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# The Lima Brainstorming Sessions

PRODUCTIVE DEVELOPMENT  
POLICIES, INCLUSIVE GROWTH  
AND JOB CREATION

José Manuel Salazar-Xirinachs  
and Jorge Cornick, Editors

Gary Gereffi  
Eva Paus  
Ben Ross Schneider  
Charles Sabel  
Ernesto Stein

Regional Office for Latin America and the Caribbean

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Salazar-Xirinachs, José Manuel & Cornick, Jorge

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## Participants

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**Jorge Cornick**, DRP Trejos y Cornick

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**Gary Gereffi**, Duke University

---

**Gerardina González**, Deputy Director, ILO Office for LAC

---

**Florencio Gudiño**, Director of Programming Unit, ILO-LAC

---

**Eva Paus**, Mount Holyoke College

---

**Anne Posthuma**, Employment Specialist, ILO-Brazil

---

**Charles Sabel**, Columbia University

---

**José Manuel Salazar-Xirinachs**, Regional Director, ILO-LAC

---

**Ben Ross Schneider**, MIT

---

**Ernesto Stein**, IADB

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## About the authors

**Jorge Cornick** is a founding partner of the consulting firm DRP Trejos & Cornick and coordinator of the Business Economics Bachelor's programme at LEAD University in Costa Rica.

He received his "Licenciatura" from the Universidad Nacional, in Costa Rica, and both his M.Sc. and Ph.D. degrees from the University of Wisconsin-Madison.

He has worked as an independent consultant on fiscal and development issues for institutions such as the Inter-American Development Bank, the Economic Commission for Latin America, the World Bank and the International Labour Organization for more than 20 years, and is a former member of the boards of directors of Costa Rica's National Councils for the Supervision of the Financial System and the Public Services Regulatory Authority, as well as former Director of the Tax Administration Modernization Programme.

Over the last few years, Cornick's research interests have been focused on Productive Development Policies, the Development of Public Capabilities for PDPs, and the role of Public–Private Cooperation in PDPs.

**Gary Gereffi** is Professor of Sociology and Director of the Center on Globalization, Governance & Competitiveness at Duke University (<http://www.cggc.duke.edu/>), where he teaches courses in economic sociology, globalization and comparative development, and international competitiveness.

He received his B.A. degree from the University of Notre Dame and his M.A. and Ph.D. degrees from Yale University.

Gereffi has published extensively on economic development and business–government relations in various parts of the world. His books include: *Manufacturing Miracles: Paths of Industrialization in Latin America and East Asia* (Princeton University Press, 1990); *Commodity Chains and Global Capitalism* (Praeger Publishers, 1994); *Free Trade and Uneven Development: The North American Apparel Industry after NAFTA* (Temple University Press, 2002); and *The New Offshoring of Jobs and Global Development* (International Institute for Labour Studies, 2006).

Gereffi's research interests deal with the competitive strategies of global firms, the governance of global value chains, industrial upgrading in East Asia and Latin America, and the emerging global knowledge economy. His major ongoing research projects are: (1) industrial upgrading, global production networks, and decent work in East Asia, North America, and Eastern Europe; (2) analysing the competitiveness of North Carolina industries in the global economy, utilizing a value chain perspective (see [http://www.soc.duke.edu/NC\\_GlobalEconomy/](http://www.soc.duke.edu/NC_GlobalEconomy/)); (3) engineering outsourcing in the United States, China and India; (4) innovation and commercialization in the global nanotechnology industry; and (5) a global value chain perspective on the emerging childhood obesity pandemic.

**Eva Paus**, Mount Holyoke College. Eva Paus is the founding director of the McCulloch Center for Global Initiatives at Mount Holyoke College. Established in 2004, the Center has been a creative catalyst to foster international education on the domestic and international front. Through courses, conferences, research, international internships, study abroad, and collaborations with external partners, students acquire the skills needed for citizenship and careers in today's global world.

Paus is the author or editor of six books and dozens of articles on economic development and globalization. Her current research focuses on the Middle

Income Trap, the implications of the rise of China for the prospects for growth-inducing structural change in other developing countries, and the relative role of national and foreign capital in advancing innovation and expanding employment in Latin America.

Professor Paus has received grants from the DAAD, the Freeman Foundation, the Fulbright Program, the Hewlett Foundation, the Mellon Foundation, the Teagle Foundation, and the Whiting Foundation. She has consulted for ECLAC (UN Economic Commission on Latin America and the Caribbean), the ILO (International Labour Organization), UNDP (United Nations Development Programme), and UNIDO (United Nations Industrial Development Organization).

Professor Paus has held a position or been a visitor at the University of Costa Rica, the University of Göttingen – Germany, the University of Pittsburgh – United States of America, Universidad del Pacífico – Peru, the German Institute for Economic Research – Germany; the Keough Institute for Irish Studies – Ireland, and Sookmyung University – South Korea.

**Charles Sabel**, Columbia University. Charles F. Sabel is the Maurice T. Moore Professor of Law and Social Science at Columbia Law School, a post he has held since 1995. He was formerly the Ford International Professor of Social Science at the Massachusetts Institute of Technology. His most recent publications include *Contract and Innovation: The Limited Role of Generalist Courts in the Evolution of Novel Contractual Forms*, with Ronald J. Gilson and Robert E. Scott (*New York University Law Review*), *New Modes of Pluralist Global Governance*, with Gráinne de Búrca and Robert O. Keohane (*Journal of International Law and Politics*), “Rethinking the Street-Level Bureaucrat: Tacit and Deliberate Ways Organizations Can Learn” (*Economy in Society: essays in honor of Michael J. Piore*, MIT Press, pp. 113–142), *Dewey, Democracy and Democratic Experimentalism* (*Contemporary Pragmatism*, Vol. 9, No. 2, 2012), and “Experimentalism in the EU: Common ground and persistent differences”, with Jonathan Zeitlin, (*Regulation & Governance*, Vol. 6, 2012, pp. 410–426).

Sabel holds a Ph.D. in Government from Harvard University, as well as an A.B. in Social Studies, summa cum laude, from Harvard College.

**José Manuel Salazar-Xirinachs**, Regional Director (ADG) of the ILO for Latin America and the Caribbean based in Lima, Peru, since 1 June 2015. MSc in development economics and PhD in economics from the University of Cambridge, U.K. B.A. in economics from the University of Costa Rica. He joined the ILO in 2005 as Executive Director for the Employment Sector, based in Geneva, Switzer-

land, with responsibility for the Organization's global work on employment policy including: enterprise development, vocational training, labour market analysis, employment services, formalization, the linkages between trade and employment, the promotion of youth employment, and related areas. From 1998 to 2005 he directed the Trade Unit of the Organization of American States, in Washington, DC, which functioned, in collaboration with the IADB and ECLAC, as the technical secretariat for the Free Trade Area of the Americas (FTAA) negotiations. He was Minister of Foreign Trade of Costa Rica from 1997 to 1998, a period during which he Chaired the FTAA negotiating process. Prior to that, he founded and ran the Business Network for Hemispheric Integration, was Executive Director and Chief Economist of the Federation of Private Entities of Central America and Panama (FEDEPRICAP) (1991–95), member of the Board of the Central Bank of Costa Rica (1994–96) and Executive President of the Costa Rican Development Corporation (1988–90). His most recent book is *Transforming Economies: Making Industrial Policy work for growth, jobs and development*, ILO–UNCTAD (2014) edited with I. Nubler and R. Kozul-Wright.

**Ben Ross Schneider**, MIT. Ben Ross Schneider is Ford International Professor of Political Science and director of the MIT Brazil Program. Prior to joining the department in 2008, Schneider taught at Princeton University and Northwestern University. Professor Schneider's teaching and research interests fall within the general fields of comparative politics, political economy, and Latin American politics. His books include *Politics within the State: Elite Bureaucrats and Industrial Policy in Authoritarian Brazil* (1991), *Business and the State in Developing Countries* (1997), *Reinventing Leviathan: The Politics of Administrative Reform in Developing Countries* (2003), *Business Politics and the State in 20th Century Latin America* (Cambridge University Press, 2004), and *Hierarchical Capitalism in Latin America: Business, Labor, and the Challenges of Equitable Development* (Cambridge University Press, 2013). He also has published on topics such as economic reform, democratization, technocracy, education policy, the developmental state, business groups, industrial policy, and comparative bureaucracy.

**Ernesto Stein**, Inter-American Development Bank. Stein is a Senior Advisor in IADB's Research Department. He has also worked as Regional Economic Advisor for the Belize, Central America, Mexico, Panama and Dominican Republic Department at IADB, and has been the recipient of a scholarship at the Harvard Center for International Development. He has published five books and more than 30 papers in specialized publications such as the Journal of International Economics, Journal of Development Economics, Economic Policy, Economics and Politics and the American Economic Review.



# List of acronyms

|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| <b>AGOA</b>      | African Growth and Recovery Act                                                       |
| <b>BNDES</b>     | Brazilian Development Bank                                                            |
| <b>CAFTA</b>     | Central American Free Trade Agreement                                                 |
| <b>CAFTA–DR</b>  | Dominican Republic–Central American Free Trade Agreement                              |
| <b>CINDE</b>     | Costa Rica’s investment promotion agency                                              |
| <b>CINTERFOR</b> | Centro Interamericano para el Desarrollo del Conocimiento en la Formación Profesional |
| <b>CMEs</b>      | Coordinated Market Economies                                                          |
| <b>COMEX</b>     | Ministry of Foreign Trade (Costa Rica)                                                |
| <b>CPC</b>       | Consejo Privado de Competividad                                                       |
| <b>CGGC</b>      | Duke University’s Center on Globalization, Governance & Competitiveness               |
| <b>FDI</b>       | Foreign direct investment                                                             |
| <b>GE</b>        | General Electric                                                                      |
| <b>GII</b>       | Global Innovation Index                                                               |
| <b>GVC</b>       | global value chain                                                                    |
| <b>IADB</b>      | Inter-American Development Bank                                                       |
| <b>IDB</b>       | Inter-American Development Bank                                                       |
| <b>ILO</b>       | International Labour Organization                                                     |
| <b>IMF</b>       | International Monetary Fund                                                           |
| <b>INA</b>       | Instituto Nacional de Aprendizaje                                                     |
| <b>INTA</b>      | International Trademark Association                                                   |
| <b>IP</b>        | Industrial Policy                                                                     |
| <b>ISI</b>       | Import-Substituting Industrialization                                                 |
| <b>IT</b>        | Information Technology                                                                |
| <b>KIBS</b>      | Knowledge Intensive Business Services                                                 |
| <b>KPIs</b>      | key performance indicators                                                            |

|                 |                                                    |
|-----------------|----------------------------------------------------|
| <b>LAC</b>      | Long-run Average Cost                              |
| <b>LPG</b>      | Labour Productivity Growth                         |
| <b>MERCOSUR</b> | Southern Common Market                             |
| <b>MFA</b>      | Multi-Fibre Arrangement                            |
| <b>MKE</b>      | Ministry of Knowledge Economy                      |
| <b>MNCs</b>     | Multinational Corporations                         |
| <b>MRI</b>      | Magnetic Resonance Imaging                         |
| <b>NAFTA</b>    | North American Free Trade Agreement                |
| <b>NGOs</b>     | non-governmental organizations                     |
| <b>NSTC</b>     | National Science and Technology Council            |
| <b>OEM</b>      | Original Equipment Manufacturer                    |
| <b>PDPs</b>     | productive development policies                    |
| <b>PEMANDU</b>  | Malaysian Performance Management and Delivery Unit |
| <b>PITCE</b>    | Policy for Industry, Technology and Foreign Trade  |
| <b>PPD</b>      | Public-private dialogue                            |
| <b>PPP</b>      | Purchasing Power Parity                            |
| <b>PROCOMER</b> | Costa Rica's Export Promotion Agency               |
| <b>R&amp;D</b>  | Research and Development                           |
| <b>RBP</b>      | Resource-based Products                            |
| <b>RFID</b>     | Radio-Frequency Identification                     |
| <b>SENA</b>     | Servicio Nacional de Aprendizaje                   |
| <b>SENAI</b>    | National Service for Industrial Training           |
| <b>SMEs</b>     | Small and Medium-sized Enterprises                 |
| <b>TNCs</b>     | transnational corporations                         |
| <b>TPL</b>      | Tariff Preference Level                            |
| <b>UN</b>       | United Nations                                     |
| <b>UNAQ</b>     | National Aeronautics University of Querétaro       |
| <b>WTO</b>      | World Trade Organization                           |

# The agenda

- 
- ▶ **Welcome and Introduction.** José Manuel Salazar-Xirinachs
- 
- ▶ **Session 1. Latin America and the Middle Income Trap**
    - ▶ Main presentation. Eva Paus.
    - ▶ Commentary. Ben Ross Schneider.
    - ▶ Group discussion.
- 
- ▶ **Session 2. The new organization of production, PDPs and employment.**
    - ▶ Main Presentation. Charles Sabel.
    - ▶ Commentary. Ernesto Stein.
    - ▶ Group discussion.
- 
- ▶ **Session 3. Productive Development Policies and employment.**
    - ▶ Main Presentation. Ernesto Stein.
    - ▶ Commentary. Gary Gereffi.
    - ▶ Group discussion.
- 
- ▶ **Session 4. The design of industrial policy in Latin America**
    - ▶ Main Presentation. Gary Gereffi.
    - ▶ Commentary. Charles Sabel.
    - ▶ Group Discussion.
- 
- ▶ **Session 5. Global Value Chains, PDPs and employment**
    - ▶ Main Presentation. Gary Gereffi.
    - ▶ Commentary. Eva Paus.
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- 
- ▶ **Session 6. Final remarks**
    - ▶ Charles Sabel.
    - ▶ Jose Manuel Salazar-Xirinachs.
-

# Preface

On January 22, 2016, ILO's Regional Office for Latin America and the Caribbean convened a team of experts on Productive Development Policies (PDPs) for a day of brainstorming regarding the relationships between PDPs, inclusive growth and job creation.

As befits a brainstorming session, a rich and free-flowing exchange of ideas and suggestions took place. Rich enough, in fact, to warrant an effort to make it available to a wider audience and not just the session participants. Hence this Lima Brainstorming Sessions Meeting Report.

The whole live interaction that took place during the sessions cannot be easily reproduced in written form. Thus, in this report we have included: the written pieces that were prepared by Charles Sabel, Eva Paus and Gary Gereffi before the sessions; an edited transcript of the oral presentations that they, Ben Ross Schneider and Ernesto Stein made during the session (in which we have included the slides they used during the session), and an edited transcript of the ensuing commentary, previously assigned to one of the participants. The general discussion that followed cannot be transcribed literally and make much sense to those who were not there. We have settled for highlighting some of the key issues that were discussed.

In the edited transcripts of the oral presentations, we have attempted to preserve the “feeling” of an oral presentation and, at the same time, presenting a written text that can be read and understood by those who were not present at the sessions. If there is any passage that the readers may find somehow lacking in clarity or style, responsibility rests with the editors, and not with the authors.

The Brainstorming Sessions were divided into five different thematic sessions, plus a “closing remarks” session at the end. These sessions are captured in Sections 2 to 7 in this report, while Section 1 contains an Introduction in which I place the Brainstorming Sessions in the context of ILO's history, its work in the region and its current strategic priorities (of which Productive Development Policies for Inclusive Growth with More and Better Jobs is number one).

One of the key motivations for convening this meeting was to talk about the experience and lessons from various institutions and social dialogue processes for productive development policies. The ILO has from its earliest days focused and actively promoted social dialogue processes mostly focused on labour market challenges. But we



have not focused as much on social dialogue processes and institutions for economic and productive transformation policies, and not just labour market institutions. And I am convinced it is time we do that. Therefore, although this was not the only focus of the Brainstorming Sessions, it was a major topic that was put to discussion.

One of the key takeaways of the meeting was the confirmation that the policy debate in general, and the ILO in particular, need a much more rigorous approach to the strengths and weaknesses of different institutional settings, and that we need to look not only into social dialogue institutions related to labour market institutions but into the nature of social dialogue institutions focused on broader economic, skills, productivity and competitiveness issues.

Finally, during the Brainstorming Sessions the importance of “experimentalist” or “iterative” methods of governance of public policy became very clear. This is an innovative and very important approach to policy-making that has been explained and better understood only in a very recent body of literature, to which Charles Sabel himself, one of the participants in the sessions, is a major contributor. This literature and this approach is barely known in Latin America, and for this reason my co-editor, Jorge Cornick, agreed to write a short note on the nature of this approach and its opportunities and challenges for Latin America. Given the relevance of the subject and the informative nature of this note, we have included it as Appendix 1 to this publication.

The reader of this document will find plenty of rich insights on key issues and challenges the region faces regarding strategies, policies and institutions for productive development, inclusive growth and job creation.

Jose Manuel Salazar-Xirinachs

ILO Regional Director  
for Latin America and the Caribbean

Lima, 2017

# 1. Why ILO Brainstorming Sessions on PDPs, inclusive growth and employment?

**José Manuel Salazar-Xirinachs**

## 1.1 Introduction

Employment creation policies, the protection of workers' rights, social dialogue and social protection have long been ILO's main concerns, and securing decent jobs for everyone remains our key strategic goal.

However, it has become increasingly clear that to achieve this goal, we need to step into policy areas and engage in a dialogue with international organizations and local governments that have been working in key policy areas that, while outside ILO's main traditional focus, are nevertheless crucial if decent jobs for all is to gradually become a reality, instead of remaining a noble but unrealized aspiration.

As an example, Global Value Chains was included as one of the three key items on the agenda of the International Labour Conference that took place in Geneva in June, with more than 5,000 participants and 187 member states of ILO. As a matter of fact, Gary Gereffi, the author of one of the "think pieces", wrote one of the background papers used to prepare the report discussed at that Conference.

This is also the rationale behind the recent publication of an ILO volume devoted entirely to Productive Development Policies (Salazar-Xirinachs, Nübler and Kozul-Wright, 2014), and our recent work on industrial policy in Argentina (Bertranou, Carregal, Casanova et al., 2015), to quote two examples among many, as well as our recent efforts to map the productive development policies debate in Latin America and to identify neglected issues that are nevertheless crucial from an ILO perspective (Cornick, 2016).

This Brainstorming Sessions are part of this initiative of venturing, with intellectual rigour, into the productive development policies conversation and its connections with employment and job creation as well as labour and employment policies.

Before we get to the main subject of this meeting, however, I would like to do three things: share some elements of the ILO's background that are relevant for our discussion; present the three key priorities we have defined for the ILO's Latin America and the Caribbean Regional Office; and to briefly recap the goals of this meeting.

## 1.2 The ILO: Key background information

The ILO was founded in 1919 by the Treaty of Versailles, as a response to what the founders perceived as the need for a global system of labour standards that would contribute to better labour–capital relations and help avoid the social conflicts and revolutionary movements that Europe had experienced in the second half of the 19th Century.

The organization's goal was to gradually establish an internationally recognized set of principles and rules to govern labour relations, based on tripartite negotiations involving labour, the private sector and the public sector, guided by universally shared values of social justice and the aspiration to improve worldwide working conditions and the protection of worker's rights.

