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# THE RETURN OF INDUSTRIAL POLICY: (What) Can Africa learn from Latin America?

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Annalisa Primi<sup>1</sup>  
OECD Development Centre

## Abstract

High growth in Africa and the changes in the global economic landscape have contributed to redefine development policy and open new spaces for debating the role of industrial policies in promoting structural transformation and development. Despite the high growth of Africa during the last decade, the continent not solved the problems of youth employment and low productivity of the domestic industry. Nor it has seen the flourishing of domestic entrepreneurship. After decades in which industrial policies were banned from the development agenda, their return is welcomed. However "What to do?" and "How to do it?" remain unanswered questions. Latin America is often regarded as a "failure" in contrast with the "success" of South East Asia. Nonetheless, the region has accumulated learning about designing and implementing industrial policies, especially taking into account the resurgence of interest in the last decade. The Latin American experience in industrial policies offers lessons that could help the policy making process in Africa, if adapted to the specificities and varieties of its different countries.

## 1. INTRODUCTION

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Africa is growing. The development debate in Africa has shifted from how to overcome poverty in a low-growth continent to how to profit from the high growth momentum. The rise of China and its appetite for raw materials have contributed, to a large extent, to boosting growth and to raising dynamism in African markets. Poverty has been decreasing, access to

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information technologies has increased in most of the countries of the region and new partners have emerged in trade and investment. Media, on their side, are playing their part portraying Africa as the next “booming” continent, with a growing and young population that could be a big reservoir for growth and development in the medium-term. However, all that glitters is not gold, and Africa still suffers from deep structural problems. Youth employment is high and growing; middle classes are emerging with new demands and aspirations that need to be addressed. The African production structure is still weak, with few domestic companies operating at the technological frontier and with the majority of firms lagging behind in terms of productivity and innovative capabilities. Diversification and upgrading are, in fact, often confined to “islands of excellence” within the countries of the region.

While optimism regarding growth and development opportunities abounds, there is growing recognition that the new context is not a guarantee of structural transformation and job creation for Africa, unless targeted policies are implemented (Chang, 2012; Greenwald and Stiglitz, 2012; Noman, 2012; Noman *et al.* 2012). In addition, the new global economic context is changing the debate on development policy, and it is re-opening the debate on industrial policies. While the Washington Consensus had wiped them away from the policy mix, the new global economic context and the growing discontent with conventional economic approaches are contributing to bring industrial policies back on the development agenda. Few believe today that open and free global markets would allow each country to specialize in the “best” possible sector/activity. However, “what to do?” and “how to do it?” are questions with no easy answers. In Africa, in particular, most of the good practices and policy advices look even more difficult to implement: corruption, weak states, lack of public resources, low entrepreneurial culture, elites, poor infrastructure and skills are often quoted as barriers for designing and implementing effective industrial policies in the countries of the region. In addition, there is a generalized policy aversion about government “interventions” in most Ministries of Finance in African countries. This, matched with the recognition that “most of the policy tools applied by South East Asian economies during their catching up are not available anymore,” turns industrial policies into an option with low feasibility and political acceptability in many countries of the region. Yet, things are changing.

Industrial policy in the new global economic landscape is much more than the policies applied by South East Asian countries in the past. During the last decade there has been a resurgence of interest in industrial policy at the global level, in OECD and in developing countries (Cimoli *et al.* 2009; Naudé, 2010; Lin, 2012; OECD, 2012a; OECD, 2013a). Latin America has often been regarded as a “failure” in contrast with the “success” of South East Asian economies<sup>2</sup> in respect catching up and industrial policies. However, the region has accumulated an extensive experience in designing and implementing industrial policies, and has advanced, particularly since the last decade through a process of trial and error (Peres, 2009;

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<sup>2</sup> What is a “failure” in the Latin American experience is also part of the debate. Some argue that the Import Substitution Policies of the 1950s and 1960s have been a failure, while others see in the Washington Consensus recipes and in their diligent application the reason of the “failure” of the Latin American catching up.

Peres and Primi, 2009; Devlin and Moguillansky, 2012; Coutinho *et al.* 2012). Latin America is far from having solved its development problems and it is still struggling in tackling inequalities and achieving economic transformation. But the region has been witnessing high growth, the emergence of new middle-classes with new aspirations and demands and a renewed commitment of many governments to promote science, technology and innovation as pillars of new development strategies more in line with the new global economic landscape. Like Africa, Latin America is also varied, with countries that differ in endowments, geography and institutions, as well as in size.

Can the recent experience of Latin America in industrial policies offer lessons for Africa? Policies are always time and context specific, but they are also shaped by regularities and general principles that make the sharing of practices and challenges in design and implementation a valuable exercise. The idea is not to find shortcuts or easy answers through the experience of others, but to enrich the analysis and add dimensions that might be under the radar in different geographic and economic contexts.

This paper aims at contributing to the renewed debate on industrial policy in Africa. It focuses on the changing economic landscape in which Africa is developing and it looks at the experience of Latin America in industrial policy to identify some policy principles that could be of help in shaping the debate in Africa. The paper is structured in three sections. The first describes the changes in the global economic landscape that are redefining the context in which developing countries are re-thinking about industrial policies. It focuses on the new geography of growth, production and trade and on the emerging new geography of innovation. The second discusses the implications of the new global context on development policy and the resurgence of interest about industrial policies. Finally, the third section focuses on identifying what lessons for Africa can be derived from the recent Latin American experience.

## 2. A CHANGING GLOBAL ECONOMIC LANDSCAPE

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We are living in a fast changing world and our economies and societies are experimenting big transformations. Among the multiple (and interrelated) issues that are contributing to redefining development opportunities today, I will recall two aspects that are, to my view, crucial to understanding and contextualizing the return of industrial policies on the development agenda and that are determining some of the major policy challenges that developing economies are facing today:

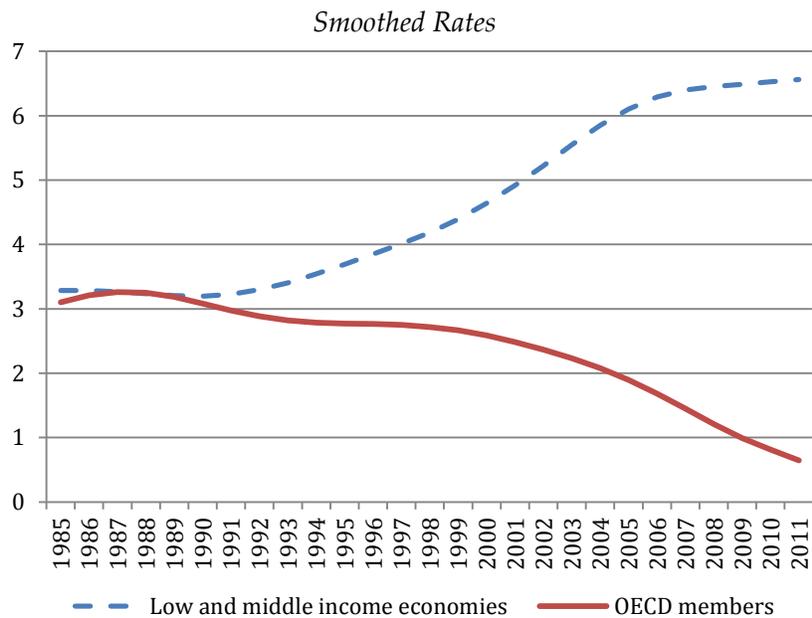
- i. A new geography of growth, production and trade is emerging due to the rise of China and its growing integration into world trade; and
- ii. A new geography of innovation is emerging too, but at a much slower pace. The increased diffusion of information technologies and growing priority given to science and technology in emerging countries are defining new micro-dynamics of learning, knowledge circulation and innovation and are contributing to create new innovation

hubs in the world. However, Africa still lags behind other developing continents, including Latin America.

