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**Tilting the playing field:
Labour absorbing growth and the
role of industrial policy**

Anthony Black

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Anthony Black is a Professor in the School of Economics at the University of Cape Town.

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1. Introduction

South Africa faces a severe problem of persistent structural unemployment. This results not only from low growth but more importantly from the pattern of growth over many decades. The recent recession aside, there has for the past several years been a significant improvement in South Africa's growth performance. However, although new jobs have been created, this has been at a frustratingly slow pace and it would be difficult to argue that there has been a structural shift to a more labour demanding growth path. The data remain controversial but even the more optimistic projections show that very large scale unemployment will remain a major problem even under quite optimistic growth scenarios. If it were not for increased social payments, poverty would have continued to increase over the period.

Employment creation is a key objective of government policy. All the major policy initiatives since 1994 emphasise this problem. It was central to the RDP, to GEAR and remains a core component of ASGISA. Recent policy statements have placed a major new emphasis on an employment intensive growth path. These include the 2010 Budget, the DTI's Industrial Policy Action Plan (DTI, 2010) and the statements released by the Minister of Economic Development. This is to be welcomed but as yet there is limited clarity as to what it actually means in practice.

The objective of this paper is to explore the role of industrial policy in the context of South Africa's chronic unemployment problem and the stated policy emphasis on labour absorbing growth. It should be stated at the outset that industrial policy is by no means the only component of a policy package to encourage a more labour absorbing growth path. For instance, one issue which is not considered here is whether manufacturing should receive the high level of support that it does in relation to other (more labour intensive) sectors such as agriculture. Nevertheless, industrial policy clearly has an important role to play.

Section two asks what should be different about industrial policy in the South African context of massive structural unemployment. The starting point is that while more rapid economic growth is an important objective, at any given level

of growth, the economy needs to become more labour demanding. The central question posed, therefore, is whether it is feasible to bring about changes in the economic structure and pattern of development, which would lead to a more rapid increase in labour absorption.

Section three then goes on to examine the link between industrial policy and capital intensive development. Pre-1994, the weight of support was strongly in favour of investment in capital- and energy-intensive enterprises. With the advent of democracy, government set a multiplicity of objectives but *de facto* there was a surprising level of continuity in the ongoing assistance for heavy industry. It is, therefore, to be expected that 'traditional' export sectors have continued to expand and that there has been relatively little diversification into non-traditional manufactured exports.

Section four concludes. We argue that the ongoing bias in favour of heavy industry has been damaging, not only for employment but also for growth. South Africa's industrial policy has been fairly interventionist but in the wrong direction. It has acted to strengthen competitive advantage in resource-based, capital intensive sectors of manufacturing and undermined the prospects of more labour demanding sectors. Industrial policy needs to shift away from direct or indirect assistance to more capital intensive sectors and should be used to actively promote more labour demanding sectors and sub-sectors.

2. The growth path, competitive advantage and the role of industrial policy

Moving to a more labour demanding growth path means generating higher levels of employment per unit of output. This can be measured by the gross output elasticity of employment (GOEE), or the ratio of growth in employment to growth in output (Khan, 2007). A rising GOEE could be achieved in two main ways. Firstly, existing economic activities could become more labour intensive or, secondly, there could be a shift in the composition of output to relatively labour intensive sectors. The first shift may occur as a result of a change in relative factor prices or a change in firm (and farm) size with more small firms (and farms) and a larger informal sector. The second could be achieved via more rapid growth in labour- as opposed to capital-intensive sectors (e.g. agriculture relative to manufacturing) or sub-sectors (e.g. garments relative to steel, or plastics relative to basic chemicals).

Comparative advantage and industrial policy

Comparative advantage is not simply a matter of initial endowments but develops over time. Changes in comparative advantage could be market driven or be shaped by government policy, including industrial policy. Proponents of strong industrial policy have argued for ‘getting prices wrong’ to accelerate industrial development and growth in general (Amsden, 1989). The ‘prices’ Amsden is referring to here include the exchange rate and cost of capital and in her conception includes selective interventions to support some sectors above others.

