

# Rethinking Productive Development

SOUND POLICIES AND INSTITUTIONS FOR ECONOMIC TRANSFORMATION

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DEVELOPMENT IN THE AMERICAS



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The Development in the Americas (DIA) series is the flagship publication of the Inter-American Development Bank (IDB). Each year the IDB presents an in-depth study of an issue of concern to Latin America and the Caribbean. This year's edition, titled Rethinking Productive Development: Sound Policies and Institutions for Economic Transformation, takes a fresh look at the contentious issue of industrial policy. How can industrial policy, which has often been counterproductive, be transformed into a successful tool to increase productivity? The Report proposes a new conceptual framework to help decision-makers better evaluate and adopt the productive development policies necessary to prosper while avoiding the mistakes of the past.

This synopsis reviews the analysis of market failures that lies behind the conceptual framework, a few highlights of its application in key areas such as innovation, and the institutional requirements for successful policy interventions. Together, this synopsis and the table of contents provide just a taste of the rich information and valuable policy implications that distinguish this year's edition of the DIA.

# Exploring a Different Industrial Policy

“We shall not cease from exploration  
And the end of all our exploring  
Will be to arrive where we started  
And know the place for the first time.”

*T.S. Eliot, Four Quartets*

Successful growth experiences around the world have often been associated with active productive development policies (PDPs).<sup>1</sup> Today’s advanced economies owe much to them. To mention one of many recent examples, the republic of Korea, probably the most successful development story of the 20<sup>th</sup> century, shaped its economy with active policies in support of specific sectors at different stages of development, from fertilizers to shipbuilding, automobiles and more recently electronics.

At the same time, industrial policy has often done more harm than good. In Latin America and the Caribbean, in particular, misguided industrial policies gave them a bad name. For a while, the prevailing view in the region was that the best industrial policy was the one that did not exist. However, shunning active policies has not produced the desired results. Low productivity and slow catching up in the region are now leading countries to take a fresh look at policy initiatives that go beyond macroeconomic stabilization and market-friendly structural reforms. Countries are actively searching

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<sup>1</sup> For the most part, the report uses the term productive development policies instead of industrial policies. This choice is meant to emphasize that the report analyzes policies that go beyond industrialization and the manufacturing sector, to agriculture as well as services, and that it offers a fresh look that departs from traditional industrial policy. Furthermore, the use of the term productive development policies avoids a term that has become ideologically charged.

for productive development policies that avoid the failures of the past, but not always with analytical clarity. They spend significant resources on them, but not always well.

The view in this report is that productive development policies are a valuable component of a broader development strategy. The question is not so much “whether” countries should engage in these policies, but rather “which” policies and “how” to do it. In a context in which policies can do good but also harm, this report contributes systematic ways of rethinking policies for productive development to separate the wheat from the chaff. This pragmatic, non-ideological view may contribute both to critically review policies and institutions in place as well as to build new successful ones looking ahead. How do current policies and institutions stand scrutiny? How could they be restructured for better performance, retaining and strengthening the good ones and reforming or slashing the not so good ones? How can countries develop brand new promising policies? How can they build new institutional capabilities to enable more ambitious policies?

This Report leads a journey of exploration of industrial policy with new eyes.

# Contents of the Full Report

## Part I The Role of Productive Development Policies

- 1 Rethinking Productive Development
- 2 A Conceptual Framework for Productive Development Policies

## Part II Sound Policies in Key Areas of Application

- 3 Investing in Ideas: Policies to Foster Innovation
- 4 The Start-Up and Scale-Up of High-Productivity Firms
- 5 Beyond the Classroom: Preparing People to Produce
- 6 Giving Credit to Productivity
- 7 More than the Sum of its Parts: Cluster-Based Policies
- 8 A World of Possibilities: Internationalization for Productive Development
- 9 Selecting Priority Sectors for Productive Transformation: An Elephant in the Room?

## Part III Institutions for Successful Policies

- 10 The Hard Part: Building Public-Sector Capabilities
- 11 Two to Tango: Public-Private Collaboration

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# PART I

## The Role of Productive Development Policies

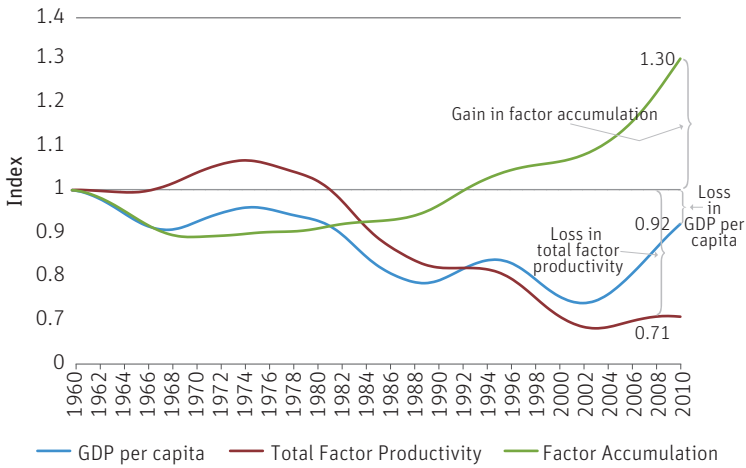
The first part of the report puts industrial policy in the context of today's policymaking and focuses on the important role of active policies for advancing economic transformation and sustained growth in the region. It lays down the basis for a sound approach to productive development policies (when do they make sense and have a reasonable chance for success?) and provides a conceptual framework to think about policy in a systematic way. The rest of the report rests on these analytical foundations and illustrates how this way of thinking can yield useful guidelines for policy action.

Despite success in macroeconomic stabilization and good progress in market-friendly structural reforms, the region has not achieved its expected high growth performance. While the accumulation of factors of production, both physical and human capital, has helped to narrow the income gap with the United States, productivity is low and its poor performance continues to be a drag to income convergence (Figure 1). In contrast, other successful developing regions such as the East Asian tigers have been able to sharply close their productivity gap (Figure 2). What else could the region do in terms of productive development policies to spark productivity and growth? This is the question policymakers ask and this report intends to help answer.

Questions of productive development policies are charged. Misguided industrial policy gave it a bad name in the region and anything that sounds even remotely similar often causes apprehension. At the same time, development success stories around the globe have typically made use of strong industrial policy; active policies for productive transformation are often decried in the

**FIGURE 1**

**GDP per Capita Decomposition: Typical Latin American Country Relative to the United States (1960=1)**

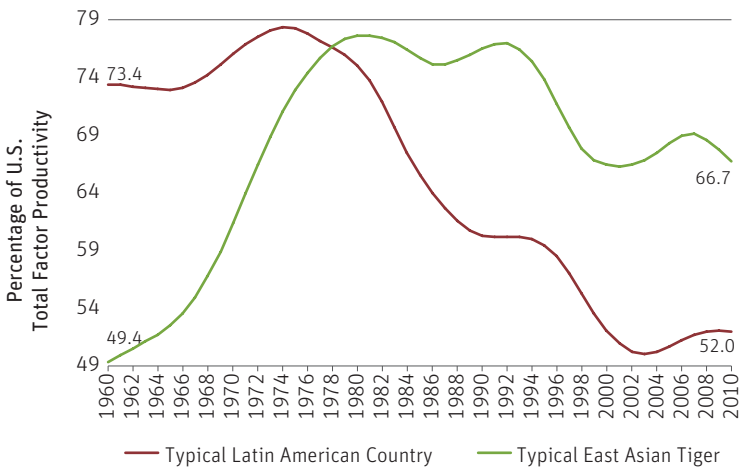


Source: Authors' calculations based on Fernandez-Arias (2014).