## 2.1. AN EVOLVING GEOGRAPHY OF GROWTH, PRODUCTION AND TRADE

Developing countries have been growing more than advanced economies since the late 1990s. Despite recent concerns about global economic slowdown, this trend is likely to continue, even though many emerging economies will be advancing at a slower pace than their previous two-digit growth pattern (OECD, 2010; 2013). This phenomenon has been driven mostly by China, but other countries, like India, have also contributed (Figure 1). This shift of the center of gravity of the world economy towards the East (and partially the South) has also contributed to make Africa the fastest growing continent in the world. While it is clear that growth is not enough for development, it is evident that it opens new opportunities for development and that it is challenging the existing the political economy dynamics of policymaking in developing countries. Policy priorities (and consequent agreements and disagreements) tend to change when policymakers discuss investment options in low-growth or in high-growth contexts.

Figure 1. Annual GDP growth rates by income group, 1985-2011

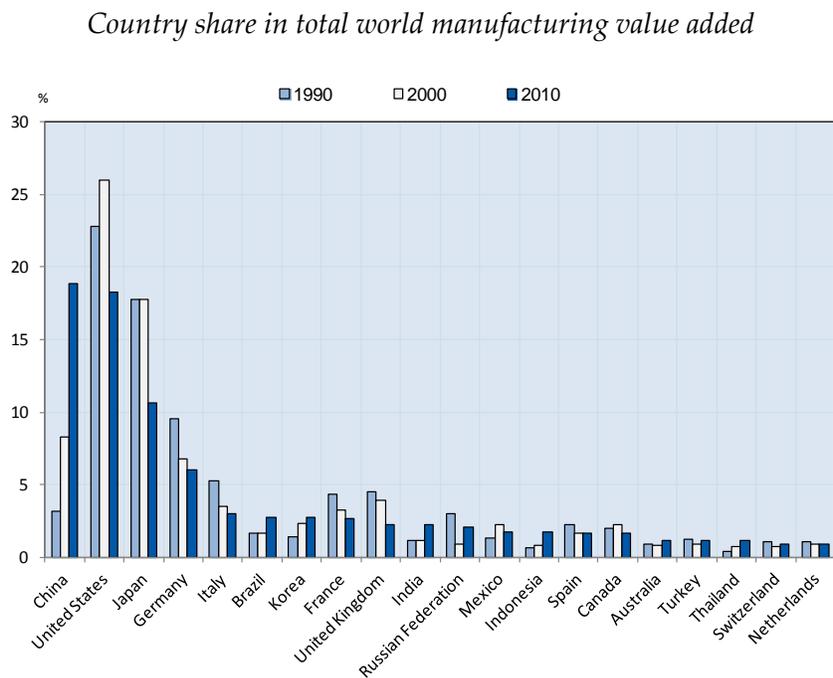


Note: Chile, Mexico and Turkey are included both in low and middle-income economies and in the OECD.

Source: OECD (2013), *Perspectives on Global Development 2013- Shifting Up a Gear: Industrial Policies in a Changing World*, OECD Paris, based on World Development Indicators (2012) and OECD National Accounts data files.

The new global geography of growth, where growth poles are today more numerous and increasingly localized towards the East and the South, is coming together with changes in the organization of production at a global scale and with new trade and investment patterns. China is today the world's largest manufacturer. Its share of total world manufacturing value added (18.9 percent) outperformed that of the US (18.2 percent) in 2010 (Figure 2). Over two decades its share in world manufacturing output has increased six-fold. The rise of this giant is reshaping the global landscape, and developing countries are aware that they need to take this into account when designing their strategies for the future (Barros de Castro, 2009; Castro and Castro, 2012).

Figure 2. World top 20 manufacturers, 2010



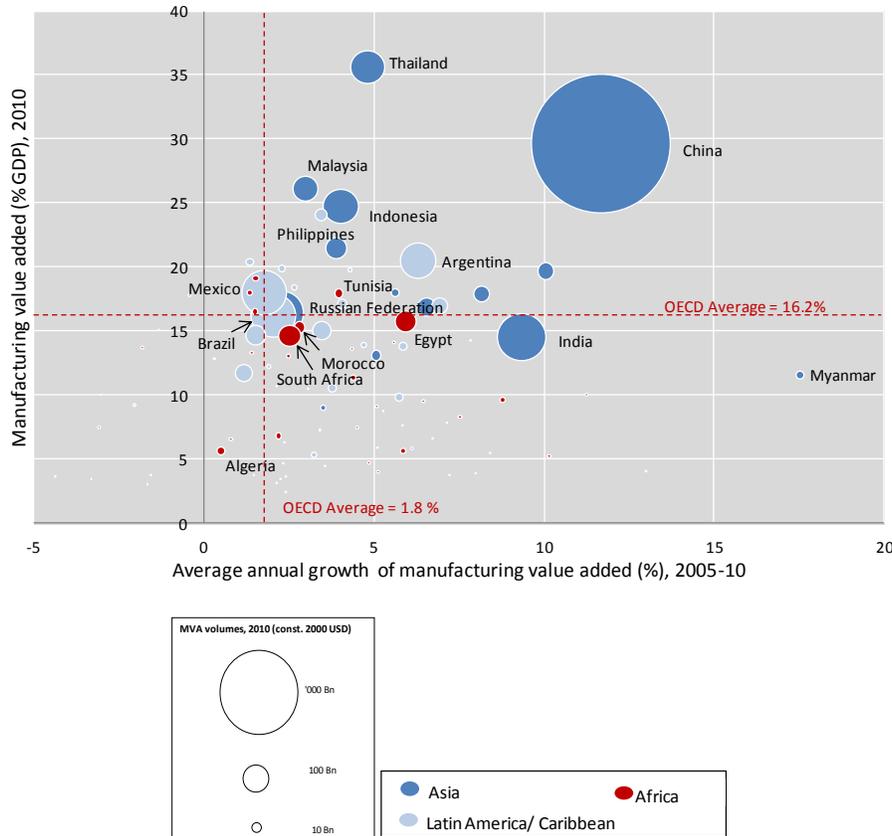
*Note: Manufacturing refers to industries belonging to International Standard Industrial Classification (ISIC) divisions 15-37. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. The origin of value added is determined by the ISIC, revision 3.*

*Source: OECD (2013), Perspectives on Global Development 2013- Shifting Up a Gear: Industrial Policies in a Changing World, OECD Paris based on United Nations Statistical Division, National Accounts Main Aggregates Database, March 2012.*

Manufacturing is shifting to China, but it is also growing in most developing economies. The share of non-OECD economies, without China, in total world manufacturing value added rose from 14 percent in 1990 to 20 percent in 2010 (UN, National Accounts Main Aggregates

Database, 2012). And even though Africa is suffering from deindustrialization with respect to the 1980s, more recent trends are indicating a renewed dynamism in the countries of the region. For example, Egypt, Morocco and South Africa have much lower shares of manufacturing in their GDP than the OECD average, but their manufacturing output has been growing more rapidly than in OECD countries between 2005-2010 (Figure 3).

Figure 3. Manufacturing, intensity and dynamism in developing economies, 2005-10.



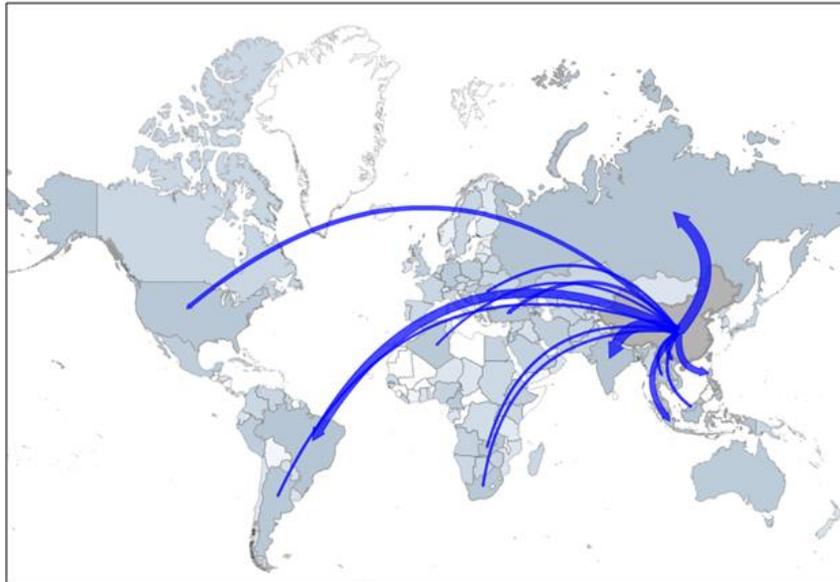
Note: OECD average: Manufacturing value added (% GDP) =2009 data or latest.

