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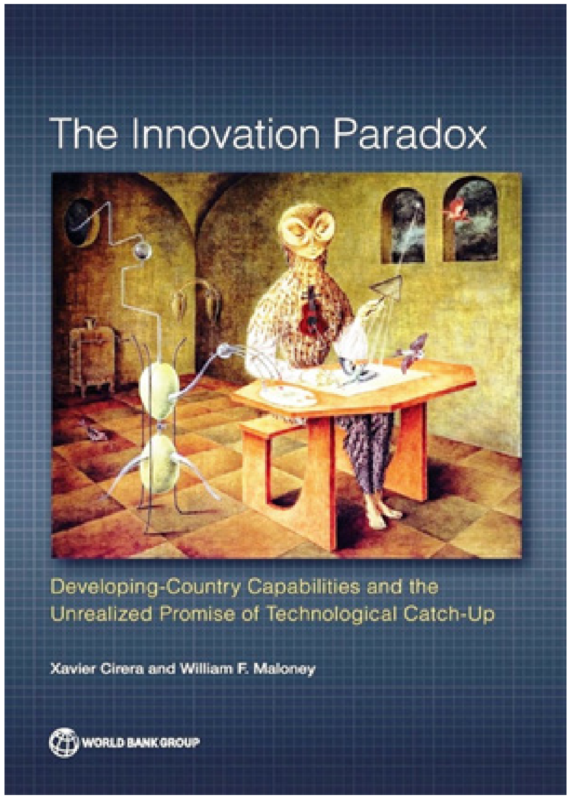
Book Review

The Innovation Paradox- Developing-Country Capabilities and the Unrealised Promise of Technological Catch-Up



The Innovation Paradox-Developing Country Capabilities and the Unrealised Promise of Technological Catch-Up,
By
Xavier Cirera & William F. Maloney; World Bank Publications, Washington DC, 2017, e-Book, ISBN: 9781464811609.

Truth as they say is stranger than fiction. The Report examining innovation using the metaphor of David Landes namely, *The Unbound Prometheus (*releasing the power of fire to Mankind) comes across as a bit off-kilter, considering the misplaced despair of the Developed West regarding the innovative prospects of developing countries. Part of this Project of keeping the Innovative fires burning is the examination of the subject for developing countries with the realistic and serious prospect that it deserves.

The author examines the possibility of Schumpterian catch-up from a distance to the technological frontier perspective in the language of a paradox. The closer investigation of the apparent contradiction reveals that the paradox is often seen from the standpoint of those that examine it, including their respective biases. The World Bank typically involves itself with a trade and development mandate and therefore its inclinations are suitably market-driven. Part of the contradiction of the Paradox lie in this proposition. Going deeper into the characterisation of the paradox, one sees the reason why developing and developed don't seem to see productivity gains and competitiveness in the same way. This begins with the measurement problems associated with using input and output indicators that were used to define and characterise innovation.

Further, the stylised facts regarding innovation outputs are a bit monolithic. Particularly, the idea that with tighter definitions of what constitutes an innovation, the finding of positive correlation with income overall shall bear out. This is faulted for ignoring the idea of Income Inequality, which matters for developing countries and is seen to be widening. The "convergence" in development is nowhere in sight. The relation between product innovation and productivity (pages 21-25) and impact of R & D on productivity (pages 26-27) is a bit far fetched. The shift of focus from formal R &D, while seeking to promote innovation is a point well-taken. The part on technology licensing should have accounted for measurement problems seen in practice. For example, the use of licensing for non-strategic purposes, distal to Research and Development which is fairly commonplace. The stylised facts from innovation inputs, particularly accumulation of innovation inputs rising with the level of development is ambiguous for lack of directionality. The corollary as to specific inputs increasing with development, on the number of firms innovating and their innovation intensity is again a nuanced proposition.

The authors could have done well to recognise the dichotomy that comparative and competitive advantage in the West and the forms of competitive advantage exploited by developing countries, using mature or late stage technologies present. That this flawed thinking on productivity is a gift of the West to the sub-altern developing countries is of course, another matter. The late realization of the Developed West that the blind pursuit of productivity baskets thought to be growth -friendly reveals their insecurity over the traditional critcque advanced by them and how it does not bear out in the real world any more. Spillovers in the language of the Developed World lexicon was always a pejorative for the developmental "trickle down" the developing countries aspired on a free riding basis.

The choice of central determinants of the paradox, namely critical complements to innovation investment, the range of firm capabilities required to undertake innovation and the required government capabilities for implementing effective innovation policies is a bit promising atleast in the former two if not in the latter. The scope for Government intervention appears in a rather limited context. The choice of the analytical toolkit of the neoclassical and the National innovation System brings about a bit of a forced coitus of ideas, particularly in terms of the common grounds (page 5) and in ignoring the dynamics of interaction qua Triple Helix and the non-market institutions necessary for knowledge creation and diffusion and the non-linear mechanisms for knowledge creation (page 15-18). This over and above, the unstated paradigmatic dilemma of relevance that National Innovation Systems in the post globalisation context face. The Policy space that governments have been left to do is a structural and relational power dynamic that is cleverly forgotten by the authors of the Report. More so, considering how conditionalities of developing country finance was used as a carrot and stick device to seek compliance onto the matrix is another source of contestations. The least said about the ability to make change in the context the better. That innovation in terms of frontier research is a less than sanguine prospect is well-known in the developing country context, but the value judgments it gave rise to historically (in favour of the developed West) is a perhaps a paradox beyond redemption.