Note: The typical Latin American country is calculated using the simple average across countries.

**FIGURE 2**

**Total Factor Productivity of a Typical Latin American Country Relative to the United States**



Source: Authors' calculations based on Fernandez-Arias (2014).



discourse of successful countries but supported in practice.<sup>2</sup> To leave aside the tools of industrial policy critical in most success stories simply because they can be misused is a luxury the region cannot afford. Flatly rejecting all policies that resemble industrial policies because of past failures in the region would amount to throwing the baby out with the bath water. Rather, wise policymaking would learn from the experience, both success and failure, building on what worked and discarding what did not. In particular, it would understand the weaknesses leading to the failures of the past in order to find ways to avoid them. The policy agenda in this area is not about whether to try active policies but how to do it, not necessarily spending more but certainly spending right. This report provides guidance for the kind of rethinking that this agenda demands.

One key failure of past industrial policies in the region is that they did not focus on developing countries' latent comparative advantages, a critical anchor of successful development policy elsewhere. Subjective and arbitrary policies going against the grain of international competitiveness bred a rent-seeking culture, led to economic inefficiency, and ultimately ran into a dead end.

Another key lesson is that successful industrial policy requires underlying institutional strengths. In East Asia, export-oriented industrial policy, in which promotion was contingent on export success, emerged in the context of strong public sectors capable of implementing policies and enforcing them. In contrast, public sectors in the region were not strong enough to develop a sound development strategy and withstand capture by private sector

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<sup>2</sup> The United States, for example, pursued these active policies despite an arduous debate regarding productive development between Jeffersonians (who thought that free markets were the best way to organize production) and Hamiltonians (who favored active government). Perhaps, as suggested by Mazzucato (2013), success lies in “*talking like Jeffersonians but acting like Hamiltonians.*” (See also The Economist, 2013).

interests. The report takes to heart these lessons throughout the analysis to ensure that rethinking industrial policy opens a way forward to a different industrial policy, not to a pendulum swinging back to the ways of the past.

If some policies may help while others may harm, how can countries validate productive development policies? The report suggests three key tests (“the Holy Trinity”) to assess policy adequacy that are quite powerful for weeding out the bad from the good:

- **What is the market failure that has been diagnosed to justify the policy?** Market agents possess deep business information and a strong profit incentive to use it. In the absence of market failures, private decisions made on this basis lead to economic efficiency. The case for public policy intervention has to be based on identifiable reasons that point to the existence of market failures so that the policy intervention generates higher social returns. Policy initiatives not disciplined by this rationale may easily interfere with what works and be counterproductive. Proposed policies in market economies can and should be tested by a simple question: why does the market not act upon presumably desirable opportunities?
- **Is the alleged policy remedy—whether it entails alleviating the failure or redressing its impact—a good match for the diagnosis?** Adequate policy needs to be a solution to the problem identified, so that the market works better once the policy is in place. All too often policy is not designed to address the problem justifying policy intervention, or its implementation deviates from the design intent, and it ends up dealing with symptoms rather than the root cause. Policies need to be an effective solution to the problem.<sup>3</sup>

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<sup>3</sup> These analytical methods to assess productive development policies are powerful but inaccurate. Learning from experience through policy evaluation in order to refine initial assessments is an essential component of a healthy system. As part

- **Are institutional capabilities sufficiently strong to design and carry out policy as intended?** Even if there is a market failure that in principle would justify policy intervention, weak public-sector productive development agencies may not have the capabilities necessary to adequately adopt it. For instance, some policies may be exposed to capture by private or political interests, or require strong collaboration across government agencies. Insufficient institutional capabilities necessary to adequately address these issues should be regarded as a constraint on countries' feasible policy set. In other words, policies that work in countries with strong institutional capabilities may be ineffective or even harmful in countries without them.

Applying the above tests varies with the nature of the productive development policies, which come in a wide variety of flavors. In order to facilitate a systematic analysis of the merits and perils of each policy, the report uses a simple conceptual framework to classify policies in different categories in order to make sense of their diversity. It argues that the considerations to take into account when thinking about policy vary depending on the category in question.

### *The Policy Framework*

The policy framework looks at the scope of application and the type of instrument, which are critical factors to focus the tests. In terms of scope, policies can be vertical (applicable to certain sectors on a selective basis) or horizontal (applicable to all sectors in relation to a given market activity). At the same time, the policy instrument

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of an integral system, impact evaluation would also follow the “Holy Trinity” and gauge the effectiveness in addressing the market failure that justifies the policy, rather than proximate impacts on direct policy beneficiaries.

may take the form of a public/collective input useful to private production or a market intervention that affects the profit equation of private firms and in this way alters their behavior. Figure 3 presents this classification of policies in the form of a 2x2 matrix, and provides an example for each resulting type.

The typology helps analyze the nature of the market failure justifying policy and the adequacy of the policy response, covered in the first two tests. In the case of horizontal market interventions, like subsidies to encourage activities such as R&D, job training or investment in equipment, the key questions should be: what are the market failures that need to be addressed in the targeted activity, and do the policy instruments address them in a reasonably direct and precise fashion. Unfortunately, policies of this type are not always guided by these questions. For example, too many programs in the region subsidize firms' investment in equipment regardless of whether it involves new technologies that may then diffuse to the rest of the economy through a demonstration effect. If all the benefits accrue to the firm making the investment, there would be no externality and the subsidy would not be well justified.

Vertical policies in the form of public inputs involve either the provision of inputs that are important for a sector's competitiveness

**FIGURE 3**

**A Typology of PDP Interventions**

	Horizontal policies	Vertical policies
Public Inputs	Improve business climate	Phytosanitary control
Market Interventions	R+D subsidies	Tax exemptions for the tourism sector

but cannot be provided by the private sector —e.g. phytosanitary regulation and controls for fruits and vegetables—or public sector assistance to coordinate the provision of a key collective input by the private sector itself. The key questions in this case are how to identify the key missing inputs and how best to provide them once identified. Identification of these inputs in selected sectors may involve a well-structured public-private dialogue. The provision of the missing public inputs, in turn, may require collaboration across public sector agencies that are responsible for these inputs.