Source: OECD (2013), *Perspectives on Global Development 2013- Shifting Up a Gear: Industrial Policies in a Changing World*, OECD Paris, based on UN National Accounts Main Aggregates Database, World Bank, World Development Indicators, and OECD STAN Database, for OECD average, July 2012.

These changes in growth and production are accompanied by growing trade between developing economies. China, India and Brazil are emerging trade partners for Africa. They increased their share of total African trade from 2.3 percent and 1.7 percent respectively in 2000, to 7 percent and 3 percent in 2011 (OECD, 2013). China is playing a determinant role in African trade. In 2011, it accounted for 19 percent of total African exports, while in 2000 that share was

only 5 percent. African imports from China also grew from 5 percent of total imports in 2000 to 17 percent in 2011 (OECD, 2013a). China has also started to generate FDI outflows in a growing number of African countries (Figure 4). These new trade partnerships are contributing to open new technology transfer and learning opportunities.

Figure 4. Top 15 destinations of Chinese foreign direct investment, 2003-12.



Note: The size of the arrows indicates the number of jobs created by Chinese FDI from January 2003 to December 2012 in the top 15 recipient countries. The graphic only includes data from greenfield and expansion-related investments; merger and acquisition transactions are not captured. This map is for illustrative purposes and is without prejudice to the status of or sovereignty over any territory covered by this map.

Source: OECD (2013), *Perspectives on Global Development 2013- Shifting Up a Gear: Industrial Policies in a Changing World*, OECD Paris, based on *fDi Markets*. A service from the Financial Times Ltd., 2012.

In addition, growing developing economies are expressing new and diversified demands. Their growing middle classes are opening new consumer markets to be captured. These new consumers represent an enormous potential, and companies will struggle to gain their confidence and sell to them. This is happening not only in Asia, but also in Latin America and Africa. This rising demand can represent a strong incentive for domestic companies to develop products and services, and also to customize existing solutions to domestic market needs. The competition to gain those markets will be harsh. So far established multinational companies (MNC) have not been particularly active in targeting the emerging middle classes, but all points to the fact that they will increasingly do so (McKinsey, 2012). It is probable that MNCs will partner with local firms and institutions in order to penetrate the new market

segments. The growing demand together with the new learning opportunities could be powerful allies for production transformation strategies in developing countries.

## **2.2. A NEW GEOGRAPHY OF LEARNING AND INNOVATION IS EMERGING TOO, BUT AT A MUCH SLOWER PACE**

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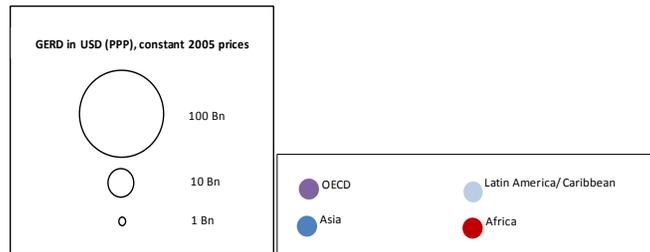
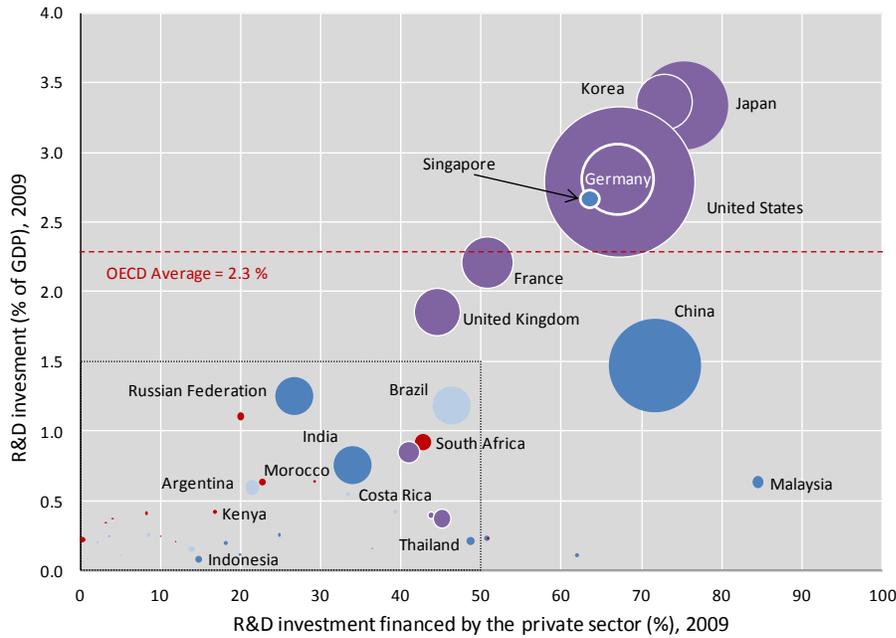
In addition to the new geography of growth, production and trade, a new geography of innovation is also emerging, but at a much slower pace. The diffusion of information technologies has contributed to increasing the possibilities for knowledge transfer and processing. Learning is increasingly happening not only through market channels. The new forms of knowledge flows go beyond capital imports or FDI and happen through networks and growing mobility of skilled personnel. Research partnerships between agents facing similar challenges and having complementary competences are happening on a global scale. A growing number of cities or localities hosting specific competences are investing in “branding” themselves to reaching new partners beyond any national effort. For example, the French city of Lyon, hosting a cluster of companies with high tech and logistical competences in urban lighting, is involved in a knowledge transfer partnership with growing Vietnamese cities willing to implement new forms of urban lighting. This is not an isolated trend; in the new global context new forms of partnership are developing by which highly localized competences and businesses can establish global partnerships to open new business and learning opportunities. But often only the localities with empowered governments and with at least basic capabilities are taking advantage of these new opportunities.

A growing number of developing economies are becoming attractive locations for research and innovation. For example, a raising number of R&D centers are opened in developing countries thanks to public policy support and to new business strategies of MNCs that increasingly perceive developing economies as future markets. These new trends are opening opportunities for learning and accumulating capacities in developing economies that were not available during the first generation of FDI that only included delocalization of the lowest levels of production phases.

Developing countries are also increasing their investment in skills, science and technology. Nonetheless, the gap with OECD countries persists (Figure 5). China is emerging as an innovator. Its image as a low-cost competitor is still present, but it is not predominant anymore. Chinese factories have accumulated capabilities and learning and are now moving up in the value chains. China more than doubled R&D expenditures over the last decade and in 2009 invested 1.5 percent of its GDP in R&D (the OECD average for the same year was 2.3 percent) and it is increasing training technical workers and scientific and engineering personnel. In Latin America innovation is, at least in terms of declarations, a key priority for most countries. However the countries of the region are far from the OECD average in R&D expenditures, patents and trademarks. Brazil, for example, is the leading country in the region, and its investment in R&D was 1.2 percent of GDP in 2010. Africa lags behind; investment in R&D, patents and trademarks are minimal when compared to other regions. The majority of

African countries invest little in R&D and the private sector hardly engages in innovation activities. No African country devotes more than 1 percent of GDP to R&D and most of the financing comes from the public sector.

Figure 5. R&D intensity and private sector commitment in selected countries, 2009.



Note: 2009 or latest available year.

Sources: OECD (2013), *Perspectives on Global Development 2013—Shifting Up a Gear: Industrial Policies in a Changing World*, OECD Paris, based on OECD MSTI Database for OECD countries, RICYT for Latin America and the Caribbean: RICYT; UNESCO for other countries.

