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# RETHINKING INDUSTRIAL POLICY FOR LOW INCOME COUNTRIES

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I came to Addis in the summer of 2004 with Joe Stiglitz, to participate in what is called a Policy Dialogue. We talked to several groups, including representatives of aid agencies working in Ethiopia. At the meeting with about aid representatives – about 20 of them -- we asked each of them in turn to say something about the priorities of their aid work in Ethiopia. It was striking that they each identified more or less the same priorities, and their priorities were virtually all in the "social sectors" like primary health and primary education, and in "governance". They made virtually no reference to the development of productive capacities. The closest any of them got to the development of "productive capacities" was one who mentioned that "rural roads" was one of his agency's priorities. No-one mentioned anything to do with in agriculture, or irrigation, or manufacturing, or services. When they talked of "improving governance" they were not referring to improving the governance of the processes through which capital accumulation, technological progress, and diversification of production can be accelerated.

I have done a lot of research on East Asia's economic development. The agendas of the aid donors Joe Stiglitz and I talked to in Addis in 2004 could scarcely be more different from the agenda of American aid to Japan, South Korea and Taiwan in the post-war decades (which was large). The comparison is interesting, especially because we know that the Americans in their aid to East Asia after the Second World War were extremely serious about accelerating economic development, because they saw this region as the front-line in the battle against global communism and they needed to have economically prospering and politically stable allies on the front line. So what was their aid directed at in East Asia? It was targeted explicitly at the development of productive capacities, including lots of assistance for the establishment of new basic industries, for improvement of infrastructure like roads, electricity and water supply, and for raising the productivity of

[1] Professor of Political Economy, London School of Economics. Relevant background papers to the argument made here include: Wade, "What strategies are viable for developing countries today? The WTO and the shrinking of policy space", Review of International Political Economy, 10, 4, 2003, 621-44; Wade, "US hegemony and the World Bank: the fight over people and ideas", Review of International Political Economy 9, 2, 2002, 201-29; Keun Lee, John Mathews, Robert Wade, "Rethinking development policy: from the Washington Consensus to the Beijing-Seoul-Tokyo (BeST) Consensus", ft.com, 19 Oct 2007; "Is international financial deregulation a disaster? Yes: Robert Wade; No: Anatole Kaletsky, Prospect (UK), December 2007. Further references below.

agriculture through irrigation and improved crop varieties. It even included assistance for large-scale, semi-expropriative land reforms in all three countries.

Yet for the past 20-25 years the consensus in the donor community has been, implicitly, that the development of productive capacities will result from free markets together with general measures to "improve the investment climate", complemented by investment in primary education, primary health care and the like.

In this talk I shall argue that the governments of low income countries should be giving much more attention to "industrial policy" than they and the aid donors have given in the past quarter century. Second, I shall argue that the focus of discussion about industrial policy should be less on "what activities should be encouraged?" and "what sorts of policy instruments are best?", and more on "how do we organize a process of discovery of sensible objectives and policies, and of implementing those policies day-by-day".

The literature on how to organize industrial policy – and in particular, how to organize the relationship between the public sector and the private sector in the process of formulating industrial policy – is remarkably thin, which reflects the fact that economists have tended automatically to reject the very idea of industrial policy. I shall draw on my research in East Asia to illustrate feasible ideas about how to design an industrial policy process. It is often said that East Asian industrial policy was all about "picking winners", and it depended on the overarching existence of a whole "developmental state". The conclusion is drawn that nothing much can be learned from the East Asian experience in countries where a developmental state is out of the question and there are no obvious "winners" to pick. This is simply wrong.

