the composition of demand changes in light of the rise in national income and the change in income distribution. Given the initial draw on resources to the new export and the release from other tradables, the expectation is that non-tradables will now be using less capital and more labour than before. This creates a likelihood, other things being equal, that the equilibrium wage in the economy will fall, though under very special conditions on the demand side this might not happen. The extent of fall in the wage will depend on the differences in factor proportions among the three categories of goods and services distinguished (the new export, other tradables and non-tradables). A special case in which the negative impact on labour will be greatest occurs when the new export not only creates little employment directly but also displaces labour directly from other activities (in addition to its indirect displacement through the falling output of other tradables). This case is exemplified by Paraguay, whose Dutch disease export is soybeans. Their production creates essentially no jobs but pushes small farmers off the land, leading to a direct net loss in labour demand.

To this is added the labour displacement in the now-discouraged production of other tradables.

This static picture of the resource reallocation impacts of an export is of course very oversimplified and needs to have added to it the dynamic and other features of a real world economy.

The simplest extension is to consider the presence of foreign capital. If the new export sector was based on such capital, no shifting of capital from other sectors would be necessary. Total output would rise by more than in the previous case, but profits would have to be remitted to the foreign country. Whether labour would now be better or worse off would depend on whether the now-discouraged sectors (other tradables) were more or less labour intensive than the non-tradables whose output would rise. Assuming zero employment in the new export, this issue would be virtually the only factor affecting the fate of labour.

Three additional aspects to bear in mind involve possible absence of full employment, adjustment dynamics and growth dynamics.

Resource underutilisation characterises all economies, but some much more than others. In general the level of utilisation tends to matter more than the quality of resource allocation. So one question to be asked about mineral or other exports is what they do to resource allocation. Both direct and indirect impacts can occur. If raised exports lead to resource underutilisation as the economy adjusts towards a new equilibrium, total output may fall rather than rise. Or if, for other reasons, the change leads to a longer run higher or lower level of resource utilisation, this can matter. Policy can go a long way to assuring that resource underutilisation does not occur, through some combination of monetary and fiscal policy and exchange rate policy. These policies also have the capacity, along with raising aggregate demand, to affect its structure and hence its impact on labour demand.

The longer run impact of minerals exports, however, depends mainly on how it affects investment and technological change and, along with those processes, the demand for labour. If investment is not spurred, or is misdirected either in terms of its growth impact or that on employment, then the payoffs are likely to be small.

A major difference between countries that take full advantage of mineral revenues and those that do not is, unsurprisingly, how well government uses those funds, assuming that a considerable share of them accrue to it. There are two generally good uses: (i) saving in foreign exchange reserves; and (ii) spending wisely and in ways that do not lock the state into long-run, low-productivity expenditures. The first use is important for at least two reasons. First, saving abroad prevents the exchange rate appreciation that would normally accompany rising export revenues and thus discourages production of other tradables. Secondly, it avoids the normal rush to spend easily available funds that leads to quick waste of a lot of them, and may in the process lock the government into continued waste in future as well (a notable feature of the story in Venezuela, but to some extent most other countries as well). Wise spending allows government to restrict funds to the highest payoff uses.

From the employment/poverty perspective it is additionally desirable that government spend resources to foster new competitive advantages that are relatively

labour intensive (among the range of possible options). In terms of direct employment creation, it is desirable that as much be of lower income people as possible and that it be of the sort that does not lock the public sector permanently into a given expenditure pattern. Government purchases of goods and services (as well as its direct employment) can also be used in employment-creating ways – witness the purchase from clusters of SMEs³ in cases like Ceara (Brazil) and others. Indonesia's spending pattern out of early oil revenues was one of the best. It went towards raising productivity in another tradable, rice, which was produced by small, low-income farmers and thus had a broad poverty-reducing impact. It was self-terminating in that much of it went to rural infrastructure, fertilizer subsidies which could be phased out after farmers learned to use this input, etc. Venezuela's was one of the worst, as funds went to capital-intensive industries that did not become competitive and in any case created few jobs, but that locked the government into a high level of recurrent expenditure. Nigeria's spending on education turned out to be unproductive since the complementary conditions to give that education a high payoff were not created.

The impact of the level of taxes on the mineral sector depends on how that level changes the incentives and behaviour of the private firms involved in the industry and how the public use of funds compares with that of the private sector. The latter depends, among other things, on whether the firms are foreign or national. The most positive case for high taxes involves situations in which those taxes do not greatly affect the level of desirable investment in the industry but do shift resources towards productive uses like infrastructural and desirable social spending, or towards the purchase of labour-intensive items.

Where the government receives a high share of the export-based rents, the way it spends these resources may be the major determinant of the employment and distributional impacts of the country's mineral dependency. Experience across countries varies immensely in this regard.

³ Small and medium-sized enterprises

2. Determinants of the growth impact of exports

Theory suggests quite a few differences in the degree to which export growth will pull overall growth. Empirical verification is necessary to nail things down, but the empirical literature has many holes in it still. The likely determinants are:

- i) The potential benefits are especially great in the 'vent for surplus' situation in which what is exported has no value at home (for example, because there is too much of it), so there is really no opportunity cost (in terms of foregone local use) from the export.
- ii) Where the local economy tends to operate at less than full capacity and the production of the exports pulls it up to full capacity, there will be an 'Okun gap' benefit along with the others.⁴ In that case there is not only no opportunity costs of not consuming the exported item but also no opportunity cost of producing it. In a Keynesian underemployment situation, total output may even rise by more than that of the export itself, all of this 'free' of opportunity cost. But this capacity utilisation benefit may be lost if imports rise with exports and include products previously produced at home. Thus balanced freeing of trade may not raise capacity utilisation, and may even lower it.
- iii) If the resulting imports include a lot of capital goods in which the country has a comparative disadvantage, then the growth impact will be larger. If the country does not have such a comparative disadvantage, or if the exports simply finance imports of consumer goods, the growth impact will be less.
- iv) Gains from exports can be offset by an appreciating exchange rate, which discourages production of other tradables, in addition to the impact of any freeing of trade on the import side.
- v) Capital flows may be causally related to the exports. An FDI⁵ capital inflow which goes to real investment in the export sector may have no net effect on the balance of payments if it leads to imports equal to the capital flow. Or the capital inflow can be directed to the purchase of non-tradables (for example, construction services to develop the export capacity). In that case it will lead to exchange rate appreciation. Finally, capital inflow can simply reflect the fact that the exports appear to make financial investment in the country more attractive and go into local financial assets, with both an appreciating effect on the exchange rate and a Pigou effect to discourage local savings through the wealth effect as assets appreciate. At the other end of the spectrum, profits from the export sector can be sent or kept abroad, which tends to offset pressure for appreciation.

⁴ This gap, named for economist Arthur Okun, refers to the distance between actual output level and potential output level, given the resources an economy has. So it is the output shortfall due to underutilisation of resources.

⁵ Foreign direct investment

vi) In general, exports are more growth promoting when the income derived from them leads to a lot of savings, which then get efficiently channelled to productive investment. An ideal situation is where the exports tap an elastic demand (encouraging more domestic production) and the profits are reinvested in expanding the capacity of this price-elastic demand product. The savings impact of growing exports clearly depends on whose incomes rise the most and what the savings proclivities of those agents are. Where incomes accrue mostly to non-saving rentiers, the impact will be weak or absent.

vii) When growing exports put the country 'on the map' in the sense of making its reputation as an exporter of the items in question, this fosters future export growth.

viii) As a frequent correlate of growth acceleration, rising exports are often part (sometimes an important part) of the virtuous circle that such growth acceleration entails. Other components are rising savings and investment rates, and eventually, rising total factor productivity. Some exports are more likely than others to contribute directly and strongly to these other elements of the virtuous circle. A flow of funds analysis is helpful to sort out the impacts.

3. Export growth, employment and inequality

Both in general and among the countries chosen for detailed study, there is a considerable range of experiences in terms of what happens in the labour market and how inequality varies with export-led growth, or more generally, tradables-led growth.

The theory tends to focus a lot on the factor proportions characterising the tradable items, since these are the ones whose output can be either greatly increased (the exports) or decreased (the import-competing goods) through trade. But what happens to non-tradables is also important. Some of these are linked to tradables through input-output relationships. Others can be affected by policy, for example, the character of government employment.