This all happened before the League of Nations, let alone the United Nations, were created. Not just tripartite dialogue, but indeed tripartite governance became a hallmark of our organization, well before public–private partnerships of different sorts, some bipartite, some tripartite and some multipartite were in vogue or even part of the policy discussion (Devlin and Moguillansky, 2010). This created a tradition and led to an accumulation of know-how, that places the ILO in a very advantageous position to make a significant contribution to policy initiatives all over the world that rely on social dialogue as a key mechanism for problem identification, policy discovery, policy implementation and social feedback for policy adjustment and improvement.

In this context the Preamble of the ILO's 1919 Articles of Constitution states that

Whereas conditions of labour exist involving such injustice, hardship and privation to large numbers of people as to produce unrest so great that the peace and harmony of the world are imperilled; and an improvement of those conditions is urgently required; as for example: by the regulations of the hours of work,... the prevention of unemployment,... the provision of an adequate living wage, the protection of the worker against sickness, disease and injury..., the protection of children, young persons and women, provision for old age, ... recognition of the principle of freedom of association, the organization of vocational and technical education...

Twenty-six years later, in 1944, after the shocks of the Great Depression and in the waning years of the Second World War, the ILO issued in Philadelphia a Declaration Concerning the Aims and Purposes of the ILO, which stated that:

- ▶ Labour is not a commodity
- ▶ Poverty anywhere constitutes a danger to prosperity everywhere
- ▶ Lasting peace can be established only if it is based on social justice
- ▶ All human beings ... have the right to pursue both their material well-being and their spiritual development in conditions of freedom and dignity, of economic security and equal opportunity
- ▶ It is the responsibility of the ILO to examine and consider all international economic and financial policies and measures in the light of this fundamental objective

The declaration further added that it was the solemn obligation of the organization to promote programmes among its member states that would achieve

- ▶ Full employment and raising standards of living
- ▶ Facilities for training
- ▶ Policies in regard to wages and earnings and other conditions of work
- ▶ The effective recognition of the right to collective bargaining, the cooperation of management and labour in the continuous improvement of productivity
- ▶ The extension of social security

As the global economy has changed, so have the working conditions and respective challenges in different regions of the world, so the ILO has embraced new themes and focused on new subjects.

In 1998, a Declaration on Fundamental Principles and Rights at Work was issued, stating the following goals:

- ▶ Freedom of association and the effective recognition of the right to collective bargaining
- ▶ Elimination of all forms of forced or compulsory labour
- ▶ Effective abolition of child labour
- ▶ Elimination of discrimination in respect of employment and occupation

A year later, the incoming Director General, Mr. Juan Somavía, introduced the concept of Decent Work as a way to summarize the basic mandate of the organization. Decent work was defined as “Opportunities for women and men to obtain productive work in conditions of freedom, equity, security and human dignity”.

It is important to remember the context in which these developments were taking place in the late 90s and early 2000s.

In terms of the global agenda and debates, intense negotiations leading to the WTO’s 1999 Seattle Ministerial Conference had resulted in failure to even agree on an agenda for the meeting, partly due to differences between developed and developing countries, partly due to the failure to find a consensus solution on how to respond to increasing pressure for the inclusion of labour and environmental standards in trade agreements.

The United States, a key player at the WTO and the ILO, has a legal framework under which ratification of international labour conventions is not possible in a direct way. This is a complex legal issue, but let me simplify by saying that the United States can adopt trade agreements that quote declarations that, in turn, refer to the conventions. The 1998 Declaration on Fundamental Principles and Rights at Work, therefore, was a mechanism that allowed for the (indirect) inclusion of labour standards in trade agreements negotiated by the United States and other countries, without the legal difficulties that some countries had in the direct ratification of ILO Labour Conventions.

The late 1990s and early 2000s were times of turmoil and intense debate regarding globalization and its impacts on employment and workers around the world. As a response to these anxieties and debates, in 2004, the ILO convened a World Commission on the Social Dimensions of Globalization. This Commission produced a landmark report that acknowledged what many people didn’t want to acknowledge at the time: that globalization is in many ways an unstoppable process based on underlying technological and economic forces, and that, therefore, the proper policy question was not how to avoid it but the need to focus on its employment and social dimensions and come up with adequate policies to address the many and often difficult social justice and opportunity issues associated with it.

The decision to focus on globalization, its consequences and the policy responses to it in different country contexts, culminated in the ILO 2008 Declaration on Social Justice for a Fair Globalization. This Declaration was the result of a three-year negotiation process; it introduced concepts of just transition and provided guidelines on how social justice can be built into the national and global policy frameworks in response to globalization. In addition, this Declaration officially institutionalized the concept of

decent work as well as some more practical aspects of the decent work agenda at the constitutional level and in the operational work of the ILO.

Fast-forwarding to the present, as you all know, Mr. Guy Ryder was elected ILO Director General and took office in 2012.

Director General Ryder launched a series of initiatives that partly respond to deep needs of member countries and partly serve to prepare for the ILO's 100th anniversary, to be celebrated in 2019.

Now, as we approach the celebration of the ILO's first 100 years of existence, the world is immersed in a process of rapid technological change that is uprooting traditional methods of production and creating new forms of employment relationships, of collaboration – and conflict – between ILO social partners and with the public sector, and also drawing new lines between workers, independent contractors and firms. There are of course other drivers of change in the world of work in addition to technology, such as demographics, the rise of the middle classes in emerging economies, climate change and the imperatives of sustainable development. The organization is paying intense attention to these new realities and relations in the world of work, under the heading of an initiative called “The Future of Work”.

## 1.3 Short- and long-term narratives of Latin American development

If you ask what is happening in Latin America and the Caribbean in terms of social and economic development, I would summarize it by saying that there are two different but complementary narratives in the policy debates in the region: a short-term one and a longer term perspective.

The short-term narrative is all about the “economic deceleration” in the countries of the region. After a decade of rapid growth propelled by high commodity prices, Latin America and the Caribbean seems to be heading into a (perhaps prolonged) period of tepid growth. The IMF projects a 0.3 per cent contraction of the region's economy for 2016, partly driven by the economic stagnation of Brazil and Venezuela. There are of course different speeds, with some countries growing somewhat faster, and some contracting, but the overall narrative, and no country is an exception to this, is deceleration. This was, indeed, the subject that dominated the discussions during the joint World Bank–IMF meeting held here in Lima just last October, 2015.

Deceleration translates into worsening conditions in the labour market. Unemployment, underemployment and informality go up, and long-fought-for but recently achieved advances in labour rights and working conditions become endangered. These concerns and the figures that document some negative developments that have already taken place are explored in detail in our most recent flagship publication, *Panorama Laboral en América Latina y el Caribe, 2015*.

But there is another narrative, one that takes more of a long-term perspective, which is the one convening us here.

This second narrative is about the long-term structural features of the region's development, and the large (and increasing) productivity gap that separates it from the developed world, an issue explored in detail in a number of recent flagship publications by regional organizations such as several IDB publications (Pagés-Serra, 2010; Crespi, Fernández-Arias, Stein, 2014; Sabel et al., 2012).

From the ILO's perspective, the problem with lacklustre economic performance is that it is almost inevitably accompanied by lacklustre (or worse) performance in the labour market.

Even during the recent decade of high economic growth, informality in the region was reduced only from 52 to 48 per cent. In other words, roughly half of all employment in the region continues to be informal, even after a decade of unusually high economic growth. And while inequality was also reduced during this decade, we continue to be one of the most unequal regions in the world (Lustig, Lopez-Calva y Ortiz-Juarez, 2013).

There is no doubt there was progress, but the challenges ahead are still enormous.

It is estimated that in 2000 there were 20 million children working in Latin America and that today that number has been reduced to 12 million (OIT, 2013). A dramatic decrease, to be sure. But still 12 million children are working instead of going to school. There is a strong political will on the part of Latin American and Caribbean governments to eradicate child labour in the region, and in October, 2014, all governments in the region committed to the Initiative: A Latin America and Caribbean Region Free of Child Labour. The ILO is supporting governments and social partners in addressing this challenge.

So, what needs to be done to address this situation? How can Latin America and the Caribbean hope to close the productivity and social gaps that are holding it back?

Whole libraries could be filled with the books that have been written trying to answer these questions, so I will not even try to summarize the answers here. Rather, I will

take the perspective that what we need is not a catalogue of pre-defined answers, but rather to discuss how to create a process, let us call it a social dialogue process, and the respective institutional arrangements and capabilities, for the continuous identification of the obstacles to development, the discovery of time-relevant answers, the implementation of tentative solutions, and feedback mechanisms to adjust and correct policies as needed.

This is of course the perspective of “policy discovery” advocated by authors such as Dani Rodrik (2008) and Ricardo Hausmann and Rodrik (2002), of “experimentalism” as proposed by Charles Sabel (2012), who is with us today, and of “experimentation, feedback and adaptation” proposed in the IADB’s recent book on productive development policies (Crespi et al. 2014). These institutional challenges are in my view the frontier for effective PDP and employment policy formulation, implementation and adaptation.

## 1.4 Social dialogue in Latin America and the Caribbean and the role of the ILO

Once we conceive the policy process as a process of policy discovery, one in which several actors, each one of them with incomplete information and operating under uncertainty that not even their combined knowledge can banish, the need for social dialogue as part of the process of building successful PDPs, or any policy for that matter, becomes evident.

And while social dialogue is difficult and even rare in Latin America, successful examples have been documented, amongst others, by Ben Ross Schneider, who is also joining us today (Schneider, 2015) and Robert Devlin (Devlin & Moguillansky, 2010). Our own organization, of course, has actively promoted social dialogue processes in the region, mostly focused on labour market challenges, quite successfully and in some cases directly related to productivity issues, as in the case of Uruguay. But we have not focused as much on social dialogue processes and institutions for economic and productive transformation policies, and not just labour market institutions. And I think it is time we do that.

And it is precisely at this point that one of the ILO’s potentially crucial contributions (not the only one, but a very important one) to the PDP debate in the region comes to the fore, for no other organization has as much experience in promoting social dialogue in society at large, and no other international organization has an internal



governance mechanism that is based entirely and explicitly on tripartite dialogue, with all the advantages and the not insignificant difficulties that it comprises.

## **1.5 The ILO's regional priorities for Latin America and the Caribbean**

With that background, we can move on to the ILO's regional priorities for Latin America and the Caribbean, which are in close alignment with two of the UN's recently established Sustainable Development Goals:

- ▶ Goal 8: promote sustained, inclusive and sustainable growth, full and productive employment and decent work for all
- ▶ Goal 10: reduce inequality

The three priorities are: (See OITAmericas, 2016)

- ▶ Productive development policies for inclusive growth with more and better jobs
- ▶ A regional strategy to promote transition to formality
- ▶ Respect and application of international labour standards and legislation

The first two priorities are closely related, as informality and small business size have been shown to be strongly correlated with low productivity (OIT, 2015), but informality demands a specific treatment and while related to productivity issues, is best treated as a policy area in itself.

The relationship between the first two priorities and the third is perhaps less evident, but just as strong: without a systematic transition from low-productivity to high-productivity activities, and from informality to formality, respect and application of international labour standards and legislation will be an unrealistic expectation for most workers. This is not to say one needs growth of productivity first and pursuit of respect for labour standards later, both need to be pursued simultaneously, but the fact remains that without productive development and a large and broad-based sector of formal sustainable enterprises, there will not be enough formal jobs and decent work.

Before digging into our main subject, Productive Development Policies, let me just note, briefly, that over that last few years we have seen several innovations in social programmes in the region. Some have received quite a bit of attention in the literature, as is the case of “Bolsa Familia” in Brazil and “Programa OPORTUNIDADES”

in Mexico (recently renamed PROGRESA). But innovations in policy interventions for promoting the transition to formality have remained somewhat under the radar so far, as is the case of the “monotributo” (the single tax) and other interventions. In the last two years, the ILO has documented a number of these innovative interventions in the region to promote formalization (Deelen, 2015; OIT, 2014).

## 1.6 PDPs for inclusive growth with more and better jobs

A significant part of the work that takes place at the ILO, both in this regional office and globally, bears directly on PDPs. However, until recently, neither PDPs nor their relationships with human resource policies, jobs and employment policies had been tackled in an integrated way by our organization.

This is precisely what we will start to change over the next two years.

As is always the case in ILO programmes, our incursion into this new field will have four components: knowledge development, technical assistance, capacity building, and finally partnerships and fundraising. These sessions are part of the first component.

We are a relatively small organization compared with other participants in the PDP dialogue, so we will proceed at a very deliberate pace, walking, if you will, before we attempt to run, let alone to fly. Our interventions will be focalized in a few, selected countries and projects, while we simultaneously work on internal capacity building.

Keeping these caveats in mind, I have to add that the ILO nevertheless has a remarkable number of tools and instruments in two well-defined areas of PDPs: business promotion tools (or as we call them in the ILO, tools to promote sustainable enterprises); and services to develop human resources and skills.

As regards tools for promoting sustainable enterprises, the main ones include: (For more details see ([http://www.ilo.org/empent/Publications/WCMS\\_430816/lang--en/index.htm](http://www.ilo.org/empent/Publications/WCMS_430816/lang--en/index.htm))

- ▶ Evaluation of enabling environments for the development of sustainable enterprises (EESE Methodology)
- ▶ Promotion of entrepreneurship and youth employment (Conozca de Empresa – CODE, *Start and Improve your Business* – IMESUN – and others)

- ▶ Promotion of collaboration between employers and plant workers to improve productivity and working conditions in micro- and small enterprises (SCORE)
- ▶ Interventions in value chains to promote better working conditions (Better Work)
- ▶ Specific support in the formulation of policies for developing entrepreneurship or improving business services to micro- and small enterprises
- ▶ Measurement methodologies to link wage increases to increases in productivity
- ▶ Studies of business development services
- ▶ Handbooks for implementing Corporate Social Responsibility (CSR) policies
- ▶ Handbooks on tripartite dialogue for sectoral strategies.

As regards services for promoting vocational training and skills, the main lines of work of the ILO, some of them delivered through the network of Vocational Training Institutions (ILO/CINTERFOR), include: (for more details see <http://www.oitcinterfor.org/>).

- ▶ Anticipation of demand for skills, technological prospection and planning
- ▶ Professional training for the rural sector
- ▶ Skills certification and recognition frameworks
- ▶ Educational technologies
- ▶ Strengthening of institutions – assessment of vocational training institutes
- ▶ Support for countries on continuing education strategies
- ▶ Strengthening of stakeholders in the world of work to participate in professional training policies
- ▶ Task assessment: updating of occupational structures, valuing of positions (useful for collective bargaining)
- ▶ Skills for Trade and Employment (STED)
- ▶ Technical guidance on dual training systems and quality apprenticeships

This is an impressive list of products and services, most of which operate at the micro or sectoral level. What is missing is more research and discussion of how these different tools connect with productivity growth and productive development policies as a

whole (micro, meso and macro levels), how PDPs connect with inclusive growth and job creation, and what institutions and social dialogue processes will make it possible to better formulate, coordinate, deliver and monitor PDPs.

Developing this larger narrative is essential to improve understanding of and progress towards Sustainable Development Goal 8: “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”. The potential for tripartite governance processes in the area of PDPs is a particularly interesting and important question for the ILO that has not been given the attention it deserves. And this is a question that is closely related to the objectives of this Brainstorming Sessions.

## 1.7 What we expect from this Brainstorming Sessions

Needless to say, there are many open questions in the PDP debate, some of them directly related to the work of the ILO. Some of them were listed in the letter of invitation to these sessions:

- ▶ Should PDPs be concerned with employment creation at all? If so, how can the goals of creating more and better jobs, on the one hand, and of increasing productivity and global competitiveness, on the other, be reconciled?
- ▶ What are the binding constraints on job creation for current PDPs? Are they on the labour demand side (the new industries create relatively few job opportunities) or are they on the labour supply side (those industries could grow faster if they could find more workers with the skills they require)?
- ▶ Public–private collaboration has been extensively discussed in the region, but in a restricted sense: collaboration between the public sector and the business sector. There has not been a lot of discussion about worker participation, in the productivity/productive transformation dialogue. Should the dialogue be widened, so as to include workers and their organizations? If so, how could this be done? Are workers’ organizations willing to participate in this dialogue?
- ▶ By the same token, the issues of public sector organization and capabilities for PDPs have been extensively discussed – even if our understanding of them is in its earlier stages – but the issues of the organization and capabilities of the private sector and workers have barely been discussed. It

is likely that these issues are as crucial for the success of PDPs as their public-sector counterparts.

- ▶ From a job creation perspective, how can PDPs that take advantage of current comparative advantages (possibly an abundance of cheap labour) be articulated with PDPs that develop future comparative advantages (highly productive and innovative labour)? In other words, how can a country at the same time exploit its current labour-specific comparative advantages and not be trapped in activities that depend on those advantages, but rather use them as stepping stones into higher value-added activities?
- ▶ Worker–employer relations are changing rapidly, in many cases the distinctions between employees and independent contractors are being blurred, job stability is becoming rare, and the skill sets required by workers change many times during their lives. How should these issues be taken into account in designing PDPs that take into account the need to create more and better jobs?
- ▶ PDPs that aim specifically at the transformation of the economic structure face the challenge that no one knows who the entrepreneurs and business leaders of the new, as yet inexistent industries will be. However, we do know who the future workers in those industries will be: they are the current high-school, technical, college and university students. How should we go about ensuring that these future workers will have the skills required to thrive in the (unknown) dynamic industries of the future?
- ▶ Linkages with local industries are one channel through which PDPs that focus on advanced, mostly foreign industries, can lead to the creation of more and better jobs. What is the status of “linkages” policies in the region? Are there job-creation opportunities that are not being used and if so, what needs to be done to take better advantage of those opportunities? How can “linkages” policies be modified so that they lead to more job-creation opportunities?

The purpose of this Brainstorming Sessions is to explore these and many related questions that you have brought up in the “think pieces” prepared for the sessions. I apologize if this introduction has been a bit long, but I thought it was necessary to provide some institutional context to our discussions.

So, thank you, everyone, for joining us today and, without further ado, let's dig in to our subject.

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## 2. Session 1: Latin America and the middle income trap

### 2.1 Eva Paus. Latin America in the middle income trap: The dual challenge of sustained growth and decent employment creation

#### 2.1.1 Introduction

Latin America's declining growth over the last few years, with negative zero point four per cent in 2015 and a mere zero point two per cent projected for 2016, reflect serious underlying structural challenges.<sup>1</sup> Most countries in the region are in a middle income trap. And the big questions are: Which strategy gets countries out of the trap? Does this strategy also lead to the creation of enough decent employment opportunities? And, if it does not, what are the ways for more people to have a decent living?

In this brief paper, I offer first broad answers to these questions. I submit that the only path out of the middle income trap is a strategy with innovation at its core supported by a coherent set of complementary measures. Innovation activities have to focus on increasing valued added within existing sectors as well as on developing new higher value added activities in agriculture, extractive industries and IT-based services. The urgency for such action is heightened by the fact that we are at the cusp of a new technological revolution where the 'Internet of Things' and robotization will lead to significant productivity increases in countries that develop first-mover advantages in the implementation of these general purpose technologies. China is working on becoming one these countries.

