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INDUSTRIAL POLICY REDUX

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THE MIDDLE-INCOME TRAP

The protestors in Egypt, Tunisia, Yemen, Jordan, Syria, Gaza, and Algeria are denouncing not only their oppressive rulers but also their joblessness. Again and again, from university graduates to day laborers, they have vented their anger to interviewers, exclaiming “I have no job”.

Their protests underline the urgency -- at the global level -- of achieving a more labor-intensive pattern of economic growth; one which must also be, in view of global warming, energy-saving.

Yet governments and firms in the Middle East – as in other middle-income countries around the world – find themselves caught in a “middle income trap”. They cannot compete with firms producing standardized products in lower-wage countries; and they cannot compete with firms producing more technology-intensive goods and services in higher-wage countries.

Southeast Asia is a good example. Malaysia, Thailand and Indonesia have experienced deep structural change towards manufacturing since the mid 1970s, especially in electronics, electrical engineering, textiles and autos. They have built up production and management skills to match the productivity levels of developed countries in standardized commodities. Few other developing countries have experienced such growth of

¹ This paper draws on ideas elaborated in Wade, Irrigation and Agricultural Politics in South Korea, Westview Press, 1982; Governing the Market, Princeton University Press, 2004; “Industrial policy in East Asia: does it lead or follow the market?”, in Gary Gereffi and Donald Wyman (eds), Manufacturing Miracles: Paths of Industrialization in Latin America and East Asia, Princeton University Press, 1990, 231-66; “After the crisis: industrial policy and the developmental state in low-income countries”, Global Policy, 1, 2, May 2010, 150-61; “Why Justin Lin’s door-opening argument matters for development economics”, Global Policy, 1,3, 2010, ___.
manufacturing capacities. On the surface they look set to join the “developed countries” within the next two decades (as did South Korea and Taiwan by 2000). Yet in contrast to Taiwan and South Korea at the equivalent stage of development, none of them – including the wealthiest, Malaysia – has built an indigenous capacity to design, innovate and commercialize into new and more profitable sectors, and few firms have created even regional brand names. All of them remain heavily dependent on MNCs for their higher-tech manufacturing exports. Most important, backward links from MNC operations into the domestic economy are thin, with the result that domestic value-added in manufacturing remains low.

Indeed, as China advances in these respects (including backward links from MNC operations, and domestic innovation capacity), it is leap-frogging the Southeast Asian economies, putting them under even stronger competitive pressure. Moreover, Chinese firms are re-concentrating within China what previously were regional value chains, so that instead of shipping components from Southeast Asian factories for assembly in China, as before, they are placing factories out in lower-wage western provinces. This re-concentration of value chains redoubles the problems for component manufacturers in Southeast Asia.

A recent study of Malaysia finds that real wages declined in 2002 – 2008, and the average skill intensity of production also declined. It concludes,

“Malaysian industry appears to be sliding down the technological slope, and the incentives for workers to improve their skills are weakening… technological capabilities are relatively static (and may even be declining)... industrial competitiveness is marking time”.

THE RENEWED INTEREST IN INDUSTRIAL POLICY

Growing awareness of the middle-income trap is one of the drivers of renewed interest in industrial policy – and impatience with the policy and institutional norms of the free market Washington Consensus. (“Renewed interest”, because industrial policy was a live subject in both developing and developed countries until the neoliberal revolution of the 1980s.)

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Another driver comes from the developed countries in the wake of the financial crash and long slump. The crash has broken the aura of “infallibility” around “the market” -- the aura sustained by beliefs of the kind expressed by Larry Summers,

“The laws of economics, it is often forgotten, are like the laws of engineering. They hold everywhere” [CHECK]

Thanks to the crisis, government is suddenly no longer the problem, it is the solution (to reverse Ronald Reagan’s dictum). The Obama administration’s efforts to raise lending, defend the auto sector, and boost innovation in selected sectors (particularly energy, medical, pharmaceuticals, IT) have propelled industrial policy to the center of political attention, though generally not called by that name. Both in the US and in other developed countries running large current account deficits (the US deficit in 2008 was roughly equal to India’s GDP), concern to increase exports and substitute domestic production for imports has also directed attention towards sectorally-targetted industrial policy.