Among tradables, the production characteristics of import-competing goods are as important as those of exportables. The fact that Indonesia raised productivity and incomes in its main tradable, rice, and later exported a lot of labour-intensive goods no doubt helps to explain the fact that inequality remained moderate. On the other hand, China has suffered an extreme increase in inequality during the opening up phase. This is due in part to the fact that initially inequality was very low, due to the non-market features of the system. Then, although some of the increase in exports has been of labour-intensive items, not all has, since China is now competitive in a very wide range of products. Finally, however, the tremendous increase in inequality probably owes much to the fact that, when it was centrally planned, China's economic structure was one emphasising large firms and a higher weight for capital-intensive goods than would have been the norm in a market economy at the same level of development. Thus, when market forces were given freer rein to determine factor incomes, inequality moved towards the level it would already have had with the existing economic structure and with factor prices determined by market forces. Malaysia, like Indonesia, wound up with a range of exportables in terms of capital intensity, from petroleum at the one end to clothing at the other. Like Indonesia, it spent a lot of money to support small-scale Malay agriculture, a fact that would be expected to keep inequality within bounds.

4. A special role for manufacturing in minerals exporters?

There is little debate that the most successful among developing countries have included mainly manufactured goods exporters (Isham et al, 2005). This fact can in part be interpreted in terms of the advantages of not being vulnerable to the 'natural resource curse' that plagues natural resource exporters or in terms of positive benefits from manufacturing activities. In contrast to the opportunities of rent seeking, leading to conflict – physical or of other types – that diminishes the positive contribution some natural resource exports can make to a country's development, manufacturing is widely believed to induce real entrepreneurship. Such entrepreneurship produces longer run growth through the skills involved in decision-making, risk-taking and innovation, the pattern of saving for own investment in future and the accumulation of human capital around engineering-type skills.

Unsurprisingly there is little controversy about the special role of manufacturing in those countries whose ticket to growth has been their light manufacturing export phase. But thus far only a minority of developing countries has been able to take this route as their main one and over an extended period of time. Two other types of countries or situations thus warrant more attention as we consider in what sense manufacturing may play a special role in development. One is that group of countries-phases where manufacturing is undertaken for sale in the domestic market, and hence in competition with imports – the ISI cases. Another is that set of countries which export not so labour-intensive manufactures. Here it is to be expected that any positive employment effect will be less than the growth effect, but the question is whether the latter can be and typically is important.

In static economic terms, some countries have a comparative advantage in primary products, others in various types of manufactures. We thus expect that if manufacturing currently has the comparative advantage in a country, it will make a special contribution to growth, and that if it does not, that trade-related contribution will not be made. But beyond this factor-proportions-based sort of aspect is the more general question – does manufacturing play a special role independently of its short-term comparative advantage. If so, the main channels of such contribution that have been mooted include:

- i. Contribution to technical change;
- ii. Stability of demand (domestic and international), which allows the sector to grow in a more healthy and successful way;
- iii. Higher savings/investment propensity;
- iv. Honing of better entrepreneurship and/or other special skills (this may overlap substantially with its contribution to technological change); and

- v. Atypically strong positive linkages with other sectors (meaning to be specified, but including Hirschman-type linkages, whose benefit is to save on scarce entrepreneurial skills).

Which sort of contribution manufacturing may be making is expected to determine how that contribution will show up in the growth record. Thus, if it is often a driver of growth because of positive current linkages (those are effects which play out in the short run), then one expects a short-run correlation between expansion of manufacturing and GDP growth, and perhaps even growth of non-manufacturing. But if the payoff comes from contribution to technical change through a probably gradual build-up of technical skills, the payoff may be delayed a matter of decades. An example is where skills build-up from an earlier phase of manufacturing development pays off in leaving the country able to be competitive in some higher value-added activity later on.

To the extent that the contribution of manufacturing involves increases in TFPs, and especially if the faster TFP growth occurs mainly in manufacturing itself (not necessarily the case but it may be), then one would conclude that rapid output growth and productivity growth in manufacturing would be the indicators of success, whereas employment growth might or might not be associated with success (see the Chilean case in this connection).

An important employment-related issue in minerals-dependent countries or in others where exports create few jobs is whether some degree of protection of manufacturing is likely to be justified on the grounds that the sector can also provide an important possible source of jobs, but will not do so without protection. The basic dilemma of such countries lies in the fact that although average income may be high, the equilibrium wage may be low. This will be the case when the export sector creates a small demand for labour at a very high demand price, and various non-tradables and agriculture create a reasonably large demand but at a low demand price, while manufacturing has the capacity to create considerable employment at medium-level demand price but only if protected.

In this situation, if manufacturing is not protected there are two possible outcomes. First, if wages are set by purely market forces (hence at the equilibrium level), then that wage will be very low, with a high share of the labour force in low-productivity services and with inequality correspondingly high. Secondly, if the wage is not set exclusively by market forces (that is, there is some legislated upward pressure on some wages, or cultural forces impede payment of very low wages), then there may be dead weight loss through inefficient allocation of labour⁷, accompanied by higher levels of open unemployment and/or underemployment. Again, inequality will be high. In both cases there is the distinct possibility that because of a monopolistically competitive market structure in some of the services, the low earnings associated with

⁶ Total factor productivity

⁷ Note though that absence of imperfections in the labour market only guarantees efficient allocation (in the sense of maximization of output) if all other markets are also perfectly competitive. Further, maximization of social utility may not be closely related to maximization of total output if income distribution is unequal.

those activities may still overstate their marginal social productivity, which may be zero or even lower. If protected manufacturing offers the option of reasonably well-paid jobs, then the distribution of income may be better than in the other two cases and total output may be no lower if in fact the marginal social product of labour in some of the services was very low. This possibility complicates the analysis of the possible roles of manufacturing in natural resource-dependent economies.

Several specific questions thus arise as one tries to assess the role of manufacturing in minerals exporters.

- i. May it be the case that mining itself provides positive learning externalities, as Wright (2001) argues has been the case historically in the US? Does this arise especially in countries where national factors dominate the minerals industry? Where minerals production takes place in export enclaves, it would be logical to suppose that everything having to do with technology is handled by the foreign firms and that there will be no learning spillovers domestically. In locally controlled mining activities, does the domestic manufacturing sector make an important independent contribution, or can mining itself be assumed to make the relevant and right decisions?

- ii. If certain manufacturing industries are the source of positive externalities, are those the sectors that will be competed out by imports if left unprotected? Minerals exports put competitive pressure on other tradables but do not lead to the demise of all manufacturing activities, so the issue here is whether they tend to knock out the sectors important to growth through productivity change or ones that do not make such a contribution. If there is some sort of natural hierarchy in terms of which manufacturing activities lose out to minerals exporters, that hierarchy is likely to change with overall level of development and factor proportions.

- iii. Certain industries also have the advantage of being able to create significant amounts of employment, so the same question arises as just noted with respect to the creation of possible externalities. It then also matters whether the same industries tend to create both positive learning externalities and large amounts of employment. Logic would suggest not, since the most labour-intensive industries tend to involve low skills.

- iv. It is possible that the greatest amount of locally induced learning occurs around exports of some of a country's natural resources, in particular those where there are specific technology needs related to other aspects of production of the item in question. Thus the processing of agricultural products is less likely to be able to borrow all of the useful technology from abroad than is automobile production.

In light of the above points, it is clear that to assess how and how much manufacturing matters in an economy like South Africa's, it is necessary to take the analysis to a disaggregated level which allows the above sorts of distinctions to be made.

In trying to sort out the role of manufacturing in South Africa, it is helpful to look both at countries where that sector dominates the growth process (since these are likely to provide the clearest evidence on how manufacturing can contribute to growth) and at countries where minerals exports are important but manufacturing has some significance. China is the most obvious member of the first category, while countries like Chile and Venezuela fall in the latter category.

China's economic history exemplifies the fact that "absorbing and adapting foreign technologies to new economic environments is a task that both requires and creates highly productive skills. In China this process has created a skilled labour force, given birth to many new industries and created a notable expansion in industrial flexibility that has allowed the transfer of skills and resources from one task to another in response to shifting requirements. There were bursts of innovations interspersed with gradual absorption, as in the late 1920s and on a bigger scale in the mid-1960s. Machinery firms could be started on a small scale with little capital. Modern producer goods industries have long existed in Manchuria and Shanghai" (Rawski, 1975, 17). The positive externalities of early industrialisation related in particular to engineering, a sector that is technically amenable to sequential development and through its widespread forward linkages of central importance as a carrier of new technology into all sectors of the economy. Since these benefits accrue neither to the industrial pioneers nor to their employees, there is scope for public policy, for example, infant industry protection. Rawski (1980) argues that producer goods have played the role of 'leading sector' in the evolution of the Chinese economy at various points in time.