Vertical policies of the market intervention variety are the most controversial because they “pick winners” to give them a financial advantage. While these policies may be justified provided they support promising sectors that would not emerge in the absence of intervention, policies of this type often come about thanks to a sector’s lobbying, rather than competitive prowess. The key concern in this type of policy is how to discipline sector selection by using reasonably objective criteria and a transparent selection process, free of undue influence from private actors and politicians, and how to limit promotion benefits that are justified only on a temporary basis, possibly switching to public inputs if and when the bet pans out.

This conceptual framework is also useful in applying the third key test on institutional capabilities. Different types of policies have different capability requirements. For example, vertical policies are often riskier than horizontal ones because they concentrate benefits and create powerful vested interests. Similarly, market interventions are riskier than the provision of public inputs because they go directly to the beneficiaries’ profit bottom line. Thus, strong political capabilities to insulate policymaking from capture may be particularly relevant for vertical market interventions. Countries must be mindful of their capabilities when considering their policy mix because policies exceeding capabilities are likely to fail. Therefore, policies that are appropriate in a given country may not work in another. For this reason, sound productive development

policies should be guided not by “best practices” but rather by “best matches” between policies and existing institutional capabilities.

The contrasting cases of the rice sector in Costa Rica and Argentina shown in Box 1 illustrate how policy quality makes all the difference. The former shows the potential perils associated with adopting policies of the vertical /market intervention type when they respond to the lobbying power of specific sectors rather than to strategic considerations. The latter shows how it is possible to address similar problems in the same sector by using specific vertical public inputs—agreed upon by the public and the private sector in a collaborative fashion—to enhance productivity. Thus, it is an example of how this report’s conceptual framework can be used to analyze the merits and perils of different types of productive development policies.

## Box 1: A Tale of Two Interventions

### Dysfunctional Market Interventions in Costa Rica

Rice is one of the most protected commodities in Costa Rica. Tariffs are high (35 percent) and prices are controlled at each stage of the production process. Overall, rice subsidies in Costa Rica amount to 45 percent of the domestic price, higher than those in the United States (31 percent) and the European Union (32 percent) (Monge-González, Rivera, and Rosales-Tijerino, 2010). A central player in the rice policy has been the Corporación Arrocera Nacional (CONARROZ), created in 2002 to protect producers from international price shocks and improve local production conditions. But the efforts of CONARROZ, which has strong lobbying capabilities, have focused entirely on the first objective (protection) and not the second (productivity).

When local rice production falls below local demand (as is typically the case), import quotas are allocated to private sector actors, who can import rice without paying the corresponding tariffs. CONARROZ manages the quotas, which are assigned to rice processors in proportion to their processing capacity. Thus, processors can purchase rice at international market prices and sell the processed rice in Costa Rica at prices that reflect the high level of protection. This generates extraordinary rents for rice processors, particularly the large ones. Altogether, rice policy in Costa Rica implies large transfers from consumers (in particular, the poor, for whom rice represents a large share of their consumption basket) to medium and large rice producers and processors.

### Effective Public Inputs and Resolution of Coordination Problems in Entre Ríos, Argentina

The experience of Costa Rica contrasts with that of Entre Ríos, Argentina, where problems in the rice sector were addressed using public inputs. In this case, the key players have been the National Agricultural Technology Institute (INTA) and Pro-Arroz, a foundation of local rice producers. Until 1998, this province produced one low-quality, low-productivity variety, mainly for export to the Brazilian market. With the devaluation of the Brazilian currency in 1999, the sector lost competitiveness. Since the early 1990s, INTA had been developing a new variety of rice (Camba) of better quality and higher productivity.

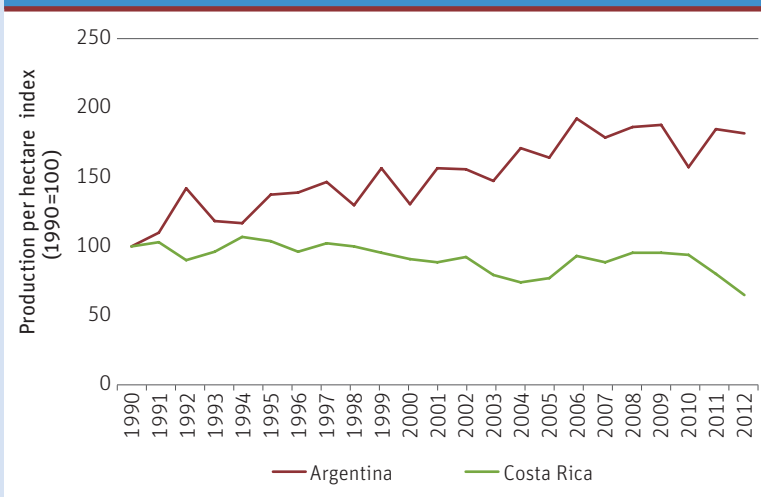
*(continued on next page)*

## Box 1: A Tale of Two Interventions *(continued)*

Rather than lobbying for protection or subsidies, Pro-Arroz organized the producers to complement the financing of the local chapter of INTA, INTA-Concepción, by coordinating its members' contributions. Later, and at the request of Pro-Arroz, the provincial government introduced a tax on producers that went directly into financing the research activities of INTA-Concepción. This is a clear mechanism to prevent free riding, where the state helps to solve coordination problems of the private sector. Rice producers also collaborated by lending their fields for the necessary experimentation with the new variety. Thanks to the successful introduction of the new variety, the sector's productivity rose rapidly, boosting its competitiveness. INTA went on to become a global leader in rice technology, and has since developed a more sophisticated variety (Puita), which has been successfully introduced in many countries, in association with BASF, the German chemical company. The results in each country in terms of productivity are very clear, as seen in Figure 4.

**FIGURE 4**

### Rice Productivity in Argentina and Costa Rica 1990–2012



Source: Authors' calculations based on FAO (2013).



## PART II

# Sound Policies in Key Areas of Application

Analyzing productive development policies—their rationale, design and the institutional capabilities required for implementation—with the aid of a simple conceptual framework yields powerful insights. Throughout its seven chapters, Part II shows how this approach can be used to rethink policy and derive sound principles in a number of key areas in which productive development policies are typically applied, namely innovation by established firms, start up and scale up of productive firms, education and training for production, financing productive development, promoting coordination in firm clusters, taking advantage of internationalization, and stimulating promising sectors.

To the extent possible, each area is reviewed in a parallel fashion. Rather than assuming that policies are justified, each chapter starts by making or questioning the case for policy intervention, conceptually clarifying the relevant policy considerations in the specific area and some of their institutional requirements. Each chapter then portrays a pragmatic analysis of interesting experiences, both past and present, in and out of the region. The review of country cases accompanies, when feasible, fresh program evaluations consistent with the analytic approach, that help illustrate what works and what does not work.