But there is also the question of what industrial policy is endeavouring to achieve. Generally it is conceived of as a way of encouraging structural change or a move up the technological ladder, for example from agriculture to industry, or the promotion of diversification into non-traditional sectors and the promotion of high technology sectors. In East Asia, for example, industrial policy is generally regarded as having been successful in leading firms to rapidly move into more advanced sectors. From a more neoclassical perspective, Lin (2009) cautions against strategies that defy comparative advantage by supporting activities which are too capital or skill intensive. It is, however, important to note that industrial policy played a key role in initially creating competitive advantage in labour intensive, export industries in East Asia which was the reason that high GOEE’s were achieved in these high growth sectors. This underpinned the dramatic success in poverty reduction in countries such as Taiwan, Korea and, more recently, Vietnam (Khan, 2007).

3. South Africa: Capital intensive development and comparative advantage¹

The evolution of industrial policy

At the time of the transition to democracy there was intense debate about the nature of the problem of slow industrial expansion as well as of the policies needed to address this (Hirsch, 2005). World Bank analysts characterised the South African economy as a protected and distorted economy of the Latin American type, resulting from apartheid policies compounding an import substituting industrialisation strategy (Fallon and Pereira da Silva, 1994; Levy,

¹ This section draws heavily on Black and Roberts (2009) from where further detail on the evolution and impact of industrial policy can be obtained.

1992). According to Levy (1992) the bias to capital-intensity further resulted from the nature of government investment support. The Bank's recommendations to redress this situation were trade liberalisation, a reduction of distortions in factor markets and a stable macroeconomic environment, and the 'right' prices to provide an enabling environment to stimulate exports (Fallon and Pereira da Silva, 1994).

The analysis of the problem put forward by the influential Industry Strategy Project (ISP) was not that dissimilar although their prescriptions focused more on 'supply-side' support and industrial policy interventions (Joffe et al., 1995). The ISP was also highly critical of the high degree of concentration and resultant lack of competition in many industrial sectors. Fine and Rustomjee (1996) offered a somewhat different perspective, arguing that the dominance of the large scale mineral-based industry that comprised South Africa's 'minerals energy complex' should be the starting point for an understanding of industrial development and appropriate industrial policy.

The ISP and World Bank interpretations prevailed in terms of stated policy, although, in practice, policy sought to promote a multiplicity of objectives, with international competitiveness as a central theme. While objectives included support for non-mineral based sub-sectors and higher value added activities, it was understood that mineral based manufacturing would remain important and should be supported by further beneficiation (Hirsch, 2005: 124).

Trade liberalisation was also an important element. Some liberalisation had already taken place by the early 1990s. This included a reduction in quantitative controls on imports, the beginnings of tariff reduction and significant privatisation. After 1994 the liberalisation programme involved removing remaining quantitative restrictions, simplifying the tariff schedule and a significant reduction in average tariff rates. The impact was to reduce effective rates of protection substantially, from a weighted average of 35 per cent on manufactured goods in 1984 to 12.9 per cent in 2000 and then to 9.5 per cent in 2006 (Edwards and Lawrence, 2008).

A range of measures were also introduced to encourage investment, technological improvements and exports, and to support small firms. These have included sector specific adjustment programmes, investment incentives, 'supply-side' incentive programmes, subsidised infrastructure, support measures for skills development and technology, special loan facilities and support programmes for small firms (Black and Roberts, 2009).

The government's concerns about international competitiveness were re-focused on enhancing capabilities in 'knowledge-intensive' activities and advanced technology, with the release in 2002 and 2003 of the *National Research and Development Strategy*, the *Integrated Manufacturing Strategy* and the *Advanced Manufacturing Technology Strategy* (DST, 2002; NACI/DST, 2003; DTI, 2002). These were followed in 2007 by the *National Industrial Policy Framework* (DTI, 2007) and most recently the *Industrial Policy Action Plan* (DTI, 2010) which has introduced an ambitious agenda of policy interventions to stimulate a wide array of priority sectors and activities.