The conjunction of these two forces for renewed attention to industrial policy – one coming from middle-income countries, one from some developed countries, notably the US – is prompting parts of the World Bank to moderate its prior hostility to the very idea of industrial policy, and begin to ask about how to do industrial policy (IP) better rather than simply less. This is a potentially significant change in the climate of ideas, because while the World Bank is no longer important as a source of finance for middle-income countries it remains important as a source of norms about best policies and best institutions.

In this essay I identify four “arguments” in the debate about industrial policy – the market fundamentalist, the hierarchist (in two varieties), and the mesoist. Against this background I then summarize key features of US IP (yes, it exists); Northeast Asian IP (Japan, South Korea, Taiwan); and new developments in World Bank thinking.

FOUR ARGUMENTS IN THE INDUSTRIAL POLICY DEBATE 3

(1) Market fundamentalists: “don’t do it”

3 In presenting the four arguments I have drawn on the important essay by Andrew Schrank and Josh Whitford, “Industrial policy in the United States: a neo-Polanyian interpretation”, Politics and Society, 37, 4, 2009, 521-53.
The dominant view about industrial policy among western-oriented economists and policy makers for the past three decades has been: “don’t do it”. As Nobel Prize winner Gary Becker said, “The best industrial policy is none at all” (1985).

Here are some more quotes which illustrate the still-dominant mindset:

- “We know industrial policy did not make a difference in East Asia because we tried the same thing here [in UK] and it didn’t work” (senior UK Treasury official speaking to Wade, 1990)

- “For every Korea there are 100 failures. Who would you put your money on?” (World Bank economist speaking to Wade, 2010)

- “In Dubai we don’t believe in planning or what you call industrial policy. We believe in the free market.” (CEO of Dubai Chamber of Commerce, in response to talks on smart industrial policy by Rodrik and Wade, 2011)

The World Bank has hardwired neoliberal norms into its basic operating procedures through its Country Policy and Institutional Assessment (CPIA) formula. Every September to May the Bank undertakes an exercise in which it scores each of its borrowing countries by this formula, and the resulting score greatly affects the policy dialogue with all of its borrowers, and in the case of low income countries, it directly affects the amount of World Bank lending to each country. The formula distinguishes several major policy and institutional domains, and deploys several indicators within each domain. The scoring criteria reflect the Bank’s beliefs about the best policies and the best institutions for all developing countries.

The scoring criteria come directly from the Washington Consensus. For example, to get the top score on “trade policy” a country must have a completely free trade regime, with very low maximum tariffs, no sectoral variability in tariffs, no quantitative restrictions on trade, and no export subsidies. In other words, the

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5 The Bank official in charge of the CPIA formula is Rui Coutinho.
optimal degree of openness is maximum openness. To get the top score on financial institutions the country must have no targeted and concessional credit (for example, to priority industries). To get the top score on “labor market institutions” a country must have almost no worker protections.

The underlying argument takes “the market” as a “natural” institution which contains powerful negative feedback mechanisms, such that it is largely “self-regulating”. Hence “competition” can generally be relied upon to drive efficiency and innovation.

The argument then says that public “intervention” is only justified when (1) markets fail to produce social optima, and (2) the intervention can be presumed to move the outcome closer to the social optima at a cost less than the gain. The conclusion is that in the real world, both conditions are rarely satisfied. Hence the slogan, “Government can’t pick winners, but losers can pick governments”.

The right public policy to promote economic growth is therefore to remove obstacles to markets; build good institutions to protect the price system; and use foreign technology. These are the ideas we know as neoliberalism, or unkindly, “market fundamentalism”.

(2) Hierarchists: “create a developmental state”

Whereas economists and policy makers for the past three decades have tended to take neoliberal economics as their center of gravity, political scientists who have studied industrial development empirically have tended to give a more positive evaluation of the role of the state. Foremost among them is Chalmers Johnson and his research on Japan’s renaissance after the Second World War. 6 Alice Amsden, a decidedly heterodox economist, made a broadly similar argument as Johnson in her study of Korea’s rise during the 1960s to the 1980s. 7

According to what is often called “the developmental state” argument, “the market” is not a “natural” or spontaneous institution (cf market fundamentalism), and market failures are

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6 Chalmers Johnson, MITI and the Japanese Miracle, ___.
7 Alice Amsden, Asia’s Next Giant, ___.

pervasive not only in developing countries but also in frontier industries in developed countries. Government “intervention” may be warranted both to build some markets and to remedy some market failures -- that is, “hierarchical” mechanisms of coordination of firms and investments may be warranted. Johnson and Amsden emphasised the vital coordinating role of apex pilot agencies like MITI and Ministry of Finance in Japan, and the Economic Planning Board in South Korea.

