

IMPROVING PRODUCTIVITY PERFORMANCE IN SOUTH AFRICA: A RESPONSE TO TREVOR BELL¹

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Trevor Bell (1995) has written a trenchant critique of the Industrial Strategy Project synthesis volume (ISP, 1995) in *Transformation*, 28. He has developed his argument sharply and clearly. Bell has, moreover, as all good critics should, gone beyond mere critique and provided an alternative perspective - an alternative analysis and explanation of our manufacturing performance. While, as we shall elaborate below, we disagree with much of Bell's alternative explanation and analysis, taken on its own, it is a credible argument that draws upon distinguished international authority and warrants serious consideration.

However, Bell is much weaker when it comes to presenting alternative policy options. In the real world of policy research - and this is where the ISP self-consciously attempts to locate itself - the researcher is obliged to spell out credible policy implications that flow from the analysis. The ISP has identified major weaknesses in the manufacturing sector, and, on the basis of this analysis, posited policy responses. Bell takes issue with our analysis of the problem, presents an alternative explanation, but is clearly much weaker in deriving policies designed to overcome the problem. At best this is not very helpful; at worst it is the counsel of despair.

We deal here with the major points of contention in the order in which they appear in Bell's critique.

Disputing the Productivity Performance. Was it really that bad?

While most observers see productivity growth as the key to economic performance and standard of living (Bell disputes this - something we will come back to), measures of productivity growth are notoriously fraught with difficulty and very contentious. Bell's central contention is that there is no clear evidence to support the position advanced by the ISP to the effect that South African manufacturing has been marked by a poor performance in productivity over a

prolonged period. Furthermore, he takes exception to the ISP 'assertion', as Bell puts it (Bell, 1995:5), that this sustained low growth rate was highly unusual. A key point of difference here surrounds the meaning given to the concept of *productivity*.

But before pursuing this, it is instructive to begin with a generally widely-held perspective. The following quote from a recent article in *The Economist* would summarise the general view on productivity:

If you were asked to choose just one test of an economy's performance, one of the strongest candidates would be growth in productivity. In the long run, increases in productivity - that is output per worker - are the only way for a country to raise its living standards. Unfortunately, if you were next asked which economic indicator causes most confusion in economy-watching circles, the right answer might well be the same: productivity growth (*The Economist*, May 5, 1996:16).

Considering labour productivity, Du Plooy (1988) noted a severe decline in value added per employee in the period 1981-85. There was some recovery thereafter, but this was short-lived. Kohler and Holden (1992) showed that real value added per employee in South African manufacturing was lower in 1990 than in 1980 (IDC, 1992:33).

In this case, productivity is perceived as being measured by the productivity of labour. But labour is only one input into production. Moreover, in the context of a large reservoir of surplus labour, raising labour productivity may not in fact take primacy in industrial strategy. It is more common to measure productivity by focusing on the productivity of all inputs into production - not just labour, but capital, material inputs, energy, and so on. This is referred to as Total Factor Productivity (TFP). Here, differing estimates of productivity abound and indeed this is the case for the South African economy and for the South African manufacturing sector. For example, Moll (1990) produced the following long-term estimates for South African manufacturing TFP growth per annum:

1948-54	-0.8%
1954-63	1.9%
1963-74	1.0%
1974-81	0.7%
1981-90	-1.9%

Two features of Moll's figures are worth emphasising - (a) the consistent declining trend after 1954-63; and (b) the strong negative growth in productivity for the 1980s.

The National Productivity Institute (NPI) (1990) was another source that stressed low productivity growth of South African industry. A very recent report calculates lower rates of productivity growth for South Africa than that of most of our trading partners over the period 1986-94 (Wharton Econometric Forecasting Associates South Africa, 1996).

At the time that the ISP was being written, the World Bank were doing their productivity calculations. Belli et al (1993) estimated total factor productivity growth rates for South African manufacturing of 0.05 per annum in the period 1972-83 and then 0.55% per annum in the period 1983-90. As they pointed out, their low productivity estimates accorded with several other studies. Belli et al, reviewing several studies of productivity in South African manufacturing as well as their own results, therefore, reached the following conclusion: 'It is a striking feature of the performance of manufacturing industry in South Africa that productivity has been stagnant for the past 20 years' (Belli et al, 1993: 73). It is notable that Bell himself wrote in commenting on the results generated by Belli et al - 'These growth rates are clearly low in absolute terms' (Wright et al, 1993:2).