Some analysts argue that the new technologies will lead to a decoupling of economic and productivity growth from employment growth (Brynjolfsson and McAfee, 2015; Ford, 2015; Haldane, 2015). If broad-based innovation leads to sustained growth of productivity and output, but does not generate enough employment at decent wages, then we need fresh thinking. If the growth of innovation-based activities and

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<sup>1</sup> The low numbers for 2015 and 2016 are heavily influenced by negative growth in Brazil and Venezuela. Overall, the growth performance of countries in South America and Central America has been somewhat different, with the former experiencing declining growth since 2010 and the latter registering GDP growth around four per cent (CEPAL, 2015).





the possibility of a decent living standard for more people become two separate goals, then, as Tinbergen already pointed out 50 years ago, we need two different policy sets to achieve these goals. And then for people in Latin American countries, just as for high-income countries, securing a decent living through social incorporation becomes as important as through market incorporation. Social incorporation provides for people's well-being independently of the market, while market incorporation offers decent incomes through jobs in the private and public sectors (Martínez-Franzoni and Sánchez-Ancochea, 2014).

Even though all Latin American countries are in the middle income bracket, their income levels differ considerably, as do the levels of their productive capabilities, social capabilities, implementation capabilities, the potential for developing new dynamic comparative advantages, and the opportunities for building political coalitions that would adopt and implement an innovation-centred strategy and expand structures of social incorporation. It is beyond the scope of this paper to explore the implications of cross-country differences, but such differences have to inform policy formulations in each country,

I will begin with a brief discussion of the meaning of the middle income trap and the internal and external reasons behind it. I will then analyse the nature of structural change in Latin America in the last two decades, with an emphasis on productivity and employment performance. In the third section, I will sketch out the challenges for broad-based innovation-based growth in Latin American and conclude with some observations about the implications of the new technologies for productivity growth and employment creation in Latin America.

### 2.1.2 Latin America in the middle income trap

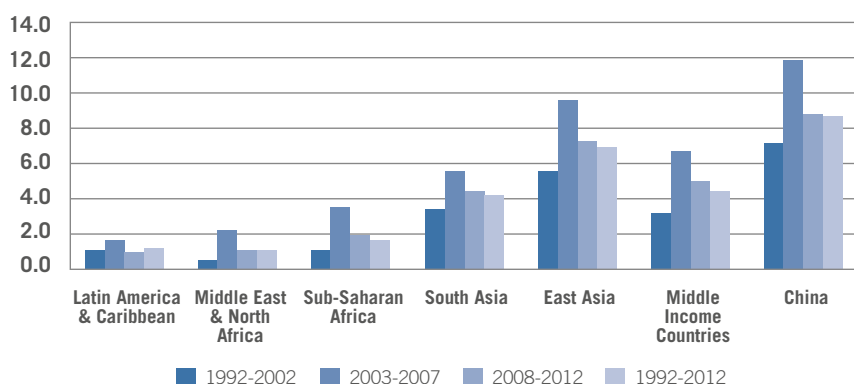
The productive transformation from commodity production to higher value added, knowledge-intensive activities is at the heart of the transition from a middle-income to a high-income economy. Few latecomers have achieved this transformation, most notably the Asian Tigers. Yet Latin American economies – like middle-income countries in other regions – continue to wrestle with the challenge. The growth spurt of 2003–2007, fuelled by the commodity price boom, tended to obscure the underlying structural problems. But the decline in GDP growth since 2010 has brought the challenge of productive transformation, upgrading, and innovation to the forefront again.

Moving from factor-driven to innovation-driven growth has always been the key challenge for middle-income countries. Yet it is only in the last few years that analysts have raised the spectre of middle-income countries actually becoming trapped. The 'middle income trap' refers to a situation of low economic growth where a middle-in-

come country can no longer compete internationally in standardized, labour-intensive commodities because wages are relatively too high, but it can also not compete in higher value added activities on a broad enough scale because productivity is too low.<sup>2</sup>

Aggregate productivity growth in the region has been dismal (see Figure 2-1.). Between 1992 and 2012, labour productivity in Latin America grew at an average annual rate of 1.2 per cent, which places the region between the low rates in the Middle East and North Africa on the one hand and sub-Saharan Africa on the other. Labour productivity growth was considerably higher in South Asia, East Asia, and the average for middle-income countries. China has been the star performer with an annual productivity growth rate of 8.7 per cent.

**Figure 2-1. Average annual growth rate of GDP per person employed, 1992–2012, constant 1990 PPP**



**Note:** The regional data include only non-high-income countries.

**Source:** Author's calculations based on World Development Indicators, online.

The slow productivity growth is primarily the result of the legacy of import-substituting industrialization (ISI) in Latin America (1950s to 1970s) and the impact of Washington Consensus policies (starting in the 1980s). Tariff protection and access to subsidized credit, together with improvements in education and infrastructure and incipient investments in a national innovation system reflected the widespread recog-

<sup>2</sup> Paus (2014) groups the writings on the middle income trap into two broad groups. One group, in the tradition of neoclassical economics, identifies the MIT with a slowdown in growth, irrespective of time and location (Aiyar et al., 2012; Eichengreen et al., 2013, 2011; Robertson and Ye, 2012). Another group, informed by structural economics, focuses on structural change and technological capabilities, and the authors tend to consider external and internal factors in explaining the middle income trap (Foxley, 2012; Gill and Kharas, 2008; Ohno, 2009; Yusuf and Nabeshima, 2009). Within the second group, Paus (2014, 2012, 2011) positions the middle income trap explicitly in the context of the Washington Consensus and the current globalization process.



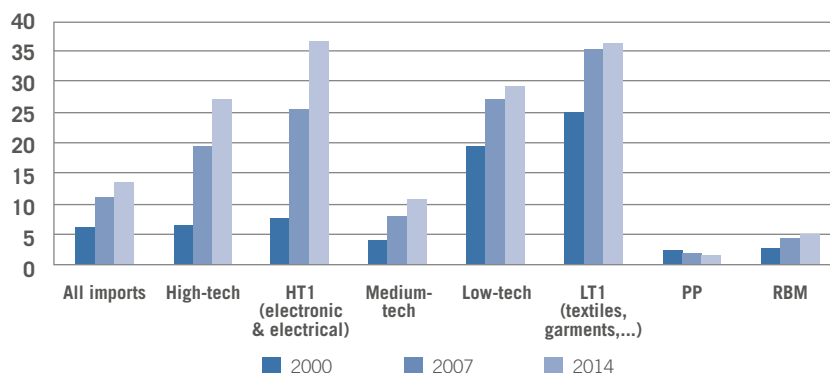
dition that the development of productive capabilities in new and dynamic activities takes time and requires multi-pronged support. The changed incentive structure led to a reallocation of resources from lower-productivity agricultural activities to higher-productivity manufacturing activities, with the manufacturing sector accounting for over a quarter of GDP by the 1960s. But the failure to adopt measures that stimulated competition (e.g. export performance requirements like in some of the East Asian Tigers or enforcement of sunset clauses for government support policies), in combination with overvalued real exchange rates, undermined the achievement of international competitiveness of manufactured products, which led to growing economic difficulties. And the manufacturing sector was not able to create enough jobs given the labour supply, which resulted in the growth of the informal service economy.

Theoretically, Latin American governments could have taken a number of approaches to address the deficiencies of the ISI strategy as implemented in the region. But in the context of the foreign debt crisis of the early 1980s, significant policy shifts towards less regulated markets in the United States and the United Kingdom, and pressure from the IMF and the World Bank, most governments began to pursue a market liberalization strategy. Under these Washington Consensus policies, as they came to be called, market liberalization and fiscal austerity tended to re-establish macro stability. But with the emphasis on allocative efficiencies and a general negation of the need to support firm learning in areas of new comparative advantages, government policies tended to work against the accumulation of firm-level productive capabilities. Many domestic firms were unable to compete internationally when governments liberalized imports, closed development banks, and reduced public investment in key social capabilities in education, training, and infrastructure. The informal sector expanded significantly in all countries, though economic growth in the 2000s increased the share of wage workers in the urban sector, from 60.7 per cent in 2000 to 65.1 per cent in 2011 (Martínez-Franzoni and Sánchez-Ancochea, 2014).

The limited development of productive capabilities has particularly grave consequences in a global context where the pressures to innovate have been rising relentlessly. Over the last 20 years, global competition has intensified considerably, product cycles have become shorter, and technological change has become faster. Governments in developed countries have contributed and responded to these developments by putting ever greater emphasis on the promotion of research and development (R&D) and innovation more broadly, thus increasing the pressure on middle-income countries to follow suit. The predicament for middle-income countries has been further aggravated by the fact that China, a middle-income country itself, has been leapfrog-

ging in the innovation process with unprecedented speed and has become a fierce competitor in high-tech as well as low-tech goods (see Figure 2-2).

**Figure 2-2. World imports from China as a share of total world imports by technology-intensity of products**



**Source:** Author's calculations based on UN–Comtrade data. The technology classification is based on Lall (2000) who distinguishes between low-tech products, medium-tech products, high-tech products, resource-based products (RBP) and primary products (PP).

In 2014, 29.3 per cent of world imports of low-tech products came from China, which is not surprising given the country's still relatively low wage levels. But the fact that 27 per cent of world imports of high-tech goods came from China as well is indeed surprising. It is the result both of China's integration into global value chains in high-tech sectors (especially in electrical and electronic products where China's share in world imports is now 36 per cent) as well as deliberate government policies aimed at increasing the technological capabilities of domestic firms.

But China is not only a fierce competitor in international markets and Latin American domestic markets. The size of China (and India) combined with high economic growth (even if the 'new normal' in China is 5–7 per cent rather than 10 per cent) offers huge opportunities for producers in other countries. Latin America has taken great advantage of these opportunities, as the region's exports to China have increased dramatically over the last two decades. While China accounted for less than two per cent of Latin America's exports in 1993, it made up nine per cent in 2013. Extractive and agricultural products have been Latin America's main exports to China, with manufacturing playing a much smaller role (see Table 2-1).

**Table 2-1. Percentage distribution of LAC exports: All markets and China**

|                      | Exports to All Markets |           |           | Exports to China |           |           |
|----------------------|------------------------|-----------|-----------|------------------|-----------|-----------|
|                      | 1999–2003              | 2004–2008 | 2009–2013 | 1999–2003        | 2004–2008 | 2009–2013 |
| <b>Agriculture</b>   | 19                     | 18        | 20        | 46               | 36        | 31        |
| <b>Extraction</b>    | 22                     | 31        | 33        | 25               | 47        | 56        |
| <b>Manufacturing</b> | 58                     | 49        | 44        | 29               | 17        | 12        |
| <b>Other</b>         | 1                      | 2         | 2         | 0                | 0         | 0         |

**Source:** Based on Ray et al., 2015.

The low productivity growth in Latin America is the result of skewed incentives for learning, both under ISI and the Washington Consensus. It is reflected in the particular nature of structural change in the region, with significant implications for the generation of decent employment (or lack thereof).

### 2.1.3 Productivity growth, employment, and structural change

Aggregate labour productivity growth is the outcome of productivity growth within sectors and productivity growth due to the reallocation of labour across sectors, since different sectors have different productivity levels. McMillan and Rodrik (2011) decompose labour productivity growth into productivity growth within the eight major economic sectors (from the national income and product accounts) and productivity growth due to the reallocation of labour across sectors. They analyse the inter- and intra-sectoral components of productivity growth for different country groupings for the period 1990–2005. Their findings show that the inter-sectoral component of productivity growth was positive in developing Asia, but negative in Latin America and Africa (see Table 2-2). In other words, in Asia, production and employment shifted from lower to higher-productivity sectors. But in Latin America, labour shifted to lower productivity activities.

**Table 2-2. Decomposition of Labour Productivity Growth, 1990–2005**

|                           | Labour Productivity Growth (LPG) | Decomposition of LPG     |                                                      |
|---------------------------|----------------------------------|--------------------------|------------------------------------------------------|
|                           |                                  | Due to within sector LPG | Due to cross-sector reallocation (structural change) |
| Latin America & Caribbean | 1.35%                            | 2.24%                    | -0.88%                                               |
| Africa                    | 0.86%                            | 2.13%                    | -1.27%                                               |
| Asia                      | 3.87%                            | 3.31%                    | 0.57%                                                |
| High-income countries     | 1.46%                            | 1.54%                    | -0.09%                                               |

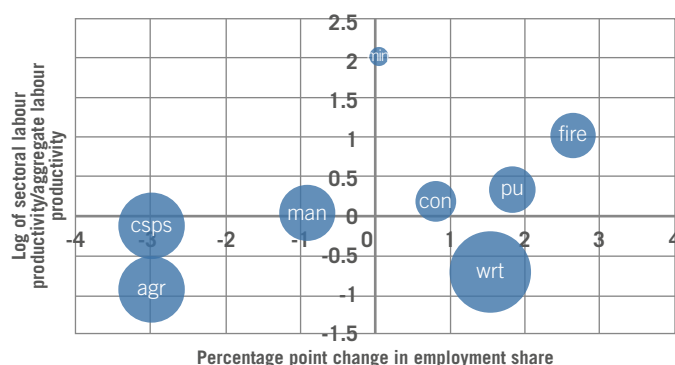
**Source:** McMillan and Rodrik, 2011.

With trade liberalization, the manufacturing sector in Latin America became more productive, but its weight in the economy declined (Paus et al., 2003), and labour found employment mainly in the service sector, often in the informal economy. The decline of the manufacturing sector was particularly pronounced in South America, where the natural resource sector regained its earlier prominence. It was smaller in most Central American countries and Mexico, however, where a large part of the manufacturing sector has become closely integrated into global value chains (often US-headed), particularly in clothing in the former and electronics and automobiles in the latter.

When we decompose productivity growth for the 1990s and 2000s separately, the story becomes more complex (Weller and Kaldewei, 2013). For many Latin American countries, the inter-sectoral component is negative or insignificant during the 1990s, but in the 2000s it is positive. That is to say, labour in the 2000s moved from sectors that had below-average productivity to sectors with above-average productivity. What was the nature of the structural change in the 2000s and what does it tell us about the prospects of a continued reallocation of production and employment to sectors with above-average productivity?

The sectoral reallocation of labour in Colombia shown in Figure 2–3 is fairly representative of the structural change that occurred in many Latin American countries during the 2000s (Paus, 2014). Employment in agriculture and manufacturing declined, while employment increased in parts of the service sector and construction. Wholesale and retail trade, a large employment sector, generally had below-average productivity, while the employment-expanding sectors with above-average productivity tended to be public utilities, finance, insurance and real estate, and construction.

**Figure 2-3. Inter-sectoral changes in labour productivity and employment in Colombia, 2000–2012**



Agr: agriculture; con: construction; csps: community services and public services; fire: finance, insurance and real estate; min: mining; pu: public utilities; wrt: whole sale and retail trade. The size of the circle indicates the weight of employment of the sector.

**Source:** Author's calculations based on Weller and Kaldewei, 2013.



To the extent that the sectors with above-average productivity levels service primarily the domestic market (construction and public utilities), the potential for future employment creation will be limited by growth of domestic demand. Mining is the sector with the highest productivity and a significant export sector in many South American countries. But it is also the most capital-intensive sector, accounting for a fairly small share of total employment and contributing hardly anything to direct employment creation, even during the commodity boom of the 2000s. That leaves ‘finance, insurance and real estate’ as the sector with above-average productivity levels that may hold the most promise of employment creation, especially in IT-based services.

The high level of aggregation of the eight sectors obscures two important issues. First, the aggregate productivity level for each sector does not reveal the heterogeneity of productive capabilities across firms. Micro and small enterprises, which constitute the largest share of firms in all Latin American countries, have productivity levels that are only a fraction of the levels of large companies. In Chile, for example, the productivity level of micro enterprises is estimated to be three per cent of that of large companies. The respective ratio in high-income countries ranges from 43 per cent in Italy to 71 per cent in France (see Table 2-3).

**Table 2-3. Relative productivity of enterprise groups compared with large companies**

|           | Microenterprises | Small Companies | Medium-sized Companies | Large Companies |
|-----------|------------------|-----------------|------------------------|-----------------|
| Argentina | 24               | 36              | 47                     | 100             |
| Brazil    | 10               | 27              | 40                     | 100             |
| Chile     | 3                | 26              | 46                     | 100             |
| Mexico    | 16               | 35              | 60                     | 100             |
| Peru      | 6                | 16              | 60                     | 100             |
| Germany   | 67               | 70              | 83                     | 100             |
| Spain     | 46               | 63              | 77                     | 100             |
| France    | 71               | 75              | 80                     | 100             |
| Italy     | 42               | 64              | 82                     | 100             |

Source: ECLAC, 2010, Table II.7, p. 96.

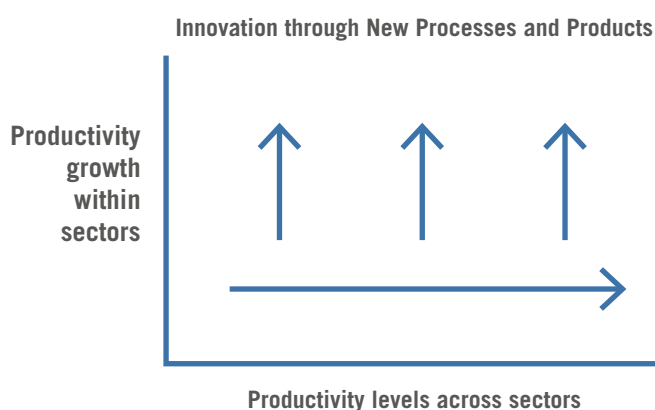
Second, the eight major sectors are likely to include subsectors with productivity levels above the average of the sector and the economy. Examples include salmon and wine in Chile, airplane and steel production in Brazil, and medical instruments in Costa Rica. These pockets of excellence may be important bases for expanding both production and employment in above-average productivity activities in the future.

Overall, the history of productivity and structural change in Latin America over the last thirty years highlights the depth of the productivity challenge and the urgency of increasing productivity growth to achieve sustained growth. But it is doubtful that such increases can also generate the quantity and quality of jobs needed to provide all people in the labour force with a decent income.

## 2.1.4 Innovation for broad-based productivity growth

At the heart of a response to the productivity challenge is the accumulation of technological capabilities, particularly innovation capabilities, to move production towards higher value added activities both within and across sectors (see Figure 2-4), activities with greater technological spillovers, increasing returns and higher income elasticities of demand. Innovation has to be a collective process where public and private actors interact and collaborate, and initiatives are in alignment, if it is to be successful. Local firms develop capabilities by learning in the production process and through interactions with other actors in the economy: other domestic firms, foreign firms, research institutions, or universities. The meso and macro contexts have to make learning by doing at the micro level possible. That means that social capabilities have to evolve so that firms have the requisite information about technology and markets, have access to funding and the needed qualified personnel, and possibilities to collaborate with other firms or research entities in the innovation process. And the relative price and support structure has to be such that it makes the risk-taking of innovation possible.

