

## **Industry and Innovation Policies in Developing Countries: Theory and Practice (60h – 9CFU)**

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Industrial development and innovation are the essential forces that determine growth, development and structural change. In particular, innovation plays an essential role in the developing world and its role will be increasingly important. This course will give students the tools and analytical methods to think systematically about industrial development and innovation in developing countries and provide them with a practical understanding of these phenomena.

Part one of the course lays the theoretical foundations of industrial development, including traditional, as well as, new and unorthodox approaches, with a focus on the theory of the firm and of innovation in emerging countries. Part two of the course explores in detail the tools and mechanisms frequently implemented in industrial and innovation policies and programs, and analyzes the approaches followed by some governments and international organizations using concrete empirical examples from policies and projects implemented by governments and international organizations.

Active participation and discussion will be encouraged throughout the course. A typical class will involve a lecture, with the second part of the class split between follow-up discussion informed by student readings and group work and presentations to identify the problems and the policy remedies to insufficient innovation and industrial development in selected developing countries.

The instructor is a Professor of Economics at University Roma Tre, Professorial Fellow at UNU-MERIT, Maastricht, and was Lead Economist at the Inter-American Development Bank (2009-16), where he designed and managed programs to promote competitiveness and innovation in Latin America and the Caribbean. He used to teach this course at Georgetown University for several years.

### **Course Learning Objectives and Skill Acquisition**

The course focuses on the economic logic behind policies and programs to promote industry and innovation in a developing country context. Students interested in working for multilateral organizations, government agencies, private sector firms interested in emerging markets, NGOs and other organizations promoting innovation and industrial development should take this course.

### **Assessment**

The course assessment will be based on an online assessment after about two months and two projects that the students will write and present during the second part of the course. The first one will include an assessment of the development of innovation or industry in a

selected developing country, the second one will be a proposal of a development project to address the problems identified in the first project. Both will be presented and discussed in class in front of a panel of advisors (the class itself), that will have to critically ask questions and discuss.

### Teaching material

Teaching material will be made available on Moodle and Teams.