*1. The case for industrial policy*

There is a theoretical case for deliberate state efforts to accelerate certain activities ahead of others, which takes off from the empirical proposition that in the conditions of low income countries certain kinds of market failures are rampant, and they prevent or hinder private, uncoordinated entrepreneurs from discovering new investment opportunities. [2]

[2] The economics mainstream tends to reject industrial policy with an argument that goes as follows. First, in a market economy there may be cases where "distortions" prevent market prices from signalling marginal social costs and benefits. In principle a government can design taxes and subsidies to correct the distortions so that market prices, as corrected, do signal efficient resource allocation. Second, *in practice* these distortions are generally rare, so if the government limits itself to the correction of market failures the scale of justified government intervention in support of industrial growth would be limited. Third, *in practice* once a government feels legitimized in undertaking a small amount of industrial policy, it is likely to be overwhelmed by "rent-seekers" and "cronies" who hijack the policy and use it for corrupt, self-servicing and

But rather than go through the theoretical argument about market failures, I shall refer to research which suggests that manufacturing and some segments of services are "engines of growth", including in the conditions of low income countries. For example, Heather Wells and Anthony Thirlwall, writing in the *African Development Review*, 2003, find that in a set of 45 African countries for 1980-96 the rate of GDP growth is strongly and *positively* related to the degree to which manufacturing grew faster than agriculture or services.[3] On the other hand, the rate of GDP growth is strongly and *negatively* related to the degree to which agriculture grew faster than non-agriculture. [4]

Two other scholars, Sukti Dasgupta and Ajit Singh, reach much the same conclusion for a sample of 48 developing countries for 1990-2000. However they find that the main distinction is not so much between manufacturing and non-manufacturing, as between manufacturing plus some segments of services, on the one hand, and agriculture on the other. Overall, they find that the services sector has become more like manufacturing, in the sense that it too – since ICTs – has become an engine of growth, unlike agriculture. [5]

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non-productive ends. So even if the distortions turn out not to be rare, the cost of the distortions may well be less than the cost of "intervention" to reduce them.

One answer to this argument stresses the pervasiveness of market failures of a kind which do not feature much in the mainstream view. In particular: (a) Market failures in discovery : Learning what new products can be produced profitably in an economy, and how, is an activity whose social value greatly exceeds its private value. (b) Market failures in coordination: New economic activities often require simultaneous and lumpy investments upstream, downstream, and in parallel, which decentralized markets are not good at coordinating. (c) Market failures in providing missing public inputs: Private production typically requires specific public inputs – legislation, accreditation, R&D, transport and other infrastructure specific to an industry – of which the government has little *ex-ante* knowledge. See Ricardo Hausmann, Dani Rodrik, Charles Sabel, "Reconfiguring industrial policy: a framework with an application to South Africa", typescript, Kennedy School of Government, Harvard University, Aug 31, 2007. Charles Sabel and Sanjay Reddy, "Undoing the Gordian knot of development today", Challenge, Sep-Oct 2007.

[3] Heather Wells and A.P. Thirlwall, "Testing Kaldor's growth laws across the countries of Africa", African Development Review, December 2003. See also A.P. Thirlwall, Growth & Development, With Special Reference to Developing Economies, 8th edition, Palgrave, 2006, 118.

4 Yet many analysts say that the impact of China's rise in labor-intensive manufacturing on Latin America is net positive. For example, a Financial Times report quotes an analyst as follows: "Mr Molano [Walter Molano of BCP Securities, based in Connecticut] suggests the China connection could even pave the way for Latin America to *capitalise on its strengths* as a low-cost producer of raw materials. If that happened it could open the way to the *re-emergence of a development model based on the classical economic concept of comparative advantage* rather than on more recent ideas such as import substitution. '*China gives a new hope to Latin America to be a viable part of the world',* he says". Richard Lapper, "Latin America quick to dance to China's tune", Financial Times, 11/11/04, emphasis added.

[5] Sukti Dasgupta and Ajit Singh, "Manufacturing, services and premature deindustrialization in developing countries", UN/WIDER Discussion Paper 2006/49, May 2006.

Dasgupta and Singh go on to report that most African and Latin American countries have experienced what they call "pathological" deindustrialization since the 1980s, meaning a falling share of manufacturing in both GDP and total employment – even in countries with relatively low GDP per head where one would certainly expect manufacturing's share to be rising rather than falling. They link this pathological deindustrialization to a movement towards production specialization in line with static comparative advantage, which favors agriculture and natural resources. Growing specialization in agriculture and natural resources may yield short-term gains in GDP growth at times of commodity price booms, like now; but makes them very constrained by the balance of payments, and dependent – today -- on the continuation of China's unsustainable investment boom (an investment to GDP ratio of 42% is not sustainable).