Development may at times be enhanced by partially curtailing access to outside suppliers – domestic as well as foreign. Isolation and crisis can be fruitful stimuli to industrial innovations. Trade-dependent industrialisation has its merits but it can attenuate the process of skill formation, which helps to overcome future obstacles without outside assistance. It is a common view that Khrushchev did China a good turn when he abruptly withdrew the USSR's⁸ support for China's industrial sector in 1960. The desperation of the economic situation provided the stimulus for the enduring improvements in product development, quality control, cost consciousness, customer service, etc.

In many ways China's 20th century experience closely parallels earlier experiences of other industrial countries. Thus:

- i. The origins of a wide range of manufacturing activities can be traced to obscure, ill-financed repair workers initially serving the textile industry. They move from repair work to production of initially cheap and shoddy imitations of foreign machines, which launch them into modern engineering industries.
- ii. The successful application of machinery in one field stimulated its application to others, and accumulating knowledge and skills made it easier to solve technical problems.
- iii. China followed foreign experience, and especially that of Japan in "intimate familiarity with day to day production activity on the part of the engineers and, to lesser extent, of other managers, provision of training facilities for blue-collar

⁸ Union of Soviet Socialist Republics

workers; participation of manual workers in planning and trial manufacture of new or modified products; temporary assignment of workers to sales organisations to teach them the importance of servicing customers needs; and organised promotion of worker morale..." (Rawski, 1980, 152).

China developed a considerable research establishment and an enormous engineering industry and manifested a strong preference to avoid slavish imitation of foreign methods. The focus was on absorbing foreign techniques and then modifying them to local demand and resource conditions, and this was true even for what in China is referred to as 'small-scale industry' – though plants are substantial and often embody high ratios of capital to labour and using modern materials. China's now apparent competitiveness in a broad range of products, including relatively sophisticated ones, reflects the long learning process around manufacturing activities.

The role of manufacturing as a source of externalities has been much less studied in countries like Chile, Venezuela and Brazil, but anecdotal evidence from Chile and Brazil suggest that there has been considerable technological upgrading related to manufacturing activities.

Table 1 summarises evidence on the role of manufacturing in overall employment in selected countries. It is clear that this sector has been a major source of new jobs during its peak growth periods: over half in Malaysia during the heart of the EPZ-based export boom, over a third during Indonesia's light manufacturing export boom, nearly a third over Chile's long process of industrialisation between 1940 and 1970 and about 18% over 1920 to 1977 in Venezuela, the period during which oil exports led to rapid economic growth. Manufacturing has little weight in the Nigerian economy and has probably never contributed much more than 5% of new jobs in any period. Manufacturing employment grew slowly during Venezuela's 25-year downturn (1977-2002), so its share of total employment was cut in half. Chile illustrates the opposite possibility – a sharp decline in the role of manufacturing employment during a period of economic growth. As its manufacturing sector has seen a rapid rise in labour productivity, its composition has shifted away from labour-intensive items and towards the processing of natural resources and metal products. Possibly this shift is consistent with increasing positive externalities, as well as the increasing share of exports coming from manufacturing. Chile's experience thus warrants special attention, given that country's greater similarity of factor endowments to South Africa than is the case with the other countries analysed.

Table 1 – Growth of manufacturing employment under the influence of mineral and other natural resource exports

Country and period	Share of manufacturing employment at beginning of period (%)	Share of manufacturing employment at end of period (%)	Share of manufacturing sector in net new jobs created (%)	Annual growth of manufacturing employment
Indonesia				
1971-88	7.8%	8.3%	8.8%	2.8%
1988-97	8.3%	12.9%	35.9%	7.2%
Chile				
1940-70	17.4	22.0 (estimate)	29.4	2.4%
1970-1987	22.0	18.0	8.0	0.810%
1987-2003	18.0	13.3	4.5	0.58%
Venezuela				
1920-77	9.5%	16.5%	17.9%	4.22%
1977-2002	16.5%	11.9%	8.6%	2.24%
Nigeria (males)				
1952/3-1986	Low	4.4%	Probably under 5%	Low
Malaysia				
1957-1980	6.4%	13.3%	19.4%	6.7%
1980-1988	13.3%	16.0%	23.1%	6.5%
1988-1995	16.0%	23.3%	34.0%	8.8%
1995-2000	23.3%	22.8%	20.6%	3.6%

a) Includes all sectors except agriculture et al., mining, manufacturing and construction.

Sources: ILO yearbook of Labour Statistics, various issues. For Nigeria, 1952-3, Hellerer (1966, Table 1-8B-2). For Chile, 1940, Mamalakis (1986, 198-9, 204-5). For Venezuela, the sources cited in Berry, 2006).

5. Country notes

5.1 Chile

As a minerals exporter Chile was able to achieve fast growth and full employment, though it is noted for the difficult political and economic transition it went through as adjustments took place. Among the highlights of this experience are the following:

The ultimate success in greatly diversifying the export base had at least two contributing factors – R&D efforts that helped to pave the way for increased exports of fisheries and forestry products and fruits, and a strong devaluation from the mid-1980s. Probably the freer trade policies instituted in the 1970s also played a role (for example, simplifying the importation of inputs for the production of exports), although this is harder to demonstrate.

With copper as its dominant export, Chile had grown relatively well during much of the 20th century, urbanised greatly and developed a relatively well-functioning democracy. Other tradables sectors were naturally disadvantaged by copper, so agriculture had become small and manufacturing had grown but behind very high tariff barriers. About 42% of employment by 1970 was in the services sector. The public sector was a significant employer, especially when public enterprises were included, with 29.2% of the labour force in 1972, falling quickly to 21.7% in 1976.

As strong market-oriented policies came into force from the mid-1970s (including unilateral free trade, later softened somewhat), with the private sector destined to be the motor of growth, there was a long period of very high unemployment and real wages fell sharply. Slow growth and major adjustment would naturally have contributed to this labour market outcome. The length of time needed to finally bring unemployment down to under 10% and for wages to recover their 1970 levels suggest also that the relatively high share of employment in the public sector had been holding overall wages up and that the quick shrinking of this component of labour demand had a negative impact on wages. In other words, the equilibrium wage of this economy, in the presence of a smallish public sector, was far lower than the actual wage before the adjustment process began. This result could be interpreted as implying that the wage elasticity of demand for labour is low in such an economy. There is a high-wage capital-intensive sector (minerals and some other tradables) and a well-paying public sector, but the demand for labour in other sectors involves much lower wage offers. In such a situation the removal of part of the public sector's demand for labour can lead to a big fall in the equilibrium wage. As this was happening in Chile, the labour market was also being made more competitive, such that union-based 'distortions' were weakened, etc. Unions had previously been relatively strong and an initial objective of the Pinochet government's policy was to provide a 'competitive' labour market.

The eventual reaching of near full employment and wage increases occurred without a return to a large public sector – it was based on private sector employment growth.

While successful on the employment/unemployment front, this process seems to have left the level of inequality permanently (at least thus far) higher than it had been before and wages lower (for any given level of per capita income). Chile shifted from being a low-inequality country by Latin standards to being a medium-inequality country.

While, as noted above, other factors helped the export diversification, the devalued exchange rate seems likely to have played a particularly important role in bringing many new export categories into competitiveness. The number of export items rose dramatically from 200 in 1970 to 3,900 by 1996, after which it stabilised.

During the fast growth from the mid-1980s on, the pattern of new employment creation saw 78% coming from services (1985-2003), whose sectoral employment growth averaged 3.2% per year.

The patterns of labour reallocation during Chile's transition and subsequent export-based growth are of special interest because one can reasonably assume that the reallocation was a response to rising labour demand in a rapidly growing economy, rather than a last resort search for easy entry sectors. With GDP rising by an average of 5.9% per year over the period 1987-2003, agricultural employment grew slowly (less than 1% per year) and its share of employment dropped from 16.25% to 13.14%. Mining's share also dropped sharply and manufacturing was a major loser, from 17.95% to 13.3%, even though output was rising at 6.0%. Manufacturing employment grew at 1% per year, contributing just 5% of all new jobs, as the sector's labour productivity leapt by 5% per year. Employment-wise the gainers were commerce et al. (15.5% to 19.9%), with 28% of new jobs; finance, etc. (4.6% to 6.9%); and construction (6.6% to 8.6%). Interestingly, the services share was just constant at about 28% (27.8% to 28.1%). The breakdown of net employment gain shows nearly 60% in commerce et al. and services, with another 11% in finance, 10.5% in transport et al., 12% in construction, only 5% in manufacturing and 7.6% in agriculture et al.

