

## Introduction

# Industrial policy, productive transformation and jobs: Theory, history and practice

José M. Salazar-Xirinachs, Irmgard Nübler and Richard Kozul-Wright

### **1. The challenges of industrial policy and the objectives of this book**

No country has made the arduous journey from widespread rural poverty to post-industrial wealth without employing targeted and selective government policies to modify its economic structure and boost its economic dynamism. Moreover, it is difficult to see how countries at all levels of development can respond constructively to contemporary challenges – from job creation and poverty reduction to participating in the technological revolution and global value chains, from promoting efficient and clean energy to mitigating climate change and greening the economy – without using some kind of targeted industrial policy.

The process of structural transformation remains particularly challenging for developing and emerging economies. Their efforts to upgrade and diversify take place in an interdependent world economy where earlier industrializers have already accumulated both enabling capabilities (individual and enterprise level know-how and skills, along with collective knowledge and sources of creativity) and productive capacities (embodied in production factors and physical and technological infrastructure) that give their producers significant cost and productivity advantages and equip them to push out the technological frontier through research and innovation. These advances offer developing countries many opportunities to catch up rapidly by learning to master technologies and products already available in more developed countries. The key question is: how can such learning be accelerated? Catching up encompasses two distinct but related processes: first, the strengthening of capabilities that enable developing economies to

trigger, accelerate and manage structural and technological transformation; and, second, the accumulation of productive capacities through a sustained process of investment. In both aspects, success requires active policies that provide incentives, direction and coordination.

Many of the higher value added activities and sectors that characterize successful transformation today are likely to be more capital-intensive than their counterparts in the past, in part because of readier access to the technology and capital equipment produced in the more advanced economies, but also because of the pressures of intensified global competition, which can be met on a sustained basis only by rapid rises in productivity. Mobilizing the financial resources to undertake the investments in physical and human capital and in infrastructure required to meet these demands continues to be a major policy challenge in many countries.

Furthermore, such a transformation requires that workers, enterprises and the economy as a whole learn to adopt increasingly complex technologies, to invest in and produce new and more sophisticated goods and services, and also to govern, direct and accelerate processes of change. Learning builds up dynamic capabilities which are key drivers of catching up and economic development. These capabilities in turn shape patterns of productive transformation and job creation, as well as the speed and sustainability of the catching-up process. Therefore, a major challenge confronting any developmental state is to support and accelerate learning processes for the development of dynamic capabilities at all levels (Nelson and Winter, 1982; Lall, 1992; Greenwald and Stiglitz, 2014; Nübler, Chapter 4 in this volume).

The presence of surplus or underemployed labour in most developing economies poses the particular challenge of how to achieve productivity growth and net job creation simultaneously, in order that the chosen growth path be both inclusive and sustainable. Structural transformation and technological change affect productivity as well as the quantity and the quality of employment, and in many different ways. They generate as well as destroy jobs in enterprises, and transform the nature, quality and profile of jobs, thereby also transforming the occupational structure and employment patterns in the labour force. The policy challenge is to promote patterns of structural transformation and technological change that strike a good balance in achieving the two fundamental objectives of productivity growth and more and better jobs. One way in which late-industrializing countries have tried to achieve this balance is to produce large quantities of labour-intensive products for export. This can enable manufacturing employment to expand beyond the limits set by the domestic market. In the same vein, a mature economy, with a competitive edge in key industrial sectors

and a surplus in manufacturing trade, can normally employ more labour in those activities and thus delay de-industrialization. However, there is a growing realization that export-led growth cannot be an option for all economies, particularly for systemically large economies, and that greater attention needs to be given to expanding domestic demand – all the more so since the financial crisis of 2007–08 (UNCTAD, 2013).