The report focuses on the development challenges prevalent in most countries in the region in their quest to catch up with more advanced countries. Therefore, in order to be relevant, it stresses the problem of insufficient economic transformation through adopting and adapting new developments originating elsewhere, rather

than the kind of research and innovation challenges experienced by advanced countries at the technological frontier. An emphasis on policies geared toward new and transformative developments aligned with international competitiveness in a globalized world is a common thread throughout all the chapters.

This section unpacks a few of the ideas discovered in this exploration of key areas of application. The following vignettes—drawn from selected chapters in the Report—show how the conceptual tests suggested in the report to assess the adequacy of productive development policies yield policy principles with bite. These are illustrations of the policy reach and sharpness that the systematic application of a sound analytical framework can deliver, not a summary of policy implications or “main messages.” The interested reader can find an overview of the policy insights in selected areas in the full report.

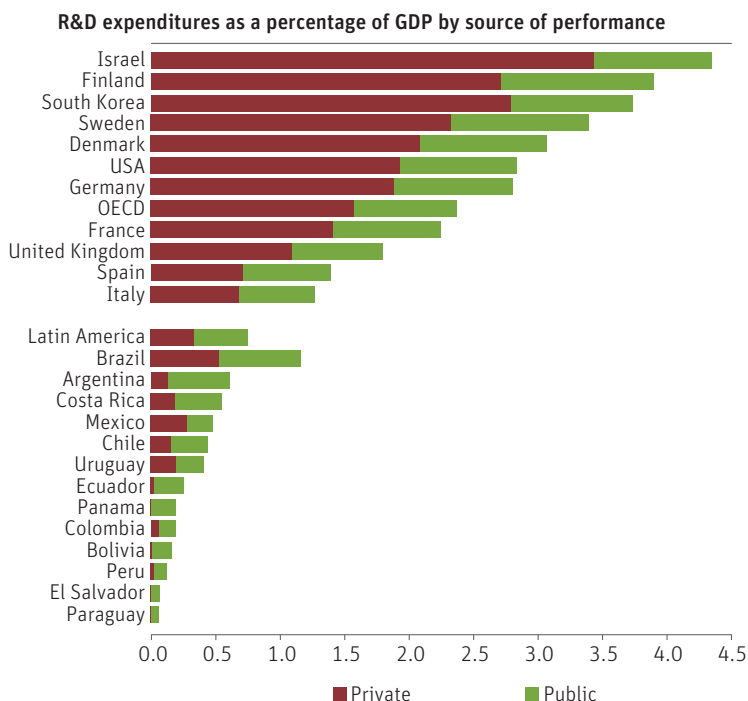
### *Navigating the Tradeoffs of Innovation Policies*

Innovation in the form of successful adaptation of technologies to national conditions and its wide diffusion across firms and sectors is at the core of productive transformation. In fact, some of the countries around the world that have been most successful in terms of catching up—such as Finland, Israel and South Korea—are world leaders in research and development (R&D). While one would not expect most countries to engage intensively in innovation to expand the technological frontier, some minimum level of R&D is always necessary in order to search for and adapt existing technologies to local conditions to catch up. Thus, in Latin America and the Caribbean the value of R&D emerges from its role as a vehicle for technology transfer and adaptation. Yet despite evidence of high social returns, the region severely underinvests in innovation (Figure 5).

Innovation activity is subject to a number of critical market failures. Firms considering investing in R&D may be reticent to do so

**FIGURE 5**

**Innovation in Latin America at a Glance**



Source: Authors' calculations based on OECD (2010) and Red de Indicadores de Ciencia y Tecnología (RICYT) (2013).

Notes: Data are from 2010 or the latest available year: 2009 for Bolivia, Costa Rica and Peru and 2008 for Ecuador and Paraguay.

Data for Peru are based on authors' calculations using innovation survey data and data from OECD (2011).

because, if successful, innovation knowledge will leak and the fruits of their investment will be shared by others; the public good nature of knowledge leads to spillovers. On the cost side, financing is a challenge for R&D because being intangible, new knowledge is hard to collateralize. Furthermore, competing firms and institutes with separate agendas may resist coordinating on collaborative research. The question is how to address these market failures preventing socially valuable innovation.

Blanket R&D promotional policies may unnecessarily subsidize activities with no spillovers to other firms, which is exactly the wrong policy objective. Policies that protect the successful innovator by impeding the diffusion of knowledge to followers would help support valuable R&D but would tend to defeat their very transformational purpose at the national level. Furthermore, duplicating investments in firms competing to be the first to a viable innovation may by itself unduly discourage worthwhile exploration.

Innovation policies need to take into account these tradeoffs and let market failures shape policy. The report considers policy ideas to help align incentives on these fronts. For example, R&D policies should target the type of activities that are more likely to generate spillovers. For these purposes, specific subsidies or matching grants may be better suited than generic corporate tax incentives, which tend to cover all innovation activities of the firm. The reason is that firms will naturally want to engage in activities whose benefits they can appropriate—precisely the ones that do not require stimulus—while policymakers want to target those with higher spillover potential, which they can do with specific subsidies but not with generic corporate tax incentives.

Similarly, subsidies should primarily target innovation activities that involve intangible assets, which are harder to collateralize and more likely to produce spillovers. Technology embodied in tangible assets like machinery and equipment—which is the most prevalent type of technological investment in the region and is often a target of innovation policy—is generally less worthwhile as a public policy target. The exception is perhaps the case in which the equipment is new not just to the firm but to an entire market in a given country and there are uncertainties concerning the cost and benefits of its adoption under local conditions. In such case, the promotion would be justified as long as it is focused on the pioneers.

This kind of innovation promotion policy could be combined with technology extension policies to ensure that subsidies favor diffusion, for example extending subsidies on the condition that the

pioneers share the experience with potential followers. Government failures are also present in the region's innovation policies. One example is the pervasive deficit of technology extension programs, which focus on the search for and adoption of technologies developed outside the firm. This is precisely the type of innovation activity one would expect to see in developing countries. Yet, while in the United States and Canada around 10 percent of manufacturing firms receive some support from technology extension programs, the corresponding figure in the typical Latin American and Caribbean country is less than 2 percent.

Finally, subsidies to foster innovation may be more effective if directed to collaborative R&D performed by research consortia involving multiple firms as well as research institutes. This would avoid unnecessary costly duplications and facilitate diffusion through agreements to share the knowledge produced. Encouraging stronger links between research institutes and businesses would also help ensure the relevance of their research.

### ***Supporting New Firms with High Growth Potential***

Latin America and the Caribbean has a long tradition of policies supporting small and medium enterprises. The typical justification for these policies has been that these firms employ a large portion of the labor force. But evidence from the United States as well as Latin America and the Caribbean suggests that it is *new* firms, not *small* firms, that have a disproportionate impact on net employment. Moreover, new firms, rather than established firms that remain small, are a natural conduit for introducing innovative, high productivity ideas to the marketplace. The process of converting good ideas into good new businesses however, is rife with market failures. It is typically impeded by lack of access to finance, since even good ideas are hard to collateralize. Furthermore, entrepreneurs may have great ideas but may lack the managerial capacity to grow a viable organization or involve those who do.