Within manufacturing there were significant reallocations of labour, with large positive contributors to net job change being food, beverages and tobacco (3.94%); wood, wood products and paper (2.72%); and metal products (2.35%). Large losses occurred in labour-intensive industries, mainly textiles and clothing (-2.85%) but also leather products and shoes. Within the broad sector 'commerce et al.', retail commerce – because of its dominant weight at the start – created the bulk of the new jobs (20.8% of the grand total), with restaurants and hotels important (at 4.8%) and wholesale trade less so (2.3%). Over the shorter period 1992-2003 (for which we have three-digit data; see Table 2), employment in hotels just retained its share, whereas that in restaurants rose and accounted for a very significant 5.2% of total employment increase. The category of transportation workers, although growing percentage-wise a little less than communications, provided 8.7% of all new jobs (communications accounted for 1.8%). Over 1992-2003, 8% came from land transport services (taxis and other) alone. In finance et al. it was real estate and services provided to business, which created almost all (8.8 points) of the total 11% contribution from this sector, with financial institutions *per se* at just 1.4% and insurance at 0.9%. Over 1992-2003, services provided to business contributed an impressive 13.9% of new jobs, while real estate came in at 2.1%, financial institutions at 1.4% and insurance at 0.7%. Within services, public administration was falling in relative size and hence contributed only

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2.3%, the two major contributors were social and community services (13.8%) and personal and household services (7.7%).

The Chilean experience in getting out from under an excessive minerals dependency has important contrasts to the Indonesian one, both in context and in policy steps. Broadly speaking, this path out of minerals dependency may be characterised as the 'high road' in that it did not rely on low wages and labour-intensive manufacturing exports, as Indonesia did. Even though the crisis/transition period 1973-1984 saw large adjustments in the labour market, with high unemployment and a sharp fall in wages, those wages were still far above the levels of low-income Asian countries. Human capital was considerably more abundant and the combination of natural resources and technological improvements (as in forestry, fishing and fruits) yielded a number of important new export products. Though human capital availability was a plus, scarcities arose as growth accelerated, and this was likely a factor contributing to the increased inequality of labour earnings over the period.

Table 2 – Evolution of Chilean employment by sector, 1992-2003

Category	Employment in 1992	% of employment in 1992	Employment in 2003	% of employment in 2003	% of employment change, 1992-2003
Agriculture, et al.	775,008	15.76	788,819	13.14	1.27
Mining	104,765	3.17	88,473	1.47	-1.50
Manufacturing	823,235	16.75	798,478	13.30	-2.28
Food	131,812	2.68	165,665	2.76	3.11
Textiles	70,541	1.43	31,884	0.53	-3.56
Clothing	120,348	2.45	78,170	1.30	-3.88
Leather products & footwear	50,429	1.03	19,925	0.33	-2.81
Printing	34,006	0.69	51,441	0.86	1.60
Chemicals	42,341	0.86	49,720	0.81	0.67
Metal products except mach.	75,643	1.54	97,158	1.62	1.98
Machinery (including trans.)	45,357	0.92	51,844	0.86	0.60
Elect, gas & water	37,419	0.76	34,214	0.57	-0.03
Construction	433,107	8.81	514,258	8.57	7.46
Commerce, et al	885,110	18.00	1,197,337	19.94	28.72
Retail	474,410	12.32	923,110	15.38	20.83
Wholesale	46,337	1.20	95,408	1.59	2.28
Restaurants/hotels	74,784	1.94	178,678	2.98	9.56
Transport	341,951	6.96	467,349	7.78	11.53
Finance, real estate & business services	210,449	4.28	412,770	6.88	18.61
Total	4,916,191		6,003,507		100.00

Source: Unpublished data made available by Jürgen Weller, ECALC, Santiago, Chile

5.2 Malaysia

This country has been notable for the long-sustained high growth (until the Asian financial crisis) and for the very large increase in manufacturing employment from a very low to a very high share of total employment. Other relevant aspects of this case are:

It has always been a high trading country with a relatively open economy. This was part of the colonial heritage. As of 1960 the ratio of exports to GDP was around 50%.

At independence the two main exports were rubber (over half of the total) and tin (reaching nearly a quarter at its peak in the mid-1960s), the former produced both on estates and on Malay smallholdings. These exports dominated until the 1970s when light manufactures (mainly electronics produced in EPZs) and petroleum grew rapidly, the two accounting for 46% of the total by 1980. Manufactures then continued to grow fast to become the single largest category (at 32% of the total) by 1985. The dramatic growth of this last export category explains the very fast overall growth beginning with recovery from a slump in the mid-1980s and also accounts for the very high share of employment in manufacturing.

Despite its very fast and sustained growth, Malaysia has not been noted for developing a lot of indigenous learning capacity or for major widening of its range of export items. There has been concern that the country has recently relied too much on electronics and that this could produce a slow-down when that (volatile) industry begins to fail (e.g. if China takes over). Still, the country has been a long running success from an economic point of view.

Macroeconomic and other aspects of economic policy have tended to be conservative, partly a heritage of the preceding colonial governments. This pattern extended to a low level of industrial protection (partly also due to the strong vested interests in agriculture), lack of balance of payments problems, and a policy of restraining labour movements. The early 1980s did see a huge fiscal deficit as the government tried to avoid recession through public spending, but inflation never exceeded 10% per year and as the macroeconomic balances loomed the country instituted its own structural adjustment programme without direct guidance or control by the IFIs.

Politics has had a strong ethnic aspect since independence, with the understanding (and the subsequent fact) being that the Malays would be in charge politically while the other ethnic groups (Chinese, primarily, with a much smaller Indian group) would contribute economically. During the first decade of independence (roughly the 1960s) the pro-Malay policies were somewhat vague, but in 1969 there were race riots that forced policy-makers to focus more sharply on the presumed needs and desires of the Malays. At independence average incomes of Malays were less than half those of the Chinese. One demand of young better-educated Malays was acceptable modern sector jobs.

The preferences of (at least some of) the Malays included or were assumed to include (a) the traditional way of life in small scale rubber and rice farming; (b) jobs in government; and (c) access to other jobs. It was recognised that their existing

entrepreneurial skills were less than those of the Chinese. Some policies were designed to improve quality of life for those retaining the traditional rural life-style, while others were designed to facilitate access to modern-type jobs. Not everyone agreed with everything that was done.

Malay-friendly policies included a target of raising their share of corporate capital, together with increasing employment of Malays through a quota system, support for small agriculture, investment in education with special attention to Malays, and several other policies. Some of these clearly benefited many members of the Malay community; others benefited only a small segment of them (e.g. the share capital programmes, which helped to create a Malay elite but not necessarily to foster entrepreneurship).

In the event the incomes of all groups rose rapidly as growth continued, with some catch up by Malay incomes, though it is hard to know whether policy had a lot to do with this and, if so, which elements of policy.

With the pro-agriculture policies that were a major part of the policy package in early years, the pressures for leaving agriculture and the rural areas was lessened, which may have contributed to the fact that, at any given level of per capita income, Malaysia tended to have an above-average share of its population and labour force in agriculture and in the rural areas. But by the 1980s the composition of net new job creation was increasingly tilted to non-agriculture and in particular to manufacturing. Over 1980-2000 both agriculture and mining (the latter never of any significance) lost employment, while the gaining sectors were manufacturing (with 31.6% of the new jobs), construction (with 12.2%) and services (with 59.6%).

The composition of services employment growth during this period involved major roles for personal, business and government services (not disaggregated) at 19.9% of all employment growth, commerce, restaurants and hotels at 26.3%, finance, insurance and real estate at 8.0% and transport and communications at 5.4%.

The government of Malaysia tended to look favorably on foreign investment and foreign interests, even though the share of capital owned by foreigners was decreased fairly quickly, because the alternative seemed to be an excessive amount of economic control by the Chinese. This group dominated local capital, including SMEs in various sectors, and they hired their own group preferentially whereas larger foreign companies were more likely to hire Malays and were more attractive to Malay job aspirants.