There has, therefore, been no shortage of industrial policy interventions and new programmes, but the net impact is far from clear. Together with trade liberalisation, it was expected that these measures would counteract the previous government's support for large-scale capital-intensive industries and the legacy of poor productivity, and would facilitate the development of non-traditional manufactured exports (Hanival and Hirsch, 1998; Joffe et al., 1995). However, this has only happened to a very limited degree. While the stated objective of policy has been to encourage higher value-added manufacturing, labour-intensive activities and smaller firms, in practice the weight of support has continued to be focused on larger scale, capital-intensive firms and sub-sectors.

Capital intensity and comparative advantage

Assuming no large scale state intervention, the (tradable) sectors which are likely to expand most rapidly will be those with a growing comparative advantage. So the question then arises as to the nature of South Africa's comparative advantage and what role, if any, industrial policy should have in trying to influence this.

One measure is to consider revealed comparative advantage. Policy since 1994 has placed considerable emphasis on becoming competitive to promote exports and was a central objective behind trade liberalisation, for instance. Attempts to develop competitive non-traditional exports especially in relatively labour intensive sectors have been generally unsuccessful. Large scale, labour intensive exports did not materialize. In fact, certain labour intensive sectors have instead proven very vulnerable to import competition. While exports have grown, they have not led to the expected jobs bonanza. Instead, productivity rose rapidly as firms slimmed down and became more competitive. So tariff reductions and a weaker currency supported export growth but it turned out that there was a high degree of path dependence with continued expansion taking place in capital intensive 'traditional' sectors such as basic chemicals, steel and other basic

metals. These sectors represented South Africa's 'revealed comparative advantage'. One of the most important exceptions, the rapid growth in automotive exports, was driven by export incentives under the *Motor Industry Development Programme* (MIDP) introduced in 1995 (Black and Bhanisi, 2007). So South Africa's 'revealed' comparative advantage was, somewhat paradoxically, in relatively capital intensive products and not in labour intensive products. While the economy has significant pockets of sophisticated technological capability and skills, there is also a very large, unskilled group and massive open unemployment but at the same time no apparent comparative advantage in labour intensive production.

However, to conclude that South Africa cannot compete in more labour demanding sectors is problematic for at least two reasons. Firstly, the reality is that South Africa competes in a number of different and sometimes 'contradictory' spheres reflecting a differentiated factor endowment. These include sectors based on its natural resource endowment in minerals and certain agricultural commodities, on capital or energy intensive, large scale industrial processing, on skills and high technology in certain niche markets and based on low wages in a range of labour intensive areas ranging from clothing to tourism. In other words, South Africa already competes in labour intensive sectors and it is of critical importance for employment that we strengthen our competitiveness in this area.

The second reason is that South Africa's revealed comparative advantage has been fundamentally distorted in three main ways. Firstly, capital and energy subsidies have increased the profitability of capital- and energy- intensive beneficiation projects in particular. Secondly, market power and the pricing of raw and semi-processed materials have conspired against more labour demanding sub-sectors and, thirdly, the ongoing skills crisis has limited competitiveness especially in more labour demanding sectors. These are elaborated on below.

Support for heavy industry

The trend towards a reduced share for mining in the economy coupled with trade liberalisation might have been expected to herald a new industrial development trajectory, with the growth of more broad-based manufacturing. However, a striking feature since 1994 has been the continued rapid growth of resource based (and capital-intensive) industries. Growth in these sectors, and in the automotive industry, has far outstripped other sectors of manufacturing.

A similar pattern is evident in the composition of merchandise exports. Trade liberalisation was followed by rapid growth of international trade in both exports and imports, but exports remain dominated by minerals and resource-intensive manufactured products (Roberts, 2007). Apart from a dip in 1999 and 2000, minerals, basic metals, basic chemicals and pulp & paper have maintained a share of around 60 per cent of total merchandise exports since 1994.