These two studies – by Wells and Thirlwall, and Dasguta and Singh – provide support for the proposition that manufacturing (and perhaps some of "services") is an engine of growth, with "social benefits" that far exceed "private benefits". On the face of it, this special role of manufacturing supports the case for industrial policy.

The same broad conclusion comes from research by Ricardo Hausmann and colleagues at the Kennedy School, Harvard University.[6] Their research on production diversification finds that the export bundles of African economies consist of products which, around the world, are associated with very low wages. They construct an index of the "sophistication" of each export product according to the GDP per head of each country which exports the product, weighted by the share of the product in each country's exports. Not surprisingly, rich countries export goods associated with high wages, poor countries export low wage goods. The more interesting point is that there is some variation in the relationship between the sophistication of exports and GDP per head. Some countries have managed to get into the export of products which are *more* sophisticated than normal for their per capital income. These economies – this is the key point – subsequently experience faster growth.

This finding, too, boosts the case for pro-active industrial policy to shift the bundle of exports in the direction of more sophisticated products. But there is a trade-off. It is relatively easy for a producer to diversify from, say, shirts to overcoats – because just about all the inputs needed for making overcoats are already available in the economy (because almost the same as needed for shirts). Hausmann et al. call this a "nearby" diversification in a

[6] Ricardo Hausmann, Dani Rodrik, Charles Sabel, "Reconfiguring industrial policy: a framework with an application to South Africa", typescript, Kennedy School of Government, Harvard University, Aug 31, 2007; Dani Rodrik, "Normalizing industrial policy", typescript, Kennedy School of Government, Harvard University, September 2007.

product map where products are placed relative to each other according to the similarity and difference of their inputs. So "nearby" diversifications may be easy, because most of the inputs needed to produce the new products are already available; but the gain in terms of return on capital and economic growth of diversifying to nearby products -- from shirts to overcoats -- may be small. On the other hand, the gain of diversifying to "distant" products -- from clothing into the steel system -- may be large; but the difficulties will also be large, because steel and chemicals require substantially different inputs from clothing, including public sector inputs.

Against this background, let me turn to industrial policy in East Asia, and in particular, Taiwan.

*2. East Asian industrial policy*

Earlier I said that most economists reflexively say no to the question of "whether" a government should undertake industrial policy. Their emphasis upon the "no" has obscured the question of "how" to do industrial policy well rather than simply less.

To draw lessons from East Asia about the "how to do" question, it helps to forget about "the developmental state" and "picking winners". Begin, rather, with Taiwan's industrial extension service. At the start of Taiwan's post-war development the government created not only an agricultural extension service but also an industrial extension service. Its job, in part, was to do much the same for industrial firms as the agricultural extension service did for farmers.

Called the Industrial Development Bureau (IDB), it comprised in the early 1980s (when Taiwan had about 20 million people) a professional cadre of some 130 industrial engineers, plus another 50 experts in corporate accounting, marketing, and the like. (The 180 staff included only three economists, reluctantly acquired.) As of 1983 it was divided into four vertical or sectoral divisions – the steel system (including steel, machinery, vehicles, etc.), electronics and information, petrochemicals and chemical, and consumer goods – and four horizontal, cross-cutting divisions – one for land use (including export processing zones), another for industrial organization, industrial law, and environmental pollution, a third for coordination with banks, customs, and taxation, and a tiny fourth one for research where the economists were corralled. [7]

One of the IDB's core functions was to maintain a close watch on the productive capabilities of Taiwan's firms and to seek out ways of enhancing

[7] Wade, Governing the Market, Princeton University Press, 2004, 201-208, and "Politics of investment and industrial policy", chapter 9, 256-96.

those capabilities. It was especially alert to developments in the private sector that were already beginning to look successful, which the IDB could help to grow faster than otherwise. Hence most IDB staff were required to spend several days a month, minimum, as part of their job description, visiting firms in their sector up and down the country. They would be looking for ways to improve factory layout, to upgrade machine tools, and to diversify the product range. Hence they had an important role in screening applications for loans from the various concessional credit funds made available by the state, such as the Strategic Industry Fund and the Small and Medium Business Guarantee Fund. (The IDB did not have substantial funding under its own direct control.)