Therefore, while productivity estimates for South African manufacturing industry (as expected) do differ, they all concur that productivity performance has been poor (very low positive or negative) over a very long period and that such a protracted productivity performance is a distinctive or striking feature which requires explanation.

The findings of these macro-studies accords with the ISP findings. At the firm level, in most manufacturing sectors, the ISP found low levels of productivity and, even more important, an increasing tendency for most South African firms to fall further behind the leaders in a period of accelerating change. The findings at the macro-level of low levels of productivity increase, of the increasing productivity gap as between South Africa and international best practice - all of this was confirmed at the firm level over a broad comprehensive range of industrial sectors. Bell never makes mention of the sectoral studies which underpin the ISP - but micro-sector and firm-level studies, and not the macro, is the terrain that the ISP study essentially traverses.

At least in the South African case, there is congruence as between the macro and the micro evidence on productivity growth (as we shall see below this is not always so), and the story they tell accords with the position advanced in the ISP.

Explaining Productivity Performance. But does it really matter anyway?

The ISP's explanation for the poor productivity performance of South African manufacturing industry is multi-factorial - macro-economic (eg business cycle), structural (eg education and skills of the labour force) and micro-economic (the efficiency with which resources are employed at the level of the enterprise), with an admitted emphasis on the micro-economic (ISP, 1995:21).

Bell disputes the ISP explanation for poor productivity performance. He complains that the ISP 'takes virtually no account of macro-economic factors' (Bell, 1995:6), but, as we shall see below, this betrays a careless reading of the ISP. But, to stick initially with the subject of productivity growth, Bell sees productivity growth as solely determined by macro-economic factors. In particular, in Bell's view poor productivity growth is a direct result of the poor rate of output growth. This restatement of Verdoorn's law is buttressed by international evidence drawn from Helleiner's edited volume (Helleiner, 1994).

Despite the labelling of this as a law, there is some considerable dispute as to the direction of causation. In the short run, any decline in output growth, principally by increasing excess capacity, will tend to have a negative impact on productivity. However, over the longer-term, the direction of causation may well run the other way. Bell appears to recognise this when he says - 'In the longer-term, causation may perhaps run to a greater extent from TFP growth to output growth' (Bell, 1995:7).

Low and possibly negative growth rates of productivity in South African manufacturing industry have been sustained over a very long period - for at least 20 years (Belli et al, 1993) and possibly much longer (Moll, 1990). Over the long period, changes in capacity utilisation cannot be the principal, let alone the sole, explanatory factor for low levels of productivity growth.

But, for Bell, the rate of productivity growth is unimportant. While grudgingly recognising that over the long-term causation '*may perhaps* run from TFP growth to output growth' (our italics). Bell, in rather contradictory fashion, nevertheless goes on to belittle the importance of productivity growth altogether. 'However, even over long time periods, it is clear that TFP growth as such is not the major part of the explanation of why growth rates differ' (Bell, 1995:7). As evidence for this, Bell cites Krugman in particular to the effect that massive investment-resource mobilisation, rather than efficiency, accounts for the high rates of output growth in the East Asian miracle. Indeed, it has recently been argued that South Korea and Taiwan were 'miracles of accumulation rather than of productivity' (Kim and Lau, 1992; Young, 1993).

Bell draws from this literature, dealing specifically with Korea and Taiwan, the general contention that the level of investment is all important. This simply will not wash. High rates of capital investment are an important part of the story as to why growth rates differ between countries, but they are not the whole of it. Countries do differ - and differ significantly - in the efficiency with which they use capital. To cite just one example, between 1974 and 1993, American gross saving and investment per worker were lower than that of Germany or Japan and yet the amount of new output generated per worker was much higher. A unit of capital in Germany or Japan generates one third below that of a unit of capital in the US.

But, even in the case of Korea and Taiwan, investment is not the sole explanation for significant growth. No careful reading of the Korean experience can reach any other conclusion but that while Korean firms acquired vast amounts of capital at low interest rates, they also made exceptionally effective (and efficient) use of that capital. At the micro firm-level, leading Korean firms saw major and systematic increases in capital, labour and total factor productivity. It is the ability of the Korean firms to engage in technological learning and to raise productivity via innovation that is the really outstanding feature of Korean development. The explanatory factors in this learning process have to be understood at the level of the firm - where the learning takes place. Thus, a recent work on Korean industrialisation emphasises the centrality of the firm-level learning processes which enabled Korean firms to make exceptional usage of what were, at least initially, much lower capital investments than that of their competitors. While effective macro-economic policies are an important part of the framework they do very little to explain such processes of firm-level learning (Linsu Kim, 1996).