5.3 Venezuela

Like Chile, Venezuela was able to take effective advantage of its mineral wealth (petroleum) over a long period (half a century from discovery in the 1920s until serious problems arose in the 1970s). During that time agriculture shrunk rapidly, as expected, though manufacturing was held up, at least in part by protectionist policy. By the 1970s, in any cases, tertiary sector employment dominated, accounting for 56% by 1977. Features of interest include:

Before oil exploitation began in the 1920s, Venezuela was a below average income South American country but by 1950 it had surpassed Argentina to become the richest country of the region by a full 50% and had a per capita GDP about 3.5 times that of neighbouring Colombia whose level of development was comparable in the 1920s. Over 1920-50 per capita income grew to 6.4 fold the 1920 figure (at an annual rate of 6.4%). During the fast growth period wages appear to have risen more or less commensurate with the growth of output per capita. By the time systematic data became available on inequality, in particular that of labor earnings (from both paid and self-employment), the reported Gini coefficients were typically in the mid-40s, indicating a level of inequality which was high, but somewhat below the average for Latin American countries.

During this half-century the structure of employment changed rapidly. In 1920 the share of agriculture et al. was a little under 70%; by 1950 it had fallen to 44% and by 1977 to 17%. This enormous decline can be seen as a combination of the normal fall in agriculture's share as development proceeds, accelerated by the unusually fast economic growth and by the crowding out effect of petroleum exports on other tradables. The corresponding increases occurred mainly in construction, from probably under 2% to 5.4% by 1950 and 8.8% in 1977; manufacturing, from 9%-10% to a peak of 16%-17% by 1977; commerce et al. from probably about 5% of employment in 1920 to 8.8% in 1950 and over 17% in 1977, on its way on up to 26.7% by 2002; the public sector from about 2%-3.5% in 1920 to probably 10%-11% in 1950 and around 18% in 1990; transport et al from 3.5% in 1941 to 6.7% in 1977; services, other than public sector, recorded a major increase from about 8% in 1920 to 14.6% in 1950 and on to 35% in 2002.

Though labour reallocation was occurring very rapidly, it came to be rather widely believed that Venezuela confronted the sort of employment challenge later associated with natural resource booms; by the early 1960s the planners worried about the much lower labor productivity in agriculture than in the rest of the economy and the fact that oil employed less than 2% of the labour force while producing 21%-23% of GDP (Levy, 1968, 15). The government decided in its second plan (1963-66) to focus on low income housing construction with supplementary urban public works and on technical education (Levy, 1968, 93-94), feeling that industrialisation was the answer to employment needs in the long-run but could not be expected to generate the needed jobs quickly or in the absence of a better training programme. Raising agricultural incomes was also considered to be important. The tertiary sector was seen as a continuing sponge, a low-productivity last resort employment option.

Some of the planners' expectations were fulfilled, but there were also surprises in the years that followed. Construction did grow vigorously over the intercessal period 1961-71, with employment rising from 5.6% of the total to 6.5%, and accounting for 9% of net new jobs, 12.9% of net new jobs for males, and probably a somewhat higher share of paid jobs for males. Contrary to the cited expectations, this decade also saw a large increase in manufacturing employment from 12.9% of the labor force to perhaps 15% in 1971, thereby accounting for over 20% of the new jobs during that decade. This increase was not due to a flooding into informal level activities, since the share who were paid employees also rose; trade protection accounted for part of the growth. Import substituting industrialisation must have played a big role in employment creation here.

Ironically, it was the oil price hikes of the 1970s that brought this generally satisfactory oil-based development to a halt and eventually put Venezuela on everyone's list of 'natural resource curse' countries. Among the factors contributing to the reversal of fortune may have been the increased recognition of and concern with poverty and inequality in the political process together with a misguided belief that employment and growth would be found in capital-intensive exports produced by public enterprises. Policy during these years was the product of a democratic process in which legitimate social concerns were hooked to weak technical capacity in government--at least on some of the key issues, and some bad luck. Government had understandable concerns like employment generation and a gradual erosion of voting support for the two traditional parties, attributed by some politicians to a crisis of legitimacy due to the level of inequality.

Venezuela's per capita income growth stopped in the 1970s, with the 2001 figure a full 24% below the 1977 peak. The country was done in, beginning in the late 1970s, by the combination of unsustainably high petroleum prices, the free flow of capital which made international borrowing too easy, a pattern of committing to expenditures on projects which would not pay off but from which it was hard for the government to extricate itself, and (perhaps) the fact that income inequality and the need to address this problem was now an important political issue.

Over 1972-78 the non-oil economy boomed at 8.4%, private consumption at 12% and gross investment at 15%. But much of the windfall was used to raise employment, wages and output in the public sector. Per capita consumption went up by 50% over 1973-82. After some saving abroad in the first years, the country had by 1976 become a net borrower. The die was cast for future problems when the government failed to maintain a cushion of savings abroad and simultaneously began channelling present and future oil revenues to develop a large public enterprise sector, mainly in basic industries such as steel and aluminum (Marquez, 1995, 404). Previously those revenues had gone to general infrastructure and the social sector, the first of which at least could be cut back without great difficulty when revenues shrank.

Contributing to the unhappy story was a legacy of the long-standing reliance on the easy rents provided by oil. Neither the government nor many of the high-income people who rode the oil wealth were in the habit of worrying greatly about costs. A vicious circle of powerful groups constraining decisions into unproductive channels together with periodic disruptive shocks has helped to keep Venezuela off a healthy growth path since the 1970s. Rarely has the 10-year growth average approached 3% over this period.

Venezuela's experience reflects not only the cited internal problems of collective decision-making but also a dose of bad luck. In fact, the government initially planned to absorb the oil windfall cautiously; to that end it created the Venezuelan Investment Fund in 1974. What it could not quickly realise was the danger posed by easy access to foreign borrowing. The open character of the Venezuelan capital market became a strongly negative factor, in conjunction with the grievous malfunctioning of the international capital market in the 1970s. After being lured into international borrowing at what were very low real interest rates, Venezuela, like so many other countries, was caught off-guard by the sudden reversal of the international capital

market in the early 1980s. Like Brazil it had made a number of slow-maturation investments which did not have time to yield fruit before the crisis struck. The average quality of the investment was low as well. The upshot was an extremely low marginal gross output/capital ratio, averaging only about 0.09 over the 25-year period 1977-2001.

In response to the crisis, a devaluation was eventually carried out in 1983, together with price and other controls and a reining in of public expenditures. Though fiscal balance was regained, the real devaluation did not push many resources into the tradables sector, a result attributed by Marquez (1995, 405) to the continuing price and import controls, but not too surprising in a natural resource exporter like Venezuela and at a time of crisis. Here we are left with the question of whether or under what conditions Venezuela might have been saved by devaluation at this time, and been able to leave its narrow minerals-dependency behind as Indonesia and Chile did.

In the event, Venezuela's political process was not up to the task of working out and implementing a policy package that would propel the country ahead. Increasing fiscal stringency accentuated the dilemma between funding for deficit-ridden public enterprises and the social service institutions, together generating an unsustainable increase in the foreign debt. Vested interests in the threatened institutions attempted to cushion the blow by protecting incomes, with the effect of overly curtailing the use of complementary inputs and reducing the quantity and quality of services made available to the public. The vicious circle of powerful groups constraining decisions into unproductive channels and periodic shocks has helped to keep Venezuela off a healthy growth path since the 1970s. Rarely has the 10-year growth average approached 3% over this period. Neither strong central power and leadership nor the competent technocrats which were key elements of the recipe for success in Indonesia and Chile were present in Venezuela.

With Venezuela's unhappy growth performance came an even more serious wage crash. Between 1950 and the peak in 1978 the implicit wage series from the national accounts indicates an approximate doubling, for an annual increase of 2.4%. By 1989 this series was back below its 1950 level. Is it the case that an economy like Venezuela's, with one sector so much more competitive than nearly all other tradables, is prone to an especially rapid decline in the real wage when growth is slow or negative, because of an inherent price inelasticity of demand for labour? It could also be that under normal conditions in this sort of economy a number of wages are held somewhat above their equilibrium levels by institutional factors, whose impact weakens under macroeconomic stress such that wages then move towards equilibrium and actual wages fall faster than equilibrium ones. Similar patterns to Venezuela's have appeared in other Latin American mining-based nations, especially Chile and Peru. The sharp fall in real wages in Chile after 1973 may be another example of the fragility of high wages in such economies, where both of the just-cited factors come into play at the same time.

While no one would deny the roles of policy errors and bad luck in the Venezuelan drama, it would be equally incautious to assume that any easy transition to fast sustainable growth was available for such an oil-dependent country, unless one considers a Chile-like evolution to be an "easy" one. It would have been necessary to

encourage Venezuelan or foreign entrepreneurs to diversify into a variety of new activities, tradables and non-tradables.