One of their specific tasks was to accelerate the development of supply linkages between the big multinational companies operating in the country, like Phillips, and domestic suppliers – as a means of upgrading the technological capacity of domestic firms.

Here is an example of how the IDB worked subtly to do this. In the early 1980s Phillips was making TVs in Taiwan, and importing a certain kind of specialized glass from its factory in Japan. The IDB team covering the glass industry identified two or three Taiwan glass makers which in their view had the productive capability to make the jump in product quality needed to produce the specialized glass at a price close to the import price. They discussed the possibilities with the firms. The firms said they would invest in the necessary equipment – provided they got a long-term supply agreement with Phillips. The IDB officials went to Phillips. Phillips said it was quite happy with its present arrangement of importing the glass from its factory in Japan, and declined to even enter discussions with the Taiwanese glass makers. But soon Phillips found that its applications to import the glass, which had previously been automatically and quickly approved, began to be delayed. Phillips contacted the Minister of Foreign Trade, who apologized profusely, and explained that even he was not always able to get the inefficient trade bureaucracy to work quickly. He promised he would investigate. Nevertheless, the delays lengthened, and lengthened again. Eventually Phillips got the message, and entered into discussions with one of the Taiwanese glass makers. The upshot was that Phillips offered a long-term supply contract, and the contractor invested in the upgraded equipment. Before long the Taiwanese glass maker was exporting some of the specialized glass.

I tell this story because it illustrates a process of “nudging” that was going on in Taiwan all the time, week after week, decade after decade as Taiwan moved up the world technology ladder into the high tech sectors. IDB engineers nudged Taiwan-based firms to keep improving, keep diversifying, telling them about new possibilities, pointing them to sources of concessional

finance, and sometimes using their influence over import licences to get multinationals operating in Taiwan to switch from imported inputs to domestically-produced inputs. The nudging was done with a close eye on

(a) what was being imported in each sector, and by whom, and

(b) the price and quality of the imports.

IDB officials were well aware that their nudging of importing firms to switch suppliers (of targeted products) to domestic firms had to be constrained by the need to keep the price differential between domestic substitutes and imports fairly small. They were able to arrange trade protection for a new domestic important substitute for a time – but only for a time, during which the domestic supplier had to get the price down and the quality up to international standards.

This mechanism is worth elaborating a bit more, because it illustrates the falseness of the standard view that import substitution with trade protection knocks out competitive pressure and allows firms to grow lazy. Let me illustrate with the case of videocassette recorders (VCRs), which the IDB was keen to promote as a strategic product in the early 1980s. It identified two Taiwanese firms with the capacity to make VCRs. IDB agreed to give them a ban on imports from Japan (the only competitive source of supply) for a period of 18 months, and then to review the position. However, it turned out that towards the end of the 18 months the price of the domestic VCRs was still well above the price from Japan. The IDB began to inform the firms and the business press that

"if domestic manufacturers do not achieve international standards for technology and price within the period of guidance... then the government might consider bringing in foreign companies for joint investment ventures.... Foreign companies that invest in VCR production in Taiwan must promise to expand their exports in ratio to the percentage of shares they hold in the companies. The goal in this is to promote the development of VCR production technology in Taiwan and to establish an independent local industry" (Economic News, 9 May 1983).

Next, the government decided to allow Sony to invest on condition that 50% of the joint venture company's production be exported and that local content initially reach 35%. Despite the objection of the two local companies which had already invested in VCR production the government stuck to its position and lifted the import ban. The two local companies then sought out rival Japanese joint venture partners to compete against the new one led by Sony.[8]

[8] Wade, Governing the Market, 2004, 207-8.

All this is about accelerating an incremental process of upgrading and diversification. It is a long way from "picking winners", a long way from the government taking big gambles on investments which private firms would not take. It is based on dense interaction between IDB officials and private firms, in an informal and bilateral way.