Bell's 'evidence' for the singular importance of the level of investment rests heavily on the studies of Krugman and others which find that, over the past three decades, the growth of the NICs is explicable in terms of the level of investment and productivity growth is of little significance. However, where the macro-data are reworked so as to allow for changes in the qualities of inputs caused by alterations in industrial structures and the changes in intermediate inputs, and, in addition, the period is decomposed into different sub-periods, a very different picture emerges. In the case of Taiwan, the growth of inputs, particularly capital input, explained most of output growth in the period from 1961 to 1982. However, between 1982 and 1983, TFP growth surpassed capital input and became the most important source of GDP growth. As important as the finding on the importance of TFP growth is the explanation for TFP growth. The major factors underlying TFP growth were changes in industrial structure,

improvement in education of those in employment, the rise in R&D and the inbound brain drain (Chi-Yuan Liang, 1996).

At a theoretical level, new growth theory (Romer, 1990), similarly stresses the central importance of deliberate efforts designed to improve technology and the efficiency with which capital is utilised. The fundamental determinants of productivity growth, these theories suggest, lie not with the quantum of investment, but with new technology - its generation and diffusion. At the heart of the issue are the policies designed to accelerate technological learning. A concern with learning and the acquisition of competence underlies dynamic efficiency. This is the position of the ISP. Nor is this concern, as Bell would have us believe (Bell, 1995:5), simply reducible to securing an improvement in allocative and technical efficiency.

Despite his own antipathy for the neo-classical position, Bell falls back into the neo-classical paradigm to the effect that investment explains output; that capital is homogeneous and that technology is freely available. In Bell's world, the well-ordered production function determines a clear relationship as between the level of investment and the level of output.

Providing an Explanation for the Slower Growth of Manufacturing Industry. What accounts for the level of investment?

Much of traditional economic thinking, modelled on Harrod-Domar explanations of growth, has placed almost exclusive emphasis on the level of investment in explaining the rate of growth. The ISP attempted to widen this perspective, and in so doing deliberately lowered the explicit emphasis given to this traditional macro-economic perspective on economic growth. Nevertheless, the ISP recognised the critical importance of investment and records the low rates of manufacturing investment in South Africa (ISP, 1995:10-11; 19-21). However, while the ISP acknowledges that macro-economic factors are critical - '... private manufacturing investment, as with investment generally, depends on a wide range of political and macro-economic factors' (ISP, 1995:19) - no attempt was made to detail this, although one of the ISP authors has explicitly targeted this issue in an addendum to the ISP which was available to Bell (Kaplinsky, 1995). Bell is sharply critical of this lack of an explanation and proceeds to supply one.

For Bell, South African manufacturing industry's productivity performance was not that weak, but, in any case, productivity performance is a dependent variable. The key causal explanation, Bell argues, lies with low levels of

investment. Investment is all.

Bell's data, in fact, refer to total aggregate investment and not to private manufacturing investment. This leads Bell to see declining investment as a problem only after the early-1980s. In fact, private manufacturing investment had begun to decline from the early-1970s.

The explanation of low levels of investment again rests for Bell exclusively with macro-economic factors. Bell's explanation is the same as that offered by Helleiner for the developing countries taken as a whole ('it is in such terms that the crisis here in manufacturing, as in the economy as a whole, must be understood' - Bell, 1995:9). While understandably not advancing a full theory of the crisis, Bell states, 'Essential to it (the crisis) ... is that a series of adverse foreign exchange shocks, culminating in a debt crisis, created a severe foreign exchange constraint which produced a sharp contraction of the economy' (Bell, 1995:9).

We would have little dispute with Bell on the importance of foreign exchange shocks and the debt crisis. But, these need to be situated in the context of a number of economic and political factors which are internal factors which are specific to South Africa. The ISP grew out of an earlier project of the Economics Trends Research Group which provided a detailed explanation along these lines (Gelb, 1991). We saw no reason, in an industrial strategy project, to revisit this exercise.