**Chart 2-1. Innovation, productivity growth, and structural change**



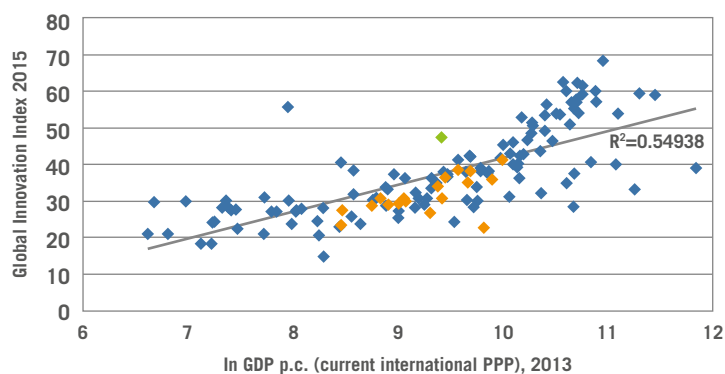
The ultimate goal in the innovation process is for technological change and innovative capabilities to become endogenous to growth in the developing country. Cimoli,



Dosi and Stiglitz (2015, 129) highlight that “the major vehicles of learning and catching up in all episodes of successful industrialization, with the possible exception of little Singapore, have been domestic firms”. Nonetheless, foreign firms can play an important role in advancing host country innovation. As innovation activities themselves have become globalized (Hall, 2011; UNCTAD, 2005), affiliates of transnational corporations (TNCs) can contribute to the advancement of local innovation capabilities not only via technological spillovers to domestic firms and local firm upgrading within global value chains, but also through upgrading of their own activities in the host economy.

Latin America's shortcomings in innovation activities, in firm learning capabilities, and in social capabilities are widely documented in the literature (e.g. Devlin and Moguiliansky, 2012; Foxley, 2012; Paus, 2014). The Global Innovation Index (GII) is one of several indices that try to capture the many inputs and contexts for successful innovation in one composite score. It includes 81 quantitative and qualitative indicators and has all the limitations inherent in composite indicators.

**Figure 2-4. Global Innovation Index and GDP p.c.**



Source: Dutta et al., 2015.

Figure 2-4 shows that the GII scores for the vast majority of Latin American countries (the red dots on the graph) are lower than expected given their GDP p.c.. Only Chile and Costa Rica have a score commensurate with their income level. Note that China (the yellow dot) is considerably above the trend line.

It is encouraging that over the course of the last decade numerous Latin American governments have put substantially more emphasis on supporting innovation, e.g. Brazil's Policy for Industry, Technology and Foreign Trade (PITCE) in 2003 and the Production Development Plan of 2008, and Chile's National Innovation Council in

2005. Based on the literature, we can identify 10 challenges to the successful implementation and outcomes of new productivist policies aimed at accelerating the development of higher value added and knowledge-intensive activities:

1. Currently policies are often piecemeal and not part of an overall strategic focus on the advancement of technological capabilities, a strategy that has to be cognizant of the highly heterogeneous production sector (Paus, 2011).
2. Policies are often not well coordinated across government institutions; public-private collaborations (e.g. the many National Competitiveness Councils) often do not carry sufficient political weight; and strategies do not surpass the short-termism of the election cycle (Devlin and Moguillansky, 2012).
3. Productivist policies tend to lack transparency and accountability (Almeida and Schneider, 2012, on Brazil), and their effectiveness is rarely evaluated (Peres, 2011).
4. Fiscal resources are inadequate in most countries, with tax ratios considerably below what would be expected at the countries' GDP p.c. level (Abugattas and Paus, 2009; Agosin, Larraín and Grau, 2009).
5. Most countries do not have a merit-based professional and technically capable civil service. Devlin and Moguillansky (2012) call it the Achilles heel of industrial policy in Latin America.
6. Macro policies, particularly overvalued exchange rates, frequently mitigate against learning and capability accumulation (Cimoli, Porcile and Calza, 2013).
7. The incentive structure provides weak economic signals for local firms (Peres, 2011).
8. Governments have neglected the strategic role that TNC affiliates can play in the development of technological capabilities and upgrading (Paus, 2015).
9. It is not clear that there is sufficient political will to pursue a productive capability-based strategy. Who are stakeholders? (Doner and Schneider, 2015)
10. More deliberate attention is needed for devising a more integrative policy response to the challenges of structural transformation, inclusion, and environmental sustainability (Paus, 2013).

Which of these challenges is most pressing in any individual Latin American country will depend on the country-specific context. But all countries are now facing an added

challenge: the onset of a new technological revolution that augurs huge changes in both the Global North and the Global South.

### 2.1.5 The new technological revolution, productivity growth and employment creation

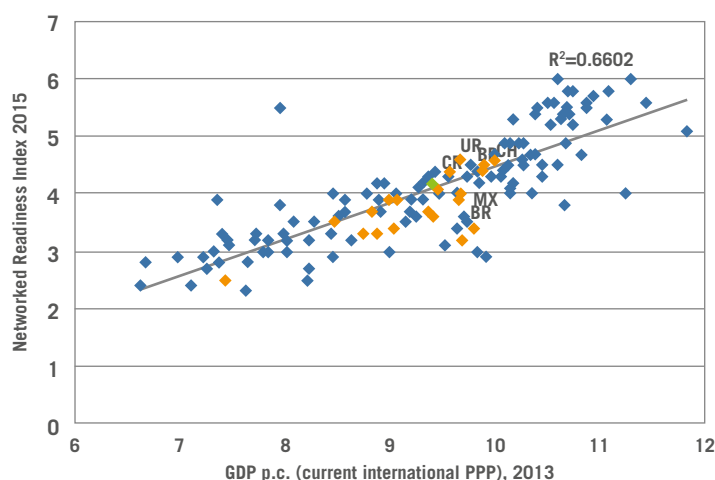
The dramatic decline in the cost of computing power combined with the growing pervasiveness of cheap sensors, the ever increasing amount of digital information and the growing interactions between them are enabling machine learning at a completely new level. “New age machines will be thinking as well as doing, sensing as well as sifting, adapting as well as enacting”, argues Andrew Haldane (2015, 12) in a keynote address to the congress of trade unions in London in November 2015. And he predicts that “in many cases, successful companies will no longer be the ones that make the best products, but the ones that gather the best data and combine them to offer the best digital services”. (59) In the same vein, the CEO of Booz and Company, Cesare Mainardi, argues in the 2015 Global Innovation Technology Report that “we are living in an age of unparalleled digital disruption, with massive amounts of technology-driven change, huge innovation, and significant evolution in the ways people use technology” (Dutta et al., 2015, xi).

Technological revolutions have always led to serious economic and social disruptions. But in spite of difficult transitions, the history of the past 200 years has proven Luddites wrong, as the loss of jobs in the areas most affected by the new technology was more than compensated by job creation in other areas, often areas that people could not conceive of until they actually unfolded. However, a number of analysts suggest that this time is different, because the technology will penetrate every sector, technological advance is growing exponentially, and machines are now able to replace not only repetitive, low-skilled tasks performed by humans, but also more skilled tasks that involve problem-solving. Analysing the potential impact of computerization on jobs, Osborne and Frey (2013) suggest that automation will affect 43 per cent of the job categories in the United States in the next decade or two.

We cannot analyse the possibilities for future areas of competitiveness and job creation in Latin American countries without taking into account the impact and opportunities of this technological wave. It will likely have a positive impact on consumers by lowering prices and providing new products/services we cannot even envision yet. Countries that adopt these technologies most aggressively will see considerable increases in productivity, which will increase the competitive pressures in international markets for all producers. China’s goal is to become one of frontrunners in the field, as smart manufacturing and Industry 4.0 are the key goals of “Manufacturing China 2025”.

How can producers in Latin American countries make use of these technologies as well to advance their productivity? It is clear that widespread use of the new technologies will require an infrastructure that offers broad coverage of ICT as well as the requisite skills to use them. The Networked Readiness Index, another composite index (with 53 individual indicators distributed across 10 pillars) suggests a more positive outlook for the region than the GII, as a number of Latin American countries score above the income trend line (see Figure 2-6. Networked Readiness Index and GDP p.c.). Detailed studies are needed at the country and sector level to assess the potential for leveraging computerization and automation for productivity increases. An interesting example is a recent paper by Anlló et al. (2015) which analyses the system of precision agriculture in Argentina and suggests the possibility of significant productivity increases.

**Figure 2-5. Networked Readiness Index and GDP p.c.**



**Source:** Dutta et al., 2015b, and World Development Indicators, online, accessed Dec 26, 2015.

A number of analysts predict that these new technologies will lead to a decoupling of economic and productivity growth from employment growth (Brynjolfsen and McAfee, 2014, Ford, 2015; Haldane, 2015). The 'great decoupling' would require a fundamental rethinking of how we distribute the gains from productivity so as to provide people with at least a minimum decent standard of living, even if they don't have a job. Arguably, the link between economic and productivity growth and employment growth is already much weaker in Latin America, as most countries have seen premature deindustrialization and the growth of the informal sector. Detailed studies need to

explore whether complementary activities can be developed that will increase employment growth.

But since it is quite possible, indeed likely, that it will not be possible to provide enough people with a decent living through market incorporation, it is critical that we also analyse how and where we might expand structures for social incorporation. The conditional cash transfer programmes that many Latin American governments implemented over the course of the last decade aimed to provide people with a minimum income level, if they met certain conditions mostly tied to advancing children's education. The underlying assumption has been that these children would then be able to find a decent job. On the other hand, basic income proposals that are discussed in a number of European countries and will be piloted in Finland and Switzerland in 2016 recognize more explicitly that decent jobs may no longer be a possibility for everybody.

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## 2.2 Eva Paus. Oral presentation

I have four main arguments that I would like to present and which are sketched out in my paper, or in more detail in other papers.

- ▶ The first one is that Latin America is in a middle income trap due to low productivity growth and the particular nature of structural change.
- ▶ The second is that we need a systemic approach to innovation for structural transformation; there has been some movement in that direction but with many challenges.
- ▶ The third is that we are at the beginning of a fourth industrial revolution or the second machine age, or whichever term you want to use.
- ▶ And the fourth argument is that we might be at the beginning stages of a “great decoupling” between employment creation and productivity growth.

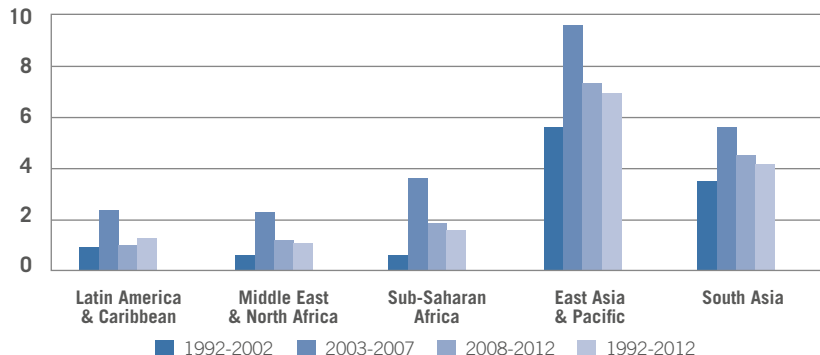
On the first point: by saying that Latin America is caught in a middle income trap, I mean that the region has a hard time being competitive in standardized products, because salaries are relatively high, but it has also a hard time competing in more sophisticated products, because productivity is relatively low. And productivity really stands for a whole collection of things, particularly technological capabilities on a broad enough societal level.

The term middle income trap is conditioned by globalization, the competitive pressures that come with it, and the rise of China. Ten years ago we weren’t talking about middle income traps. We assumed instead that countries that reached a middle income level would eventually reach higher income levels.

Low productivity growth in the region is well known. This is illustrated by Figure 2-7, with GDP per capita growth rates for several regions from 1992 to 2012. Even when Latin America’s GDP per capita grew at its fastest rate, from 2003 to 2007, it was below the growth rates of sub-Saharan Africa, East Asia and South Asia.



**Figure 2-6. Growth of GDP per worker, based on 1999 PPP**



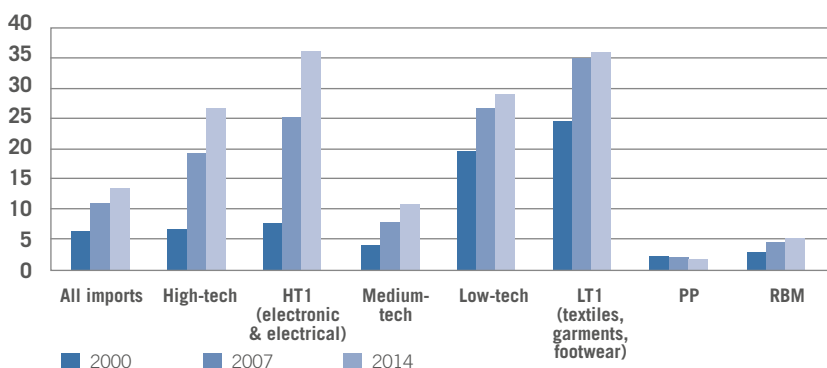
**Source:** Author's calculations based on World Development Indicators data.

An important source of competitive pressure for Latin America comes from China's emergence as a manufacturing powerhouse. Figure 2-8 shows world imports from China as a percentage of total world imports.

The first thing to note is that, in spite of all the discussion about higher wages in China and the textile industry moving out to Bangladesh and other low-wage countries, China continues to be a highly significant exporter of textiles.

But perhaps even more remarkable is the growth in high-tech imports coming from China. Some of this reflects China's participation in global value chains, but some of it reflects increased capabilities of Chinese companies. In either case, China is in direct competition with Latin American based manufacturing, be it by local firms or by multinationals.

**Figure 2-7. World imports from China by tech-intensity of products**



**Source:** Author's calculations based on UN-Comtrade.

If we inquire about the sources of labour productivity growth, the results for Latin America are not encouraging. Labour productivity may increase as a result of increased productivity within sectors where labour is already deployed, or as a result of resources moving out of low productivity sectors and into high productivity ones. Dani Rodrik has referred to the latter as growth-enhancing structural change.

In a recent paper, Rodrik and McMillan (2011) decomposed labour productivity growth into “within sector” and “structural change” growth. Their results are summarized in Table 2-4.

The structural change component is positive for Asia, but it is negative for Latin America. That means, yes, we have within sector productivity growth. Manufacturing is much more competitive than it used to be, but now, where has labour gone? It has gone increasingly to less productive sectors, including the large informal economy.

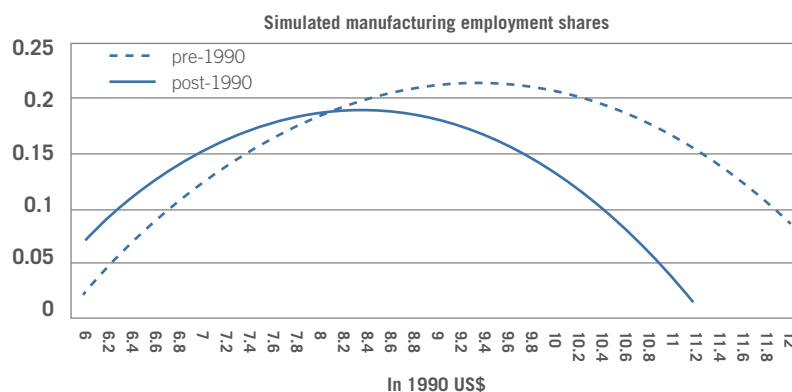
**Table 2-4. Decomposition of Labour Productivity Growth, 1990–2005**

|                       | Labour Productivity Growth | Decomposition of Labour Productivity |                   |
|-----------------------|----------------------------|--------------------------------------|-------------------|
|                       |                            | Within Sector                        | Structural Change |
| LAC                   | 1.35%                      | 2.24%                                | -0.88%            |
| Africa                | 0.86%                      | 2.13%                                | -1.27%            |
| Asia                  | 3.87%                      | 3.31%                                | 0.57%             |
| High-Income Countries | 1.46%                      | 1.54%                                | -0.09%            |

**Source:** Rodrik and MacMillan, 2011.

This has led to what Rodrik (2015) has called “premature deindustrialization”, illustrated by Figure 2-8.

**Figure 2-8. Simulated manufacturing employment shares**

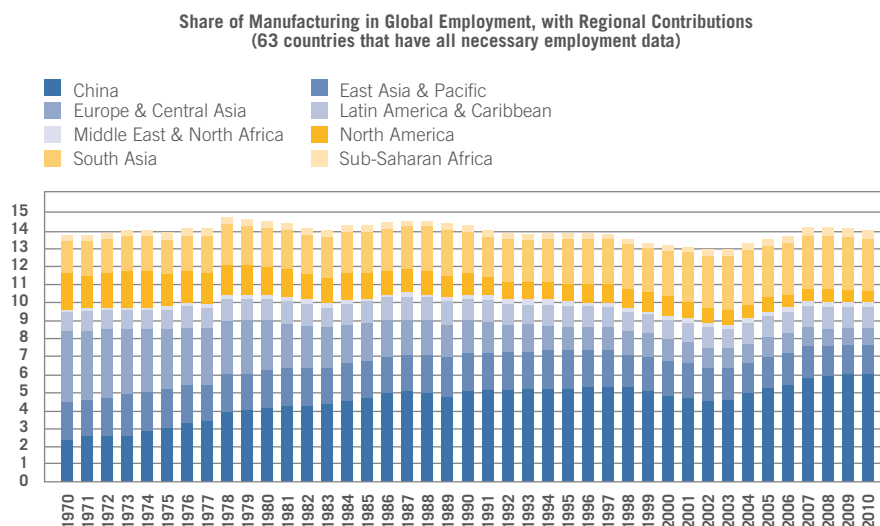


**Source:** Rodrik, 2015, Fig. 6.

When countries reached their peak manufacturing employment share, pre-1990, it was at a much higher level of development (as measured by per capita income) than it was post 1990. Post 1990, the curve shifted left and down: the peak is lower, and the share of manufacturing employment in total employment decreases at lower income levels.

Note, however, that the overall share of manufacturing in employment has remained fairly stable for 40 years. So perhaps what we are seeing, at least so far, is not so much a decline in manufacturing employment, but a displacement: North America, Europe and Central Asia have seen their shares go down, while China and East Asia & Pacific have seen their go up, as illustrated by Figure 2-9.

**Figure 2-9. Share of manufacturing in global employment and regional contributions**



**Note:** GGDC employment data, excluding West Germany and Taiwan, augmented with 23 non-GGDC countries from our main dataset. San Marino is excluded.

**Source:** Felipe et al., 2015. Fig. 4

After looking at the results in Rodrik and McMillan (2011), I replicated their analysis, but looking at the 90s and the 2000s separately. My results were a bit different from theirs: the structural change coefficient was negative, as in their case, for the 90s, but positive for the 2000s; which is, of course, what we want.

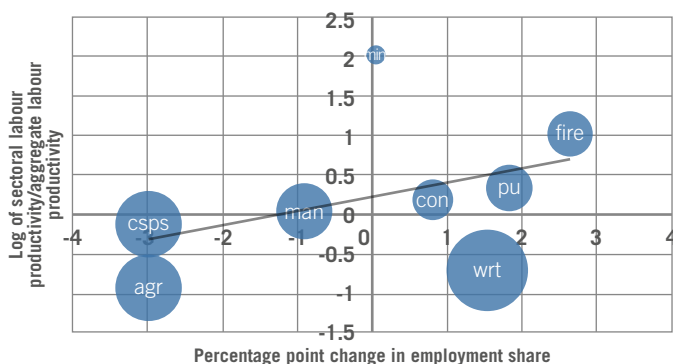
But the story of structural change that we are seeing is different from the traditional story we all know. It is a story of structural change within services, rather than a story of structural change towards manufacturing, as illustrated by Figure 2-10. The data

in this figure are for Colombia; but it is fairly representative of many other countries in Latin America.