On the back of this core industrial extension work the IDB also did a lot of sectoral planning, including drawing up lists of products to be given fiscal investment incentives and lists of tariffs and import controls. One American manager described the IDB as "the spear throwers, the shock troops, the main point of contact between foreign companies and the bureaucracy".

In this sectoral planning work the IDB worked quietly with Taiwan's industrial associations. The Taiwan state being, in the early 1980s, still an authoritarian regime, the government *required* any market segment with more than five firms to have an industrial association. The administrator of each association was appointed not by the firms, but by the state. His job was to mediate between the preferences or demands of the firms and the preferences or instructions from the state. Taiwan's dense array of industrial associations was first and foremost an instrument of government political influence and intelligence; but it also functioned as a means of getting information to the IDB about productive capabilities through a different and higher-level channel than the bilateral dealings between sectoral teams of IDB engineers and particular firms.

In addition to this kind of *incremental* industrial policy, the Taiwan government also undertook another, much bigger kind of industrial policy, closer to "picking winners". It was heavily involved in creating basic industries like steel, ethylene, and semi-conductors. The IDB was complemented by a much higher level Council for Planning and Development, where large-scale planning about the economy's future evolution took place. The Council for Planning and Development was chaired by the deputy prime minister or the governor of the central bank over many years leading up to the early 1980s, and it directly responsible to the cabinet. Among other things, it functioned as a think tank for economic questions dealt with by the cabinet.

Operating in parallel and to some extent in competition with the Council for Planning and Development was the Science and Technology Advisory Group. This was a group of 7 to 10 experts in science and technology, some of whom were Taiwanese, some of whom were non-Taiwanese, but all of whom were based *outside* of Taiwan. For example in the early 1980s a former French minister of science and technology was a member, and a former chief scientist of IBM. The group met twice a year for several days at a time, once in Taiwan, once outside Taiwan. It did two

things. One, it scanned the world technology frontier for developments that might be relevant to Taiwan, and directed Taiwanese officials' attention to them. Two, it scrutinized some high tech projects being proposed for Taiwan – the production of robots, for example – in the light of its knowledge of relevant developments happening in the rest of the world.

I should also mention here that Taiwan had a special agency devoted to attracting FDI to Taiwan, and a *separate* special agency, called the Investment Commission, which scrutinized FDI proposals from the point of view of making sure they benefited Taiwan.

However, I won't say more about big-scale and high-tech industrial policy in Taiwan here, because most of the existing literature on East Asian industrial policy has focused at this end of the spectrum. Here I have stressed the small-scale industrial policy and industrial extension end of the spectrum, which is more relevant for low income countries.

*3. Government leadership and followership*

Let me make the distinction I have just made more explicit. Think of a simple 2x2 matrix. On the vertical axis is the distinction between government "leadership" of the market (or private firms), and government "followership" of the market. Government leadership of the market is intended to lead decentralized private producers to do something they would otherwise not want to do in the absence of public support – to enter new sectors or make big jumps in production technology, for example. Government followership, on the other hand, is intended to bet on some of what the private sector is already doing or about to do, in order to accelerate movement in that direction.

On the horizontal axis is the scale of public assistance: big or small. It may refer to public funding, or the magnitude of concessionality in credit, or the size of tax incentives, or the magnitude of protection.

The standard picture of industrial policy, as painted by the critics, presents only one of the resulting four cells as constituting "industrial policy": namely, government leadership of the market on a large scale.

However, much East Asian industrial policy was in a followership mode, and each intervention was on a small, incremental scale. This cell, I argue, is of greater relevance as a model for industrial policy in low income states today.

*4. Features of the industrial policy process*

Taiwan industrial policy shows several design features which make good sense, and might be adopted elsewhere.

First, the industrial policy support measures were designed so that they were kept targeted at new products or new processes, and as more producers came to be able to produce the products or use the processes, the criteria of eligibility were raised so as to keep the incentives targeted at the frontiers.