In brief, Bell's explanation for low levels of investment in South African manufacturing industry is seriously incomplete. Positing that low levels of investment are a reflection of foreign exchange shocks does not, for example, explain the long duration of the crisis in South Africa and the long-term trend decline in private manufacturing investment. Strikingly, there is also little reference to the social regime of accumulation, and the role which Apartheid - and more specifically, opposition to Apartheid - played in the explanation of low levels of investment (by contrast, see Gelb, 1991). Nor does it explain the limited commitment of South African firms, by contrast with South Korean or Taiwanese manufacturing firms, to meet crisis by engaging in technological learning ... and we could go on. Macro-constraints and macro-crises could have sunk South Korea. But, it was precisely at the time of the steep rise in foreign debt in the 1970s, with the promotion of the Heavy Chemical Industries (HCI), that outstanding growth and investment accelerated. The key question is how Korean industrial firms turned crisis into opportunity through accelerating technological learning (Linsu Kim, 1996:42).

Exports and Imports. Grounds for optimism or pessimism?

Bell is critical of the ISP, firstly, for placing 'more or less' exclusive focus on exports, and, secondly, for not providing any statistical analysis of past and likely future trends in exports. The latter includes calculating the likely maximum rate of export expansion and the rate of export expansion required to achieve some desired level of GDP growth.

We plead guilty to most of the second charge. We did provide data on past growth of exports, but we did not make future predictions in general nor in relation to some desired growth rate.

The first charge - our alleged 'exclusive focus on exports' - requires a more detailed response. We are not exclusively focused on exports. But we are driven by the imperative to achieve international competitiveness in manufacturing. This will enable us to penetrate international markets and, in the context of trade liberalisation, is, equally, a precondition for effective competition against imports on the domestic market. We do not forswear the continued use of protective measures to bolster the position of our manufacturers on the domestic market, but, not unlike Bell, we recognise that, at best, this is a temporary expedient and, at worst, a disincentive to attaining the level of competitiveness that the medium-term requires. Moreover, and although this is disputed terrain, there is some comparative evidence to suggest that firms do tend to learn more from exporting than from producing for a domestic market, *especially if this domestic market is characterised by low levels of competition* (see below).

However, our concern with exports goes well beyond this. Successful performance on domestic markets cannot substitute for exports. *We have to increase our penetration of international markets.* How does Bell imagine that we are going to achieve the requisite rate of output growth that he sees as driving any further output and productivity growth? How, in other words, does Bell envisage securing the positive operation of Verdoorn's Law, if not through exports? If this is how Bell understands our 'more or less exclusive focus on exports', then indeed we are guilty. But, if Bell does not share our guilt then it is he who is in serious trouble. As we have seen, the *macro-economics* of an inward-oriented industrial growth path are not sustainable. At the very least Bell should support his heterodoxy by a detailed elaboration of the macro-economic co-ordinates of *his* 'more or less exclusive focus on the domestic market'. The argument and evidence that he provides here is singularly unpersuasive.

Bell is generally very sceptical of the prospects for export expansion, although he is apparently much more upbeat about the prospects for import substitution. He argues that ISI has made a positive contribution to the economy and that the South African economy has not been exceptionally closed. Both are propositions

that the ISP is in agreement with. But, Bell then looks at import substitution indices for South Africa and Mexico. By disputing the conclusion that ISI has '... been taken to excessive lengths, which make further import substitution exceptionally difficult' (Bell, 1995:22), he seems to suggest that further ISI is indeed possible. This backhanded endorsement of further ISI, does not however find support in the data that Bell himself presents. His Figure 3 shows that for all three manufacturing categories, the import substitution index in South Africa has been moving upwards since the early-1980s, and while the import substitution index did indeed track that of Mexico for more than 50 years, the trends in the two countries have diverged with the index for Mexico declining and that for South Africa rising. The fact that this upward trend for South African manufacturing occurred pre-trade liberalisation and under recessionary conditions suggests, if anything, very limited scope for further ISI in the present context.

Bell also appears to favour resorting to ISI in order to maintain external balance. But, his argument here is hedged with so many qualifications that his position is, at best, ambivalent:

... it is arguable, contrary to public opinion, that far from being an impediment to faster growth, import replacement was a macro-economic imperative for the maintenance of external balance at the growth rates achieved into the 1970s ... it may well be that successful economic restructuring requires it to play the same role in the future. Whether import substitution can play this role in future is another matter. It is possible that it will not be able to do so for two reasons ... (Bell, 1995:23).