5.4 Indonesia

Indonesia arguably emerged best of all among the major oil exporters who did not have enough of that product to secure their future as high-income countries. Several elements played a role in the success achieved.

A considerable amount of oil money was used to raise the performance of small-scale rice agriculture. The funds were used to improve infrastructure (rural roads, irrigation works, etc.) and to subsidise fertiliser in order to get farmers used to applying it. This spending was highly beneficial since the Green Revolution in rice was just coming on stream at the right time. Rice was a tradable, sometimes exported, sometimes imported, and rising productivity in this crop affected tends of millions of small farmers (in a country still highly agricultural at the time).

Manufacturing employment and output rose in the wake of oil and other exports, due partly to the growth of small-scale labour intensive production for local consumption—complementary to rising rural incomes due to the Green Revolution, partly to fairly standard ISI protection, and later to the growth of manufactured exports in the textiles/clothing area. With agriculture still quite important the composition of new employment over 1971-1985 saw important roles for it, for industry and for the tertiary sector (with 37% of new jobs) but by 1985-97 the latter had come to dominate, with 61% of new jobs (Table 3).

When oil prices fell in the 1980s and Indonesia began to suffer macroeconomic disequilibria, the government was able to pull itself together by cutting back on spending plans and, above all, achieving a major successful devaluations. This had to be done with care since rice was a very important tradable and the key item in the cost of living. So the devaluation was "partially compensated" in terms of its impact on the price of rice. This devaluation allowed the country to move back onto a fast growth path and ushered in the era of rapidly rising exports of clothing and textiles. With agricultural employment growth by now slowed, these labour intensive exports meant that export growth brought employment directly. The sequence was similar to that in Malaysia, although the export items were different as were the type of firms in charge of those exports. Indonesia's break-through into clothing/textiles exports owed something to the fact that other exporters had filled their Multi-Fibre Agreement quotas, leaving 'space' for Indonesia, and to the fact that China had not yet entered this market in full force at the time. Probably the success owed something to both of these facts and to the devaluation and subsequent real exchange rate stability.

Key features of the initial take-off were that wage movements were not such as to discourage employment or growth; that the way growth initially manifested itself in the labour market was primarily through an increase in employment/decrease in underemployment; and that the burst of growth was not disequalising. Although agricultural growth was strong at this time and the sector contributed significantly

(nearly a quarter) to employment growth over 1971-80 (partly due to its dominant weight in total employment), the change in the composition of employment was relatively rapid, after little apparent change during the period 1950 to the late-1960s. Total employment grew quickly, mirroring that of the labour force. Over 1971-80 both industry and tertiary sector employment rose very fast, at 6.0% and 5.7% respectively, while agricultural employment was edging up at a modest 1.2%. Shares of employment growth were 24.2% for agriculture, 23.8% for industry and 52.0% for the tertiary sector, in which government played a large role. Within industry, both manufacturing and construction employment grew fast (reliable data are not available for the precise period). The large gap between the almost 6% growth of non-agricultural employment and the 1.2% for agriculture did constitute the first rapid shift of employment structure away from agriculture. As of the early 1970s most wage series were still below their mid-1950s levels except for medium-size manufacturing. It thus appears that the wage increases accompanying the take-off were essentially recoveries towards earlier levels and not the sort of supply-side-based upward pressure that might be expected to discourage employment or investment.

Over the 30 years of rapid growth that followed, different sectors drove the demand for unskilled labour. Agriculture, especially rice, was dominant until 1972 and important until 1987. Manufacturing became significant by 1972 and played the dominant role from 1987 on, and construction had a smaller but still significant role, as labour-intensive public works were a major source of demand for intensive in several periods. Unions were not a significant force during this period, though public wage policy was important in the modern sector since public employees accounted for about half of the workers and their wages had a significant impact on the private wages until the late 1980s.

Even as the mixed effects of the Green Revolution were being felt in agricultural employment, government spending based largely on the oil boom, plus indirect income circulation, seem to have brought considerable economic benefits to a wide range of rural classes. Public sector construction expenditures on roads, irrigation and other areas create much employment. A boom in housing construction contributed as well. Overall, construction accounted for close to 15% of all non-agriculture jobs created for males over the period 1971-95. Much of the employment was a result of the increased income in middle income and poor families, especially in rural Java.

The third and ultimately the most important sector in absorbing low skilled workers was light manufacturing. Over the bulk of the 1980s wages in many if not most non-agricultural activities stagnated or fell, in response to a mid-1980s recession. This period saw capital-intensive ISI projects, which presumably had a negative impact on labour demand. Wage stagnation continued even as the second export boom began, due in part to macroeconomic policy that included two devaluations and subsequent gradual deflationary policy designed to keep the country competitive. Only with the surge in manufactured exports did Indonesia's labour market start to reflect the widespread benefit of rapid increases in labour demand by a tightening up that led to generalised wage increases. As growth accelerated under the reforms, manufacturing finally registered the most rapid employment growth of the major sectors, especially, it seems, in the rural areas and agricultural employment started to fall in absolute terms. Over 1985-95 urban manufacturing employment of males rose by 8.5% per year while that in rural areas grew at 4%. The sector was now providing close to half of the new jobs for males outside agriculture (it had previously provided 15-20% of such jobs)

and probably as great a share for females as well. This exuberant employment growth reflected the labour-intensive character of most of the growing sectors of manufacturing. In this second growth take-off, wages lagged output growth by a few years. By the early 1990s, for the first time, all major wage series were rising. Institutional change was also a factor in the modern sector, as minimum wages were pushed up, beginning in 1992. Public wage policy had a significant impact on the private wages until the late 1980s when deregulation gave the private sector a more independent role.

The level of income inequality appears to have changed little in Indonesia through this whole process. Although aspects of policy favoured some capital-intensive industries, there was always potential for productive employment to rise in one or another labour intensive tradable sector.

5.5 Brazil

Brazil, on average, has been Latin America's star performer over most of the 20th century, culminating in the 'Brazilian Miracle' of 1968-73, though interrupted by a period of stagnation in the early 1960s and then the serious slowdown at the time of the early 1980s debt crisis. Despite this success, growth was typically fragile in Brazil, with a delicate balancing act required to sustain it, in a context of extreme inequality, the populist responses to which that inequality gave rise, and the attendant difficulty in satisfying the expectations of all major groups in the population. The "miracle" itself and in fact the whole of the fast growth period between the early 1960s downturn and that of the 1980s was achieved under military rule. Other special features of Brazil's experience include the following:

Brazil exemplified a dirigiste style of development with high levels of government intervention and involvement in the economy, high public investment, a reasonable capacity to collect taxes, and a considerable degree of continuity in the patterns of economic management. Inflation was a nearly continuous threat, attributable substantially to the government's difficulty in funding its investment plans through taxation, and against the background of severe inequality. Exchange rate overvaluation was also a permanent threat as long as inflation co-existed with fixed exchange rates, although overvaluation was much less frequently pursued deliberately than in countries like Argentina and Peru.

Between the pre-1960s period and the post-1964 acceleration that produced the 'Brazilian Miracle' the role of economists, and of technocrats' more generally, was increased, reflecting the military's mistrust of the traditional civilian elites. This orientation towards reliance on technocrats was combined with a sense of the practical. Unlike some other Latin American countries, there was little tendency to swing abruptly from textbook *laissez-faire* liberalism to extensive state intervention. This probably helped both to produce the fast growth and to preserve the political peace.

Despite various differences between the leaders over time, Brazil's policy-makers appeared to be unusually unwilling to countenance slow growth, given the social and other pressures on them. Inflation posed a frequent threat to continued stable growth.

The economic downturn of 1960-64 was the result of the large investments planned by the administration of President Kubitschek (1956-61) and the resort to monetary expansion to pay part of the bill, the resulting inflation and periodic exchange rate overvaluation. The first military government (from 1964) brought inflation down and developed a credible fiscal strategy, created many special funds, suppressed all collective bargaining and strikes, in a program whose anti-communist tinge helped Brazil's relationship with the US and encouraged the international community to once again finance the country's current account deficit. The second government featured more expansionary policies in light of the economy's excess capacity, and growth averaged nearly 10% over 1968-76. Industrial output rose at about 15% per year over 1967-73 and employment at almost 9%. This growth burst certainly created many jobs. Brazil, a country which imported about 80% of the crude oil consumed domestically, then had the misfortune to come up against OPEC's oil price hikes of 1973. Policy over 1973-82 was a concerted attempt to prolong the boom. An initial dose of fiscal and monetary constraint was imposed to slow growth from its 14% level in 1973 to a still impressive 7% average over 1974-79. About half of the oil price increase was passed on to consumers with the rest handled by public subsidies, as the government opted to deal with the trade deficit by growing out of it rather than by cutting imports via recession; it did this partly for political reasons (a poor government showing in November 1974 local elections) and partly because the foreign funds were available to ride out the predicted period of balance of trade deficit. Unfortunately, while this plan was still being pursued the industrial country recession of the early 1980s, the sharp increase in real interest rates on international lending and the resulting onset of the debt crisis put paid to this plan.