### 3. CHANGES IN DEVELOPMENT POLICY AND THE "RETURN" OF INDUSTRIAL POLICY

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#### 3.1. THE QUEST FOR NEW FORMS OF ECONOMIC THINKING

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The new geography of growth, trade and innovation is not only changing development opportunities; it is also contributing to redefining development policy and the main issues on the development agenda. On the one hand, there are emerging global development challenges, like health and environment that are calling for new forms of global governance. On the other hand, there is wide consensus that growth, albeit necessary, cannot be an end in itself. Growth needs to be inclusive and sustainable, and not only for reasons of external pressures, but for growing internal demands. The new “middle classes” and the growing young populations in emerging and developing countries are increasingly expressing new aspirations and demands, putting pressures on national policy choices and calling for new responses to increase their opportunities and achieve better lives. These new demands represent a growing source of pressure for governments in emerging and developing economies to shift towards new development models that match global aspirations with local needs. Examples of these trends range from the growing demand for better and fairer education in Chile, a high-growth and well export-performing country in Latin America, to the call for social and economic fairness expressed by the Arab Spring. On the financial side, the new emerging countries are discussing how to close the financial gap and mobilize new sources of finance for development. The project of a BRICS bank could represent a major novelty in development finance (and hence in priorities for investment); however, the agreement between these emerging countries will require some time as many fear the potential predominance of China in this sphere. In addition, the 2008 financial and economic crisis has contributed to shake the fundamentalism in free markets and has re-opened a debate on the role of the state in contemporary capitalist economies (Skidelsky, 2009; Griffith-Jones *et al.* 2010). A growing quest for new forms of economic thinking and policy models is arising in OECD and non-OECD countries due to the growing recognition that markets alone do not always perform optimally for the society.

From the 2000s onwards, as the promises of the Washington Consensus were not fulfilled, developing countries have started to look at new development models. The rise of political leaderships concerned with the welfare impact of traditional market-led growth policies, together with the growing discontent with conventional growth recipes and the more ambitious demands and raising aspirations of the societies in growing developing countries, are concurring to define a new landscape in which the fundamental trust in self-correcting markets is started to be questioned, or, at least, not automatically assumed as the reference for policy action. This has implied on the one hand, the return to classical ideas of economic development, including the recognition that production activities differ in their capacity to generate linkages and raise aggregate productivity and a growing attention towards the role of demand, especially the domestic one. But it has also required searching for new policy models capable of

taking into account the specificities of the new landscape, characterized by increasing relevance of (local, regional and international) networks for production and innovation, higher speed of diffusion of information (when not of knowledge), and higher mobility of capital and talents.

How the changing economic landscape will affect development policy is still to be clarified on many fronts (including the future of aid, development finance and development cooperation priorities). However, a major difference with respect to the previous decades has already emerged: production structure (i.e. what countries produce, trade and consume and how they organize these processes) is back on the development agenda. Production structure is, once again, seen as an essential determinant of growth, productivity and income distribution. Even the discussion on the post-2015 MDGs has revealed that the neglecting of the “production and structural side” in the first generation of MDGs had been a weakness that needed to be addressed in the next generation of development goals, as often outcomes on poverty and inequality are shaped by structural issues. However, there is also a growing recognition that the development debate and the challenges differ today from the ones of the 1950s and 1960s where the structural issues were at the core of the development agenda. Today the level of integration of global economies (especially on the financial side) is much higher, thus requiring different types of policy approaches. On the other hand, the diffusion of information technologies has deeply changed the speed of information flows, thus creating new pressures for the accountability of policy actions.

### 3.2. THE RESURGENCE OF INTEREST IN INDUSTRIAL POLICIES

Together with the renewed interest in the “structural” dimension of development comes the resurgence of interest in industrial policy. After its golden age—which spanned from the 1940s to the 1970s—industrial policy was banned from development strategies in the name of structural adjustment programs. From the late 1940s onward, the majority of developing economies had put in place strategies, with mixed results, to foster the creation of endogenous technological and production capabilities to shift from agricultural to industrialized societies (Amsden, 1989; Wade, 1990; Reinert, 2007). With the upsurge of the debt crisis, the development agenda shifted from policies to foster structural change and productivity catching up, to narrowing poverty gaps. Poverty was considered an area that needed targeted strategies and active policy support, while the development of industrial capabilities was assumed to be an automatic process guaranteed by open capital and good markets, which once freed from the ties of state intervention and regulation would have conduced countries to specialize in exporting what they were best at. This was not the case in practice. While structural adjustment programs and globalization contributed to macroeconomic stability and fostered modernization of production activities, they also brought about job losses and dismantling of production and institutional capabilities in key manufacturing and technology areas, contributing to truncate the state-led industrialization efforts started in many developing economies in the previous decades (Fajnzylber, 1983).

The resurgence of interest in industrial policy does not mean that the controversy about it is over. But it seems that after decades of good and bad examples of industrial policies and in the presence of a new, more challenging economic landscape, the discussion is shifting to a more pragmatic level where economists and policymakers discuss not about the need (or not) of industrial policy, but on “what” to do and on “how” to do it (Chang, 2011). Somehow there has been a convergence towards recognizing that state intervention is needed in order to engender processes of structural change and favor the transition of the economy towards superior stages of development, in which rents are extracted more from knowledge than from capital accumulation or raw materials (Reinert, 2007; Cimoli *et al.* 2009; Chang 2012; Lin; 2012).

A major novelty in the current debate is that industrial policy is less and less viewed at as a set of targeted government interventions linked to the South East Asian policy management style. Industrial policy today is much more than a “South East Asian phenomenon”. The interest on industrial policy today is coming from different countries and in different ways (Rodrik, 2004; Chang, 2009; Cimoli *et al.* 2009; Noman *et al.* 2009; Noman, 2012; ECLAC, 2012; Lin, 2012; OECD, 2012a, 2013a). China is a peculiar case; it has been implementing industrial policy for a long time, mixing open economy approaches with strategic management of accumulation of capabilities and technology transfer for domestic learning. Most South East Asian economies are implementing production transformation strategies each with a peculiar focus; Malaysia is fostering FDI spillovers and SMEs development, Singapore is promoting technological upgrading and global integration and Korea is focusing on promoting national champions and the development of new key technologies.

A growing number of OECD countries are reopening the debate on industrial policies due to the long-lasting effects of the 2008 economic and financial crisis (OECD, 2012a). Austria, France and the UK are implementing new industrial policies to boost the competitiveness of their domestic industries and to create better jobs. The US is crafting new strategies to face the growingly competitive global scenario by implementing new manufacturing and innovation initiatives to strengthen the national production and technology clusters, as well as by promoting the creation of new US-based firms. In Latin America, the return of industrial policy predated the 2008 financial and economic crises. Brazil re-launched its industrial policy in 2003 and since then it is refining the institutional and financial arrangement for its production transformation strategy based on technological upgrading, diversification and specialization. Industrial policy is also rebounding in Africa. South Africa is the most pro-active country with its multi-annual Industrial Policy Action Plan (Zalk, 2012), but Morocco is also actively involved in designing and implementing a new industrial policy to better leverage from growing FDI in key strategic sectors, as the car industry. Senegal, on its side, is planning to re-create a national development bank to channel resources to production development.

Several issues are contributing to the resurgence of interest in industrial policy in developing economies:

- i. First, sustained growth and catching up are not low-hanging fruits for most of these countries. Globalization with a booming China opens new opportunities but also threats

for growth job creation and is requiring new strategic approaches to grasp the benefits of the new scenario (Dahlman, 2011). China evidently impacts different countries in diverse ways. It is boosting the demand for natural resources exports contributing to sustain growth in several developing economies; it is fostering new investment flows in the developing world contributing, for example, to the new dynamisms in African markets and it is challenging the survival of low-cost assembly and manufacturing in most developing economies. The rise of China is pushing countries to look at trade, manufacturing and defense under new angles due to the changes in the global geopolitical order. Creating and retaining manufacturing, technological and scientific capabilities is becoming more difficult and it is rising in countries' priorities.