History shows that in all cases of successful catching up, the State has played a proactive role, be it in building markets, in nurturing enterprises, in encouraging technological upgrading, in supporting learning processes and the accumulation of capabilities, in removing infrastructural bottlenecks to growth, in reforming agriculture and/or in providing finance. However, this is not to say that such successes all follow a uniform model; on the contrary, they encompass a variety of different institutional arrangements and policies. Indeed, it is partly because of the wide variety of patterns of state intervention used to accelerate growth and development that industrial policy has been one of the most misunderstood areas of economic and development policy, supporters and detractors alike tending to adopt entrenched and often hostile positions. However, in recent years, and particularly since the recent financial crisis, there has been a degree of rapprochement between the two perspectives, based in part on a better understanding of the record of industrial policies – both successes and failures. It is now clear, for example, that protective tariffs can be overdone, with negative consequences, and that “hard industrial policy” measures can be distorting; but it is also clear, as recent studies recognize (Pagés, 2010; Devlin and Mogueillansky, 2011), that there are many cases where industrial policies have been successful, with substantial development impact. Nor are the latter limited to the well-known East Asian examples. Ireland and Costa Rica were ambitious and successful in defining criteria for choosing sectors on which to place strategic bets and, in these particular cases, using foreign direct investment (FDI) as a tool of industrial policy; Brazil succeeded in creating competitive steel and aeronautics sectors, which are now generating significant exports – indeed, industrial policy is widely recognized across Latin America as having been of critical importance in launching new export activities in the region.<sup>1</sup> Robert Wade’s contribution to this book (Chapter 14) shows that particularly but not exclusively in the high-technology sector, the United States has not only applied industrial policy extensively and successfully, but has been expanding and refining its reach.

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<sup>1</sup> The Inter-American Development Bank (IADB) research project “The emergence of new successful export activities in LAC” reviews cases of the “discovery” of new competitive activities and concludes that industrial policy was important in solving coordination problems that led to discovery. See Pagés (2010), Ch. 11.

The recent rapprochement also owes something to the breach in the ideological dominance of neoclassical thinking and the contributions of different economic traditions. Growth, structural, institutional and evolutionary economics have produced a wealth of new research on productive transformation, catching up and industrial policies using different analytical frameworks, each one highlighting different dimensions of the catching-up challenge so that together they widen the scope for industrial policies. The failure of developing countries to translate economic growth into jobs, economic development, poverty reduction and enhanced living standards has also contributed to new thinking on the relevance of policies and strategies, including industrial policies, to the proactive promotion of multiple development objectives (ILO, 2011; UNIDO, 2013; ECA, 2013; World Bank, 2013; OECD, 2013).

A first objective of this book, therefore, is to recognize the relevance of the different traditions in development economics and the contributions of their various frameworks to the analysis and design of industrial policy. Each of those frameworks highlights different objectives of industrial policies, raises different policy issues, and therefore suggests different areas and scope for industrial policies. Over the past decade, the breadth of experience of developing and emerging economies in particular, places these countries, perhaps for the first time, in the vanguard of the discussion on industrial policy. The chapters in this book tap deeply into that experience. Moreover, the application of different analytical frameworks to current practice in industrial policy can contribute to a better understanding of what is needed to create and pursue successful productive transformation policies.

A second objective is to encourage a much more integrated approach to productive transformation policies. This is crucial to getting industrial policy right. Only a coherent set of macroeconomic, trade, investment, sectoral, labour market and financial policies can adequately respond to the myriad challenges of structural transformation and decent jobs faced by countries today. Strategies to enhance capabilities for high-performing catch-up growth require education, training, investment, trade and technology policies to promote learning at different levels and in different places – in schools, in enterprises, in social and organizational networks. Focusing systematically on coherence adds another dimension to the debates on industrial policy. Hitherto, policy coherence has generally not been a sufficiently explicit goal, either in research and analysis or in actual industrialization policies.

A third objective is to explore the links between productive transformation, job creation and employment growth. The new debate on productive transformation is weak in this area, and yet it is important to make these links explicit, especially in

view of the rapid growth of labour supply in most emerging economies and developing countries. Industrial policies need to be designed with a view to fostering structural transformation patterns that have the potential to accelerate the generation of not just more jobs, but also more productive and better jobs. Productive jobs lead to higher levels of income, reduced poverty, an improved standard of living and stronger domestic demand, by providing decent wages, good working conditions, training, social protection and respect for workers' rights. Better jobs, in the sense of those of greater developmental and dynamic catching-up value, include those with high technology and skills content; these offer workers opportunities to acquire new knowledge and technological competences, thereby in turn enhancing the complexity and diversity of the knowledge base of the labour force, an essential ingredient for accelerating the catching-up process.