Over its three-plus decades of generally rapid growth (despite the 1960-64 slowdown), Brazil industrialised rapidly, effectively using the foreign exchange from its natural resource exports (of which coffee was long the major item) to subsidise the manufacturing sector and other 'infant' tradables, some in agriculture. Manufacturing employment peaked at about 17%-18% of the total in the late 1970s, before crashing to under 10% by the late 1990s. Many inefficiencies have been alleged in this process of industrialisation through protectionism and other forms of intervention, but it seems doubtful that they could have been very severe given the 6.0% average growth rate maintained for about 35 years and the relatively high output/capital ratio characterising the process.

The role of export growth in Brazil's boom is not clear. The current price export/GDP ratio rose sharply over 1967 (a trough at 5.77%) to 1973 (a peak at 8.27%), implying that the purchasing power of exports (in GDP terms) rose by 16.8% per year, while GDP was growing at 10%. The constant price export share of GDP changed little, however, so the increased role of exports came from the increase in their relative price. The constant price import share jumped from 4.95% in 1967 to 8.04% in 1973 and to 9.47% in 1974, pointing to the rapid increase in imports. On the one hand, therefore, the export to GDP ratio was still quite low at the time of the 'Miracle' (it had increased to 11.28% in 2002, with most of the increase thus occurring during the slower growth period after 1980). On the other, export growth and capital inflows were permitting a rapid growth of imports.

Export structure was greatly diversified, as the coffee share fell from 42% in the mid-1960s to 12.6% in 1974. By the late 1960s Brazil (like Colombia) had begun to diminish the policy bias against non-traditional exports, with a resulting impact towards export diversification. This process was more directed than in Chile, where the devalued exchange rate appears to have played a large (and neutral) role.

While it is generally accepted that inequality in Brazil widened during the 1960s, there seems to have been little change during the fast-growth 1970s, as a result of which all income categories gained substantially. There were substantial gains in real wages in both industry and agriculture by the early 1970s. The distributional fallout of the growth with acceleration thus appears to have been modest. Wage data show a 10% decline in average industrial wages from their 1963-64 peak during the 1964-67 period with its focus on stabilisation. Industrial wages recovered moderately to 1971, then took off – the average annual increase through 1982 was 6.4% for a cumulative increase of about 100%. The national agricultural wage series, available only from 1972, shows an even faster increase until 1980, when a decline set in. Although neither wage data nor other sources seem to permit a definitive picture, most of the wage evidence suggests that the big increases started not with the burst of growth beginning in 1968 but three or four years later. Such a lag might be related to the fact that inflation was still high (though falling) or that a process of absorption of surplus labour, going on during the earlier growth phases well, happened to reach a turning point in the early 1970s. Alternatively it may have little to do with such specific features of this acceleration episode in Brazil but rather be a common feature of the first years of growth accelerations and their dynamics.

5.6 A schematic comparison of how Chile, Venezuela, Brazil, Nigeria, Malaysia and Indonesia used their mineral (and other natural resource-based export) revenues

These six countries all had good opportunities to take advantage of mineral (and/or other natural resource) exports to fuel development during a certain phase and, simultaneously, to lay the groundwork for the next phase. Indonesia was the most successful in combining growth with equity during this process, Malaysia achieved the fastest growth over several decades and also succeeded in balancing the needs of different ethnic groups, while Brazil grew fast using its natural resource rents to subsidised 'infant industries' through various mechanisms. Venezuela had earlier had a long and basically successful half century of growth based on oil up to the price lukes of the 1970s, but then crashed under the weight of a series of policy mistakes together with some bad luck. Chile from the early 1980s was the most successful in diversifying the range of exports as it grew, but also saw inequality stay at the high levels reached during the severe reforms of the 1970s. Nigeria failed to grow, create adequate employment or diversify exports.

By the time the opportunities under discussion here arose (mainly in the 1970s and 1980s), Chile and Venezuela were already highly urbanised, so agriculture did not offer much employment potential. Indonesia, Malaysia Brazil and Nigeria were less

developed so agriculture remained very important. This meant that the first option available to these four countries – to raise the level of productive employment in small-scale agriculture – was not a significant option for two of the Latin American countries.

For either Chile or Venezuela to move beyond its main mineral export and diversify, the highly labour-intensive 'low-road' option was not open, since wages in these countries were far above the levels of Indonesia or Malaysia. Chile developed new exports through a combination of R&D (for example, salmon and fresh fruits) on the one hand and a devalued exchange rate (later) on the other, with freer trade also facilitating the import of inputs for exported items. This approach was spectacularly successful in expanding the range of exports. Originally most were intensive in raw materials and the manufacturing share of total employment fell considerably from about 18% in 1987 to 13.3% in 2003. More recently, the manufactured component has been rising. As noted, exports could not be expected to be highly labour intensive (the more labour-intensive branches of manufacturing have been shrinking); probably their factor proportions are not too different from the national average. This presumably helps to account for the fact that income inequality appears to have changed little since the big export boom began in the 1980s, but growth has been high, so all major groups have seen income increases.

Brazil has also diversified its export structure greatly over the years. The coffee share fell from 42% in the mid-1960s to 12.6% in 1974. By the late 1960s, Brazil (like Colombia) had begun to diminish the policy bias against non-traditional exports. The process was more directed, involving drawbacks, subsidies and other forms of support, whereas in Chile of the late 1980s the devalued exchange rate appears to have played a large (and neutral) role. Diversification was a more natural outcome in Brazil, given the size of the country and the range of natural resources it possessed. As in Chile, however, labour-intensive exports played little role in this process, partly because wages were not as low as in Asian countries and partly because of the extremely dualistic structure of the economy, with large capital-intensive firms in virtually all sectors, from agriculture through manufacturing. Many of Brazil's new exports over the last several decades have involved sophisticated, capital-intensive technologies, as with airplanes, soybeans and orange juice. There has not been the concerted effort to assist small-scale agriculture seen in both Indonesia and Malaysia, although it is nonetheless the case that small-farms became significantly more productive over the 1970s, for example, so new technologies and better access to other inputs were apparently being felt there. The end of Brazil's strong run of growth cannot be attributed to policy error to the same degree as Venezuela's. A strong case can be made that the building-blocks were being put into place to allow the country to offset the negative impact on the balance of payments from the oil price hikes of the 1970s and had real interest rates not shot up so suddenly in the early 1980s.

Venezuela's story is that of mistakes and bad luck around the time of the high oil prices during the 1970s, so that although new comparative advantages were sought (largely in capital-intensive industries like steel and aluminium), these turned out not to be competitive. Even if they had, the employment creation would have been extremely small, so little benefit would have resulted on that front. Ironically, Venezuela's political process gave more attention to inequality and poverty reduction than did Chile's ideologically free-market system, but the outcome for the poor was

better in Chile. Venezuela's governments never identified a coherent plan that could have provided growth with improving equality.

Nigeria's situation as its oil era began was most similar to Indonesia's in terms of level of development and structure of the economy. In retrospect the best way to spend much of the oil wealth would probably have been in fostering higher productivity in small-scale agriculture. This would not have been as easy or as quick as it was in Indonesia, since there was no Green Revolution waiting to be adapted to local conditions, so the gestation period might have been long. In any case, Nigeria directed a considerable amount of spending to education and urban infrastructure. The former, at least, was a more sensible choice from a growth and employment perspective than Venezuela's, but it also turned out to have low payoff because other things did not go well in the economy, so the increased level of human capital did not have enough useful outlets for itself.