- ii. Second, growth in emerging and developing economies has also opened spaces for proactive policies, which were not available in the 1980s and 1990s. In Brazil it allowed boosting investment for production development and social inclusion, contributing to create incentives both on the supply and on the demand side since the early 2000s. In Colombia the rise of revenues from natural resources has recently contributed to reopening the debate on the competitiveness strategy and on how to channel funds from natural resource extraction to support innovation and regional development. The coming into power of political leaderships in favor of a pro-active role of the state in fostering structural change also contributed to creating pressures to design and implement industrial policies in countries like Brazil and South Africa.
- iii. Third, the costs of poor industrial and innovation capabilities have become more visible. No country has developed without the creation of a sound and productive scientific and manufacturing base (Amsden, 1989; Wade, 1990; Chang, 1994; 2002; Reinert, 2007; Cimoli et. al 2009; Lin, 2012). This is even truer in global economies. The existence of knowledge-based capabilities is the precondition to grasping the benefits of global markets. The issue is not merely to be part of value chains, but to be in the position that allows capturing the most of their value. It is the existence of production and knowledge capabilities that allows seizing the benefits of global economies, not the other way round. Manufacturing has been changing in nature, and *per se* cannot be the only locus for absorbing the rising mass of workers, neither in OECD nor in emerging markets (IDA, 2012). But it is widely agreed that it is a key area to creating better jobs, promoting productivity growth and engendering linkages with other sectors. History shows that manufacturing is key to contributing to sustain growth and productivity and that it fosters the accumulation and diffusion of technical change. Advanced economies too, which have been praising the benefits of the "tertiarization" of the economy, are increasingly worried about their loss of manufacturing competences, especially in the aftermath of the 2008 financial and economic crisis (OECD, 2012a; IDA, 2012).

When governments envisage a more pro-active role of the state in the economy, the risks of capture and rent mismanagement are of course high. Policymakers and the public

administration are often well aware of the major bottlenecks in the policy processes and of the difficulties in implementing industrial policies. But new policy circles in developing countries today are starting to debate on how institutions and performance-based management schemes can help to maximize the effectiveness of government intervention to reduce lock-in and capture, instead of preaching for a minimalist policy approach to avoid mistakes and failures.

Since the last decade many developing countries are designing and implementing new industrial policies in a variety of ways. In general industrial policies involve a set of coordinated actions directed to change the prevailing specialization pattern of a country over the medium and long term, by increasing the rents derived from knowledge and innovation with respect to the ones deriving from the extensive use of raw material and labor. Often industrial policies include government actions designed to support the creation of endogenous production and technological capabilities in areas that are considered strategic for national development. The identification of these activities is country and time specific, but it is also based on the emulation of successful past experiences. When they are successful, industrial policies contribute to achieving a deep transformation of the socio-economic structure of the country in the medium and long run (Chang, 1994; Reinert, 2007; Cimoli *et al.* 2009).

By observing the theory and practice of industrial policies in different countries, it is possible to identify the principal features that shape them. Industrial policies differ, or resemble, across countries, for their governance, priorities, objectives and policy mix (Table 1). Some countries have a centralized/plan-based industrial policy model. Targets are set, and objectives and lines of action are formalized in national plans. This is the case for most East Asian economies, as well as for Brazil, Morocco and South Africa. But even countries without a formalized “industrial policy plan” or strategy implement *de facto* an industrial policy by financing research and technology transfer, by setting up regulations that favor certain types of agents over others and by promoting trade in specific industries. This is, for example, the case of the US where industrial policy follows what can be called a “decentralized/initiative-based” system where a variety of Federal and State-led programs and initiatives contribute to establishing a preference for American industry, including the intellectual property regimes law and some of its provisions, such as the Bayh-Dole Act (Cimoli, Coriat and Primi, 2009; Block and Keller, 2011).

Industrial policy has often a strong regional and/or local component. In some countries there is a prevailing bottom-up approach where most of competences at the level of industrial and technological capabilities are managed at the sub-national level; Germany and India are cases in point. Other countries follow a more top-down approach with reduced margin of maneuver for regional and/or local authorities, as it happens in South Africa. In other cases a more mix-approach prevails where national initiatives coexist in a more or less coordinated way with regional actions. This is the case in China, Brazil and Italy, for example.

In addition, industrial policy today needs to deal with the issue of the greening of the economy. The green economy represents a potential new paradigm for which industries need to be prepared for (Mathews, 2012). Not all will be leaders in green production and technologies, but there are windows of opportunities for first comers in this area that should not be

disregarded by developing countries. In fact, developing economies include territorial and social inclusion (i.e. Brazil and India) and green (i.e. China and South Africa) as priorities in their industrial policies.

Developing countries often face multiple challenges when designing their industrial policies. Some industrial policy actions aim at diversifying the production structure, contributing to creating capacities in new economic sectors (e.g. electronics, pharmaceuticals or biotechnology, etc.), or in new types of activities (e.g. design, research and development, value-added services, etc.). Other actions aim at fostering specialization and upgrading of existing activities and sectors. This means favoring modernization of production, increased efficiency and improved performance of existing companies or clusters of entire sectors. But industrial policy also aims at strengthening the density of a production system by fostering entrepreneurship, networks and collaborations, on the basis of the recognition that denser systems are more resilient, innovative and productive. This also implies including specific policies to address the drawback of persistent informality in developing countries (Srinivas, 2012). Each of the objectives poses specific challenges to the policymakers: how to identify the beneficiaries and stakeholders? Which incentives are needed to get them interested in the policy and which forms of dialogue are better suited to foster the necessary public-private partnership required for going from design to implementation?

In every country industrial policy is often nested in a strategic vision about the country's development path. The end is not to strengthen national economic actors (whether large or small firms or clusters); the end is to achieve higher growth, better jobs by simultaneously improving the positioning of the country in the global political and market place. This strategic dimension of industrial policy requires actions in multiple fields, well beyond private sector operations. For an industrial policy to be effective, targeted actions in finance, skills, infrastructure and trade are needed, as well as alignment with macroeconomic policy and competition policy. This systemic dimension is often difficult to achieve, but it is what ultimately determines the effectiveness of industrial policy in the medium and long term.

Table 6. Main features of contemporary industrial policies.

<b>POLICY MODEL GOVERNANCE</b>	<b>Plan-based:</b> ( <i>i.e.</i> formalised in national development plans/strategies). <i>Ex. Brazil, India, Korea, South Africa.</i>	<b>Top-down:</b> (Low responsibilities for regional/local governments). <i>Ex. South Africa.</i>
	<b>Initiative-based:</b> ( <i>i.e.</i> based on multiple-government-led initiatives). <i>Ex. US</i>	<b>Mixed:</b> (Co-existence of national and regional/local initiatives). <i>Ex. China, Brazil, Italy.</i> <b>Bottom-up:</b> (High responsibilities for regional/local governments). <i>Ex. Germany, Spain, India.</i>
<b>PRIORITIES/SCOPE</b>	<b>Traditional</b>	<b>Growth</b> <b>Job creation</b> <b>International competitiveness</b>
	<b>Emerging</b>	<b>Territorial inclusion &amp; competitiveness</b> <b>Social inclusion</b> <b>Sustainable/green economy</b>
<b>OBJECTIVES</b>	<b>Diversification</b> ( <i>i.e.</i> entry in new sectors/types of activities) <b>Specialisation and upgrading</b> ( <i>i.e.</i> scaling up in local and/or global value chains) <b>Increasing the density of the production system</b> ( <i>i.e.</i> fostering entrepreneurship, linkages, networks)	
<b>POLICY MIX</b>	<b>Industrial policy tools <i>strictu-sensu</i></b> ( <i>i.e.</i> direct and indirect incentives to firms; business regulation) <b>Trade policy and FDI</b> <b>Support to science and technology</b> <b>Skills development</b>	<b>Infrastructure building and upgrading</b> <b>Financing</b> ( <i>i.e.</i> development banks) <b>Macroeconomic policy</b> ( <i>i.e.</i> exchange and interest rate management) <b>Competition policy</b>

Source: Author's elaboration.

#### 4. (WHAT) CAN AFRICA LEARN FROM THE RECENT LATIN AMERICAN EXPERIENCE IN INDUSTRIAL POLICY?

There are no blueprints for designing and implementing a “good” industrial policy. Each country will need to identify its own approach taking into account its vision for development, as well as its endowments and challenges. However, countries can learn from the experience of others. We are often told by experts on Africa, that “Africa has another history, challenges and heritage” and that hence, most policy recommendations valid for other parts of the world do not apply. Africa is also highly heterogeneous, it includes small and large economies, natural resource rich and poor countries, landlocked countries and islands, countries at war and countries that are consolidating their democratic systems.