The next section presents a brief history of industrial policy. Section 3 moves on to discuss the various economic models and frameworks for productive transformation policies (based on Chapters 1–5). Section 4 distils lessons and principles from the various case studies presented in this volume (Chapters 6–14), focusing on practical issues, from design to implementation. Section 5 concludes.

## 2. The rise, fall and rise again of industrial policy

Economics, including development economics, is subject to fads and fashions. So, is the present renewed attention to industrial policy just a passing fashion, likely to fade away some time soon? Such is indeed the conclusion of a recent article in *The Economist* bemoaning the return to a misguided ideology of “picking winners”.<sup>2</sup> In fact, a brief review of the history of industrial policy shows that it has never gone away, albeit persisting under different names and guises, and that it has been applied in both developed and developing countries, even when strong ideological currents appeared to be flowing in a contrary direction.

There is little doubt that the period after the Second World War was a “golden age” of industrial policy, in large part because governments in developed countries were in broad agreement that balanced and coordinated expansion, increased provision of public goods and services, accelerated technological progress and appropriately designed multilateral arrangements in trade and finance offered

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<sup>2</sup> *The Economist* (2010). This article sees the renewed attention as a politically expedient response to short-term problems and warns: “The present round of industrial policy will no doubt produce some modest successes – and a crop of whopping failures.”

the best way to secure rising living standards and prevent a return to the waste and destruction of the inter-war years. The overall consensus embraced a range of policy instruments to achieve these goals, so that active demand management coexisted with industrial policies and indicative planning, and steady multilateral trade liberalization with relatively strict capital controls. The outcome was a period of unprecedented growth in developed countries, driven by high rates of investment and rapid technological progress, often linked to strong export demand, and underpinned by full employment and rising wages.

This broad policy consensus also cultivated a favourable environment for growth and development in poorer countries, allowing them ample policy space, within the context of the multilateral trading system, to pursue “big push” strategies combining high rates of capital formation, strong industrial development and a shift of economic momentum from the rural to the urban economy. Together, these elements helped to accelerate growth across the developing world. Dedicated support measures were often employed to bolster agricultural output (and keep food prices in check), to advance technological capabilities and to strengthen financing arrangements, including through the creation of national development banks. In some cases (notably the East Asian “tiger” economies), these strategies had a strong export orientation, while in others (such as Latin America and South Asia) priority was given to growth in domestic or regionally integrated markets.

Across these experiences, the evidence shows that sustained periods of high growth rates derived from deliberate support for learning and the accumulation of collective capabilities as part of industrial development strategies. This was particularly marked in those East Asian countries that applied education and training policies to prepare the labour force for entry into targeted industries (see Chapter 7 by Cheon in this volume) and promoted technological capabilities in firms to enable them to diversify into dynamic sectors and to keep driving the process of “creative” imitation (Kim, 1997). Industrial, technology and trade policies were formulated as part of economic development strategies that provided a combination of incentives and compulsion (“reciprocal control mechanisms”) to enable and accelerate learning by domestic enterprises and the translation of rents into productivity growth (Amsden, 2001). Examining the long history of uneven industrial development over the last 50 years, one can conclude that despite flaws and limitations, the achievements associated with these early strategies were significant.<sup>3</sup> As table 1 shows, the period from 1950 to 1973, which is usually identified as one dominated

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<sup>3</sup> According to Ocampo and Parra (2006), in the 1960s and 1970s as many as 50 out of 106 developing countries experienced sustained expansion, defined as four consecutive five-year moving average periods with income per capita growth exceeding 2 per cent. See also Maddison (2001) for a useful comparative assessment of how the different developing regions performed during this “golden age”.