Malaysia's experience differed from the others mentioned here in that petroleum was never the main source of export earnings, although together with tin the two did bulk large at times. Rubber was the other main natural resource-based export. So natural resources did account for virtually all exports in the earlier post-independence years, which means some of the same decisions and challenges confronted this country. Malaysia's use of export rents to bolster the smallholder rubber and rice producers was a sort of parallel for Indonesia's spending on Green Revolution rice. The impact was clearly to spread the benefits of natural resource exports around and to improve the competitiveness of other tradables, although the share of all small farmers benefiting from the land development was much smaller than those in Indonesia benefiting from the Green Revolution. Eventually Malaysia did make an effort to raise overall smallholder productivity, but did not achieve Indonesia's level of success. Like Indonesia and Chile, Malaysia came up with another category of exports at the appropriate time – labour-intensive manufactures produced in its EPZs. Unlike the other two, it did not have to effect a large devaluation to achieve that outcome, nor were local entrepreneurs importantly involved.⁹ This was a story of attracting foreign capital to EPZs to take advantage of lowish wages and stability, at a time when wages in first-round exporters like Taiwan and Korea were getting too high. As a result of this transition to manufacturing exports taking this form and occurring without much local learning, Malaysia's manufacturing export status has remained more fragile than that of most other East Asian countries. Export diversification remains very small, in stark contrast to the Chilean experience. Although the Chilean export basket remains largely natural resource-based, the processing component has been rising and much capacity to learn and innovate has been developed. This is less true in Indonesia, where export diversification has proceeded less far.

There are interesting differences in the roles played by small and medium enterprise in the export growth and in learning. Chile appears to have a good number of local

⁹ Branson et al. (1992) argue that many problems would have been better achieved had the country devalued and thereby created a more general incentive for the development of new comparative advantages through learning.

SMEs engaged directly or indirectly in the export process; the devaluation would have provided a strong across-the-board incentive for such involvement. In Indonesia many such firms got involved in clothing exports, even though the support apparatus left much to be desired. Most of them were run by ethnically Chinese entrepreneurs. In Malaysia the progress of SMEs has been limited, partly because here too they are predominantly Chinese and in this case government support policy has been lukewarm and the exchange rate has not provided a major stimulus. Linkages from the mainly large foreign firms operating in the EPZs to the rest of the economy are, as usual, quite limited, another factor discouraging the learning process in this country.

Macroeconomic stability, after a fashion, was the norm in the three of the success stories. Chile left its days as a hyperinflation victim behind, Indonesia's macroeconomic policy was stabilised by a strong group of technocrats with the President's ear, and Malaysia, although it had a huge budget deficit during its attempt to stave off a recession in the 1980s by public spending, rather quickly brought the limited effects on inflation under control, without JFI-imposed adjustment programmes (it had its own adjustment programme). Prior to its take-off into the 'Brazilian Miracle' in the late 1960s, Brazil's inflation had reached close to 100%. This level was cut to a moderate (by Brazilian standards) 20% before the acceleration began and fiscal policy was acceptably prudent.

At this point it seems likely that Chile has progressed to a point where successful growth in the future is quite probable because the country has learned how to use world markets to its benefit, has greatly diversified its export bundle and shown a capacity to modify it quickly, has developed a broad base of entrepreneurial talents and skills over the last two decades, and has become 'mature' in its management of macroeconomics – monetary and fiscal policy on the one side and the exchange rate on the other. It remains to be seen if and when inequality will fall to the middling levels of most industrial countries.

Indonesia is a much less developed country with many remaining problems of governance. Its financial system proved vulnerable in the East Asian financial crisis. Given the increased competition at the low-wage end in international trade, it will have to improve performance to remain a fast-growing country. And its natural resources (currently discovered) are not nearly enough to alone propel it into the range of rich countries.

Malaysia's natural resource endowment is stronger than Indonesia's and has certainly been a mainstay for a long time. Its dominance of electronics exports played a key role for a couple of decades but cannot be counted on indefinitely, so it must also find a way to switch horses at some point.

Venezuela does have enough oil to bring it close to industrial country income levels (assuming prices stay high and the stock does not run out too soon), but faces the daunting employment challenge of how to use the non-tradables sectors effectively for productive employment creation. In all cases a particularly interesting challenge is to use non-tradables production in such a way as to improve the country's capacity in world markets, as with development of relevant human capital, efficiency in various types of services, investment in infrastructure, etc.

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The inherent nature of the challenge to countries with a dominant mineral (or other natural resource) export is the combination of:

- i. The need to be in the process of developing new comparative advantages even at the time when the dominant item has a huge comparative advantage, which means that market processes will not encourage other items into the export bundle; and
- ii. Managing employment policy, involving to a large extent non-tradables in a way which is successful in achieving its employment goal while not coming into conflict with the needed developments on the tradables side.

In only a few countries can natural resource exports be the driver that brings per capita income into the industrial country range (say US\$10,000 per capita and up), so the country that sticks with those exports is likely to stay as a middle-income developing country, and often with a quite unequal income distribution. Given this fact, larger developing countries need to give high priority to learning how to find new exportables. Smaller ones may be lucky, as Malaysia has probably been, or more recently Costa Rica, where Intel's investment alone makes a big difference to national prospects.

Table 3 – Growth of tertiary sector employment under the influence of mineral and other natural resource exports

Country and period	Share of tertiary employment at beginning of period (%)	Share of tertiary employment at end of period (%)	Share of tertiary sector in net new jobs created (%)	Annual growth of tertiary employment (%)
<i>Indonesia</i>				
1971-85	28.0	32.0	36.8	3.6
1985-97	32.0	40.1	60.6	4.6
<i>Chile</i>				
1940-70	36.1	41.6	50.4	2.1
1970-1985	41.6	55.7	96.0	4.0
1985-2003	55.7	63.4	77.6	3.2
<i>Venezuela</i>				
1920-77	20	56.1	63.5	5.1
1920-50	20	35.2	46.7	4.8
1950-77	35.2	56.1	69.9	5.4
1977-2002	56.1	69.8	79.5	4.5
<i>Nigeria (males)</i>				
1952/3-1986	15.0-18.2	39.3	55.3-57.7	4.9-5.5
<i>Malaysia</i>				
1957-1980	28.5	39.7	52.2	4.83
1980-2000	39.7	50.0	59.6	4.94

a) Includes all sectors except agriculture, et al, mining, manufacturing and construction.

Sources: H.O. yearbook of Labour Statistics, various issues. For Nigeria, 1952-3, Helliner (1966, Table 1-8B-2). For Chile, 1940, Mamalakis (1986, 198-9, 204-5). For Venezuela, the sources cited in Berry, 2006).

6. Wages and employment behaviour in economic acceleration

Causation may run in both directions between wage behaviour, employment and growth acceleration. On the one hand, all sustained growth accelerations raise wages; usually the average increase in wages is fairly close to the increase in labour productivity, which in turn is usually fairly close to the increase in GDP per capita. It appears safe to say that aggregate labour demand rises in all cases of sustained fast growth, although it may rise considerably faster in some cases than in others, and the composition of demand increase among types of labour may also vary a good deal. It seems unlikely that there are any experiences of growth at 7% or faster in which there is not a general increase in the demand for labour. But with increases at 3% to 4% (and per worker productivity increases at, say, 1% to 2%), this cannot be counted on with much confidence. One broad interpretation is that technological change is always impacting on any economy (albeit faster when capital equipment is being turned over faster), so labour productivity tends to rise faster when growth is faster (the 'Van Doorn' effect).

There appears to be some tendency for those countries whose accelerations occurred in the context of surplus labour to see most of the rising demand for labour lead to increases in employment rather than in wages. This was broadly speaking the pattern in Indonesia, Singapore, Brazil, Malaysia, India and Korea. In cases like Indonesia and Chile, the take-offs came soon after disastrous declines in real wages and clear excess supply situations (in Indonesia a chronic situation; in Chile the result of a major macroeconomic downturn). Upward policy pressure on wages in Venezuela during the 1970s may have contributed to the subsequent crash, although it was one of many factors. The two countries with fixed exchange rates (or one *de facto* viewed as fixed – Singapore) worried about and took steps to make sure that rapid wage increase would not puncture the growth bubble.

From a distributional point of view it would often be expected that increasing labour demand would have a more beneficial impact on poverty and inequality when it takes the form of rising employment, in particular of rising employment of low-skilled earners.¹⁰ Where this seems to have happened, as in Singapore and Brazil, for example, inequality has not risen. Typically wages do rise within a few (three to five) years of sustained acceleration episodes. By this time, labour productivity is likely to be rising at the firm level, and TFP may be as well. In cases where there was initially excess capacity there may not be much increase in productivity at the firm level until the excess supply of factors has been mopped up. But there have been few (if any)

¹⁰ This would, however, depend on the composition of families by income earners and the price elasticity of demand for a particular type of labor. Where elasticity is very low, total labour income accruing to that type of labor rises when the wages rises.

Thoughts on employment typologies

studies that look closely at these matters of the timing of the sources of output growth at various stages of an acceleration episode.

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