The broad policy conclusion is: “Do industrial policy better, not less”. In this approach both developing and developed countries (including the US) should build apex pilot agencies and target specific sectors for growth and contraction.

(3) Hierarchists: “Don’t do sectoral industrial policy in a decentralized polity”

A variant of the hierarchist approach comes from analysts of the US IP experience, including Robert Reich, Ira Magaziner, Peter Hall, David Soskice, and others. They accept that IP worked well in the centralized polities of East Asia. They argue, however, that the success of sectoral IP (targeting specific industries) depends heavily on the political structure in which it is formulated and implemented. It is likely to be ineffective in the context of (1) a federal structure, (2) strong separation of powers between legislature, executive and judiciary. In these conditions there may well be a lot of IP, as vested interests capture the relevant parts of the state apparatus and obtain programs to their advantage; but it will be uncoordinated and ineffective when judged by a national interest test. In short, IP in a fragmented political structure is both “inevitable and ineffective”.

The broad conclusion, then, is that sectoral IP may work in centralized polities but not in decentralized ones. Analysing varieties of capitalism, Peter Hall and David Soskice declare that “non-market coordination” is bound to fail in “liberal market economies”, and warn policy makers in this type of capitalism “to avoid agencies interventionist enough to interfere with the operation of market mechanisms”.

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The policy conclusion is that policy in non-centralized liberal market economies should stick to “horizontal” (not “sectoral” or “vertical”) interventions designed to make (all) markets work better: macro stabilization, provision of public goods, anti-trust, R&D subsidies (available for any R&D).

(4) Mesoists: “IP can foster supra-firm structures, like networks”

Much recent writing about industrial development in both developing and developed countries has been pitched at the “meso” level of analysis, between the “macro” (economy-wide) and the “micro” (firm). The meso level is the level of supra-firm structures, especially networks and industrial districts (firms in close physical proximity). Whereas it is conventionally assumed that firms are coordinated either through market mechanisms (in which their interactions are governed mainly by price, courts or contracts: “one shot deals”) or through hierarchical mechanisms (based on ownership rights or legal sovereignty), analysis at the meso level emphasises a third basic mechanism of inter-firm coordination, networks (where relationships are not based primarily on price, courts or contracts, but on more multiplex “special relationships”).

Analysis at the meso level in conventional neoclassical economics mostly stops with the concept of “agglomeration economies”, where atomistic firms derive benefits from co-location (proximity), including reduced transport costs. The recent meso-level analysis emphasises, rather, clustering and network building as intentional acts, part of firm strategy; and puts them in the context of an economics based on assumptions of limited-foresight, learning, and path-dependency, rather than of equilibrium and rational expectations.

The basic argument is that coordination other than through markets and hierarchies can have big private and social gains -- that participation in networks, especially when the networks are spatially concentrated (industrial districts), can raise learning, productivity, and innovation.

But second, “network failures” are common; basically because competing firms don’t like to cooperate when one firm’s

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sharing of knowledge rebounds to the private benefit of other firms. When network failure occurs (either existing networks are abandoned or networks fail to arise in the first place), firms interact only through what may be sub-optimal modes of markets or hierarchies, foregoing rewards of reciprocity.

Third, government agencies can play an active role in helping to form and sustain networks linking scientists, engineers, entrepreneurs, venture capitalists, and aimed at fostering the growth of new firms and industries. They can do so, for example, through grants or subsidies, and through something like an industrial extension service for firms in targeted sectors.

US INDUSTRIAL POLICY 11

As suggested above, the standard view of US IP is that, to the extent it exists at all, it is ineffective judged against a national interest test. In Michael Mann’s words,

“There is no serious American industrial policy; this is left to the post-war powerhouses of the US economy, the large corporations. Much of this [IP failure] is due to the radical separation of powers enshrined in the US constitution. A coordinated political economy cannot easily be run by a President and his cabinet, two Houses of Congress, a Supreme Court and fifty ‘states’ (which are also fragmented by the same separation of powers) – especially when they belong to different political parties”.12

However, recent research by Fred Block, Charles Sabel, Andrew Schrank and Josh Whitford, among others, suggests that by using a different lens – the one described above as “mesoist” -- a whole array of US IP comes into focus. This research reveals that not only does the US have vigorous industrial policy, but also that, prima facie, it is quite successful (at the high-tech end), contrary to the expectations of the earlier-mentioned hierarchists. In Schrank and Whitford’s words,

“The federal government has been pursuing industrial policy within decentralized political institutions for well over a generation... American industrial policies go beyond preservation of market competition, maintenance of macro stability, and provision of public goods to address

firm-specific needs in a host of different ways and through a variety of different agencies”. 13

It has been missed by most analysts because they have equated IP with East Asian-type IP: with centralized coordination agencies and national programs to develop specified industries. But the fact that the US has had no apex (top-down planning) agencies akin to MITI and Ministry of Finance in Japan does not mean it has had no IP.