### Course general schedule

Part I		
	<p><b>Manufacturing, Structural Change and Economic Development</b></p> <ul style="list-style-type: none"> <li>▪ Why industry matters</li> <li>▪ The determinants of industrial development: dualism and structural change</li> <li>▪ The need of a micro approach to explain performance:</li> <li>▪ Doing Business and its critics</li> </ul>	<ul style="list-style-type: none"> <li>▪ Szirmai, 2011</li> <li>▪ Szirmai, 2015, <i>Socio-Economic Development</i>: Cambridge University Press, 2<sup>nd</sup> Ed., chapters 8 and 9.</li> <li>▪ IMF Podcast on Structural Change, Interview to Rodrik, <a href="http://www.imf.org/external/pubs/ft/survey/so/2013/IN_T062813A.htm">http://www.imf.org/external/pubs/ft/survey/so/2013/IN_T062813A.htm</a></li> <li>▪ McMillan, M.; Rodrik, D.; Verduzco-Gallo, I., 2014</li> <li>▪ Rodrik, 2013</li> <li>▪ Hallward-Driemeier and Pritchett. 2015</li> </ul>
	<p><b>The microeconomics of enterprise development and innovation in developing countries</b></p> <ul style="list-style-type: none"> <li>▪ The standard neoclassical approach. Innovation and productivity in the production function.</li> <li>▪ Production, innovation and technological change in developing countries</li> <li>▪ Technological capabilities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Bell M.R. and Pavitt K., 1993</li> <li>▪ Lall S., 1992</li> <li>▪ Nelson R.R., 2008</li> <li>▪ Pietrobelli C., 1997</li> </ul>
	<p><b>The Economics of Innovation: the basics</b></p> <ul style="list-style-type: none"> <li>▪ Introduction to evolutionary economics</li> <li>▪ Systems of Innovation</li> <li>▪ Innovation policy</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fagerberg, 2006</li> <li>▪ Lall and Pietrobelli, 2005</li> <li>▪ Lundvall, 2007</li> <li>▪ Cirera and Maloney, 2017 (ch. 1,2, 4)</li> </ul>
Part II		
	<p><b>The logic and justification of active policies to promote enterprise development</b></p> <ul style="list-style-type: none"> <li>▪ Modern industrial and innovation policy</li> <li>▪ Market and Government failures</li> </ul>	<ul style="list-style-type: none"> <li>▪ Crespi G., Fernandez-Arias E. and Stein E. (Eds.), 2014. Chapters 1, 2 and 3.</li> <li>▪ Hausmann R. and Rodrik D., (2003 and 2006)</li> <li>▪ Lin J. and Chang H.J., 2009</li> <li>▪ Fernandez-Arias et al., 2018</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Coordination and Systemic failures</li> <li>▪ Institutions and industrial policy</li> </ul>	
	<p><b>Tools for enterprise development and innovation in developing Countries:</b></p> <p><b>Enterprise Clusters</b></p> <ul style="list-style-type: none"> <li>▪ Productive agglomeration and clusters in developing countries.</li> <li>▪ Collective efficiency and joint actions.</li> <li>▪ Cluster Development Programs (CDP), theory and examples.</li> <li>▪ Impact evaluation of CDP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Casaburi G., Maffioli A., Pietrobelli C., 2014, ch.7.</li> <li>▪ Maffioli, Pietrobelli, Stucchi, 2016 Ch.1</li> <li>▪ Schmitz H. and Nadvi K., (1999)</li> <li>▪ Chatterji A., Glaeser E.L., Kerr W.K., 2013, <a href="http://www.nber.org/papers/w19013">http://www.nber.org/papers/w19013</a></li> <li>▪ EIU, 2016, <a href="http://destinationinnovation.economist.com/category/cluster-effects/">http://destinationinnovation.economist.com/category/cluster-effects/</a></li> </ul>
	<p><b>Tools for enterprise development and innovation in developing countries:</b></p> <p><b>Global Value Chains</b></p> <ul style="list-style-type: none"> <li>▪ Global Value Chains in Developing Countries: Governance and Upgrading</li> <li>▪ Policies for GVC integration</li> </ul>	<ul style="list-style-type: none"> <li>▪ Gereffi G., Humphrey J., Sturgeon T., 2005</li> <li>▪ Giuliani E., Pietrobelli C. and Rabellotti R., 2005</li> <li>▪ Pietrobelli, Staritz, 2017</li> <li>▪ Fu X., Pietrobelli C., Soete L., 2011,</li> <li>▪ Humphrey J. and Schmitz H., 2002</li> </ul>
<b>Part on Practices: diagnostics and proposals of policies and programs</b>		
Oct.-Nov.	Reports and diagnostics on innovation and industrial development in selected developing c.s	Examples and reports from OECD, UNCTAD, World Bank, IADB, etc.
Dec.	Examples of projects, programs, policies to promote innovation and industrial development	Examples and reports from World Bank, IADB, developing countries' Governments

## Compulsory Readings

### Selected Chapters from:

- Szirmai A. (2015) *Socio-Economic Development*: Cambridge University Press, 2<sup>nd</sup> Ed., chapters 8 and 9.
- Crespi G., Fernandez-Arias E. and Stein E. (Eds.), 2014, *Rethinking Productive Development: Sound Policies and Institutions for Productive Transformation, Development in the Americas*, London: Palgrave for Inter-American Development Bank. Chapters 1, 2 and 3.
- Cirera X. and Maloney W.F., 2017, *The Innovation Paradox: Developing Country Capabilities and the Unrealized Promise of Technological Catch-Up*, Washington DC: The World Bank, <https://openknowledge.worldbank.org/handle/10986/28341> chapters 1, 2, and 4.

### Articles:

1. Bell M.R. and Pavitt K., 1993, "Technological Accumulation and Industrial Growth: Contrasts between Developed and Developing Countries", *Industrial and Corporate Change*, Vol.2 No.2.
2. Casaburi G., Maffioli A., Pietrobelli C., 2014, Policies to Promote Coordination among Interlinked Firms, in Crespi et al., *Rethinking Industrial Policy: Sound Policies and Institutions for Productive Transformation*, Palgrave, chapter 7.
3. Fagerberg J., 2006, "Innovation. A Guide to the Literature", in J.Fagerberg and D.Mowery (Eds.) *The Oxford Handbook of Innovation*, Oxford: Oxford University Press.