Table 1. Average per capita manufacturing growth rates, 1870–2007

	1870–90	1890–1913	1920–38	1950–73	1973–90	1990–2007
Leaders <sup>1</sup>	3.1	3.4	1.9	7.9	2.4	2.2
Asia <sup>2</sup>	1.5	4.2	4.2	8.3	5.9	4.3
Latin America	6.4	4.4	2.8	5.7	2.7	2.2
Middle East and North Africa	1.7	1.7	4.9	6.2	6.1	4.5
Sub-Saharan Africa	n.a.	n.a.	4.6	5.5	3.5	3.9

<sup>1</sup> Germany, United Kingdom and United States for the period up to 1938; includes Japan from 1950.

<sup>2</sup> Includes Japan before 1950 only.

Source: Bénétrix, O'Rourke and Williamson (2012).

by import-substituting industrialization (ISI), saw the fastest industrial growth rates in the developing world of any period since the late nineteenth century, and by some margin. However, this was not, strictly speaking, a period of catching up, as the leading advanced economies also posted historically unprecedented rates of industrial growth during these years; the dramatic slowdown in the latter countries following the oil shocks of the early 1970s meant that the period 1973–90 actually witnessed more pronounced convergence in industrial performance.

In a sobering assessment of post-war experience in Latin America, a region at the centre of much early debate on industrialization and development, Albert Hirschman (1995) complained that too much development thinking (by both dependency theorists and market fundamentalists) seriously misjudged the progress made in the three decades following the end of the Second World War and that the economic “growing pains” that became apparent at the end of the 1970s (whether in the form of rising inequality, balance of payments problems or rent-seeking behaviour) did not merit the wholesale policy changes that came to characterize much of the region following the debt crisis of the early 1980s.

Successful growth performance notwithstanding, from the early 1980s industrial policy was not only unceremoniously dropped from policy discussions but denigrated as a major source of economic distortions in rich and poor countries alike. Two compounding factors led to this abrupt fall from grace.

The first was the broad-ranging political and ideological assault on state intervention, beginning in the mid-1970s in the advanced economies, but accelerated by Margaret Thatcher in Britain and Ronald Reagan in the United States at the end of the decade, and spreading to developing countries during the debt crisis of the early 1980s. This attack was associated with specific evidence of excesses and abuses of industrial policy documented in influential research in developing

countries (Little, Scitovsky and Scott, 1970; Bhagwati, 1978; Krueger, 1978). The result was a generalized consensus around the promotion of market-based strategies (liberalization, privatization, deregulation) in pursuit of more efficient (“get prices right”) outcomes (Williamson, 1993; World Bank, 1987). In this intellectual environment, which came to be labelled the “Washington Consensus”, industrial policy was criticized and shunned.

The second factor was the increase in capital mobility which began in the 1970s following the collapse of the Bretton Woods system, but picked up pace significantly only from the early 1980s, following the extensive deregulation of the financial sector in the advanced countries, and the dismantling of controls on cross-border financial activities. The ensuing surge in capital flows marked a radical break with the post-war international policy framework. While the theoreticians of efficient financial markets promised large-scale gains, particularly for capital-scarce countries in the South, the 1980s and 1990s were marked in most regions by a series of boom-and-bust cycles that did little to bolster productive capacity or generate broad-based growth, particularly in the developing world (UNCTAD, 2011). The exceptions to this pattern were in East Asia, where strong developmental states that had emerged in the 1960s and 1970s initially resisted financialization pressures and continued to use a range of policies to manage catch-up growth. Beginning in the early 1980s, China began to replicate this model of development, albeit with some unique characteristics specific to the history of that country (see Chapter 11 by Lo and Wu in this volume).

From the turn of the millennium, however, the external environment shifted in favour of developing countries. Not only did the volume of capital inflows increase, their cost fall, and trade conditions improve, but commodity prices began to rise sharply, while some countries also saw remittances increase. As a result, growth picked up across all developing regions; a number of countries saw a marked rise in their trade surpluses, while the debt profile of many others improved significantly.

Paradoxically, this shift opened up the space for developing countries to explore a much wider set of policies than that endorsed by the Washington Consensus to

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