The share of non-traditional exports did expand from the mid-1980s to the mid-1990s with annual growth rates in excess of 20 per cent in sectors such as motor vehicles, electrical machinery, transport equipment, leather products, beverages, rubber products, printing and publishing and footwear over the period 1988 to 1996 (Black and Kahn, 2002). However, the base was extremely low for many of these products. Much of this expansion was into Africa, coinciding with political acceptability and the ending of sanctions. Africa's share of South Africa's total exports excluding gold increased from just 9.1 per cent in 1988 to 17.9 per cent in 1996. But the diversification of South Africa's exports has effectively stalled, aside from automotive exports. Edwards and Lawrence (2008) show that non-automotive manufactured exports fell in volume terms by 3.3 per cent per annum from 2000 to 2005.

The growth of resource-based sectors of manufacturing has been on the back of cheap (coal-based) energy and government support to exploit linkages within the 'minerals-energy complex' (Fine and Rustomjee, 1996). For example, aluminium production which dominates non-ferrous metals is based entirely on low priced electricity to process imported bauxite. Cheap electricity has been a function not just of abundant coal resources, but also the extraordinary electricity pricing policy. Massive over investment in electricity capacity in the 1970s and early 1980s by the state owned utility, Eskom, led government to set extremely low tariffs to attract huge investments in a series of metal processing plants. In the past this was justified by a large excess generation capacity resulting from the earlier over-investment. However, even with capacity running out, agreements were being reached in 2007 with Alcan for an aluminium smelter, reportedly at an electricity price around US\$0.02/kWh or R0.14, compared with average prices of R0.18 for other industrial users and R0.45 for households (Black and Roberts, 2009). The severe constraints on South Africa's generation capacity led to these plans for the smelter investment being cancelled in late 2009.

In effect, the electricity pricing structure has exacerbated the impact that South Africa's natural resource endowment has on the pattern of trade discussed above. While there have not been any analyses of the country's trade performance which properly take this into account, the reported statistics on the

cancelled Alcan smelter project offer a graphic illustration. The R21bn greenfield investment would have employed just 800 people, with the product expected to be almost entirely exported in primary form.

Direct state support for basic metals production was further provided in the form of Industrial Development Corporation (IDC) finance for aluminium and stainless steel plants into the 1990s, through state ownership of the main steel producer until 1989, and in the provision of infrastructure over recent decades (Fine and Rustomjee, 1996). Much of the IDC finance in the second half of the 1990s continued to be oriented to large, capital-intensive, resource-based activities. The IDC has only more recently increased the emphasis on employment creation. Similarly, the basic chemicals sector is dominated by Sasol, which was initially a state corporation. Its capabilities are derived from huge state financing of its synthetic fuel-from-coal operations which were established for strategic reasons as a result of the sanctions threat (Levy, 1992; Rustomjee et al., 2007).

The paper and paper products sector is reliant on timber and has historically benefitted from the apartheid government's policies with regard to land and water resources for extensive afforestation. The large paper mills of the two dominant producers, Sappi and Mondi, are also capital and energy intensive. It is notable that South Africa exports around one-third of the pulp produced in the country for processing elsewhere (Genesis, 2005).

Some of the very substantial support programmes provided by government have reinforced rather than altered the industrial development path. An accelerated depreciation allowance under the 37E incentive was given to major resource-based projects in the 1990s such as Columbus Stainless Steel and Saldanha Steel. The *Strategic Industrial Projects* programme provided tax relief equivalent to R7.7bn from 2002 to 2005 for large capital-intensive projects many of which are in basic metals and basic chemicals (including four projects undertaken by Sasol) (Black and Roberts, 2009).