4. Gereffi G., Humphrey J., Sturgeon T., 2005, "The governance of global value chains", *Review of International Political Economy*, 12:1, 78-104.
5. Giuliani E., Pietrobelli C. and Rabellotti R. (2005) "Upgrading in Global Value Chains: Lessons from Latin American Clusters", *World Development*, Vol.33(4), pp. 549-73.
6. Hallward-Driemeier, M. and Pritchett L., 2015. "How Business Is Done in the Developing World: Deals versus Rules." *Journal of Economic Perspectives*, 29(3): 121-40. <https://www.aeaweb.org/articles.php?doi=10.1257/jep.29.3.121>
7. Hausmann R. and Rodrik D. (2006) "Doomed to Choose: Industrial Policy as a Predicament", Harvard Kennedy School Working Paper. [http://www.hks.harvard.edu/index.php/content/download/69495/1250790/version/1/file/hausmann\\_doomed\\_0609.pdf](http://www.hks.harvard.edu/index.php/content/download/69495/1250790/version/1/file/hausmann_doomed_0609.pdf)
8. Hausmann R. and Rodrik D., (2003), "Economic Development as Self Discovery," *Journal of Development Economics*, Vol.72, Issue 2, pages 603-33, December (also NBER Working Paper No. 8952).
9. Lall S. and Pietrobelli C., 2005, "National Technology Systems in Sub-Saharan Africa", *International Journal of Technology and Globalization*, KSG, Harvard, Vol.1 No.3-4, 2005.
10. Lall S., 1992, "Technological Capabilities and Industrialization", *World Development*, Vol.20 No.2
11. Lin J. and Chang H.J., 2009, "Should Industrial Policy in Developing Countries Conform to Comparative Advantage or Defy it? A Debate Between Justin Lin and Ha-Joon Chang", *Development Policy Review*, 2009, 27 (5): 483-502
12. Lundvall B-Å. (2007) "National Innovation Systems—Analytical Concept and Development Tool", *Industry and Innovation*, 14:1, 95-119, DOI: [10.1080/13662710601130863](https://doi.org/10.1080/13662710601130863)
13. Maffioli A., Pietrobelli C. and Stucchi R., 2016, *The Impact Evaluation of Cluster Development Programs*, Washington D.C.: Inter-American Development Bank, <http://dx.doi.org/10.18235/0000335> Chapter 1.
14. McMillan, M., Rodrik, D., Verduzco-Gallo, I., 2014, "Globalization, Structural Change, and Productivity Growth, with an Update on Africa". *World Development* 63: 11-32, doi: 10.1016/j.worlddev.2013.10.012
15. Nelson R.R., 2008, "Economic Development from the Perspective of Evolutionary Theory", *Oxford Development Studies* Vo.36 No.1 March, pp.9-22
16. Pietrobelli C., 1997, 'On the Theory of Technological Capabilities and Developing Countries' Dynamic Comparative Advantage in Manufactures', *Rivista Internazionale di Scienze Economiche e Commerciali*, Vol.XLIV, No. 2, June.
17. Pietrobelli, C. & Staritz, C., 2017, "Upgrading, Interactive Learning, and Innovation Systems in Value Chain Interventions", *European Journal of Development Research*, <https://doi.org/10.1057/s41287-017-0112-5>
18. Rodrik D., 2013, "Unconditional Convergence in Manufacturing", *Quarterly Journal of Economics*, pp.165-204, doi:10.1093/qje/qjs047

#### **Additional (Optional) Readings**

- Chatterji A., Glaeser E.L., Kerr W.K., 2013, "Clusters of Entrepreneurship and Innovation", NBER Working Paper 19013 <http://www.nber.org/papers/w19013>
- EIU, "Innovation Clusters: Understanding life cycles", The Economist Intelligence Unit, London <http://destinationinnovation.economist.com/category/cluster-effects/>
- Fernández-Arias E., Sabel C., Stein E., Trejos A., 2017, "Two to Tango: Public-Private Collaboration for Productive Development Policies", IDB Working Paper IDB-WP-855, Washington D.C.: The Inter-American Development Bank. <https://publications.iadb.org/handle/11319/8697>

- Fu X., Pietrobelli C., Soete L., 2011, "The Role of Foreign Technology and Indigenous Innovation in the Emerging Economies: Technological Change and Catching-up", *World Development* Vol. 39, No. 7, pp. 1204–1212
- Humphrey J. and Schmitz H. (2002) "How does insertion in global value chains affect upgrading industrial clusters?", *Regional Studies*, Vol. 36, No.9.
- Podcast on Structural Change, Interview to Dani Rodrik, IMF Podcast, <http://www.imf.org/external/pubs/ft/survey/so/2013/INT062813A.htm>
- Schmitz H. and Nadvi K., (1999). "Clustering and Industrialization: Introduction", *World Development*, Vol. 27, No.9., pp. 1503-14.
- Szirmai A., 2011, "Manufacturing and Economic Development", UNU-WIDER Working Paper No. 2011/75, November, <https://www.wider.unu.edu/publication/manufacturing-and-economic-development>