The question is, can services – going forward – provide the potential for productivity growth, knowledge spillovers, linkages, all the things we have historically associated with the benefits of manufacturing as an industrialization strategy?

We don't have a historic example to support that. That doesn't mean it can't happen, because we have technologies now that didn't exist in the past, but I think that's something to investigate.

**Figure 2-10. Employment and productivity in Colombia 2002–2012**



**Source:** Author's calculations based on Weller and Kaldewei, 2013.

But if services are going to be the driver of structural change, we face many challenges, not the least of which is that we know much less about services and in particular about productivity in services than we do about manufacturing, and we don't have good data for developing countries.

Interestingly, data for developed countries suggests that while productivity growth in services as a whole lags behind that of manufacturing, in some sectors, it is much higher.

**Table 2-5. Labour Productivity Growth by sector and subsector, USA and EU-15, 1980–2005**

| Labour Productivity Growth, 1980-2005 |             |             |
|---------------------------------------|-------------|-------------|
|                                       | EU-15       | US          |
| <b>Total</b>                          | <b>1.57</b> | <b>1.56</b> |
| Manufacturing                         | 2.69        | 4.59        |
| Services                              | 0.87        | 1.27        |
| Rest                                  | 3.14        | 2.14        |
| <b>Service industries</b>             |             |             |
| Wholesale and retail                  | 1.52        | 3.06        |
| Hotels and restaurants                | -1.06       | -0.34       |
| Transport                             | 2.17        | 1.47        |
| Communications                        | 6.18        | 4.44        |
| Finance & insurance                   | 1.94        | 3.02        |
| Real estate                           | -7.32       | 1.42        |
| Business services                     | -0.22       | 0.20        |
| Public administration                 | 0.94        | 0.37        |
| Social & personal services            | -0.41       | 0.92        |

**Source:** Maroto-Sánchez and Cuadrado-Roura, 2009.

And within services it would probably be useful to distinguish “consumer services” from “producer services”, where there might be more room for economies of scale, and where the borderline that separates “manufacturing” from “services” is somewhat nebulous, with the same activities counted as part of “manufacturing” if performed in-house, or as “services” if outsourced.

So, ultimately, I think we need to move away from just focusing on manufacturing; the strategy has to be about raising productivity, which – may be obvious, but again – is about raising productivity within the sectors we have and, obviously, across sectors. To achieve that, we need a coordinated strategy, we need a proactive strategy to advance technological capabilities.

There’s a long literature on the various strategies and attempts that have been made in the so-called Post-Washington Consensus to move away from market liberalization and adopt more proactive policies. But there are numerous challenges if we want to promote the kind of integrated strategy we need:

- ▶ Ideology and dominant political coalitions
- ▶ Piecemeal policies

- ▶ Lack of coordination and short-termism
- ▶ Lack of transparency, accountability and effective evaluation
- ▶ Inadequate fiscal resources
- ▶ Lack of a merit-based professional & technically capable civil service
- ▶ Macro policies militate against learning
- ▶ Weak incentive structure for local firms
- ▶ Neglect of strategic role of TNCs in development of technological capabilities
- ▶ Little attention to integrative policy response to the challenges of structural transformation, inclusion and environmental sustainability

Ideology and dominant political coalitions, it seems to me, are the most important obstacles; not every item on the list is equally important. The point is that the challenges are quite considerable, even if one disagrees with particular items of the list or their ordering.

Let me now move on to the subject of the fourth industrial revolution.

There are few statistics about the use of robots in industry. From the little data we have, we know that the United States and China, but also Japan and Germany, are at the forefront in their use. And China's forward-looking strategy, "China Manufacturing 2015", is all about Industry 4.0 and about being at the frontier rather than playing catch-up in this revolution.

A quote by Klaus Schwab, the organizer of the World Economic Forum, captures well what's at stake, "We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before". The increased use of robots, the whole robotization phenomenon is, as you know, a key topic at Davos.

What are the opportunities and challenges we face as this fourth industrial revolution gets under way? To start with, competitive pressures on Latin America will become even stronger than they already are.

If China or other countries are successful, their productivity growth is going to increase dramatically. So, what they can sell in the international market or in Latin American markets, will be at substantially lower prices. At the same time, reshoring of manufacturing production is taking place in the United States and, to a lesser extent, in Europe.

So, what are the consequences of these two processes – robotization and reshoring – for developing countries?

And think of other changes taking place in developed countries. Self-driving cars are just on the horizon. At some point, they will become the norm and perhaps even mandatory. When that happens, the logic of car ownership changes dramatically. Why have a car when you can call one at any time, have it drop you wherever you are going, and then call another to take you back whenever you are ready?

The demand for cars will fall dramatically once we reach that stage, and the configuration of one of the most important global industries will change dramatically.

And what about opportunities?

I would say that at this point there are lots of open questions, and we need to take a good look into them. How can Latin American producers use these new technologies? Are they already taking advantage of them in precision agriculture? What about precision manufacturing?

Is there an opportunity for Latin America to jump right into the post-industrial, automated, service-driven economy, without ever having been a fully industrialized region?

And even if the region takes full advantage of the new technologies, will there be enough jobs to go around? This is of course a crucial question for ILO.

The way you make a decent living is to get a job and if there aren't enough jobs any more, if there aren't ways to get them, to work at a decent wage, then, what are the alternatives? It is urgent that we start thinking about these questions.

In summary, I would say that we need much more detailed studies of the service sector, of the tradeable service sector, of the producer goods service sector, to see what policies are needed for these sectors and specifically how the value chains look like.

Furthermore, we need to really focus in on this issue because if we believe that we will not be able to create enough jobs, if decent jobs cease to be the ticket for decent standards of living, then what can we do in this context? What are our options?

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## 2.3 Ben Ross Schneider: Commentary

This is a great paper, and it packs a whole lot of interesting issues into a very short format, and it ends with these depressing kinds of speculations about what will happen if we are simply not able to create a large enough number of decent jobs.

I want to focus, however, on three earlier points made in the paper.

One: the need to unpack the concept of innovation, to look beyond the R&D and classic forms of innovation.

Two: the need to think a little bit more of the issues raised about industrial policies for services.

Three: the obstacles we face as we try to improve an uncoordinated or chaotic industrial policy.

Let's start with innovation. We all use – because they are so easy and readily available – the R&D figures and we can show that there is a gap between what rich countries invest in R&D versus middle-income and poor countries, and it seems like we can think of the policies we would need to close the gap.

But I think we might be missing something that is easier than innovation and potentially more beneficial: policies that would target not innovation on the frontier, but innovation just to increase productivity in firms that are not close to the frontier on productivity. Given the well-documented heterogeneity of Latin American firms in terms of productivity, considerable gains in overall productivity might be achieved using this sort of policy.

And so, there's a lot you could think of doing in terms of industrial policy that is not at the frontier but rather looking at some segments that are way below the leaders in the sector.



Most firm level innovations in Brazil, for example, are new to the country or new to the firm, but not new to the world. This is catching up with the technological frontier, rather than trying to move the frontier out.

But if you want the large firms in the region, multinational and domestic, to do more R&D and more innovation, you will need a different set of policies. Some multinationals may be doing some R&D in the region that is at the same level as they do in their home countries. Domestic firms are doing very little.

So, what about... – and the terminology here is getting difficult – industrial policies for services? So, again, if you think about possibly low-hanging fruit, if the least productive new jobs are in the services, then it's useful to think about how you might make those more productive.

There might be lots of opportunities in services, but as pointed out in the presentation and in the paper, this is a subject we don't know much about.

## 2.4 Group discussion

- ▶ Coherence and long term stability have been offered as required – or at least desirable – features of industrial policy. This may call for an institutional design in which industrial policy is both centralized and driven by long term planning. But some of the great disasters in LAC's industrial policy are associated with centralized policies carried out by very large institutions. On the other hand, many of the success stories are associated with institutions that have operated “under the radar” and in a more decentralized fashion. So, a case can be made for NOT having ONE, coherent, long term industrial policy strategy, but rather to foster a process of policy discovery in which a variety of different agencies try to identify problems and devise solutions, and a variety of institutional arrangements are tried out.
- ▶ There is little consensus regarding the high potential of the services sector and our scant knowledge of the sector, and of the appropriate measurement of productivity in services, let alone policies to increase productivity. This is true of the public sector also: we don't have good productivity measures for the public sector.
- ▶ The discussion about productivity tends to focus on the private sector. But the public sector plays a large role in the economy, and it seems reasonable to assume that productivity in the public sector is generally low. So overall productivity could be boosted by a more productive public sector,

both directly (when the public sector is a provider of goods or services) and indirectly (when the public sector acts as a regulator of the private sector).

- ▶ One area in which public sector productivity is low with certainty is education. Educational results for the region range from low to disastrous, and if these results are not improved, the discussion about higher productivity and decent jobs is nothing but wishful thinking. Interestingly from an ILO perspective, the reform of public schooling in Latin America is inconceivable without the cooperation of teachers' unions, so perhaps this is an area in which ILO's expertise in social dialogue and tripartite governance could make a significant difference.



## 3. Session 2: The new organization of production, PDPs and job creation

### 3.1 Charles Sabel. The new organization of production, productive development policies and job creation. Thinking about industrial policy as industry becomes less central to development

#### 3.1.1 Introduction

Deep changes in the organization of production have made industry – manufacturing – less central to industrial or productive development policy, while increasing the relevance of agriculture, mining and services in both the public and private sectors.

The same changes have diminished the importance of national or macro-level consensus and conceptualization of PDP's relative to the creation of lower level forums for completing and correcting broad initial plans by addressing ground-level problems arising in policy implementation.

Given the traditions of thinking about economic development in Latin America, it is natural to cast these changes as a shift from an old to a new structuralism, from industrial policies centred on national business/government councils to industrial policies that encourage ongoing exchanges between higher level bodies with convening and coordinating capacity and ground level bodies addressing concrete problems, each correcting the shortcomings of the other.

The central claim of the old structuralism was that some activities are intrinsically rich in capacities generated at the frontier of world technological capability, while others are not. Activities that are rich in capacities are the core of the modern economy; those that do not are its periphery. Agricultural goods and minerals – commodities – were thought to be inherently peripheral products. Countries that produce them were trapped far from the knowledge frontier, incapable of generating the skills to get there. Industrial goods on the contrary were seen as inherently central. Once a coun-

try started producing them, it automatically gained the capacity to produce more and more sophisticated goods both in the original line of industry and in others. Hence modernization was equated with industrialization – whence the idea that development policy is industrial policy.

More recent versions of structuralism, such as maps of the product space, say the same thing with greater technical sophistication, while emphasizing, as we will see, an important generalization about the association of capacity-building and growth.

Contrast the view of neoclassical economics, according to which products are not associated with (capacity-rich or capacity-poor) production processes at all. Rather, in this view, products can be made with varying combinations of capital and labour, with the most efficient combination determined in each case by the balance of the producer's particular factor endowments. It does not matter for present purposes whether the old equation of industry with central capacities was correct or not – though there is substantial historical evidence that the equation was partial and incomplete.

### 3.1.2 Three fundamental changes

Profound changes in the organization of production, resulting from self-reinforcing advances in technology and institutional design in a context of growing uncertainty or inability to predict future states of the world, have revalidated the most general claim of structuralism while invalidating its focus on manufacturing and dismissal of commodities and services. Three changes are key.

First is vertical dis-integration: the decomposition of production into tasks – research and design, production of components or sub-systems, assembly of the final product – accomplished by independent firms collaborating with many clients and linked in supply chains. The more uncertain the development of markets and the trajectory of technological change, the riskier it became for mass producers of goods such as automobiles or household appliances to own suppliers of components whose products could abruptly become obsolete because of unforeseen innovation or superfluous because of a shift in demand.

The second change is the globalization of supply chains – locating production facilities where the costs of production are most advantageous, or to serve important markets with distinct characteristics. Globalization was initially seen as part of a strategy of cost-cutting; only later did firms begin to see that production in new and distinct markets facilitated innovation in both manufacturing process and product design.

The third change is the shift within these supply chains to just-in-time or continuous improvement production and design systems based on immediate error detection and correspondingly short learning cycles.

Mass-production firms hedged against breakdowns in operations by holding large buffer stocks of work-in-progress inventory. Uncertainty dramatically increased the cost of these hedges. Firms responded by eliminating the buffers – at the limit producing one piece at a time – so that breakdowns would stop production and operations could only resume when the disruption had been traced to its source and corrected.

Instead of concealing breakdowns through inventory hedges, the strategy was to reduce the possibility of breakdowns by making production more vulnerable to them and firms more able to learn from what this vulnerability revealed.

There were analogous changes in the process of design.

Traditional mass producers sought to reduce errors downstream in the implementation of designs through exhaustive upstream planning: given enough time, all potential flaws could be identified and eliminated. As the pace of innovation accelerated and the trajectory of technological change became more uncertain, firms began to collaborate at the outset of new designs with key first-tier suppliers of critical components and sub-systems, and each step of these collaborations is likely to be informed by exchanges between the design department and manufacturing.

To the extent that just-in-time production implies co-location – the physical proximity of suppliers to customers to reduce the costs of frequent deliveries and facilitate communication – it cuts against globalization, at least as a strategy for securing static, rather than dynamic efficiency gains.

Similarly, to the extent that just-in-time analogues in design imply the proximity of design to manufacture, they too reduce the attraction of globalization understood as simple cost cutting.

These trade-offs are under constant review by transnational firms; and for this reason alone – quite apart from obvious political economy considerations that make one location or supplier more attractive than another – their supply chain and globalization strategies are continuously adjusted (for example, by greatly increasing the number, and enlarging the roles of lead-company engineers co-located in the supplier's plant) and may change significantly (as for example when Nike in recent years required major suppliers to demonstrate capacity for just-in-time production).

### 3.1.3 What's valid, what's not in structuralism

How do these fundamental changes bear on the validity of the structuralist claims?

First, all together, but especially the decomposition of production into independently organized tasks, imposes or reinforces a distinction between capacity-rich and capacity-poor activities central to the structuralist thesis. Suppliers are routinely graded by competence, with the most qualified collaborating with their customers in design and production, and the least, executing routine tasks. Because of the implications of just-in-time methods for co-location of suppliers and firm-level learning it is possible for some suppliers to advance up the competence hierarchy, acquiring additional capacities — upgrading.

But this opportunity comes at a cost. The capacity to develop capacity itself has demanding prerequisites – for example an increasingly literate and numerate workforce or the ability to attract and coordinate complementary investments (a sterilization facility to foster development of a cluster of medical device makers, or a textile maker for a cluster of garment firms). These are just the kinds of prerequisites that middle-income countries in Latin America, with their disastrous education systems and limited capacities for policy coordination, may struggle to meet.

If the chief lesson of structuralism was that countries should take extreme care to (be able to) choose economic opportunities that are capacity rich, then fundamental change in the structure of production has not lessened its relevance.

But while this general lesson remains valid, the structuralist insistence that industry is the privileged vehicle of capacity building seems partial and misleading.

Modern manufacturing is characterized by vertical disintegration, short learning cycles, and globalization. But these same traits are coming to characterize agriculture, mining, and private, business-related services, as well as provision of service-intensive public goods such as education (though globalization in any straightforward sense is plainly less relevant in this last case). Manufacturing is no longer distinct. If modern industry is conducive to learning, so too are these other sectors.

At the same time, and for reasons peculiar to it, manufacturing has changed in some ways that make it less effective than it has traditionally been as an instrument for capacity building. It would be too much to claim that everything but manufacturing is the new manufacturing, especially since, as we will see in a moment, there is an important and worrisome sense in which *nothing* replaces traditional manufacturing in all its developmental functions. But even a cursory review of developments in the

various sectors is sufficient to show that structuralist concern for capacity building should lead us to broaden the scope of PDP's beyond their conventional ambit.

### 3.1.4 Where is capacity built today?

Start with the developments in manufacturing that diminish its attractiveness as an engine of productive growth.

The first is a decline in the share of manufacturing employment at its peak in total employment of successive cohorts of industrializers. For early industrializers such as the United States and Germany, manufacturing employment peaked at 30 per cent or more of the workforce. For Brazil, the peak came at 16 per cent, for Mexico at 20 per cent and for India 13 per cent. Even in China the peak was 17 per cent (which it reached in 1996).

Part of the explanation has to do with technological progress. As manufacturing becomes more productive, the prices of manufacturing goods decline and fewer workers are required to make them, even accounting for the increase in demand that results from lower prices. But part of the explanation – and a part especially relevant for present purposes – has to do with globalization and trade. Developing countries with small and relatively weak manufacturing sectors are price takers. As the prices set for manufactured goods in the advanced countries decline because of technological progress, manufacturing becomes less attractive for the developing price takers. The result, reflected in the low employment shares of India and Brazil, is what Dani Rodrik calls "premature deindustrialization"; and this deindustrialization throws a spanner in the works of what he calls the "automatic escalator" by which manufacturing activity, starting at the most basic levels, has historically conveyed developing economies to higher productivity and secure jobs.

The second limitation is that some of the most labour intensive manufacturing offers essentially no opportunity for skill acquisition. The paradigmatic case is final assembly of mobile phones or many kinds of computers by specialized contract manufacturers. The products are of course extraordinarily sophisticated and complex. But the sophistication and complexity are in the components. Final assembly consists of a sequence of very simple tasks or standard operating procedures defined by the lead firm; were it not for frequent model changes, assembly would be automated. As it is, jobs in these factories – the largest of which can employ several hundred thousand workers – are extraordinarily low-skilled. Many can be learned in 30 minutes, particularly demanding ones in several days. Maintenance workers are specialized in the repair of the single machine. Industrial engineers are limited to making slight adjustments in the standard operating procedures established elsewhere. Arrangements of this kind

make it impossible to learn general skills on the job (though more experienced workers do acquire plant-specific skills on which the factories depend).

Some contract manufacturers operating under these conditions can climb the competence hierarchy by mastering additional capacities. But they do this as companies, using the returns on low-skill activities to diversify into new lines of work (robotics, specialized consumer electronics) and new workforces — current workers (even industrial engineers) are in dead-end jobs.

It is of course very difficult to estimate what share of manufacturing employment in middle-income countries is subject to these limits. The point in underscoring the limiting case is not to suggest that manufacturing can no longer make a fundamental contribution to development. Rather, the aim is to interrupt the intellectual reflex that automatically associates manufacturing employment with growth. Malaysia and China — and more recently Brazil — went to great efforts to attract contract manufacturing in the last decades. The more prosperous Chinese provinces now refuse contract manufacturers' applications for zoning permission to extend production; Malaysia is having related second thoughts about the concentration of contract manufacturers in Penang. As a delayed developer, Latin America is perhaps especially at risk of anxiously seeking some things it had best not want.

While manufacturing is suffering these setbacks, the new production disciplines such as just-in-time and its equivalents have spread to the other sectors.