However, not all new firms have the same impact on job creation and innovation. In fact, the majority of new business owners—such as contractors, restaurant owners, auto mechanics, dentists, insurance brokers, etc—do not plan for their firms to innovate or grow substantially. Unfortunately, the market failures discussed above tend to be more severe for firms based on novel ideas, which if successful are more likely to have high growth potential. Thus, efforts to encourage the creation of new firms should not consist of blanket policies favoring entrepreneurship. Rather, they should be selectively focused instead on innovative new firms that promise to have high growth potential.

The key question, then, is how to identify the right firms? The report argues that there is no need to pick them ex-ante. Rather, what is needed is to adopt policies in which firms with high growth potential self-select into the programs or that leverage private sector capabilities to screen and identify promising firms. The most popular programs for start-ups in the region and beyond—efforts to reduce the costs or the number of steps needed to establish a business—may not encourage the right type of firms. They are likely to impact entry by marginal firms, but may be unnecessary for the most promising ones. In fact, firms that enter as a result of these programs tend to have lower returns and lower productivity than the ones that already exist. Similarly, a blanket policy of easier finance to small firms is bound to mostly subsidize firms whose productivity is not particularly high. High productivity firms would yield profits and could grow over time, albeit slowly, on the basis of retained earnings, so that older small firms are likely to be of low productivity.

The Report analyzes policy ideas to zero in on new firms with high potential. For example, it discusses facilitating venture capital to fund start-ups in the region, so important in the most dynamic sectors in the United States, as an alternative to traditional credit mechanisms that are often blocked by lack of collateral. Venture capitalists can accept innovative ideas as “collateral” because they participate in the financial upside of the enterprise, and in this way also act as

a screening mechanism for promising ventures. The Report also discusses the use of private firms as “incubators” to facilitate the right environment for fledgling firms to develop, and goes on to discuss how to incentivize them with contracts contingent on the performance of the new firms—and not just on the number of firms incubated, as done frequently in the region—so that they help screen those with high potential and provide them with valuable services.<sup>4</sup>

However, encouraging the emergence of successful start-ups is not enough. In order for these firms to make a dent on aggregate productivity, high productivity start-ups need to scale up and absorb workers and other factors of production previously employed in less productive activities. However, a number of failures may impede the scaling up of highly productive new firms, a remarkable fact in the region. One critical factor relates to family ownership. In a context of strong market failures in early stages of a business, as tends to be the case in the region, the family may be a very useful device to enable the start-up of a business on the basis of trust. But as firms scale up, family relatives may no longer be well-suited for the management roles needed to grow. In developed countries, these problems are mitigated by an active private equity industry that invests in promising companies and improves their management practices, restructuring them so they can operate at higher scale. But this industry is very underdeveloped in most countries in the region.

### *Smart Financing for Development*

The conceptual framework proposed in the report also helps clarify how to use financial instruments smartly to advance PDPs with

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<sup>4</sup> These two policies have strong complementarities, and may be part of an effort to create the right ecosystem for entrepreneurship. In some cases, the development of high risk start-ups may require direct public sector intervention. The case of the salmon industry developed by Fundación Chile is an excellent example in which the public sector invests in a successful venture and then sells it at a profit, capturing the upside gains and defraying the cost of the expected failures.

maximum effectiveness. When to use guarantees or loans and how to structure development banks to serve PDPs are two good examples of the issues discussed in the report on this subject.

*How to ease credit: guarantees or loans?* Credit markets often fail to allocate financing to worthwhile projects. For example, limitations of the legal system to posting collateral and to enforcing it curtail the supply of credit to firms, even when they would have invested in good projects. These kinds of failures would justify the existence of credit PDPs to deal with problems in the financial system. Furthermore, a credit program in itself may be a suitable instrument for both horizontal and vertical market intervention policies justified by a non-financial market failure. For example, a credit program to encourage certain activity (e.g. innovation) may do the job by incentivizing firms to invest in it. Similarly, a credit program for certain strategic sectors such as the development of green technologies would help the sector invest and prosper. What kind of financial sweetener should a development bank use to ease credit in each case? A clear analysis of the underlying market failure holds the answer.

If the main market failure resides in a bad credit supply system constraining the creditworthiness of potential borrowers, the use of cheap guarantees would be effective in expanding credit supply and allowing finance to reach high-return projects of credit constrained firms. At the same time, these guarantees would have the desirable feature of not being particularly attractive to creditworthy firms with full access to credit. In contrast, the provision of loans at below-market rates may easily fail to yield many additional high-return projects because their effect would be diluted into the pool of firms with good access to credit, which are already investing in their good projects. If, alternatively, the credit supply system works reasonably well and the market failure is non-financial, a different policy instrument would be appropriate: cheap lending would be needed to alter firms' behavior and promote the activity or sector to which the program is attached. In this alternative case, guarantees would be rather ineffective, with a marginal effect on firms' behavior.



In summary, cheap guarantees are better suited to tackling credit constraints; they would be particularly efficient when private banks are excessively risk averse and the public guarantor has superior enforcement capacity or information about collateral value. By contrast, cheap lending is ideal for targeting firms that generate positive spillovers but do not face tight credit constraints impeding borrowing, so that the desired investment will naturally follow as the cost of capital is lowered.

*Smart Development Banks.* Development banks are key agencies for productive development policies because through financial support they can foster investment in selected activities and sectors as well as enable the growth of high productivity firms slowed down by lack of credit. Unfortunately, both first-tier and second-tier development banks have shortcomings. First-tier institutions are perhaps inefficient and are at risk of capture and mismanagement, which would lead to biased credit allocation and financial losses. Second-tier institutions, channeling their resources through private bank intermediaries, mitigate this risk at the cost of losing direct control over the allocation of credit and subsidies. This is a problem because private banks have the incentive to lend to their traditional clientele, not the intended targets. The Report discusses options to strike a balance in which a hybrid development bank retains partial or full control over credit allocation while shedding some of the risks, for example seeking private co-financing to calibrate its pricing or selling its loans to private collection firms.

The Report goes further and argues that besides their role as financiers, development banks could have an intelligence role. It recognizes that market failures and how to address them are not self-evident, and therefore puts a strong emphasis on the need to build institutions for productive development policies that are able to learn. This learning paradigm has a number of institutional implications for all productive development agencies. In the context of development banks, it points to exploiting the synergies between

financial analysis and the discovery of policy-relevant issues with a broad perspective (e.g. what are the market impediments that block the growth of certain industry). This new intelligence function weighs in favor of a first-tier scheme, because it cannot be performed well by private banks that filter information through their private profit lens. These smart development banks with a dual mandate can make important contributions in policymaking committees along with other top agencies.