The two reasons are international (GATT) and domestic factors (slow rates of economic growth). Bell's support for ISI concludes with an ominous warning, which says it all:

Promotion of significant new import replacement thus may initially require considerable resources, and much resolve on the part of those responsible for promoting South African industrialisation (Bell, 1995:24).

But, if we don't have the considerable resources or the iron resolve to support further ISI, we may indeed have to accept the ISP position - 'If any of these conditions is lacking we may well, as the ISP report implies, have to rely almost exclusively on export expansion' (Bell, 1995:24).

International experience shows that the competitiveness of manufactures is dependent upon precisely those forms of productivity growth which the ISP targets and which Bell decries - better designed products, better quality products,

more differentiated products, products which reach the market reliably and on time, new products. International experience also shows that targeting these forms of productivity growth simultaneously raises labour, capital and materials productivity, that is TFP (Andreasen, 1995; Bessant, 1991; Dertouzos, 1989).

This means that Bell's suggestion that we maintain our historic commitment to ISI *without at the same time changing the productivity (broadly defined) of our manufacturing sector* is macro-economically unsustainable unless we resort to a process of continuous devaluation. This not only reduces real incomes, but is also likely to be highly inflationary, and this, among other things, will dull the very incentive to invest which Bell believes lies at the heart of future growth! In other words, it is ironic that the only way in which Bell's commitment to ISI or high levels of economic growth can be sustained is through the achievement of higher rates of productivity growth which is precisely the target he is tilting against.

Market concentration. Is it a problem?

The ISP policy responses seek to enhance our industrial performance, firstly, by strengthening the flow of market-based incentives, and, then, largely in recognition of widespread market failures, by strengthening underlying manufacturing capabilities, particularly, our human resource and technological capabilities. Thirdly, we review our institutional capabilities and make recommendations designed to strengthen them.

Bell dismisses our 'supply-side policies'. These - most particularly the focus on our technological, human resource and institutional capabilities - are the core of our policy proposals, summarised in the synthesis volume and detailed in the 13 sectoral reports. Bell's evaluation of these measures takes up approximately 20 lines. The ISP - according to Bell - has failed to 'consider properly' the potential impact of its supply-side measures and is, therefore, adjudged to be 'extraordinarily cavalier'. Detailed critique of these measures is avoided by the time-honoured, and, dare we say, 'extraordinarily cavalier' throwaway, that to do so 'would require at least another whole paper'.

Our proposals to strengthen market-based incentives are captured in our recommendations on trade policy and competition policy. We have already responded to Bell's views on our trade policy. In summary, he contests the outward-orientation of the ISP and proposes in its stead a renewed focus on import substitution. Despite this, Bell is manifestly - and quite correctly - sceptical of the ability of the traditional instruments of trade policy to support ISI. He presumably would envisage the deployment of other macro-instruments - fiscal policy? monetary policy? the exchange rate? - to stimulate investment

and demand. These are not elaborated - this would presumably also require 'at least another whole paper'.

Our proposals on industrial organisation - ownership and market concentration - are also rejected. Bell decries our lack of regard for the 'conventional rules of logic and evidence'. We readily acknowledge the difficulties associated with gathering evidence in this area, difficulties that are exacerbated by the paucity of information that emanates from the competition authorities. Moreover, although aggregate indices of concentration are useful, the pertinent evidence includes, crucially, insight with respect to the (frequently, unlawful) *behaviour* of dominant firms: the perpetrators are, for obvious reasons, inclined to understate their culpability, the victims to exaggerate. To a significant extent, however, we are obliged to rely on anecdotal evidence gleaned largely from interviews with industrialists, big and small. This is imperfect, but so is the real world, and, short of simply ignoring a widely acknowledged influence on economic performance for lack of 'conventionally' acceptable evidence, we are obliged to rely upon 'unconventional' - though, hopefully, acceptable - evidence.

As for our logical deficiencies, the interplay between competition policy and industrial policy is exceedingly complex. Bell identifies some of the more obvious potential conflicts between these policy fields and these, and others, are elaborated in the ISP studies. But certainly, to refer only to the most obvious conflict between the imperatives and objectives of industrial and competition policy, we recognise that, in important sectors and processes, scale and efficiency are positively correlated; and that scale imperatives frequently dictate concentrated markets in a small economy.