Developments have been most dramatic and extensive in agriculture, most conspicuously in the vertiginous diffusion amongst advanced producers of precision or no-till planting. As its alternative name indicates, precision agriculture does away with ploughing. Instead of opening the soil and then seeding, seeds are inserted (through the biomass remainder of the previous crop) essentially one at a time, to a depth and with a dosage of fertilizer adjusted to the conditions of each "pixel" of land. This avoids soil compacting and thereby erosion and increases yields; results are monitored pixel by pixel, and planting conditions are adjusted again to take account of micro-field conditions, unexpected effects of drainage patterns and so on.

Starting in the 1990s the introduction of no-till reversed the dramatic fall in the productivity of the Argentinian Pampas due to traditional mechanized ploughing and aggravated by efforts to compensate for the deterioration in soil quality through increased use of fertilizer. Latin American is today a world leader in this new form of agriculture, and its productive growth rates in this sector are among the highest in the world.

The success of precision agriculture has had important spillovers in other sectors. For instance, it encouraged the emergence of firms using sophisticated biotechnology to



adapt seeds to precise local contexts while also developing important new traits. Some of these firms have become multinationals in their own right. It has also induced, in Argentina, the rise of a cluster of highly capable agricultural equipment manufacturers, specializing in the production of no-till seeders and sprayers for targeted, low-dose application of pesticides and herbicides.

Developments in livestock raising are similar. RFID tags and user-friendly data-entry and retrieval systems allow comprehensive registration of movements and feeding of individual animals. Such complete traceability, combined with advances in genomics, leads to better breeding and herd management, again based on continuous improvement through short learning cycles. All this makes it possible to comply with existing phytosanitary standards – and, in the case of Uruguay – take part in creating new ones, thus opening new markets for exports of high-quality products.

All of these developments are especially significant because, in contrast to manufacturing, there are substantial and increasing possibilities for on-the-job learning on farms and other parts of the agricultural supply chain. Moreover, the foundation of the generally applicable knowledge – in biotechnology, or equipment design or in database management – that they generate is intrinsically local. The farmer knows best what works in her fields. In a competition to customize seeds and tools to the farmer's needs, the domestic producer, who in effect grew up with the farmer, has an advantage that her foreign competitor cannot match. In this sense, the particularities of place create a sheltered space for innovation in the new agriculture (and other sectors) that only marginally exists in manufacturing today.

Mining has long been more capacity- and knowledge-intensive than its reputation as a commodity-producing sector would suggest: 20 per cent of Australian copper mining export revenues derive from copper-mining-related IP.

As in agriculture, the introduction of a new paradigm depended on the exhaustion of the old one. The current paradigm is opencast mining: excavation from the (mountain) top down. But the deeper the pit, the greater the energy costs of recovering ore from the bottom. And the bigger and deeper the pit, the greater the environmental burden of dust and other particulate matter released by excavation.

"Continuous" or "subterranean" mining is the alternative. Production is largely automated. Drilling is from below, using small explosive charges and gravity to dislodge ore onto conveyor belts for transport to the surface.

So, unlike the switch to precision agriculture, the switch to the "ore factories" will not generate possibilities for mass employment, and the transformation is incipient, not well established. But given the distribution of ore – 30 per cent of world copper

reserves are in Chile – the new methods will certainly be introduced early in Latin America. The question is whether Latin American firms and workers participate in the development of the new technology and the important capacities in robotics, sensors, factory automation and software associated with it.

Consider, finally, the transformation of the service sector, public as well as private.

The production of services, like the production of commodities, was traditionally thought to be resistant to innovation. Where commodities were thought to be by nature fixed – unchanged and unchangeable – services were thought to depend on idiosyncratic personal relations resistant to any systematization; and this assessment coincided with the self-perception of professionals in law and medicine who traditionally viewed the rules of their craft as ineffable.

This view has changed in recent decades because of strong evidence of productivity gains in service provision, but perhaps more fundamentally because the boundary between production of goods and production of services is breaking down.

A salient case is the production of continuous (productivity) improvement itself. The capacity for continuous improvement is, we saw, a characteristic trait of the new manufacturing. If that improvement is produced by an internal team of line workers and their supervisors, it is a manufacturing product and the productivity gain is fairly booked as an increase in manufacturing productivity.

But now suppose, as is often the case today, that a standalone firm specializing in process improvement contracts with a manufacturing firm to reduce the latter's tooling costs (partly by introducing new, custom-designed appliances, partly by suggesting reorganizations in production) in return for a share of the cost savings. The standalone firm is now a provider of Knowledge Intensive Business Services or KIBS, whose own productivity increases as, though economies of scope, it learns to boost the productivity of its clients. Similarly a KIBS firm might contract to reduce the incidence of blowouts in the tyres of enormously expensive off-road mining equipment, or provide design or research expertise to improve products or seeds. Wherever the productivity gain is booked, it is clear that capacity generation is intrinsic to the provision of services in all these cases.

The service sector as a whole in Latin America is marked by low productivity, and its performance contributes significantly to the low productivity of Latin America overall. But many of the highest productivity service firms in Latin America are KIBS linked to the production of renewable resources.

Of the changes touched on so far, one of the most important – perhaps the most important – concerns reorganization of service provision in the public sector, especially reforms in education and in many social services such as child welfare, family support services, and labour market activation. These reforms are of a piece with the changes discussed so far because they, too, aim for the construction of organizations that can diagnose problems, monitor the effect of initial responses, and alter responses in the light of experience. Given diverse students, many of whom do not come to class equipped to learn by themselves, attendance will only improve educational outcome if the school is able to track individual performance and adjust pedagogy to individual need. Analogous customization is increasingly seen as necessary in many other social services.

As experience in the advanced countries shows, constructing organizations with these capacities requires reconfiguring existing public bureaucracies and revisiting long-standing employment relations. It requires rebuilding existing training facilities for teachers and others, or creating new ones. It requires changes in union–management relations which are likely to be difficult for both sides. It is easy to think of reasons why such reforms will be both easier and harder to accomplish in middle-income countries, but nearly impossible to think of reasons why on balance they will be easy.

Daunting as prospects of reform are, they are doubly critical. Unless they succeed, Latin American economies will simply not be able to meet the requirement for a literate and numerate workforce which is the prerequisite for entry into the capacity building economy. But if they do succeed, the reforms will create substantial employment opportunities with wide scope for on-the-job learning.

What do all these sectoral changes amount to? In particular, will these shifts, by themselves, solve the vast employment problems faced by developing countries, especially in Latin America?

The answer is almost certainly not. Given the attraction of cities, and the slow pace of change in the public sector even when change is possible, it is hard to imagine that the new jobs in the “new” agriculture, mining and services, public and private, will together in the short run absorb the current cohorts of unskilled workers and afford them chances for on-the-job learning. It is in this worrisome sense that the sectors comprising the “new” industry are nothing like a complete substitute for the old.

### 3.1.5 Back to the core of structuralism

But recall that, stripped of historically contingent commitments, the core of structuralism is the idea that development requires access to activities that generate general

capacities to get and stay close to the frontiers of world productive knowledge. From this point of view, the key question is not whether the “new” jobs alone solve the old problem but whether they can contribute to growth by their spillover and multiplier effects, whether, that is, the creation of a stock of generally applicable skills will foster development of domains of the economy beyond current reach.

The important contribution of technically sophisticated versions of structuralism is to show that this is precisely the case. The shorter distance between two activities on neo-structuralist maps of the product space, the greater the likelihood that the ability to do one implies the ability to do the other, with master activities – those that allow easy movement among the most demanding and lucrative tasks – at the centre and those that are (almost) self-limiting at the periphery. Looking at the product map of any particular economy, it is therefore possible in principle to identify the path of short (feasible) moves from activity to activity that leads most directly from the periphery to the general capabilities at the centre. This is the economy's high road to growth.

These maps, however, capture and synthesize historical experience – the distance between activities as they traditionally were; and because they are in this sense backward-looking, they are an unreliable guide to the way forward in the current era of deep change. (Agriculture and mining, for example, are typically shown on these maps as very “far” from the core of the economy, when in, in fact, the distance, as we have seen, is rapidly decreasing.)

But even if these products maps are unreliable guides for policy, they are invaluable as documentation of the general propositions that less demanding capacities have spillovers into more demanding ones, and the more demanding ones do indeed have very general applications. From this vantage point – the one faithful to the structuralist conviction that capacity building is the key to growth – the importance of innovations like the ore factory is not the immediate needs it meets but the otherwise unreachable possibilities it generates.

Assuming then that skills do have important spillovers and multipliers, fostering the creation of capacity-generating jobs in all sectors — and especially those where Latin America is already performing well — is imperative. How can PDPs help?

### 3.1.6 PDPs and uncertainty

Recall that firms facing uncertainty respond not by hedging, but by increasing their vulnerability to disturbance and their ability to learn from the defects in goals and organization that failure reveals. PDPs whose aim is to encourage the growth of firms that can respond to uncertainty (and can therefore take advantage of upgrading possi-

bilities in global supply chains) or encourage development of public services continuously adjusted to particular needs do the same. Like the firms themselves, and drawing on information that firms generate in their routine self-monitoring, these PDPs use short learning cycles to correct problems in implementation or, if need be, reset goals. Monitoring how projects are carried out becomes as important as the initial choice of projects because under uncertainty successful development plans are almost always modified in execution.

Continuous monitoring and adjustment of plans entails in turn qualified decentralization of authority to front-line decision makers, resolution of problems at the lowest possible level (because the lower the level of decision making the more likely it is to have key contextual knowledge), and as part and parcel of these requirements, inclusion of all actors with relevant expertise and experience. Decentralization of authority is qualified because lower-level actors, even if better informed than the higher ups, are hardly infallible; and in any case they depend on convening and coordinating capacities (in dispute resolution, regulation and budgeting) that only superior levels possess.

An example – an illustration of a family of institutional possibilities, not a canonical model for emulation – of this type of PDP is the Malaysian Performance Management and Delivery Unit (PEMANDU). PEMANDU was formed in 2009 to organize public–private coordination in defining and carrying out ambitious plans for development in various sectors of the economy sector (palm oil, paddy rice, electronics, tourism) as well as public sector reforms and projects (transit systems and environmental clean-up in Kuala Lumpur; the reform of public schools and the police).

PEMANDU has developed a well-defined governance regime for making and revising plans with broad stakeholder participation. Initial goals and provisional but detailed action plans to achieve them are fixed in lengthy (6- to 9-week) workshops (“Labs”) that include the key public and private stakeholders in a specific domain, such as the palm-oil industry or the national railway system.

The goals are translated into key performance indicators (KPIs). KPIs are used both to maintain pressure to decide and act and to trigger re-examination of goals and the means of achieving them. The plans are also “stress-tested” against resource viability and must be approved by a steering committee of decision-makers from relevant stakeholders.

Progress against KPIs is monitored in a regular cycle of meetings and committees across departments, agencies and (at times) entities from the private sector or civil society. This monitoring reveals coordination problems or flaws in the initial goals, diagnoses their causes and focuses efforts on solutions. If participants hoard infor-

mation or reach a deadlock, disputes are “bumped up” to successively higher review bodies. If the deadlock continues, control of the situation passes to superior authorities, and ultimately the prime minister. Since these authorities are almost certainly unaware of the key facts in dispute, their decisions will likely make all parties worse off than they would be under a jointly agreed resolution; and the prospect of that outcome induces deliberation and compromise to avoid it. Hence the prime minister adjudicates one or two disputes a year.

When new information casts doubt on the viability of initial goals, a set of tools and governance processes – including procedures for reconvening Labs or more focused “mini” variants of them – allows for the accountable revision of projects, plans and targets. Between (infrequent) revisions of goals and (frequent) revisions in execution, PEMANDU's CEO estimates that 70 per cent of initial plans are revised in the course of implementation. To underscore that the output of each round of review and revision is used as the input for the next round of implementation, allowing continuous adaptation and the fluid incorporation of the previously unexpected, we call PDPs of this type recursive. Such recursive models of organization assume that information problems are continuous, so that planning and doing must be intertwined. They are neither top down nor bottom up; and the need to articulate the reasons for decisions across levels makes possible explicit learning that is hard to achieve when adjustment is tacit and local.

### 3.1.7 Instead of a conclusion

There are numerous examples in Latin America of PDPs with many of those features, though seldom, it appears, with such highly articulated governance mechanisms. Many are at the provincial or sectoral level, and often at the intersection of the two – PDPs for a particular sector in a given province. Also, they are often directed to agriculture, or renewable resources more broadly. Examples include the Fundación Proarroz that orchestrates and carefully monitors coordinated improvement of rice growing and processing in the Argentine province of Entre Rios and a cluster of famously successful projects to improve wine production in the province of Mendoza. There are also quite successful agricultural extension services, national in scope but operating through regional centres with governance boards composed of local stakeholders, in countries such as Brazil (EMBRAPA) and Argentina (INTA). This list could easily be lengthened. With the partial exception of Mendoza, none of these cases has been studied in enough detail to establish precisely just how they do, or do not correspond to the recursive model of PDP.

But much anecdotal evidence suggests that there is a strong family resemblance. If this is so, there are no invincible systemic obstacles – not macroeconomic instability, not the absence of a Weberian civil service, or traditions of contention or simply mutual suspicion between the public and private sectors – to the creation of recursive development policies. Perhaps these institutions and the principles of their success have gone unremarked in part because of their connection to the production of commodities, and therefore in the traditional structuralist view to backwardness. But as industry and the jobs it once created, become less central to economic modernity, and the capacity for capacity building diffuses throughout the public and private sectors, perhaps it is time, or past time, for Latin America to learn to generalize successes in economic competition and institution building that it has too often dismissed.

## 3.2 Charles Sabel. Oral presentation

I am going to be very brief because I'd like to leave maximum time for discussion and to have a real exchange, and I am eager to hear Ernesto's comments. I also tend to be long in responding to things. So, I'd rather try your patience with responses than with the presentation.

### 3.2.1 The core arguments

You are familiar with them from your own work and from mine.

It's a general argument that uncertainty together with globalization lead to a vertical disintegration of firms, a decomposition of production into tasks, where firms performing different tasks collaborate in supply chains, where the various components of the supply chain are located to take advantage of either absolute cost differential in the production of particular steps or to take advantage of proximity.

These are contradictory things that result in a highly unstable division of labour between countries and within value chains.

The overriding idea is that you have very short learning cycles and continuous improvement, this is the third element, and that too you can think of this as a response to uncertainty. In a predictable world, you can ensure against disruptions but in an uncertain world it's better to make yourself vulnerable to the disruptions so you can learn to overcome them, and that induces continuous improvement. That's the core Japanese manufacturing insight: if you set up production in a fragile way so the things break down easily, then the only way to start production once it is broken down is by

eliminating the source of the breakdown; in order to continue production you have to improve it. That's the logic.

The argument of the paper is that if modern industry is characterized by disintegration, short learning cycles, and the contradictory effects of globalization, then everything is modern industry, because those changes and traits are characteristic of agriculture, livestock raising, mining and they are certainly characteristic increasingly of business services, including services to provide continuous improvement in this way and public services of the kind I mentioned earlier.

### 3.2.2 Good news and bad news

That's the good news from the point of view of arguments that are rightly concerned by the fact that manufacturing was the high road to industrialization, and manufacturing is now, for a number of reasons that we heard, less central to development. It's good news to hear that there are paths for capacity building, diffused throughout the whole economy; that is very good.

That's the reason why I think we should stop talking about industrial policies, and talk more about productive development policies, whose scope is as much outside "industry" as inside "industry".

The bad news is that there is nothing like industry that will have the effect of producing very rapid convergence in the way we've become used to, where you transfer a whole population from a low productivity rural setting to an industrial setting which is not only of higher productivity but where the productivity converges with the world frontier.

And our model of what successful economic development was, was exactly that transition. You take the rural population; you put them in factories; the factories converge with increasing productivity but it continues to increase through the automatic convergence with the world frontier.

So now you can say, continuous improvement formalizes what was in the black box of unconditional convergence of manufacturing with the world productivity frontier; we have a better idea of how you get that kind of convergence, that's really good, but we have the little problem that the number of jobs that are involved in this multiplicity of new sites does not add up to the numbers associated with what we have learned to think of as the "normal" path to growth.

And it is this idea of a normal path or patterns that leads to the idea of "the middle income trap"; if there is a path then every deviation is a trap. The expectation is that



once you get on an escalator, you will automatically escalate. This is an idea that goes all the way back to Gerschenkron.

Is there a version of the good news that corrects for the bad news, that makes the overall situation one of good news? Yes, there is, at least conceptually, and like all optimistic arguments, it relies on the assumption of increasing returns to scale and it depends on the interplay of new capacities and new productive structures. If improvement of productive structures is in itself conducive to capacity improvement, if capacity improvement leads to improvement in productive structures, and the more you do one and the other, the higher the returns in terms of further improvements, then the overall news might be good news.

### 3.2.3 Unions and employment

Now, let me say some things about unions, the ILO and employment in relation to these arguments, in hopes of advancing the discussion or at least provoking responses that will advance the discussion.

If you look at the evidence, it's clear that there are enormous possibilities for on-the-job learning, that's what we really care about, people with lower levels of skill being able to be put in situations where they acquire more skills. There are enormous possibilities for those in agriculture, in public services and so on, even if they don't add up to the numbers that in the past were associated with industrialization.

We need to learn more about how that happens and what to learn about the successful institutions that have encouraged those developments, especially in Latin America, because there is a belief, not completely without foundation, that Latin America just lacks the institutional capabilities to do these things.

We spent a lot of time – and rightly so – looking at the bad lessons that institutions such as BNDES might induce one to draw, but the question is whether there are other, less conspicuous experiences from which we might derive positive lessons? Are there good policy examples from which we might learn good lessons? I believe there are, I believe we can find them and indeed several have already been mentioned in this meeting, in areas like agriculture, extension services, biotechnology and traceability systems and so on and so forth.

So, there's an institutional lesson.

Then there is the question of trade unions and the role of the ILO. Now, I have to say as somebody who started out as a labour economist – my very first job was teaching labour economics at MIT – that I did a fair amount of work regarding

economic restructuring and unions, and came to see unions actively participating in restructuring.

The big problem, however, the organizational and conceptual problem for unions, – and I would be happy if somebody contradicts me on this – is that they have just not figured out how to move from collective bargaining, from representing general interests and a focus on the division of returns between workers and employers, and to engage in the kind of collaborative problem solving that has emerged at the core of the new organization of production.

You have vertical disintegration, you have short learning cycles, and firms have to be continuously restructuring themselves; unions have never found a way to be part of that process, except at the local and regional levels.

Let me be more precise.

There are successful examples of unions engaging, constructively and successfully, in the continuous economic restructuring that we have been discussing, at the local and even regional level. But I know of no cases where this has been translated successfully to the national level. All efforts to do this have choked. And I am not talking about places that are hostile to unions. I am talking about Germany and Denmark, two places that I know really quite well in this regard and it is not a happy story.

A similar thing is now happening with public sector unions, and this brings me to Latin America, where unionization is largely a public sector phenomenon, and also a middle class phenomenon of incumbency or both.

The teachers' unions are deeply divided on these questions; there are the younger teachers who want to take part in these things, because it means they are continuing education for them and because they actually love teaching children, and the older teachers who have lived under the old system and they are thinking about their retirement and they are not so interested in doing it. To some extent, unions have become organizations of pre-pensioners, naturally more interested in securing good pensions than in transforming and upgrading the region's educational system.