### *The Public Sector as Coordinator*

Productive development is often impeded by coordination failures among firms in a sector or across sectors. The Report shows that these failures are pervasive. Innovative activities resulting in productivity improvements in a sector across the board and the provision of collective inputs that would be beneficial to firms as a group are impeded by free riding: competing firms want to share in the benefits but would rather not chip in to cover the costs. For example, as illustrated in Box 1, a group of farmers would collectively benefit from research to upgrade their crop varieties but may find it difficult to coordinate to fund the needed research, as each one has an incentive to free ride. Similarly, the failure of firms in different sectors to coordinate business decisions may leave profitable opportunities unexploited. For example, a potential tourist destination may be left undeveloped because the hotel industry would not invest in an area without the required amenities and transportation (e.g. flights) while at the same time these complementary industries would not make investments in an area without lodging. This is a “chicken and egg” problem in which neither is first and profits are left on the table.

Coordination failures of this kind tend to be specific to certain sectors or clusters of firms, and thus typically require some type of vertical policy. They may call for market interventions to induce the private sector to internalize the benefit of coordination (for example providing financial advantages to the hotel industry in a new

tourist area to jump start investments), or for policies to facilitate the provision of collective productive inputs (for example making it possible for farmers to fund a research center cooperatively). Remarkably, these policies may cost very little because the solution of coordination failures is in the collective interest of private producers. Achieving coordination requires information and commitment, not necessarily subsidies.

The public sector should be ready to provide the collective inputs needed by groups of producers that they do not provide by themselves because they are unable to coordinate (e.g. a cold supply chain from plant to port for exporters of fruits and vegetables). How to identify these critical missing inputs? One possible method the public sector may use is, when practical, to seek appropriate co-financing from the beneficiaries as a condition for intervention. Besides the fiscal advantage, private financing would ensure that beneficiaries would only ask for those productivity-increasing inputs whose benefits exceed costs. Rice growers in Entre Rios, Argentina, asking the authority to tax them to finance local research on rice, is a perfect example of the state using its authority to improve coordination at little cost.

The solution to a “chicken and egg” problem may be even cleaner, and may simply consist of convening the relevant actors to draw a concerted plan. To add credibility, the public sector may provide temporary investment enticements to be removed once coordination takes place and is irreversible. Alternatively, a minimum return guarantee may be an ideal instrument in this context: it encourages investments by putting a floor on returns. If everyone invests and the project pans out, the guarantee is never called, thus avoiding fiscal costs.

### *Selecting Sectors for Vertical Policies*

The process of economic development does not just center on the ability of countries and their firms to produce more of the

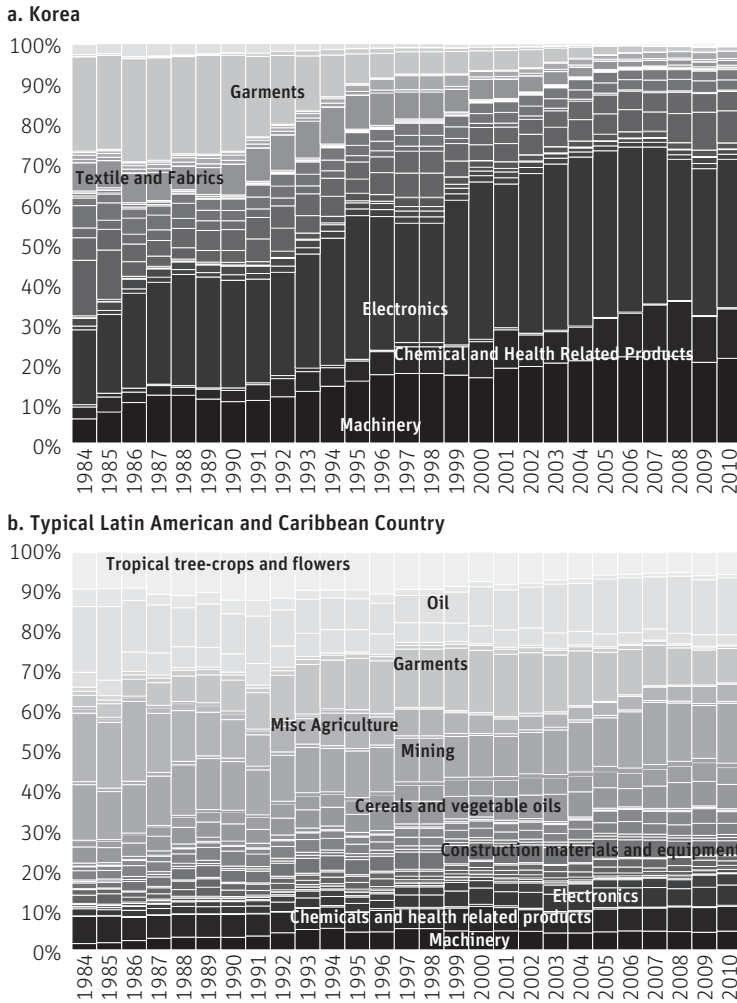
same. Most of the successful cases of development around the world have been associated with the capacity of countries to produce new and better-quality goods and services—that is, to engage in processes of productive transformation. These processes do not always happen spontaneously. In fact, most countries that have successfully gone through these processes have engaged in deliberate vertical policies—Korea being a prime example—seeking to develop specific sectors, products, and processes that are perceived to have high development value but are somehow impeded by market failures. In the case of Korea (illustrated in Figure 6.a), these policies led to drastic changes in the composition of production and exports from products of low sophistication (represented by lighter colors) such as garments, to more sophisticated (darker) products such as machinery and electronics. In contrast, the typical country in Latin America and the Caribbean (Figure 6.b) underwent little productive transformation.

What sort of vertical policies would help address market failures at the sectorial level, and allow these processes of productive transformation? Policies may provide key public inputs and help address coordination failures among firms in need of certain collective inputs. They may help—through temporary subsidies or guarantees—develop certain sectors when the market is unable to coordinate the multiple investments needed for a competitive sector to emerge, as in the example of tourism discussed above. They may also help infant industries with latent competitiveness to develop through learning by doing, which the market would not pursue if the fruits of the costly learning process cannot be appropriated by the pioneering firms. Importantly, vertical policies may be also geared towards developing sectors with high strategic value, which contribute to open up new avenues for valuable productive transformation.

While these selective policies have the potential to contribute to the development process, they are risky and can easily do more harm than good—particularly when they involve market

**FIGURE 6**

**Complexity of Export Baskets in Korea and in Latin America and the Caribbean**



Source: Authors' calculation based on Hausmann et al (2011).

interventions such as subsidies, tax breaks or protection. They tend to generate high stakes among potential beneficiaries and typically involve much discretion on the part of policymakers,

which under weak institutional settings can be exposed to capture and lead to unsound policy and unproductive rent seeking. Not surprisingly, even within countries, the experience with sector selection in vertical policies in the region has been a mixed bag. For example, the success in attracting FDI in sectors such as electronics and medical devices in Costa Rica contrasts with the rice policies discussed above, which distribute rents to large growers at the expense of consumers without doing anything to increase productivity.