Even though every country is unique and faces challenges that require a context-specific approach, lessons can be learned from the experiences of others. Countries learn how to implement policy by trial and error and by accumulating know-how and expertise. The past and the current successful cases show that industrial policy works better when it has clear priorities, it is capable of getting a constructive dialogue between the public and the private sector, and it mobilizes investments in bundles in critical areas, including infrastructure, skills and finance. Since some South East Asian countries have been extremely successful in implementing industrial policies and achieving structural transformation, it is common to look at their experience and try and identify lessons for other developing countries. Often the “success” of the East Asian experience is confronted with the perceived “failure” of Latin America. However, Latin America has also accumulated extensive learning in industrial policies, not only in the past, but also in the last decade. Latin America has witnessed a (slow) return of industrial policies (Peres, 2009). Clearly, the fact that industrial policies are back in the region to a different extent and under different forms is not a proof of their effectiveness and good management; structural transformations tend to occur over decades and often industrial policies deliver results on the medium and long run. But many lessons can be learned from the ongoing experience of Latin American countries in designing industrial policies in the new and changing economic landscape.

The learning in industrial policies in Latin America can offer interesting contributions to the debate in Africa for several reasons. Both regions have been growing since the late 1990s and are facing the challenge of sustaining this growth and reducing inequalities in the long run. At the same time, they are both influenced by the new trends in their traditional OECD trade partners and in their emerging partners, which are redefining their development opportunities. In addition, they are both profiting from a good global momentum in which windows of opportunity for new comers seems to be more accessible due to increased diffusion of ICT, emerging global challenges such as the search for new and renewable energy sources and greener production and consumption modes, and changes in the organization of production at a global level, with growing specialization opportunities. In addition, countries in Latin America, as well as in Africa, are increasingly involved in developing new visions for their development in context of new societal demands and growing concern about equity. Most countries in the two regions have in fact suffered from a process of institutional weakening in the realm of science, technology and production in the aftermath of the structural reforms, and are now facing the challenge of design and implementing industrial policies with old or weak institutions.

Since the 2000s Latin America has witnessed a resurgence of interest in industrial policies. Brazil has been the pioneer, with the Integrated Industrial, Technology and Trade Policy introduced in 2003, that then evolved into the Production Development Policy in 2008 and in the *Plano Brazil Maior* in 2012. Other countries in the region have had a shier approach towards explicitly using the term industrial policy, but in practice sectoral technology initiatives and governments incentives to promote domestic scientific, technological and industrial development have been strengthened in most countries of the region. Argentina, for example,

has created its Ministry for Science, Technology and Productive Innovation in 2007, signaling the willingness of the country to increasingly shift towards a more knowledge-based growth pattern. Chile has focused on promoting industrial clusters and has created a new government funds to promote innovation by extracting rents from mining.

The return of industrial policy comes in a new and rapidly evolving global context that calls for new policy approaches. The reshaping of the global development landscape and the rise of China are not a blessing, nor a curse for developing countries. In the medium and long term, much of its impact on other emerging and developing economies will depend on the strategies and policies they will implement in the short and medium term. If the ultimate goal of industrial policy is still sustaining growth, productivity and employment, countries today need to do it by operating in global knowledge economies and by fostering at the same time social and territorial inclusion as well as the greening of production and consumption modes. The broadening scope of industrial policy and the increased interdependency of economic agents in global economies pose new challenges to the creation and retention of production and knowledge capabilities. How to better tap into the resources and competences available elsewhere? How to create the incentives to go beyond easy short term gains and engage in the costly and painstaking effort of building domestic capabilities?

Latin American countries are recognizing the importance of strengthening their production and innovation capacities. Despite the still-prevailing suspicion about the risks of failure of industrial policy, the wind is changing. The new context and the increased availability of information about countries' strategies are showing that a great deal of state intervention is needed to back up private sector dynamics and boost development. In the last decade several emerging and developing economies re-engaged in active industrial policies in Africa, Asia and Latin America.

Latin America looks today like a region in motion that is increasingly acknowledging the relevance of science, technology and innovation for development and that is, in different ways, trying to foster production transformation and upgrading through different channels (Peres and Primi, 2009; David and Foray, 2012). From the recent experience of the return of industrial policies in Latin America it is possible to identify some lessons for Africa around the following eight main points:

#### 4.1. REHABILITATING THE PLANNING FUNCTION IN GOVERNMENTS

Industrial policy is back in Latin America, but with different strengths and nuances in the different countries. Brazil is the country that more openly speaks about its industrial policy, however most Latin American countries have reinforced in the last decade government actions to strengthen domestic entrepreneurial activities and/or to promote a better inclusion in global value chains by promoting new forms of FDI and by increasing support to science and innovation. Achieving structural transformation in Latin American countries means overcoming several barriers—low skills, poor infrastructure, low demand and scant financing, for example. Critics often argue that getting all these conditions right is a luxury that most

developing countries cannot afford. But clarifying the objectives of structural transformation helps in revealing the barriers and in creating a demand for articulating the necessary actions.

Regardless of the specific country approach, the countries of the region are facing a major governance challenge to rehabilitate the planning functions in countries where these capabilities had been reduced due to the extensive application of the structural reforms packages of the 1990s. In the last decade, Argentina, Brazil, Chile, but also smaller countries like Costa Rica, have re-strengthened their planning functions by creating inter-ministerial bodies for policy coordination. The institution of these councils is not a guarantee of their capacity to operate, but when matched by Presidential commitment they help in creating spaces for aligning actions of different ministries to the objective of structural transformation and production upgrading. In certain cases they can help in building trust and alignment with the Ministries of Finance, which often are the most adverse to endorse production transformation strategies.

#### 4.2. RECOGNIZING THAT IT IS POSSIBLE (AND LEGITIMATE) TO GO BEYOND CURRENT COMPARATIVE ADVANTAGES

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The heritage of structural reforms has contributed to a generalized perception that production activities and sectors are all alike and that deliberate efforts to "build" competences in given technological and production fields were doomed to failure. However, one of the most welcomed changes in the policy discussion in Latin America in the post-Washington Consensus period has been the return of the sectoral dimension in innovation and competitiveness strategies; i.e. sectors differ for their impact on aggregate productivity and for inter-sectoral technological spillovers and for the ways in which they create, absorb and diffuse knowledge. Hence, policies need to openly take into account the sectoral dimension.

However, many countries in Latin America struggle when it comes to deciding how to prioritize actions. And often policymakers feel more comfortable (or face less opposition) when dealing with horizontal measures. The discussion on how ambitious should the policy be and how far from existing assets and competences a country can target are non-consensual issues in the region. A large economy like Brazil with a quite articulated industrial matrix and a young and growing population is putting in place a strategy (Brazil *Plano Maior*) with multiple targets: some incentives target the creation of frontier knowledge and technology, others aim at boosting the competitiveness of existing sectors and others target national priority sectors like energy and health. For smaller economies the issue is more challenging. Costa Rica has opted for a competitiveness model that focuses on the attraction of FDI as a lever to transform the economy, while Chile has followed a softer approach by promoting cluster development in areas where the country already had some advantages and capabilities (copper and mining, wine and ICT, among others). In addition, even in the same sectors some firms operate at the frontier and are well integrated in global production networks. Yet most of the domestic firms are small and characterized by low productivity and reduced international competitiveness, when they do not operate in conditions of informality. The experience of Latin American

countries shows that horizontal measures have limited impact in context characterized by high structural heterogeneity.

The return of industrial policy is contributing to redefining the development debate and to re-legitimizing interventions to create new capabilities. This can be done in several ways, by promoting the upgrading and diversification of existing companies, by fostering the creation of new companies and by strategically dealing with foreign ones. While there is disagreement on how to choose the direction of technical change, and who should do it, there is consensus on the fact that the new context opens opportunities for going beyond the current specialization pattern. Countries can mobilize different levers for strengthening capabilities, including financing of S&T development, public procurement, FDI and entrepreneurship promotion. Those instruments are not novel, but can be designed in new ways to be in line with the new scenario and be more effective.

Science, technology and innovation do not receive the same attention in all Latin American countries. Some countries are trying to exploit the synergies between industrial development and promotion of science, technology and innovation. Brazil is a case in point where the partnership between the Ministry of Science and Technology, Ministry of Development, Industry and Foreign Trade and the Brazilian Development Bank (BNDES) is a clear advance in institutional design. Fostering science, technology and innovation requires new spaces for vertical and horizontal co-ordination. Innovation is increasingly a cross-cutting issue in the agendas of different sectoral ministries (such as health, energy, the environment and education), beyond its traditional role for development in agriculture and manufacturing. There is an increasing need for more co-ordination between different sectoral agendas (of the various ministries) to increase the effectiveness of public action. Brazil has responded to these challenges by creating co-ordination mechanisms between innovation policy and productive development policy. At the same time, in line with the recent national strategy for growth with social inclusion, the Ministry of Science and Technology has supported the strengthening of institutions in Brazil's federal states in order to promote production structure diversification and to increase the country's scientific, technological and productive strength.