A lot of US IP can be understood as operating at the meso level -- creating networks and overcoming network failures – as distinct from remedying market or hierarchical failures. It is comprised of programs run by national, state, and local agencies, which themselves are relatively uncoordinated. At national level the agencies include the National Institutes of Health (NIH), Advanced Research Projects Agency (ARPA), National Institute of Standards and Technology (NIST), Small Business Administration (SBA), and more. They fund R&D in selected sectors, and use their control of funding to build and sustain networks between firms, scientists, engineers, and venture capitalists. NIST organizes Manufacturing Extension Partnerships (MEPs) in specific geographical areas to provide manufacturing advice to local firms. SBA makes Small Business Innovation Research (SBIR) grants. Federal agencies with large research budgets (like NIH, Department of Energy) are required to allocate 2.5% of grants to the SBA, which in turn distributes about 5,000 awards to 1,500 small firms per year. These awards are especially important in bridging university and commerce; for example, more than two thirds of the recipients include an academic or former academic among their founders.

SEMATECH is a famous example of network-building IP. It was formed in 1987 at the initiative of the Advanced Research Projects Agency, in response to the virtually disappearance of American companies able to make the equipment needed to make semi-conductors. The frontier equipment makers were all Japanese, which tended to hold back the latest generation equipment for six months and more for “testing” – by Japanese semi-conductor makers, giving the latter a strong competitive advantage over American rivals. ARPA rounded up 14 American semi-conductor makers, and (against some resistance) encouraged

them to form a consortium to pool R&D and manufacturing capacities, and re-enter the production of semi-conductor equipment. The firms cooperated and SEMATECH flourished when the semi-conductor cycle was down; then the firms would willingly send top-quality staff to work with SEMATECH. But when the cycle was up they were less willing to cooperate, and ARPA’s funding and willingness to bang heads together helped to keep the consortium going. But by 1996 it was well enough institutionalized that its Board decided it could flourish without any more federal funding. It continues to flourish to this day.

One study summarizes the overall state of US IP as follows:

“Below the ideological surface, a powerful ‘jerry-built’ substrate has emerged of federal, state and local government innovation support programs each filling gaps in the other”.14

An official involved in these programs said, “We definitely see the programs as a de facto industrial policy, but we cannot use that term, so we usually call it R&D policy”.15

Contrary to hierarchists, the decentralized, meso-level US IP has economic advantages: it better fits the US’s increasingly decentralized production structure. The previously vertically-integrated firms have become increasingly de-integrated, with a corresponding growth of smaller-scale firms scattered around the country. As their share of production grows, so the gains from networking grow. By being brought into innovation networks they are more likely to compete on the high road (high skills, innovation) than compete on the low road (cheap wages). Moreover, decentralization – with programs run by many agencies at different levels and locations -- allows for experimentation.

It is, however, difficult to evaluate the economic rate of return of such scattered programs, especially by cost-benefit analysis. What can be said with confidence is that:

- the programs have developed valuable products and processes;

15 Quoted in Schrank and Whitford, op.cit., at n.93, from Etzkowitz et al., ibid., p. 314.
- the programs have been able to withdraw benefits from “losers”, at least in the civilian industrial sector, as distinct from agriculture and defence;

- firm networks not encompassed in public network programs have a higher rate of decline or breakup – which on the face of it argues for the value of public involvement.

For example, Sherrie Human and Keith Provan report that of the small firm networks (outside public programs) they studied in the mid 1990s more than 60% had broken up by the time of their restudy in 1998.\textsuperscript{16} And Maryann Feldman and Maryellen Kelley provide evidence that firms within publicly sponsored networks are more likely to sustain collaboration than those outside.\textsuperscript{17}

\textbf{EAST ASIAN INDUSTRIAL POLICY}

The defining feature of capitalist East Asian IP (as practiced in post-war Japan, South Korea, and Taiwan) is its centralization in the form of apex coordination agencies. However, less well-known is the dense incorporation of state companies and private companies into the process of defining objectives and instruments. For example, industries were intensely organized into associations. In Taiwan, any set of firms in the same sector (even “feather exporters”) which numbered five or more was required to form an industry association (such as a Taiwan feather exporters association); with a government-appointed secretary (and president elected by the members).