Political and private capture is not the only risk. Even well-intentioned vertical policies aimed at fostering economic development may go bad simply because of their technical complexity. The process of adopting vertical policies is necessarily imprecise and demanding in terms of the required institutional capabilities, and always open to mistakes. For example, the policy success in the aircraft industry in Brazil contrasts with the failed attempts in the 1980s to create a competitive computer industry, overwhelmed by the informatics revolution in advanced countries.

The key question in vertical policies is the selection of beneficiary sectors, what is scornfully known in some policy circles as “picking winners.” How to soundly identify high value sectors that appear to underperform, or not to emerge, due to market failures? Certainly not by hunches or ideological preconceptions. The Report proposes an analytical framework to identify sectors that are potential candidates for vertical policies. It does so by using objective metrics that can contribute to detect telltale signs of market failures in the pattern of productive transformation. These metrics provide proxy indexes of how costly specific transformations may be (based on world experience) and how valuable they would be for the economy in improving its export basket.

The metrics address two classes of failure. First, they help detect the failure to seize opportunities that would appear to make good business sense (i.e. the cost of honing the capabilities required appears to be lower than the benefit it would deliver).

Such anomalies suggest that the country does not become competitive in certain clusters of products because the market is somehow impeded, and may prompt policymakers to convene the relevant private sector actors to identify what, if anything, may be stopping the market, and what remedial policies may be required to unleash it.

Second, these metrics help identify strategic transformations generating valuable opportunities for the future that the market may be missing because part of the benefits that the new opportunities will yield would be captured by others, and not necessarily by the pioneers. If confirmed by further analysis with potential market participants, strategic sectors may merit strong policy interventions to incentivize the market to move in the chosen direction. The effort by the investment agency CINDE to attract sterilization services to Costa Rica, thus opening up opportunities in the most valuable segments of the medical devices value chain (see box 2), is an example of a policy to address a “failure to expand opportunities,” as these type of failures are called in the Report.

## Box 2: The Attraction of Sterilization Services in Costa Rica

The medical devices sector was one of a few sectors targeted by Costa Rica, through CINDE, to attract FDI. The sector has been expanding at healthy rates since Baxter first came to Costa Rica in 1987, and is now responsible for nearly \$1.5 billion in exports. But not all medical devices are created equal. They range in complexity from simple disposable devices (such as catheters) to surgical and medical instruments (such as biopsy forceps) to therapeutic devices (such as heart valves) which go into the body to stay, to complex medical equipment (such as MRI machines).

As of 2007, Costa Rica had been highly successful in attracting multinationals to the sector. But they were mainly producing low complexity disposables. Why did they not make, for example, heart valves or other cardiovascular devices? Because in order to sell them, they needed to go through the process of sterilization, not locally available at the time. Producing them in Costa Rica would have required shipping them to the United States to have them sterilized and then shipping them back for packaging, complicating the logistics and adding greatly to the costs.

Why was there no sterilization? With no heart valves and other similar products in production, there was no demand for sterilization services. It became clear to CINDE that it was a strategic chicken and egg problem that the market would not solve by itself. It had to add the sterilization process, in order for the more complex links of the value chain to develop. CINDE intensively courted firms that could provide these services. The efforts paid off in early 2009, with the arrival of BeamOne, a contract sterilization processor headquartered in the United States. Next in line was Sterigenics in 2011. Within three years of the inauguration of the BeamOne facility, Costa Rica had successfully attracted a number of companies in the cardiovascular sector including Boston Scientific (in 2009), Abbot Vascular (2010) and St. Jude Medical (2010). In 2013, Costa Rica exported nearly \$300 million in the therapeutics category of medical devices, and an additional \$500 million in surgical and medical instruments. The share of disposables fell from 90 percent in the early 2000s to less than half.

Why did CINDE target sterilization? In the language of global value chains, it was trying to move Costa Rica into the more profitable sections of the value chain, in order to capture more value. In the language of this Report, sterilization opened important avenues for further development into other complex products. CINDE addressed a failure to expand opportunities by going for strategic value.



## PART III

# Institutions for Successful Policies

The underlying institutions through which PDPs are adopted are critical for their success. Two reasons stand out. First, the right PDPs to address market failures in a given context are not well known in advance and cannot be simply prescribed by a technocrat without much institutional support. Rather, they must be discovered by a learning process governed by institutions. Second, the viability of technically sound PDPs is limited by the risk of government failure. Technical analysis is insufficient to make a policy case because there may be government failures that render the policy remedy worse than the disease. Part III deals with the institutions that craft productive development policy and to a large extent determine its success or failure.

As argued above, good PDPs are an important component of a successful development strategy. But designing and implementing successful PDPs is not an easy task. Several features can make PDPs particularly hard. First, PDPs often require a mechanism of policy discovery. For public policies in other areas, the problem that requires an intervention, the target beneficiaries, and the solution are usually known. For example, a vaccination campaign against Hepatitis A involves administering a first dose of the vaccine to children between 12 and 23 months of age, and a second one between six and 18 months later. The doses and the delivery mechanism are known and need to meet well-specified quality criteria. PDPs tend to be different. While in some cases the problems associated with market failure may be known from the start (for example, spillovers in research and development), in most cases problems need to be discovered as part of the policy generation process. Even if the market failures are well known, the best policy solutions may be hard to identify, as different instruments can

potentially be used to solve a problem. The target of interventions may not be known, either—identifying young firms with high growth potential may not be as easy as identifying children between 12 and 23 months of age. Unlike the case of vaccination in which the delivery can follow well specified protocols, implementation of PDPs typically requires a major dose of tacit knowledge, as well as ample flexibility. To some extent, productive development policies need to be set up as search engines, scanning the policy space in order to identify the most important problems, the most appropriate solutions, and the best ways to implement them.

Second, given the importance of policy discovery, institutions for successful PDPs need a policymaking process that fosters learning, evaluation and adaptation. Effective search needs a culture in which calculated risks and pilot programs are encouraged and a fair share of policy failures is regarded as the expected outcome of a sound process. The other side of the learning coin is evaluation. An experimental mindset to search out and try policy solutions needs to be supplemented by systematic and unbiased evaluation in order to learn from the experience, refine solutions and eliminate what does not work. Actively searching, trying solutions, and evaluating them to refine and weed out are very tall orders for public institutions, particularly in Latin America and the Caribbean where traditional public sector organizations tend to be bound by rigid rules and ex-ante controls.

Third, the public sector only has access to part of the information required to identify what is needed. Thus, intense interaction with the private sector—which has direct knowledge of the impediments to production and the possibilities for transformation—is a key ingredient of the policy discovery process. Unfortunately, collaboration is hampered by the risk that the private sector might take advantage of its informational advantage and share only self-serving information in order to derive unproductive rents from PDPs through capture. The need to interact with the private sector adds a layer of complexity to productive development

policy. While it is clear that a system abused by capture and riddled with rent seeking—as was often the case in the past—is totally unacceptable, avoiding these risks by severing the private sector from the process of productive development policy would also be a grave policymaking failure. Collaboration free from capture, to mutual benefit, is commonplace in the region, under diverse forms of private sector participation; collaboration is possible.<sup>5</sup> At the same time, the region’s experience suggests that the risk of capture is alive and constitutes an important constraint to be reckoned with.