The positive attribution to Linkage of investments in Innovation-related inputs as increasing with income per capita (pages 19-21) is equally specious to my mind, as the characterisation of technology as a source of reducing income inequality is relevant for developing countries. More so, the prospect of redistributive gains from technology is extremely doubtful as articulated. That the policy trajectory acknowledges the difference is a part respite. The use of uncertain data to generalise is the tricky trap this Report falls into in part.

The authors recognise correctly the absence of complementarities, in terms of human and physical capital, yet fails to reflect on the basic dichotomy between labour-intensive forms of growth and technology growth, as characterised by optimal use of factors of production, labour and capital. The conceptualisation of returns to investment and accumulation as the central organising paradigm conflates his assertion that accumulation of capabilities follows the same dynamic as accumulation of capital. Not unsurprisingly though.

Their conceptualisation urges the need for recognising broader innovation-related market failures is another missed opportunity. The need for data to benchmark innovation performance afresh is correctly recognised but flawed in execution. This is due to the understanding that innovation must orient itself to demand led, as opposed to supply driven paradigms, represented by the mix of capabilities that they recognise essential to innovation. The narrative of managerial and organisational practices should have been better operationalised, in terms of acquisition of capabilities, nuanced by a realisation of the overall importance of productivity and quality upgrading based growth trajectories. Particularly, the impact on routines within firms could have been done to firm up this argument in a direction that ignores the idiosyncratic elements of business operations in the Developing world. Further, a juxtaposition with knowledge transfer related issues could have done better to emphasise how relational aspects of proximity govern the spread of knowledge geographically. The use of NIS accounts to corroborate the generation of capabilities as a monolithic narrative puts paid to any sectoral and regional analysis of the specificities involved, given learning as the key source of capability generation. Another assertion made in relation to managerial and organisational capabilities that when firms lack the capabilities to respond to market conditions, identify new technological opportunities, develop a plan to exploit them and then cultivate the necessary human resource will not find it easy to innovate meets the truth with the Paradox.

The question of weakness of managerial capabilities in developing countries rightly identifies the need for upgrading but for the sequential or simultaneous nature they need to undertake. Further given their multifactorial nature, the visualisation of limits on competition juxtaposes the innovation problem as an ownership structure problem or one of failure of incentives. In terms of ownership structure, it is wrong assume that a weak rule of Law is implicit from the existence of government and family-owned firms and most often firms with diffuse ownership. The Latter while a case for need of managerial and organisational capabilities emphasises how it is wrong to plainly attribute bureaucratic and path-dependent trajectories to ownership structure. The same could be equally said of corporate firms working in a command and control paradigm or in flat, non-hierarchical manner of decision making.

The sources of learning and upgrading capabilities is a bit reductionist and consequentialist in it's focus to participation in international trade. The dynamics of coordination in value chains is given a miss in this dialectic of export -oriented growth, which has been bit of a mystery as to the reasons. Oft-repeated incantations to links with Foreign Direct Investment doesn't do much good for the structural issues involved and renders the promise of the initial discussion infructuous. This discussion based on factors external to the innovation process, much less the way it progresses in developing countries, renders the possibility of knowledge spill overs as bit of a paradox. The articulation of the Innovation Policy Dilemma as the greater the magnitude of market failures to be resolved and the multiplicity of missing complementary factors thus overlooks the diversity of the Debate, which is the more hands on approach compared to the macro approaches under discussion. The emphasis on governments capabilities to design, implement and coordinate an effective policy mix to manage it being weaker articulated as the informational asymmetry points to a greater failure of governance rather than of regulation. It is this nuanced description that underlines what Governments can, must and should not do in this context. That the roles of the public servants, ministries and agencies play in ensuring or undermining the effectiveness of innovation policy is noteworthy only if the trajectories are understood in terms of it's values as superimposed, it's norms as largely influenced by power dynamics and it's outcomes as tempered with the realistic prospect. The four key dimensions identified namely policy design, efficacy of implementation, coherence of policy and policy consistency and predictability are points well-taken. However, it is the latter two aspects that form relevance in developing countries which are reduced to idiosyncratic elements that defy explanation. That most of the policy even in the Developed West is not evidence-led policy undercuts the strength of supplanted policy models, "one size fits all" kind of approaches in the developing countries is not an overrated and oft-repeated polemic for nothing. The heuristic framework employed, namely the "capabilities escalator", where policies to support firm upgrading are prioritised consonant with the level of capabilities of the private sector and of policy makers and institutions, does little by way to outline the paradoxical elements of the technological progress, seen in sectors and regions minus the influence of institutions, atleast in the formal sense. The saving grace is that the heterogeneity of firms renders this interpretation deterministic and not rigidly determined. That any formal pattern of pursuit is not advocated, renders this proposition slightly an inclusive character that it otherwise does not have. Rightly so the need to walk before you can run is correct. The rethink on innovation policies advocated by this Report positions it as the problem of remedying the commonly articulated knowledge-related market failures, which itself is based on a narrow view of accumulation of capital. The centrepiece of innovation complementarities as the accumulation of all types of capital-physical, human and knowledge while correctly identified doesn't translate in terms of the capabilities escalator interpretation nor to a problem of capital or factors of production in the traditional sense. That the firm managerial and technological capabilities are a central complementarity to narrowly defined innovation expenditures is less than axiomatic. The last dimension of an honest balancing of capabilities with tasks, requiring selectivity rather than wholesale importation or supplantation of policies from elsewhere is a point welltaken. After pointing to the need for better data collection and interpretation, the report ends with an uncertain prescription and a sense of helplessness of the sectoral specificities or driving factors involved is a medicine worse than the Disease. Pasteur's counsel of fortune favours the prepared mind ironically holds true for the resolution of this paradox in a wholistic manner. Prometheus is Still Bound but the Geese as they say have flown.

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