Among some of the recent tools that Latin American countries are introducing to foster the strengthening of domestic innovation capabilities and sustain learning processes, there are:

- i. *The strategic management of FDI.* While in the past FDI was considered a potential threat for the creation of endogenous technological and production capabilities, many countries in Latin America are now trying to profit from the new generation of FDI. Companies have, in fact, started to delocalize not only assembly functions, but also more knowledge intensive activities including design, testing and R&D. Some countries in the region have started to put in place on the one hand incentives to attract these types of FDI and, on the other hand, to promote the generation of backward and forward linkages with the local economy. Costa Rica is probably the best known example in the region (OECD, 2012b), but Brazil (especially some states) and Chile have also been active in this field. And have accumulated negotiation capacities with potential investors.

- ii. *Public procurement*, that until few years ago was another taboo in the regional policymaking, is now starting to be included among the tools to strengthen the domestic industry and to attain social goals (like for example in the health-care sector). It is generally used in areas such as health, defense, infrastructure and energy where there are high social and economic issues at stake and where in general the state is involved on the research, use, service delivery and/or production. Brazil includes public procurement as one of the tools of its industrial policy. However, public procurement needs strong government capabilities. Often there are controversies, especially from foreign companies, which claim for the application of the WTO principle of equal treatment. In addition, it happens that the existing legal frameworks can act as barriers for the required procedures. Developing countries would benefit from building institutional capabilities at the national, regional and local level to allow policy learning in the management of public procurement (Kattel and Lamber, 2010).
- iii. A new and fashionable trend in Latin America is the setting up of new *government programs to promote the creation of start-ups*. These programs have low operation costs and are contributing to create an image of Latin America as a new place for innovation (OECD, 2013b). Initiatives of this type are flourishing in most countries in the region, including, Brazil, Chile, Colombia and Peru. Some are more oriented towards the attraction of foreigners with entrepreneurial skills and experience, as the Chilean program. Others, as the Brazilian one, target mostly national entrepreneurs, even though 25 percent of total beneficiaries can be from outside the country.

A major puzzle for Latin America, as well as for Africa, is how to promote the transformation and upgrading of the agricultural sector, while promoting diversification and industrialization. Brazil offers an interesting example. In the 1970s Brazil instituted a National Corporation for Agricultural Research (EMBRAPA); a public company is in charge of carrying out frontier research to increase the productivity of the national agro-industrial production, while at the same time preserving the environment. The organization is financed by the general government budget, but it is also allowed to receive additional contributions by external partners, including multilateral financing agencies, private companies and foundations. The organization is managed with high research standards, but it is strongly oriented towards technology transfer and productive application. It works both with small rural producers and in partnership with large domestic and foreign companies. The work with local producers heavily relied on the existence of rural extension services that have been closed or impoverished by the structural reforms, inducing EMBRAPA, to develop ways to share solutions with agricultural producers; some branches of EMBRAPA have in fact developed new “mobile units” that travel to the regions and help the small producers to introduced the innovations in their processes.

### 4.3. FINDING APPROPRIATE SOURCES OF FINANCE AND TAILORING FINANCING SCHEMES TO THE NEEDS OF BENEFICIARIES

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The recent experience of Latin America shows that appropriate, long-term oriented financing schemes are necessary. Industrial policy needs to get the private sector on board, and for this, long-term financing and clear regulatory framework for financing schemes are necessary.

Development banks are proving to be powerful allies in channeling financial resources to production development and innovation. But these institutions need to introduce innovations in their management and operational routines to be able to foster innovation and operate in a fast-changing environment. For example, in Brazil the National Development Bank (BNDES) is a key actor in the design and implementation of the national industrial and innovation policies. The bank had introduced new procedures to evaluate intangibles to be more capable of screening projects with higher innovation potential, and it has introduced new tools for targeting the different demands. For example, a key challenge for Brazil is increasing SMEs financing. Scanning and evaluating credit requests for SMEs is not only challenging and time-consuming, it also requires multiple operations that could result in delays that actually inhibit the operation of the firms and their investments in innovative projects. The BNDES has introduced a credit card for SMEs (*cartão BNDES*) that allows them to easily access government credit lines in a quicker and safer way than through credit cards operated by other first-tier banks.

Latin American countries have also developed new forms of partnership with the private sector to match funds and finance innovation and production development. On the one hand, some countries have introduced sectoral technology funds to finance mission-oriented research programs and innovation projects in fields of strategic importance (e.g. oil, energy, and water management in Brazil; software and biotechnology in Argentina). Sectors matter for industrial policy because production, technology and innovations have organizational, technical, skills and infrastructure requirements that are highly sector-specific. These systems that channel private and public resources to innovation projects are operative in Argentina, Brazil and Mexico, among others. Brazil has been the pioneer. As early as in 1999, it instituted a system of sectoral technology funds to finance R&D and innovation in specific sectors, thanks to a system of matching grants from the private and the public sector (Cimoli *et al.* 2005; 2009). The existence of these funds contributes to build partnerships and trust between universities and the private sector. The operation of these funds is complex because they require coordination between industry and academy, and these relationships are often difficult and built over time through processes of trial and error.

Natural resource-abundant countries have also introduced new forms of financing for innovation. The rising prices of raw materials opened opportunities for extracting rents from these activities and channeling them to economic development. Chile has been the pioneer. In 2005 it issued a law that channels royalties from mining exploration to a public fund for innovation. Colombia and Peru are today debating on introducing a similar type of mechanism.

The use of this source of finance for production development and diversification requires addressing the territorial dimension, because consensus is needed both on the sectoral allocation of those resources and on their territorial destination. The communities hosting the natural resource related activities claim rights on the use of those resources and consensus-building efforts are needed. While the creation of funds based on natural resource rents is a step in the right direction, it is not a panacea for countries rich in natural resources. The design and management of those financing schemes is complex and requires strong learning processes both at the central and at the regional level. High political leadership and long-term support are required to allow the mechanisms to function and be effective.

#### 4.4. CLARIFYING WHO ARE THE STAKEHOLDERS AND BUILDING TRUST

In Latin America, a major challenge is to identify the stakeholders and the beneficiaries of the industrial policy initiatives, as well as to get a consensus for these policies in a context with high social and poverty challenges. The conformation of the “elite” challenges the capacity of industrial policy to get the private sector on board and to establish a pact for national development. Often the “elite” is well-connected with foreign economies, but shows low level of trust with domestic financing and production agents. Today the option of picking few national companies as major beneficiaries and stakeholders of the policy would not be feasible. Not only is the context characterized by a variety of agents that the policy is called to act upon, but it would not be socially sustainable to make industrial policy a policy for the few. Even accepting that a degree of concentration of efforts and resources is needed, because scattered interventions are inefficient, the new industrial policy needs to be inclusive. Countries need to decide how to deal with a variety of stakeholders including SMEs, start-ups, foreign companies operating in the country and with the nationals installed abroad. A key challenge for Africa, as well as for Latin America, is how to create incentives for the birth and evolution of a national entrepreneurial class. It is not only about having companies operating in the country; it is about creating a system in which nationals can grow as Schumpeterian entrepreneurs.

#### 4.5. MOBILIZING REGIONS AND TERRITORIES AS AGENTS OF CHANGE

The return of industrial policy in Latin America is characterized by a growing attention devoted to the “territory.” While in the past industrial policy interventions have been territory-blind, today this option is not sustainable and not desirable. In some countries in Latin America, including Chile, Colombia and Peru the willingness to channel resources from the mining sector towards innovation is helping to create a demand for strengthening institutions at the regional level. In Argentina and Brazil, the governments are increasingly concerned about promoting a more balanced development pattern and finding new sources of growth in provinces and states.