Fourth, the delivery of PDPs also poses distinct operational challenges. For example, more often than not, PDP solutions require inter-agency cooperation because the problems to be solved match the complex reality of the productive sector and not the functional architecture of the public sector organizational chart. A minister of tourism, in close contact with the private sector, may identify the need for paving a road and training the labor force as key elements for the success of a tourist destination. But she is not responsible for paving roads and training workers, and typically does not have authority over those who are. Eliciting cooperation from other parts of the public sector is challenging, and failure to do so often leads to failed PDPs.<sup>6</sup>

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<sup>5</sup> There is a wide range of public-private interactions in the region and elsewhere, from mere consultation or information gathering, to seeking consensus in order to ensure shared ownership of policy decisions, to delegation of certain policy responsibilities. These interactions may narrowly focus on certain sectors or clusters (for example, to secure needed collective inputs) or may encompass cross-sectorial, strategic concerns (for example, exploring the emergence of certain transformative activities). The general objective is the same in all cases: benefit from deep knowledge residing in the private sector concerning the need for intervention, how to implement policy effectively, and how to evaluate it. Unfortunately this is not an easy objective.

<sup>6</sup> Collaboration with the private sector may be very useful for effective policy implementation because, by being vocal about their needs, private actors may actually help to induce the required cooperation within the public sector.

The above features make it hard to get policies right, as limitations in the ability of the public sector may lead to good intentions turning into bad policies. These government failures associated with the lack of expertise or organizational shortcomings, however, pale in comparison with those springing from bad intentions that lead to PDPs being “sold” to the private sector or captured by political interests. In that case, the processes in place to try to produce sound policies are subverted. The region’s skepticism about productive development policy, despite its effectiveness in other regions, hinges, in equal parts, on legitimate doubts about the governments’ ability and the suspicion that PDPs may be used to transfer rents to private groups with access to power. Institutional arrangements need to deal with both concerns.

These challenging features of PDPs point to three institutional capabilities that countries and agencies need to appropriately design and implement them: **T**echnical capabilities in order to resolve the technical difficulties associated with policy adoption; **O**rganizational capabilities, such as managerial skills, the ability to foster an environment in which experimentation, evaluation and learning is encouraged, and the ability to collaborate effectively with the private sector and other areas of the public sector; and **P**olitical capabilities in order secure continuous support, and protect the policy process from undue influence by businesses, policymakers or politicians. The quality of the **TOP** institutional capabilities is a key factor for the success of the PDPs.

While it is clear that all **TOP** institutional capabilities are desirable in order to design and implement successful PDPs, not all of them are critical for every policy. In fact, policies differ in terms of the relative intensity with which they require those public sector capabilities. For example, vertical market interventions, such as subsidies for specific sectors, are high stakes policies that generate incentives for lobbying and rent seeking. Thus, successful implementation may depend crucially on the availability of political capabilities to insulate the policy process from capture and

corruption, especially if these policies involve intense interaction with the private sector. Similarly, some vertical public inputs that require the cooperation of different public agencies may be particularly sensitive to the ability of the public sector to act in a coordinated fashion.

In turn, countries and agencies vary in terms of their respective capabilities. Thus, policies that work well in a particular country, with its set of capabilities and institutions, may not work equally well—or may even be counterproductive—in a different context. For this reason, the traditional approach of identifying best practices to recommend them regardless of context is ill-advised. Rather than focusing on “best practices,” policies should be selected on the basis of “best matches” between the country’s needs, the capability requirements of policies, and the existing institutional capabilities. In particular, countries lacking strong institutions would be wise to avoid certain policies, even if they have an airtight theoretical justification, until the necessary capabilities are in place. For example, a country without adequate capability to control capture by the private sector may want to stay away from engaging in strategic bets on sectors that are far from current comparative advantage and concentrate instead on horizontal policies, as well as policies to provide needed public inputs for existing sectors, which are less subject to this problem.

The Report discusses in detail how the public sector could be organized to better design and implement PDPs. Within this discussion, it advances ideas on how to structure the interaction with the private sector in order to take full advantage of the information sharing and joint policy exploration, while minimizing the risks of capture and rent seeking. For example, the information and policy proposals received from interested parties may be directly checked by a number of third sources—some perhaps with opposing interests—or may be tested after the fact following a “trust but verify” approach. In this context, systematic evaluations to weed out bad policies would also help deter non-collaborative

behavior. Sharing with the private sector the burden of carrying out policy (as in cofinancing arrangements) and applying conditionality to beneficiaries to ensure that the desired policy objectives are met may also be useful features to align incentives. Moreover, the conversations with the private sector may be limited to identifying obstacles and needed public inputs in order to make the sectors competitive, leaving hard to manage conversations regarding subsidies and the like off the table. Getting this interaction right is essential, and requires technical, organizational and political capabilities.

How should countries go about developing their capabilities? The Report offers a number of ideas to improve the functioning of productive development agencies and their coordination. Personnel policies to attract the right talent and promotion policies that reward performance and technical skills would certainly help, as would training programs in productive development agencies that focus on the required capabilities. Similarly, personnel rotation policies across agencies that need to cooperate may be important to foster good will, a common vision, and a shared sense of purpose among the agencies involved. However, building capabilities also involves a sizable dose of learning by doing within a context that encourages experimentation, evaluation and policy adaptation. It is in the process of identifying problems and learning how best to address them through iteration and adaptation that countries and agencies can expand their capabilities for policy design and implementation.



“The Washington Consensus—its name notwithstanding—was invented in Latin America. However, as this useful report shows, inadequate productivity growth since its adoption has forced the region’s policymakers to reconsider whether the wholesale rejection of industrial policy was appropriate. The Inter-American Development Bank has long been at the forefront of this rethinking. The authors do a masterful job of not only surveying what is known about ‘productive development policies,’ but also laying down a policy agenda. Admirable in its analytical exposition, empirical detail, and policy discussion, this is a must-read for development economists and practitioners alike.”

—Dani Rodrik, Albert O. Hirschman Professor of Economics,  
Institute for Advanced Study, USA

“Once the commodities boom is over, Latin America will have to discover new sources of economic growth. Tired orthodoxies will not do the trick, but the fresh thinking contained in this volume just might. It explains what went wrong with industrial policies in the 1960s, and what countries have to do differently this time around. First-rate. Should be required reading for policymakers around the region.”

—Andrés Velasco, Former Finance Minister, Chile

“This book is a must-read for policymakers and practitioners in the elusive world of effective industrial policies. A useful toolbox to think about a topic that is central to any government today.”

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