The pattern of performance suggests the importance of previous government policies, and 'path dependent' factors, meaning that firms which have developed productive strengths are better able to re-invest and continue to grow. Perhaps the best example of this is the chemicals giant, Sasol, which leads local industry in ongoing R&D spending. The basic chemicals sector which is dominated by Sasol also has the highest investment rates, with levels approximately 50 per cent of value added in the years 2003 to 2007. Investment rates averaging

around 40 per cent of value added have also been maintained in the basic iron & steel, non-ferrous metals and coke & petroleum sub-sectors.

Market power and input pricing

The market power of large upstream producers in sectors such as steel and chemicals has profoundly disadvantaged more labour intensive downstream production. Downstream development in sectors such as steel and chemicals has been hindered by the market power of large, upstream producers such as Iscor (now Arcelor-Mittal) and Sasol. The lack of competition has enabled them to use import parity pricing, meaning that local fabricators have derived little advantage from low production costs of material such as steel, aluminium and basic chemicals (Roberts and Rustomjee, 2009). This is in spite of the fact that beneficiaries of the 37E tax incentive undertook to set prices at a level which did not lead to higher returns from domestic sales than exports. In similar fashion the potentially labour demanding plastics sector has been rendered uncompetitive by the pricing on inputs derived from large firms such as Sasol.

The skills constraint

The third ‘distortion’ is that the historical, systematic undermining of black education has limited the supply of skills and therefore hugely raised costs for manufacturing. Since 1994, what can generously be described as the ‘false start’ in the rehabilitation of black education and artisanal training has continued to militate against competitiveness in more labour demanding sectors. The most striking feature about the labour market in South Africa is not so much that wages of production workers are higher than competitors (although in many cases they are), but the exorbitant costs of managers and skilled staff. Based on detailed international survey data in manufacturing and some service sectors, Clarke et al (2007) found that unskilled workers in South Africa earned slightly less than in Poland but somewhat more than in Brazil. However managers’ wages were 2.5 and 3 times higher than in Poland and Brazil respectively, and wages of professional and skilled employees in South Africa were also much higher than in the other two countries. A recent benchmarking study of the Thai and South African automotive industries came to similar conclusions. It found that the ratio of production workers’ wages in South Africa compared to Thailand was nearly three to one, for professionals 6:1 and for artisans an incredible 12:1 (Benchmarking and Manufacturing Analysts, 2009). Even allowing for the possibility of higher qualification levels for skilled staff in

South Africa, these differentials create a huge competitive disadvantage for South African manufacturing.

Major initiatives, such as the 1998 Skills Development Act, designed to address this problem have had limited success. This Act established Sector Education and Training Authorities (SETAs) funded by levies on wages. Many smaller companies who experience difficulty claiming back the levy perceive it to be an additional tax on employment.

4. Conclusion: Reshaping comparative advantage

So South Africa's 'revealed comparative advantage' is, in part, the outcome of its distorted pattern of development. Powerful interests have coalesced around this capital and energy intensive growth path in support of what Fine and Rustomjee (1996) have dubbed the 'mineral energy complex'. Naturally they are opposed to any reduction in this support.² While industrial policy has sought to shift industrial development onto a different trajectory, this has proved extraordinarily difficult and has met with limited success (Roberts and Rustomjee, 2009).

But what does this mean in the South African context of high unemployment, an apparent lack of competitiveness in labour intensive sectors and a capital intensive export profile? This structural paradox has created a conundrum for industrial policy. Should policy encourage sectors which display revealed comparative advantage or attempt to create new areas of comparative advantage by encouraging higher valued added activities? Or is it possible to compete more effectively in more labour demanding activities? This conundrum partly explains the Department of Trade and Industry's adoption of a multiplicity of potentially contradictory policy objectives in support of beneficiation, the 'knowledge economy' and labour absorbing growth.