In part because of these difficulties - that is, difficulties related to the gathering of evidence and to the contradictory roots and consequences of size - many analysts advocate downplaying competition policy in favour of trade liberalisation. This would - the argument goes - ensure requisite levels of competition in the domestic market and, by virtue of the (generally exaggerated) boost that trade liberalisation is sometimes thought to give to export activity, would ensure that our domestic giants faced competitive pressure in their exporting activities. While the report explicitly recognises the saliency of these arguments, we do not believe, for reasons elaborated in the report, that trade policy *substitutes* for competition policy. We accept, however, that trade liberalisation is a powerful *complement* to a robust competition policy. The originality of Bell's contribution is that he accepts neither trade liberalisation nor competition policy - he doesn't like our emphasis on export growth, he hankers after trade protection, and he opposes a strengthened competition policy. How, in Bell's scheme of things, are the competitive pulses - widely acknowledged to

be compromised by unbridled private power - reproduced?

In truth Bell is unconcerned because he is unpersuaded by our evidence that purports to establish the link between market dominance and dynamic inefficiencies. Is market entry (by SMEs in particular) inhibited by market-dominating and vertically-integrated large firms? This is, we believe, established, to the extent possible, through the ISP and other sectoral studies and is strongly supported by common sense, uncommon though that may be in the economics profession. Do highly concentrated markets reduce the attractiveness of South Africa as a site of direct foreign investment? Bell clearly believes that all the many statements by international merchant banks and other prospective international investors that support this argument are simply self-serving sophistries. We do not, and several high-profile joint ventures are, we believe, indicative of a 'if you can't beat 'em, join 'em' approach on the part of international investors, an attitude that certainly reduces the competitive temperature in the domestic market, and probably reduces the aggregate of DFI.

Bell points to what he believes to be contradictory positions adopted in our argument for strengthened competition policy. He refers to the paper and pulp duopoly, currently under investigation by the Competition Board. We explicitly acknowledge that powerful oligopolists may be the most robust competitors. In some product lines the paper and pulp sector is testament to this. But oligopoly - or, even more so, duopoly - may be fertile ground for collusion. We believe that there is prima facie evidence of collusion between our two paper and pulp giants. And our call for greater competition in this sector, does not conflict with our general support for greater specialisation. There is a world of difference between, on the one hand, a clothing or auto firm who operates within the framework of a trade regime that positively discourages specialisation and, on the other, a market sharing arrangement by two market dominating, colluding firms.

The report explicitly acknowledges that it is difficult to garner conclusive evidence in the area of industrial organisation, and that it is difficult to find a conflict-free zone between the imperatives of competition and industrial policies. For this reason our approach to competition policy is cautious and rooted in behavioural, as opposed to structural, transgressions and remedies. This may not be 'first-best' but it is potentially better than the business-as-usual approach effectively proposed by Bell.

By way of conclusion: what space for industrial strategy?

For Bell, macro-economic policy is all important. Macro-economic policies will affect investment which in turn drives output. Productivity is dependent on

the rate of output (or investment) growth. Even where large-scale market failures justify micro-economic interventions, in technology policy and human resource development for example, Bell is sceptical that they will make a significant difference to industrial performance (Bell, 1995:28).

The critical importance of macro-economic policies and the absolute necessity of avoiding macro-economic disequilibrium is accepted. However, contra Bell, this is a necessary but hardly sufficient condition to promote industrial development. As we read it, the lesson of the NICs is that interventionist micro-economic policies including industrial policy and trade protection, can coexist with sound macro-policies and that these micro-economic policies can play a significant role in the promotion of industrial development.

As disturbing, despite Bell's insistence upon the absolute primacy of macro-economic policy, his effective endorsement of an inward-oriented industrialisation path is difficult to square with current macro-economic imperatives. Indeed, as the macro-economic policy desiderata, expressed in the so-called 'Washington consensus', takes increasing hold internationally, and, more important, as barriers to both capital and commodity flows are lifted, the scope for a creative, national macro-economic policy is increasingly circumscribed. In particular, it is difficult to sustain, on macro-economic grounds, the autarky proposed by Bell. This is why, in order to promote development, particularly industrial development, governments are increasingly looking to more micro-economic interventions, particularly in the intertwined realms of industrial and technology policy.

NOTE

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