Now, the problems are more urgent in Latin America and the opportunities are greater than in other regions. They are more urgent because the school systems are just machines for generating Arab Springs. You just say, "What is the school system in Latin America?" It's a machine for generating Arab Springs. I do not know which year it will be, but I can say you are teaching people to expect to become part of the modern world and prosper in it, while at the same time depriving them of the tools and skills to

make that happen. When reality meets expectations and crushes them, what do you think will happen?

And the problem is not the parents, it is certainly not that all the parents of these kids want to do is consume now and forget about the future of their progeny, and we know this because these parents are spending a fortune on sending their kids to private schools.

The problem, therefore, is not that there is insufficient demand for high-quality education; the problem is that the State is not supplying it.

Now, here is a place where I think and... Let me say, what's the fluidity, the 'indefiniteness', the metabolism is building up and catabolism is breaking down, the mixture of metabolism and catabolism in the Latin American Public Sector right now is extraordinary. That is, there are things growing up and things disintegrating everywhere you look and labour has a very indistinct place in this and this seems like an enormous place of opportunity for the ILO in Latin America to be a point of focus and convening for discussions and analysis of this.

So, let me end there with the balance between the good news and the bad news being still undecided. I don't know whether it's a foregone conclusion that a self-reinforcing processes of capacity and economic improvement will take place and that the hand of reason will kind of reveal itself in a bounteous way, but I don't think that we are necessarily screwed, either.

### 3.3 Commentary. Ernesto Stein

I thought this was a brilliant paper. I really, really liked it.

Chuck starts from these three fundamental changes:

- ▶ Disintegration, so production is not vertically integrated any more. It is divided into tasks.
- ▶ Globalization, these tasks are not necessarily collocated.
- ▶ Just-in-time and continuous improvement production. So firms no longer hedge against problems by keeping buffer stocks under high uncertainty, as they did under mass production. The buffer stock you would need to keep may be too large and storage becomes too expensive. You switch to the just-in-time paradigm. You reduce these hedges. You let the problems quickly come to the fore so you identify them, you solve them, and you reinitiate production once they're solved.

One very interesting insight that I got from this is that the just in time paradigm actually may limit globalization. Why? For two reasons. Since you need quick delivery of inputs, then that quick delivery is helped by proximity. And, also because just-in-time and continuous improvement means that there is no clear separation between a design stage and a production stage; rather, you are continuously modifying design as a result of whatever you're finding in production. Collaborative design, thus benefits from proximity in ways that are analogous to the proximity benefits in production.

If this is so, then what happens is that there are some local advantages created if you could train firms and workers to learn to operate well within this just-in-time paradigm, some non-tradable capabilities which will make you a more attractive location for firms that operate under this paradigm and you become a more attractive location for some sorts of FDI.

If you do have a local advantage associated to training workers and firms to work within this paradigm, then I think there are huge externalities because you are training these people but this may bring extra investment. So, would it make sense to subsidize the adoption of just-in-time techniques, perhaps? I think this is something worth discussing.

But how do you develop these capabilities?

One of the things that comes out of Chuck's paper is that perhaps developing these capabilities in the private sector requires the simultaneous development of similar capabilities in the public sector as well. If the world of production changes rapidly and under considerable uncertainty, its requirements in terms of human resources, public services and public inputs will change just as rapidly and under as much uncertainty. A public sector that is not able to keep pace would become an obstacle to structural change and productivity increases.

I really like this comparison that Chuck does between just-in-time in a firm and just-in-time kind of policies where policies also in an uncertain environment need to reduce hedges in order to quickly identify where the problems are in implementations and how to resolve them through continuous monitoring and adjustment with goals that are reset constantly, etc.

It seems that it would pay to train workers and firms so that they can work under this paradigm. That is not easy. That requires a public sector that is well-positioned to work under similar conditions and so it is important to think how you develop these capabilities within the public sector, not only within the private sector.

Chuck discusses the case of PEMANDU and some cases in Latin America that resemble it.

The other thing I want to discuss is this issue of whether industry is better as a capacity-development tool, and apparently industry used to be better, manufacturing used to be better. It was conducive to learning and also it was labour intensive. So, that's why perhaps Rodrik would term manufacturing like the automatic escalator, but Chuck tells us that this is no longer so and, in this, there is good news and bad news.

The good news is that you can find similar conditions in agriculture and mining and services. So agriculture and mining may be the new manufacturing in this regard and there's a beautiful example of precision agriculture as a just-in-time process where you are delivering exactly what is needed in terms of fertilizers or whatever that the seeds need according to what is the condition of that pixel of land, etc.

Also that there are opportunities for learning here because this type of precision agriculture offers you a platform from which you can – and should – jump to other things like biotechnology and machinery, etc. And that these also have/provide a natural protection in the sense that if you want to develop tools and seeds for a particular site, for a particular area of a country or within the country, then those who have knowledge about that area, about the soil conditions are probably going to be the locals and so the locals are naturally going to have some protection which you would not have in manufacturing, perhaps. So, naturally, you will get biotechnology developments and manufacturing of agricultural machinery developments which are local. And this is what we are seeing in Argentina.

Another advantage of precision agriculture is not discussed in the paper; it has changed the way in which farming is organized. Now, you have these huge companies that are working with rented land rather than owning it, and they employ cutting-edge technology, biotechnology, drones, etc. So this is the good news.

The bad news is that these new industries are not labour intensive. So, how do you deal with this problem? There are not going to be enough jobs to employ the unskilled population that is the majority in our countries.

It seems to me that what would be desirable is to focus on sectors that are labour intensive as well as offering opportunities for learning. And I was wondering whether one can use some data like the Productive Space/Product Space. For example, in Product Space, you can measure whether goods are good platforms to jump into other goods, through these strategic value kind of variables. You could also, for example, could try to see whether some sectors have long quality ladders which offer you the opportunity of learning quickly within the sector.

You could also measure the speed of improvement within the ladder in different sectors. So, you may want to focus on sectors which are both labour intensive and either a good platform to jump into other complex things or have long quality ladders and quick learning within the ladder. I was wondering if this is a good way to characterize the types of sectors one would want to focus on. So, let me leave it at that.

### 3.4 Group discussion

- ▶ In the “old” on-the-job training, workers were trained to perform a well-defined job at increasingly higher standards. In the “new” on-the-job training, workers participate in the definition of a job that changes continuously.
- ▶ Even forestry is now more knowledge intensive. It is not a question of “pruning” but of complex management. And management skills are transferable.
- ▶ PDPs that lead to continuous improvements have to be continuous improvement processes themselves. Brazil is a museum of PDPs: all the old ones are preserved along with the new ones. What we need is to replace them.
- ▶ We do have success stories in LAC. Just look at ag-extension services such as INTA.
- ▶ On average, all education is low quality in LAC, not just public education. Once you control for social variables, the results of private schools are no better than the results of public schools.
- ▶ Increased productivity in services may not always be possible or desirable. Higher productivity in care of the elderly is unlikely. In tourism, you may want to have more people servicing you, not fewer.
- ▶ Can we use natural resources as a source of capability and productivity increases. One participant argues that R&D in agriculture and mining is quite small. Another argues just the opposite and cites Australia and Denmark as examples.
- ▶ In Finland, family background has very little impact on educational outcomes, but in order to achieve this, teacher training and teacher performance have to be very high. There might be a productivity limit in education, but LAC is so far from this productivity frontier that such a limit, if it exists, is irrelevant.



- ▶ Is education relevant for productivity? Not in terms of the number of years of formal education. Is it relevant in term of the skills developed (or not)?
- ▶ It is conceivable that LAC may solve its productivity problem without solving its employment problems. These two issues have become de-linked.
- ▶ Regulation is another area in which increased public sector productivity has great potential for increasing overall productivity.

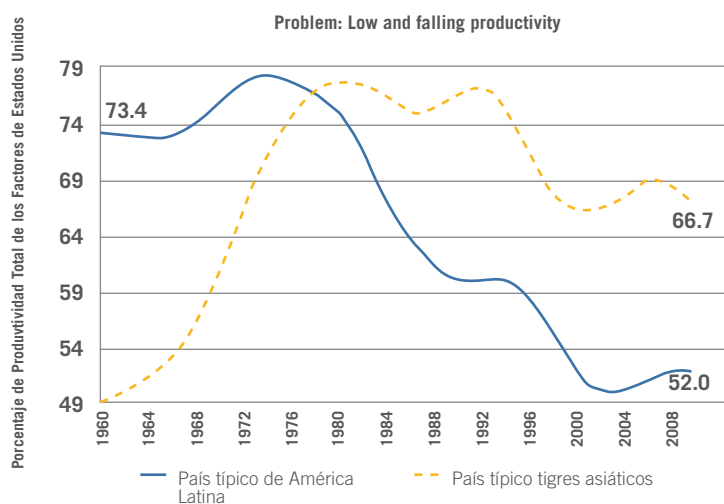
## 4. Session 3. Productive Development Policies and employment

### 4.1 Ernesto Stein: Productive Development Policies and employment

#### 4.1.1 Productivity in LAC

We all know that productivity is problematic in Latin America. We are not converging but diverging; we are getting further and further from the leaders, while some countries in Asia are converging, as illustrated by Figure 4-1.

Figure 4-1. Low and falling productivity



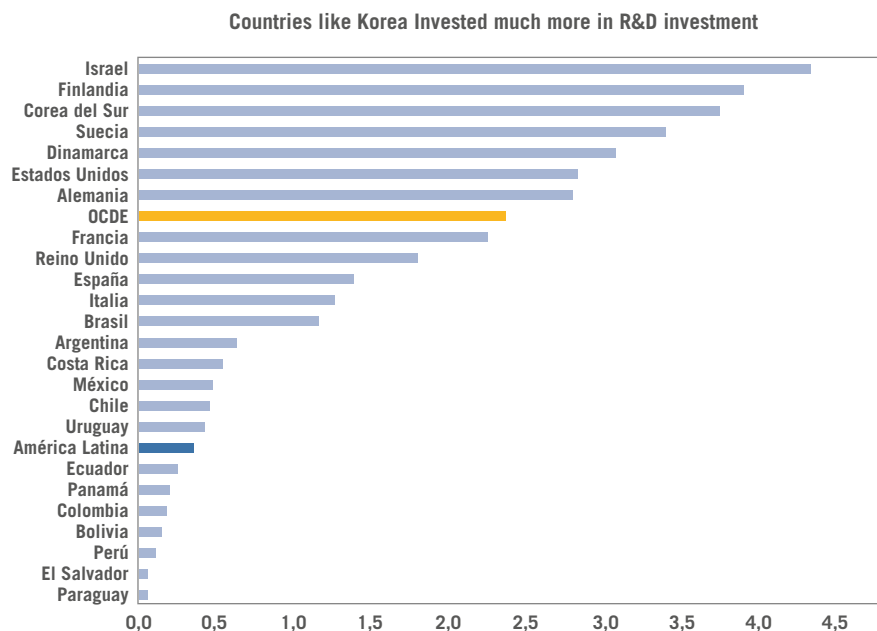
Source: Own calculations based on Fernández-Arias (2014).

We don't invest as much in R&D, as illustrated by Figure 4-2.





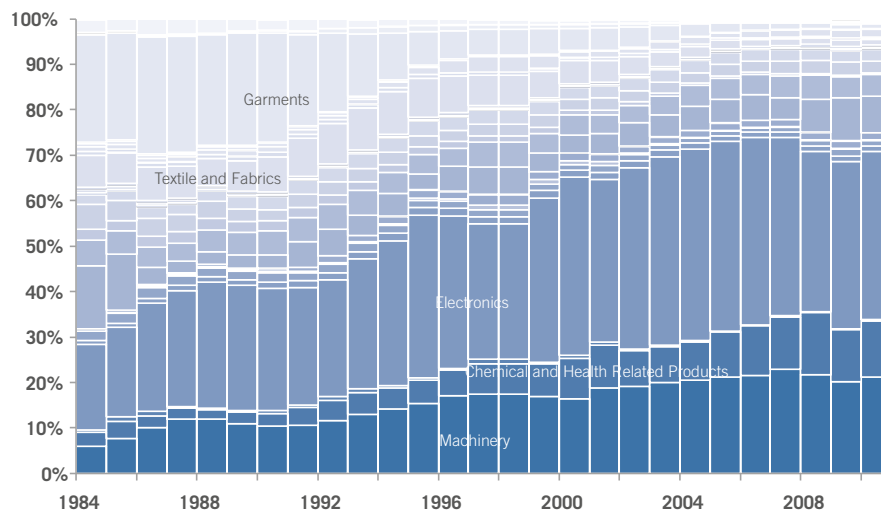
Figure 4-2. International comparison of R&amp;D investment



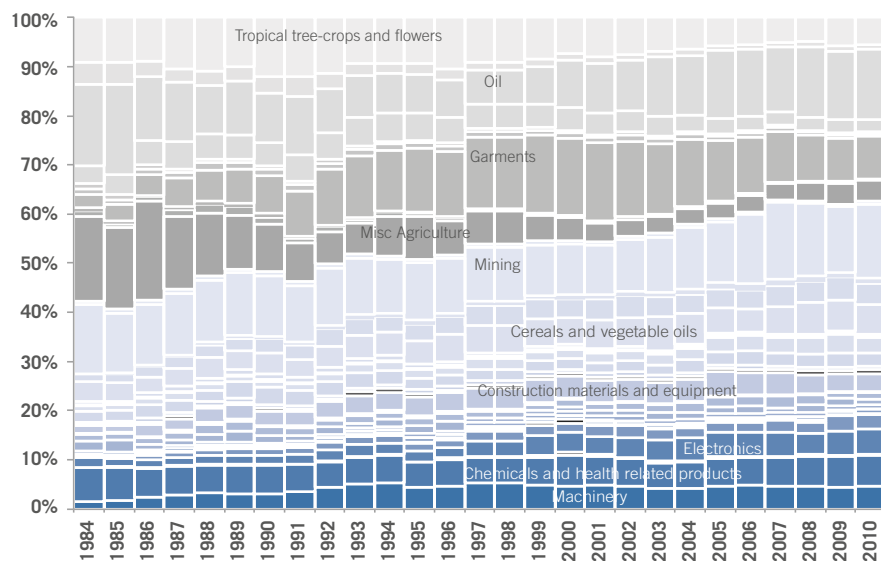
Source: OCDE (2010) y RICKYT (2013).

Perhaps as a result, we have achieved significantly less in term of economic transformation. The next two figures – we call them “50 shades of grey” – illustrate the point. These graphs show the composition of exports according to the level of sophistication of the exported products, using Hausmann et al. (2011) complexity indices as a measure of sophistication. The darker the shade of grey, the more complex the product category. And what we can see is that the complexity of Korea’s exports has increased consistently over time, while the lighter shades tend to disappear. In the case of Latin America, lighter – or at most medium – shades of grey dominate all the way.

**Figure 4-3. Deep economic transformation in Korea**



**Figure 4-4. Light economic transformation in LAC**



**Source:** Author's calculations based on Hausmann et al. (2011).

### 4.1.2 The return of PDPs and the three tests

We think that, in part, this difference in productive transformation has to do with different implementation of very different industrial policies or productive development policies. It's not that we didn't implement them in Latin America. In the 60s and 70s, our countries were actually very active. But we tended to implement policies that were protecting the domestic market instead of looking at exports. And these policies, in general, do not have a good track record.

Then in the 1990s, the pendulum moved to the other side. We moved into indiscriminate rejection of industrial policies under the Washington Consensus, but that did not deliver growth either. And today we are in the search for good industrial policies. We know that industrial policies can be good. We know that they can be bad. And the question is, how do you distinguish the good ones from the bad ones. And what we do in this report is try to bring to the fore a conceptual framework to think about these policies. This framework starts with what we call three basic tests.

The first test is the market failure test. We always look for market failures in order to justify policies. Sometimes they can be government failures. But, you have to ask yourself, why is the market not delivering what appears to be desirable? What is the market failure that requires/that calls for an intervention?

The second test is what we call the policy design test. Once we identify a market failure, we have to think whether the policy that we are putting on the table is well designed in order to address that market failure. Many times you see policies that have very little to do with the market failures that supposedly justify them.

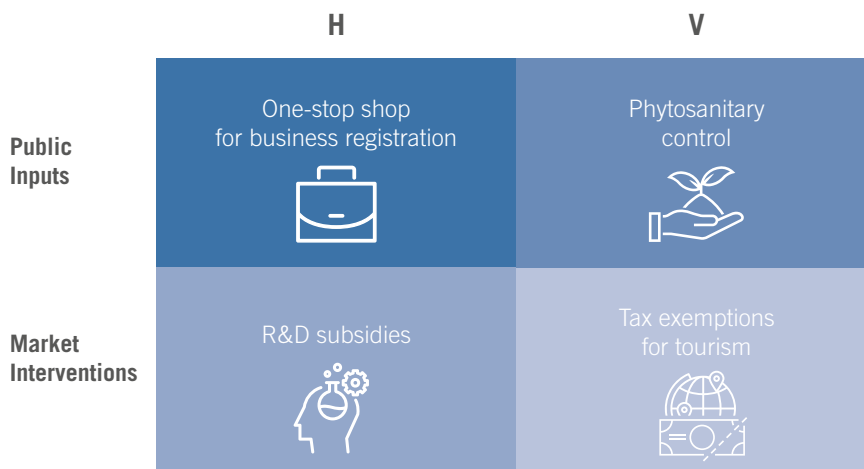
And the third test is whether the country has the required institutional capabilities to be able to implement these policies adequately.

### 4.1.3 The four-quadrant classification of PDPs

How do we apply these tests to actual policies? Within productive development policies we have very different things. In order to make sense of them, we want to classify them in a useful way. Here we emphasize two dimensions. One is the scope: whether these are horizontal policies or vertical, whether they are for all sectors or whether they are trying to support some specific sectors. And we also think it is very important to distinguish the type of intervention. In particular, we distinguish between public inputs like phytosanitary controls or a law for a particular sector. And we distinguish these public inputs from what we call market interventions, such as protection, subsidies, or tax exemptions. Combining these two dimensions, we get a 2 x 2 matrix. The first column contains horizontal policies, the second vertical policies. The rows distinguish

according to the type of instruments: the first row contains public inputs, the second market interventions. This is illustrated by Figure 4-5, which also contains examples of policies in each quadrant.

**Figure 4-5. A 2x2 matrix of PDPs**



What we think is nice about the conceptual framework is that the types of policy considerations that are relevant change depending on which quadrant you are talking about.

An example of horizontal public input is a one-stop shop for business registration. An example of a horizontal market intervention would be subsidies for research and development. An example of a vertical public input would be phytosanitary controls, for the fruit sector, for example. An example of a vertical market intervention would be tax exemption for tourism.

Typically, when we make this presentation, we do not even deal with the first quadrant (horizontal public inputs). Why? Not because it is not important, but because it's non-controversial. Even during the height of the Washington Consensus, nobody discussed whether the State had a role to play in this quadrant. But the other quadrants were subject to much discussion.

So, typically we don't discuss the first quadrant. Today, however, I want to discuss some issues in each quadrant (even the first one) that are connected to labour issues.