Also less well known is the public industrial extension services which operated in these economies, acting partly like “street level bureaucrats”. For example, Taiwan had an Industrial Development Bureau, supplemented by free-standing Task Forces (such as the Automobile Task Force, and the Factory Automation Task Force).\textsuperscript{18}

Their functions were:


(1) to promote a three-way flow of information – from the factory floor to the center of economic policy making, from the center to the factory floor, and between firms;
(2) build networks between firms (including supplier-buyer links);
(3) promote import substitution in selected sectors;
(4) promote exports.

For example, Taiwan’s Industrial Development Bureau had a staff of roughly 180 in the early 1980s, mostly engineers. They were divided into teams. Four vertical or sectoral teams (metals and metal machinery, electric-electrical, chemicals and petrochemicals, and daily necessities); and three horizontal teams (industrial estates and EPZs, industrial regulations, and research, the latter being where its three economists were corralled). Each member of one of the vertical teams was required to spend several days a month in factory visits.

Here is an illustration of how the IDB kept nudging firms operating in Taiwan – domestic and foreign – to upgrade and diversify their production, decade after decade. At a time in the early 1980s the IDB officials dealing with glassmaking considered that some Taiwan glass makers could step up the quality of their production to match the specialized glass which a Philips factory was importing for its TV sets, provided Philips would give them a risk-reducing supply contract. The officials approached Philips, which declined even to consider the suggestion. Soon Philips’ applications to import the glass, previously quickly and automatically approved, began to be delayed. And delayed. Philips complained – to no avail. To cut a long story short, eventually Philips got the message, made a long-term supply contract with a couple of domestic glass makers and gave them technical help, and soon stopped importing the glass. Before long, the Taiwan glass makers began to export some of the specialized glass. This is a case where an extra-market push provided by public industrial policy officials helped to nudge the production frontier in Taiwan up the technological ladder.

To repeat, this kind of nudging has been going on in Taiwan for decade after decade, but has received little attention from those who write about industrial policy – whose attention has tended to be captured by programs like the “Five Year Plan to Develop the

Automobile Industry” (which failed, though the subsequent plan to develop auto components was much more successful).

THE WORLD BANK’S PARTIALLY REVIVED INTEREST IN INDUSTRIAL POLICY

To pick up the point made earlier: the World Bank, or a part of it, has recently begun to talk about industrial policy in a more positive light. This modifies the three decade long embrace of the Washington Consensus, during which time the Bank’s experts on industrial development and industrial technology were invited to find employment elsewhere, and replaced by good governance specialists, poverty reduction specialists, environmental specialists, privatization specialists, and the like.

The recent change has been propelled by the arrival in 2007 [CHECK] of Justin Lin as chief economist, the first-ever non-G7 chief economist. Lin is Chinese; and very importantly, has a PhD in economics from the University of Chicago, an imprimatur of reliability in the eyes of the American economics profession. Drawing on his knowledge of East Asian industrialization and of theories about stages of growth (such as the work of the Japanese economist Akimatsu beginning in the 1930s) 20, Lin has pushed the idea that “development” is about not only higher levels of income and consumption (the focus of the Bank’s “poverty reduction” mandate) but also changes in production structure, a subject that has – surprisingly – received rather little attention under the rule of the Washington Consensus (which presumes that whatever changes in production structure resulting from freely working markets must be optimal, with only a few exceptions). Lin argues that governments can usefully push firms to diversify and upgrade their production – with the caveat that government efforts should stick within the economy’s existing comparative advantage (undefined).

Lin has spelled out six steps for strategic government intervention in a specific country: 21

(1) Government (G) identifies a list of goods and services produced over the previous two decades in dynamically growing countries with similar endowment structures and average GDP 100% higher.

(2) Among listed industries, G gives priority to those in which some domestic private firms have already entered, helps remove obstacles to their development.

(3) Some listed industries may be completely new to domestic firms; in such cases, G could adopt specific measures to attract firms in the higher-income countries identified in step (1) to invest in these industries.