While industrial policy is sometimes narrowly defined as a set of selective interventions to promote industrial upgrading, we would prefer a broader conception – 'improving economy wide efficiency.' In the South African context of large scale structural unemployment, this leads in turn to a focus on employment. Moreover, the bulk of our unemployed labour is unskilled or semi-skilled and can most easily be absorbed into labour intensive activities. As *Business Day* commented recently, "...we need to create jobs for the workforce we have, not the workforce we wish we had."

² See for instance, "Paper sector fights Eskom hike proposal", *Business Report*, 13 Jan, 2010.

It may be theoretically possible and sensible, especially in a mineral rich economy, to have an industrial policy which promoted capital intensive, resource based exports with employment being generated elsewhere in services, (protected) manufacturing for the domestic market or agriculture. Or industrial policy could target more advanced, leading sectors which may lead to little direct employment growth but which would generate the export expansion required to finance development with employment being generated in the protected sectors of the domestic economy. We argue, however, that industrial policy should be aligned with other policies and directly aimed at supporting more employment intensive growth.

Government has very clearly stated the case for a more labour absorbing growth path – but an economy cannot efficiently shift its growth path without shifting its comparative advantage. To move to a more labour absorbing growth path, South Africa will need to compete more effectively in labour demanding economic activities. We are not suggesting that we can suddenly out-compete China in ultra labour-intensive manufactures and neither are we suggesting that South Africa should support, unsustainable, low margin activities. However, this competition cannot be avoided and for inroads to be made into the unemployment problem, South Africa needs to do much better than it has been doing. The playing field has been tilted towards energy and capital intensive firms and sectors – it needs to be tilted towards supporting employment and labour demanding growth.

The question of incentives is crucial. By incentives we mean the whole panoply of prices, subsidies and regulations which face market participants. It has been shown that there has been a significant bias against employment as a result of South Africa's particular development experience. Growth has favoured capital intensive sectors and constrained labour intensive development. In part this has reflected differentiated support across various sectors. Factor prices are a second consideration. The relative prices of capital and labour do have an effect on the production techniques that are selected and also play a role in the growth strategy in terms of impacting on the growth path that an economy follows. Capital has been subsidised for very large capital intensive projects. Industrial support frequently takes the form of investment allowances and subsidies. The SETA funding for training on the other hand is derived from a tax on the payroll and in fact constitute a transfer from smaller, labour intensive firms to larger more capital intensive firms. A major set of subsidies has been energy. Electricity has been very cheap and especially cheap for large capital intensive users. Implicit and explicit energy subsidies to these sectors run into billions per year. So one key question is whether the incentive structure can be re-shaped to facilitate employment creation much more strongly.

The case for intervening directly to support employment intensive activities can also be made in the conventional economist's language of addressing market failure. Very high unemployment has major negative external effects. The resulting social dislocation creates huge costs for society. It imposes a tax on poor households, nearly all of which are supporting unemployed members. Higher employment would relieve this burden and lower household costs. Higher employment would also improve educational and health outcomes and reduce the cost of social services.

But what of objectives such as technological upgrading, promoting the knowledge economy and moving up the value chain? These activities can and should be supported and may be complementary to labour absorbing growth in some ways. But in the end they constitute a limited development strategy in the South African context because a large section of the labour force is not equipped with the skills to be employed in these sectors. It can also be argued that higher employment and the growth in labour demanding activities is the best way of encouraging upgrading because income growth at the low end of the income distribution is likely to be the best way of improving educational outcomes and therefore creating a decent platform for vocational and tertiary education.

Placing employment at the centre of industrial policy means support for small firms and training, particularly at a basic level and an examination of the regulatory environment. It also means providing appropriate infrastructure and investments to improve competitive capabilities in more labour demanding activities. This does not mean that wages should, be driven down although policy does need to investigate if there are labour market rigidities that need to be addressed here. Incentives should subsidise labour and training rather than capital investment, electricity and infrastructure for capital intensive firms. The challenge for South African industrial policy, therefore, is to tilt the playing field towards labour absorbing growth in order to mobilise the potential of an under-employed and poorly skilled workforce.

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