Regions and cities can be powerful additional sources of growth and innovation on the one hand, and on the other hand, industrialization today needs to take into account its impact on urbanization and territorial management. Many countries in Latin America (as well as in

Africa) are consolidating their democratic systems and their industrial policies need to be nested in these political schemes; they cannot be a kind of closed-door bureaucratic exercise that then has to permeate the whole country. The development of production capabilities in Latin America is not happening in a harmonious way within countries. Often, rising growth and accumulation of production and innovation capabilities is happening in specific locations within the countries, while the majority of the territory still lags behind. This agglomeration trend, if not counterbalanced with active policies for territorial development, might undermine potential growth in the future by underestimating new sources of growth and by engendering growing social tensions.

#### 4.6. PLANNING INCENTIVES FOR THE NEXT PARADIGM: INVESTING IN GREEN SOLUTIONS

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Despite the disagreement at the multilateral level, many developing economies are recognizing the opportunities and challenges of the new green economy paradigm. On the one hand, they need to foster learning and increasing participation in global production networks, which in many cases are still based on “back” technological paradigms. On the other hand, they will all need to invest and prepare themselves for the future. This means being involved in research, as well as profiting from importing greener technologies which are increasingly cheaper in the markets thanks to the Chinese action (Mathwes, 2012). Brazil, for example, is investing in green technologies, building up on government-led efforts started in the 1970s. Environmental sustainability is a priority also for small economies like Costa Rica and Panama, but it is still not high up in most countries in the region. In addition, most of the “green” transformation programs focus on the technological dimension, as in Brazil, while the green paradigm would require to address in addition to the technological dimension, also the consumption side and the change in behaviors, service delivery and urban planning. These are all areas where developing countries could make big steps.

#### 4.7. INVESTING IN STRENGTHENING STATE CAPABILITIES

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The role of institutions is paramount in development. These are created through time in a cumulative process. The countries where the government administration has been reduced or minimized due to the implementation of the structural reforms face peculiar challenges, when there is a growing demand for more and better state intervention. Institutional strengthening is necessary. The traditional argument states that countries should get the “institutions” right and only then get the policies “right”; but the reality shows that things work the other way round. Institutions co-evolve with the challenges they are called to face and with the policies that they administer and implement. Poor institutional capabilities are no excuse for calling for low state intervention. Investing in institutional strengthening is part of a pro-active policy package. Latin American countries have strengthened their institutions for innovation in the last decade. Argentina created a Ministry for Science, Technology and Productive Innovation in 2007 to

signal the willingness of the country to promote knowledge-based growth. Brazil introduced innovation among the priorities of its national development bank (BNDES), and it is promoting the creation of a new corporation to promote mission oriented research. Chile created a Ministerial Council for Innovation. Smaller economies have made progress too: Costa Rica has created a ministerial council to promote the coordination between FDI policy and innovation and Uruguay has created a National Agency for Innovation, for example.

#### 4.8. DO NOT LEAVE EVALUATION AS AN ADDITIONAL ITEM ON THE “TO DO LIST”

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Latin American countries have been investing more in policy planning than in implementation and have been traditionally sloppy in policy evaluation. Most countries lack systems for policy monitoring and evaluation. However, in the last decades, thanks to the diffusion of ICT, knowledge about “inputs” has increased in quality, quantity and accessibility, but still impact evaluation has not been developed in an adequate manner. In addition, even in countries where there is a favorable climate for industrial policy today, like Brazil and South Africa, proponents are required to be “accountable” for the executed actions and to prove the effectiveness of the implemented measures. The slowdown of the global economy in the aftermath of the 2008 crisis (and the entry into a non-expansionary phase of the economic cycle) led to advocate for fiscal consolidation in order to stabilize the economy.

The experience of Latin American countries shows that targeted efforts to create a culture of evaluation is needed. It will not develop spontaneously in most countries. Evaluation is more useful when it is conceived of as an integral part of the policy cycle, and not an “external” function of control of check and balances. In small countries, external support is often essential to carry out policy evaluation; however, even in those cases, direct participation of local constituencies is essential to ensure meaningful evaluation exercises. Some Latin American countries have introduced industrial and innovation surveys to monitor trends and assess policy impact (Cimoli *et al.* 2011). Improving the capacity to use surveys is a mid-long term process requiring a permanent dialogue between experts, statisticians and policymakers.

While impact assessment is rare in Latin America, most countries advanced in creating and facilitating access to information about policy programs and their implementation. In some countries agile agencies like observatories are contributing to information generation and analysis. For example, in Argentina the Observatory on Employment monitors job and production trends in the country and favors policy fine-tuning by operating in close collaboration with the ministerial level. In Colombia the Observatory for Science and Technology (OCyT), created in 1999 as a public-private partnership initiative, is responsible for the elaboration of qualitative and quantitative indicators to monitor trends and support the process of strategic decision-making.<sup>3</sup>

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<sup>3</sup> In South Africa, for example, the *Department of Trade and Industry* (DTI) has to report annually to the Parliament the implementation results of the *Industrial Policy Action Plan*. It is also required to present a mid-term implementation

## 5. CONCLUSIONS

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The new economic landscape is opening up opportunities for Africa, but market forces alone will not be enough. Creating more and better jobs, improving the participation of Africa in production networks and increasing scientific and technological capabilities in the countries of the region are still goals to be reached by African countries. History shows that development is a process that goes hand in hand with the building of domestic institutions, strengthening of domestic demand and supply and with the creation of backward and forward linkages within the economy and with foreign partners. These processes entail accumulation of scientific, technological and production capabilities as well as intensive institutional learning. Creating the conditions for promoting learning and structural change in Africa could help the countries of the continent to fully grasp the opportunities of the new global economic scenario and reduce the deep gap that still separates opportunities and living standards in Africa from the rest of the world.

The re-legitimization of the "production structure" as an area for policy intervention and the resurgence of interest in industrial policies can be allies in engaging African countries in implementing new transformation strategies and improving the participation of its countries in the global economy and achieving progress on the domestic fronts. For example, South Africa is engaged in Multi-Annual Industrial Transformation Plans and Morocco has a new industrial policy aiming at strengthening domestic production leveraging on FDI in priority sectors, including the automotive one. However, designing and implementing industrial policies is easier said than done. Especially in the new economic landscape characterized by high mobility of capital and labor, the growing relevance of international knowledge and production networks and in countries where there is still a high policy resistance in accepting the legitimacy of embracing ambitious transformation strategies.

Southeast Asian countries are often looked at to derive lessons about industrial policies; however, Latin America has also recently accumulated interesting experiences to share with Africa in this respect. Countries should not underestimate the importance of claiming the right to deliberately intervene to alter the production structure and favor specialization in more knowledge and technology intensive sectors and activities as a key pillar in a country's development strategy. There are no automatisms in development processes, and market incentives alone are not generally enough to promote a transition towards superior stages of development. Science, technology and innovation, as well as learning processes, are paramount in development. Investing in building learning and absorptive capacities is crucial to be able to tap into existing knowledge and to open opportunities for leap-frogging. Latin America has

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review, including quantitative and qualitative achievements of strategic and sectoral targets, including the number of beneficiary firms, number of jobs created, allocation of government support and changes in legal framework. The evaluation process includes a review of mid-term challenges and opportunities and a re-assessment of strategic priorities taking into account what has been achieved through policy implementation and the eventual rise of new challenges. In South Africa the industrial policy implementation mid-term review also clarifies the coordination requirements with other policies, including trade, competition, technology, innovation, and green economy.

started to advance in this area by increasing the importance of the innovation agenda in the countries' development strategies; Africa has much to do in this respect. Creating a culture for innovation and stimulating domestic entrepreneurship are important component of development strategies.

Industrial and innovation policies are effective when they manage to get the private sector on board; this is an open challenge for countries in Latin America as well as in Africa. It is not uncommon that business and political elites are responsible of the low impact of government industrial development strategies because they tend to have low trust in domestic consumption and production. Creating a national entrepreneurial class is a key component of the development process. Africa has a big asset for breaking this vicious cycle and grasping the opportunities of the new global economic and political context: the potential of its young and growing population. The young population is increasingly skilled and is expressing new demands and aspirations that are at the essence of the "animal spirits" that are behind the dynamism of our economies. Industrial policies should be able to mobilize them, whether they are in the continent or abroad, to make Africa the next rising giant.

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