For example, Taiwan used a set of fiscal investment incentives whereby producers of stipulated products or processes received one or more reductions in tax or accelerated depreciation allowances. For example, one product in the list of electrical equipment products eligible for fiscal investment incentives in 1982 was "high-efficiency fluorescent tubes, limited to those which have an intensity of illumination of 80 lumens or more. [9]

Conversely, the industrial support measures had sunset clauses – such as an explicitly announced time period beyond which they would expire, or a regular review of the items eligible for incentives.

Second, the IDB officials in a position to help secure financial assistance to firms (but only help, for recall that the IDB had few resources under its own control) were well aware that they had to constantly look at the size of the gap between the prices and quality of imports and domestic substitutes. They knew that they could not impose too much of a handicap on firms when forcing or encouraging them to switch to domestically-made substitutes – and especially not when the firm was a multinational company and when it was an exporter. In this way they tried to "square the circle", by giving domestic producers of import substitutes some protection (whether trade protection or other financial help) while also keeping them under international competitive pressure. In short, they had benchmarks for success, which were derived from international comparators.

Third, the staff of the IDB were for the most part meritocratically selected, including by formal examinations. But sometimes it happened that the government decided to make a big push into a certain sector – such as automobile components – and found that the IDB staff were not up to the job, not up to date. In such cases it created special "task forces" comprised of experts in the sector who did not have to pass through normal civil service recruitment channels and who could be paid more than main-line IDB staff; and gave each task force responsibility for driving through change in its area. Sometimes the resulting competition had the beneficial effect of stimulating the by-passed team in the IDB to upgrade its quality in order to get some of the action.

[9] Wade, Governing the Market, appendix 1.

The fourth point is that the IDB staff were "embedded" with the private sector, first at the level of the sectoral teams and their regular visits to factories up and down the country, and second, at the level of their contacts with industrial associations, especially the administrators of the industrial associations.

The fifth point is that Taiwan's industrial policy was the responsibility of not one but two high ranking cabinet ministers – the Minister of Economic Affairs and a Minister Without Portfolio who supervised the work of the Science and Technology Advisory Group. And as I mentioned, the overarching Council for Economic Planning and Development was chaired for many years by either by the deputy prime minister or the governor of the central bank (who was a member of the cabinet).

## 5. *Conclusions*

A speech about organizational arrangements and organizational processes is almost guaranteed to be dull. I have talked about these matters here in the hope of countering a pervasive negativism I detect about the possibilities of low income countries diversifying their production structures into manufacturing and higher value-added services. The negativism is fed by Washington Consensus ideas – expressed in World Bank policies and conditionalities, such as the Poverty Reduction Strategy Program (PRSP) – that the development of productive capacities will occur by itself provided the government ensures a good investment climate.

The negativism is fed, second, by the conviction that the tasks of industrial policy are beyond the capability of agents in low income countries to carry out; that if a government tries, the result will be corruption, rent-seeking, and ineffectiveness.

And thirdly, the negativism is fed by the fact of the "China price", the ability of Chinese producers to land manufactured goods in most parts of the world and sell them profitably at prices substantially below the prices that domestic or regional producers have to charge to make a profit.

I have no magic bullet to solve the real problems of low state capacity and the China price. What I have done here is to sketch the outlines of an approach to industrial policy – illustrated by the concrete realities of Taiwan – which does look to be more viable than the many critics of industrial policy say, and which cannot be dismissed with the jeer that "bureaucrats can't pick winners". I suggest that it is of the first importance that the governments of low income countries actively go beyond the objectives of the Millennium Development Goals and seek to diversify the production structure.

Expanded trade – particularly expanded exports of manufactured goods – has a key role to play in this process. Here let me mention the Economic Partnership Agreement (EPA) which the European Commission is trying to get the ACP countries to sign by December 31, 2007. This agreement, with its requirement that the ACP countries move quickly to free trade and free capital movement, will make it more difficult for ACP producers and foreign firms based in ACP countries to expand manufactured exports and develop the domestic or regional market for locally-produced manufactures. The EC is saying that "there is no alternative" – either you sign by December 31 or your exports to the EU face significantly higher tariffs. The ACP countries should be insisting that some of the alternatives to the EPA -- which have been proposed but which the EC refuses to consider -- are put on the negotiating table.

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