(4) G should pay attention to private enterprises’ successful discoveries of industries not included in list, & provide support to scale up those industries.

(5) In developing countries with poor infrastructure and unfriendly business environment, G can invest in industrial parks or export processing zones and make necessary improvements to attract domestic private firms and/or foreign firms willing to invest in the targeted industries.

(6) G should give limited incentives for domestic firms or foreign investors that work within list of industries in step (1) to compensate for public knowledge created by their investments.

   It would be quite wrong to conclude that Lin and his ideas for strategic government intervention in industrialization have persuaded most World Bank economists. On the contrary, the author’s field work in the Bank during the summer of 2010 revealed that many dismiss the arguments with the annoyance one might direct towards a fly, in the tone expressed in the quotes at the start of this essay.22 The rejectors include many in the research vice presidency of which Lin is the head.

   On the other hand, some World Bank operational economists are desperate to respond to borrowing governments’ requests for help in building competitive industries, and are casting around for guidance as to how to do so.

   Here another important development is the appointment of a senior McKinsey executive, Janamitra Devan, as vice president for Financial and Private Sector Development (FPSD), in early

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22 This field work was done jointly with Jakob Vestergaard of the Danish Institute of International Studies.
Devan, as a former McKinsey executive not marinated in neoliberal economics, sees the potential of industrial policy. With his encouragement the FPSD vice presidency is leading an effort to form what it calls Competitive Partnerships Initiatives (CPI) with a number of borrowing country governments. (The CPI designers do not use the term “industrial policy”, which escapes their lips only in private.) Under the CPI, an array of mostly already existing Bank and International Finance Corporation (IFC) tools of lending and advice are focussed on specific industries identified by the government (with Bank help, guided by the sort of steps Lin laid out). Implicitly, these industries are to receive more public support than others. The CPI is currently being piloted in Kenya, and more countries are in line to begin pilots shortly.

So the change underway at the World Bank, both in talk and action, is still in early days. But it is potentially of far-reaching significance for changing the prevailing income and consumption-based notion of development by re-introducing production upgrading and diversification and concepts of individual and collective experimentation and learning. It is worth watching out for.

CONCLUSIONS

Multiple causes have come together to make it no longer “common sense” for mainstream economists and policy makers to dismiss the idea of public agencies giving a “directional thrust” to the economy’s future growth with the jibe that “governments can’t pick winners but losers can pick governments”. These include the demands on middle-income governments for help to their firms in breaking out of the middle-income trap (and specifically in competing against products made by Chinese firms), and demands on developed country governments for help in boosting productivity in frontier industries, including in ones such as solar panels and wind turbines where low-wage China is mounting a big, industrial policy-assisted push. The causes also include surging research by heterodox economists using ideas from corporate strategy, behavioural economics, disequilibrium economics, evolutionary economics; and from political scientists and public policy specialists studying the intersection of corporate, supra-corporate, and industrial policy governance.
This new awakening recognizes that industrial policy is not a single thing which is either present or absent. It comes in many shapes and sizes, which have in common the aim of boosting firm productivity and production diversification by sectorally-targetted methods rather than just across-the-board methods.

Some of the relevant distinctions in terms of types and degrees of industrial policy are the following:

- big/small,
- leading/following the market,
- horizontal/vertical (sectoral),
- centralized/decentralized,
- correcting market failure/correcting network failure.

For example, one can make a simple 2x2 matrix: big/small, leading/following the market, and then plot a country’s use of industrial policy in a given industry, or range of industries, across time. Much East Asian industrial policy, as I have emphasised, falls in the small-followership cell, in the sense that it did not entail significant resources and tended to support ventures which private firms were keen to do anyway – or nudge them at the margins to do a bit more. But accumulated over leading sectors and across decades, such nudging was probably an important source of upgrading and diversification, even though hard to measure. The United Kingdom, by contrast, had no such policy and its organizational back-up. The UK’s industrial policy, such as it was, was mainly focused on propping up failing firms for employment reasons.

Clearly the appropriate instruments, and the risks of failure (eg capture by beneficiaries), vary between the different sides of the above distinctions. The fact that most developing countries do not have the “state capacity” to do “big-leadership” industrial policy in the way that the Japanese, Koreans and Taiwanese did does not mean there is no scope for effective industrial policy. An apex pilot agency is neither a necessary nor sufficient condition of effective industrial policy, as the US case of building networks illustrates.

END