Let me start with horizontal public inputs. To begin with, there are two ways in which productivity can increase in a country: one is through productivity growth within individual firms and the other one is through the reallocation of factors of production from less productive to more productive sectors, from less productive to more productive firms and that includes exit of the least productive firms and entry of the more productive firms, etc.

And once we are thinking about this second channel, the reallocation channel, then there is a bunch of reforms that can facilitate this reallocation to more productive firms and sectors that will help boost productivity. So, for example, if I reduce barriers to start a business then I'm favouring entry and if I improve bankruptcy laws, I'm favouring exit of those firms that are less productive. If I do some labour market reforms, if these reduce frictions in the labour market, then it can contribute to ease reallocation from less productive to more productive firms. These are things that may help increase productivity that are in that first quadrant. If I do a worker retraining programme, that may help as well because it may make it easier for workers to move from a declining sector to a sector that is on the rise. You may want an education system that produces generic problem solving skills and soft skills that facilitate workers' adaptability, etc. These are all things that may facilitate reallocation. Some of the things I have mentioned are not PDPs proper, but they are related to them and they are likely to have an impact on productivity, **so organizations such as ILO, that are looking at things that are at the intersection of PDPs and other policy areas, may want to take a closer look at them and how they interact with PDPs.**

Let's move now to the second quadrant, horizontal market intervention. These are not interventions that are seeking to favour or support certain sectors but rather to stimulate some activities in all sectors. What activities? R&D, investment in machinery, labour training, etc. Let us think of the first two examples. And I want to go back to that first test. That is, we have to identify the market failure, because it is not always the case that there is a market failure that justifies a policy intervention.

Think of research and development, for example. We know that in the process of investing in research and development there is some knowledge that is created and this knowledge is not necessarily being appropriated by the firm that does the investment so there are potential spillovers. There are others who are in the industry that are observing what's done and learning from it and so you could argue that subsidy is justified due to the presence of this knowledge spillover.

In contrast, if you think about investment in machinery, well, unless this is the first machine of this type that gets introduced into the country and there are going to be

demonstration effects, you have to ask yourself why wouldn't the firm appropriate all the benefits of investing in this machinery. So it is very important for the policymaker to ask this question: where is the failure? If you do not find a failure, then it's not justification for a public intervention.

This is not a theoretical concern. It is a very practical one. There are institutions as large and important as BNDES that do not seem to think about market failures at all when deploying their policies.

Let me think about labour issues within this quadrant. Should we subsidize worker training? Well, here there is also a clear externality and this is an issue we discussed to some extent in the previous session. I'm training workers, there is labour mobility so I'm not going to be able to appropriate all the benefits of the skills that those workers obtain and so then, in the absence of a subsidy, firms would underinvest in worker training.

Lacking public interventions of the appropriate scale this has led to Latin America severely under-investing in worker training. So, I think there is a role for subsidies here. Of course, what type of worker training do you want? That's also very important. We are under-delivering in terms of quantity and quality but also of relevance. Many times you don't have enough private sector participation in terms of what sort of training gets done, what are the curricula in order to increase the relevance of this training for the needs of the market. So you need to involve the private sector in the definition of these programmes.

How about subsidizing employment? Well, I don't think it passes the market failure test. So, that's not something I would do. It may make sense as a social policy, as an employment policy. I don't think it is a PDP policy.

What about FDI attraction? If you think there will be knowledge spillovers through worker's training (**possibly all the way up to managerial and engineering levels**) and linkages to local companies, subsidies make sense. **But you'd better make sure your policy is not limited to subsidies, but rather it also fosters the realization of the potential spillovers,** for example by deploying a Supplier Development Programme like in the case of *Costa Rica Provee*. In that way, it's more likely that spillovers will occur and it is also more likely to have a larger impact on employment. You may also want to include employment generation as criteria to decide who receives FDI subsidies and how much subsidy you provide. Uruguay, for example, includes employment in the decision-making process and verifies ex-post whether employment was in fact created and to what degree and penalizes companies if they did not comply with their promises.

Now, let us consider technology extension. R&D subsidies tend to focus on the cutting edge – on the firms that are close to the frontier. In Latin America, there is huge

heterogeneity within sectors. There are many firms that are far from the frontier and because we have frictions, the factors don't move easily to the more productive firms. Because if the factors were to move to the more productive firms, then I wouldn't worry about that. That is not a problem. But in the case where you have frictions and factors get trapped in unproductive firms, then maybe you need to make sure that these firms get boosted in terms of their productivity.

On top of that, SMEs probably represent a large share of total employment and on average they tend to be low-productivity firms, as vividly illustrated by a graph that Jose Manuel presented earlier in this session. Therefore, we think technology extension programmes are very important and can really help increase productivity of these firms that employ a large number of people. And in Latin America, technology extension is incredibly under-developed. So, you would think that in countries of Latin America where we are far from the cutting edge, OK, we do less research and development, it makes sense. But, then probably we are doing much more technology extension than the United States or more developed countries. Well, this is not the case. So, in the United States and Canada, one in ten firms receive some sort of technology extension support; in the typical Latin American country, one in a hundred firms on average receive support. So, there is huge potential in increasing what we do in terms of technology extension.

So, let me go to the third quadrant. This is, we think, maybe the core of what industrial policies should be. I mean, when we talk about the *mesas productivas sectoriales ejecutivas* (executive sector productive committees) in Peru, we are talking about the identification of interventions in this quadrant. We are also talking about this quadrant when we talk about cluster policies, etc. Examples of interventions in this quadrant include phytosanitary controls in the fruit sector, a good biotechnology law that allows the sector to thrive, certification programmes in the software industry or the development of new rice varieties in Argentina.

There's a bunch of different possibilities of public inputs that the State can bring to the table and either allow sectors to exist or boost productivity of sectors considerably.

Now, every time you focus on this quadrant, then public-private collaboration is absolutely essential. And there are important questions here.

First, how do you identify what the main obstacles are and what needs to be done to overcome them? How do you choose the sectors that you are going to work with? We have a chapter dealing with this public-private collaboration in (Crespi et al., 2014), and while we don't have time to discuss this issue today, we think it is a very important for policymakers to think hard about it before making policy decision.

But another important issue also arises in this quadrant: public–public coordination. We have worked on this with Jorge Cornick, and Chuck Sabel has worked on these issues with Ricardo Hausmann and Dani Rodrik in South Africa and other cases.

Take, for example, the case of a Minister of Tourism trying to develop some tourist destination which has very good potential, but he identifies that in order to realize this potential, access roads need to be paved and an English-speaking workforce is needed. What's the problem? The problem is that the Minister of Tourism does not have resources or the responsibility to pave roads or to train workers. So, he needs the collaboration of the Public Works Ministry. He needs the collaboration of the Labour Ministry. And this inter-agency collaboration within the public sector is sometimes tremendously difficult to obtain and we see tremendous problems in Latin America in this regard.

It is not just a matter of bringing the three ministries together to the table and hoping that magically things will get resolved.

Images of gears are frequently used to illustrate attempts at solving public–public coordination issues, such as the one in Figure 4-6 , used by the transportation authority of the City of Manchester. Their motto?: Making the city work together.

**Figure 4-6. Public–public coordination in Manchester**



Try to move these gears in your imagination. If you turn gear 1 clockwise, it will make gear 2 turn anticlockwise, which will make gear 3 turn clockwise...and this will make



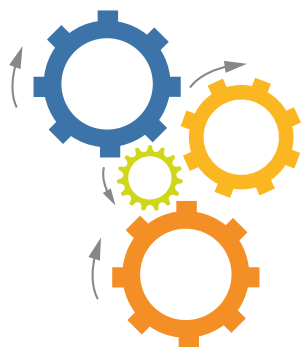
gear 1 turn anticlockwise. The image tries to depict coordination, but the mechanism it depicts leads to paralysis. These gears cannot move!

The moral of this story is that coordination doesn't happen spontaneously – or it rarely does. It is not enough to bring the three ministers and sit them at the same table. Specific coordination mechanisms or processes are needed, and this is the idea illustrated by Figure 4-7, where the small red gear represents the coordination device.

So, how do you achieve this? Well, you can create a specific institution for this, like PEMANDU in the case of Malaysia and you can read Chuck's work on that. You can give responsibility for these PDPs to someone that has a higher rank and tells every ministry what to do so that they are aligned. Sometimes countries have economic cabinets, but often that is like throwing these three ministries on the same table hoping that something will occur, unless you have specific processes in place that foster or force coordination – such as, for example, the active participation of the president authority telling everyone what to do and making everyone accountable. Without such processes these things don't work. They don't work by magic. Many times in Latin America they don't work.

Jorge has studied really interesting cases in Costa Rica of times when it has worked and times when it hasn't worked depending on those conditions. And you have budgetary mechanisms like Chuck and Ricardo and Danny have suggested, such as giving money to the minister of tourism to buy services from the other ministries, etc. How you do it, I don't know, but you have to think about some way in which you are going to be able to coordinate because many things in this third quadrant require this type of cooperation.

**Figure 4-7. A public–public coordination mechanism**



Let me go to the labour related issues.

Is there a role for labour to join these *mesas productivas*? Labour participation is certainly not the standard case in these *mesas*. Yesterday, we were with the Minister of Production, Piero Ghezzi, and he was telling us, “Yes, we invite the labour guys once in a while to discuss some specific issues, but they are not part of the core team that gets together every week to decide what we are going to do.” So they are not part of the core.

In Colombia, labour has a role in the national system of innovation, but it is not represented on its executive committee. Labour participates in a meeting maybe once or twice a year, but not in the day-to-day policy-making process.

Perhaps one reason for this is that while labour and management have some common interests, they also have conflicts of interest, and it is not easy to separate the forums in which the common interests are furthered and those in which conflicts are resolved. If labour is at the table, perhaps the conflict aspects overwhelm the commonality of interests and so the discussions tend to focus on the differences rather than what unites us.

For example, Minister Ghezzi was telling us that in new sectors where there is no decades-long history of conflict over salaries, cooperation is more likely than in old sectors where conflict defines the relationship between workers and employers.

One labour-related issue that frequently arises in these conversations between the private and the public sectors is the lack of properly qualified labour. It is not surprising, then, that the ministry of labour is one of the gears in Figure 4-7. And there are many experiences in the region where training programmes led by industry are maybe the solution to these problems.

Sometimes, there are countries that also rely on outside knowledge, bringing knowledge from abroad in order to deal with these issues. Korea is an example. When they decided to foster ship building, Hyundai brought a guy from a shipyard in Scotland, Jack Duncan, who was building ships that were similar to the ones Korea needed to build; he was the one who trained all the naval engineers in Hyundai. Recently, Eduardo Fernandez-Arias and I had lunch with a former Minister of Knowledge in Korea; he had to go back to Scotland to try to find this guy to bring him back in order to give him a medal in recognition of what he had done for the shipbuilding industry in Korea. The guy had died but they located the son and they gave the son this medal of honour.

In the case of Chile, at some point, when they decided to develop offshoring as a result of one of these *mesas*, of the cluster programme, they also found that the problem was that Chilean workers lacked the skills necessary to develop this sector as quickly

as they wanted. So, what did they do? They decided to make a more flexible migration policy so they could bring 5000 people from India with skills in this area.

Should employment be a criterion for sector selection? I think perhaps it should. And, actually, this is clearly a criterion that Piero Ghezzi puts on the table. He is looking for sectors that are going to be able to deliver employment of unskilled workers. But I don't think it should be the main criterion.

I think one needs sectors with latent comparative advantage that are in need of public inputs or are subject to coordination problems. But since you cannot deal with all the sectors at the same time and you want to have an impact, then you want sectors that are large enough. Sectors with high employment or high employment potential provide that, and tend to also be politically attractive. But they should not be targeted if the sector is highly uncompetitive because then you would be trapping resources in a low productivity sector or activity, which is exactly the opposite of what PDPs should try to do.

Now I get to the last quadrant, the vertical market interventions. Agricultural subsidies in the European Union are an example of what not to do. And, actually, policies in this quadrant are the policies that gave industrial policies a bad name in Latin America. Policies like protection of rice in Costa Rica and others.

When we started working with this quadrant, we called it "the forbidden quadrant". In this quadrant you are giving subsidies to specific sectors. You are inviting them to lobby for subsidies, and the most powerful sectors are likely to get some. The risks and opportunities for abuse are therefore plentiful. But this does not mean that this quadrant should be always avoided.

You could, for example, focus on sectors that are competitive (or at least have latent competitiveness) but which are hindered by some market failure. A good example is that of sterilization services in the Costa Rican medical devices sector, an example that Gary Gereffi has studied in detail.

What was the problem in Costa Rica? Well, they had identified medical devices as a key sector and had been able to attract firms in this sector. But they had been able to attract firms that were producing the low complexity type of medical devices, disposable ones like catheters and things like that. And they were not able to produce the more sophisticated things like heart valves, for example. Why? Because there was a missing link, and the missing link was sophisticated sterilization services. Since heart valves required sophisticated sterilization, then they could not produce and export this product from Costa Rica.

Why didn't a company come and start providing these services? Well, since you didn't have heart valve manufacturers or other producers that require sterilization, then no firm would have come to provide those services without the demand. You had a coordination problem, like a chicken and egg problem. CINDE, the FDI attraction agency, identified this market failure and worked hard to try to convince a company to come, offering a competitive package. Eventually, in 2009, they were able to convince one company and they located in Costa Rica in a particular industrial park. The following year, there were already three large multinationals producing cardiovascular equipment in the same industrial park. Chicken-and-egg problem solved!

This is a very small sector in terms of employment. Therefore, you are not are interested in sterilization services because this generates a lot of employment, but because it is a springboard that allows you to get into complex things, into things – that I don't think are very labour intensive either – but at least they bring a lot of dollars and very soon Costa Rica was exporting 5 hundred million dollars of sophisticated medical devices.

So, this is a strategic bet. Whenever you make a strategic bet, you are taking a risk. The question is how to structure a process so that you will select sectors that have potential to become competitive. If you don't have objective criteria, then you are going to end up with rent seeking. In (Crespi et al., 2014) we discuss some objective criteria that you could bring to the table. One is strategic value: you want sectors that create capabilities that may then allow you to jump into other things, etc. You need strong institutions here because otherwise you could have problems because private interests are going to want to exert pressure and obtain benefits. You are going to make mistakes. The question is whether you can set up the process where even a few successes can pay for the mistakes. To this end, it is very important to be able to identify mistakes quickly and to leave them behind.

Let's now consider labour issues in this quadrant.

One issue is whether employment should be a criterion of selection. But here the risk of getting it wrong is much higher than in other quadrants. Why? Because if you provide subsidies to a sector that has high employment, it becomes even more difficult politically to take those subsidies away once you realize that this sector is going nowhere. So, here I think it is very, very risky perhaps to focus on employment.

You want sectors that have competitive potential and are subject to some market failures. You don't want to reallocate factors towards low productivity sectors that have no hope in export markets. So, for example, in the Dominican Republic, at some point they gave an employment subsidy for textile “maquila” (assembly), which I saw as very problematic. This was a declining sector.

Perhaps there is a role, a cyclical role, in competitive sectors during crisis like when the United States gave money to the auto industry during the recession. Whether or not you think that, perhaps you are going to have significant losses of productive capability that will be very difficult to bring back in good times.

#### 4.1.4 Institutions

Finally, a word about institutions.

Institutions are difficult here. You need processes for discovering the right policies. You need policies to have long time horizons. You need collaboration with the private sector without opening the door for rent-seeking. You need close cooperation across government agencies. These things require sophisticated capabilities, technical, political, organizational. These capabilities are not the same across countries and different policies require different capabilities. This means that it's not that I see a good policy in Korea and then I bring it home and I'm going to be able to implement it. You have to pay attention not just to bringing the policies that you want after you identify the best practices, but you have to focus also on the match between these policies and their institutional requirements and the types of capabilities that actually you have. In the meantime, you can focus on developing these capabilities that we were discussing before. Thank you.

#### 4.1.5 References

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**Hausmann, R., Hidalgo, CA., Bustos, S., Coscia, M., Chung, S., Jimenez, J., Simoes, A. and M. Yildirim.** 2011. The Atlas of Economic Complexity. Puritan Press. Cambridge MA.

### 4.2 Commentary. Gary Gereffi

In the interest of time, I'm just going to make three comments:

The first one has to do with how reforms or policies can facilitate factor reallocation, which we discussed earlier. I want to use the example of South Korea, because it has come up frequently and it is closely related to the issue of policy instruments and their

potentially bad use that leads to giving incentives to the wrong sectors, as Ernesto emphasized.

When you look at Korea, they used the stick at least as much as they used the carrot, and to give just one example, let's talk about athletic footwear. Nike, Reebok and other companies moved manufacturing offshore in the late 1970s, and they picked Korea and Taiwan as the two countries where they wanted to concentrate production; by the 1980s, athletic footwear was a thriving export industry in South Korea.

However, by that time Korean policy planners were looking longer term to where they thought the country should go and felt that footwear was too low tech. They wanted the suppliers in Korea to move up the technology ladder, and the question was how to stop the thriving athletic footwear export business. To export in Korea you needed an export permit, and the government just said no more export permits would be issued to the footwear companies. They complained and the government agreed to give them several months to clear the pipelines so that they could finish their orders, but they pushed the athletic footwear companies out of Korea.

It's a similar story in China: when you look at how China moved from the labour-intensive, low-tech export industries like garments, footwear, toys out of Guangdong Province, the government decided to take away the permits for foreign companies to be able to locate in those provinces. The government said, if you want to stay in China, go to the interior provinces that aren't well developed, which allowed China to create more space in the coastal provinces for higher technology industries. Thus, these Asian economies used productive development policies that were effective in relocating export-oriented industries relatively quickly.

These examples from South Korea and China highlight two elements that are important for East Asia's dynamic upgrading path: first, a vision or a strategy of where you want to go; and second, in order to upgrade technologically, you may need a way of getting successful firms to shift their investments to other low-cost countries or to more suitable locations within the country.

Second point. Ernesto talked a fair amount about the idea of using market failures as a tool to help us in terms of industrial policy. I don't like that framework because I think it can always be applied ex-post.

Typically, if you see market failures, you can come up with a laundry list of things that could qualify as market failures. But when countries are actually doing effective PDPs, often times they are looking at how to build capabilities and you may not want to have to confine yourself to a predetermined list.



To take one example in many of the international industries that I've looked at: local firms have to get international certification. In any sector connected to food, medical devices, or agriculture, certification is often a barrier to smaller firms becoming significant players in the market. Eventually some countries came along and say, "Well, maybe we should subsidize or make it easier for smaller firms to get that certification." I don't think this was thought of originally as a market failure. Later, you can probably justify it as an impediment to local companies becoming more competitive, and theoretically this is correct. However, as a guide for what to do, you need to preserve the flexibility for smart governments to interpret what is happening in particular industries in terms of whether a particular policy is an impediment to progress or not.

In sum, I think market failures aren't necessarily the best way to select policies on the ground.

This brings me to my third point: How do we come up with appropriate comparative experiences to give countries or regions ideas for where to go?

Ernesto said something that came up a couple of times in the piece that we were reading, which is that best practices really aren't a good way to think about things; rather, it is better to look at practices that fit the capabilities of a given public sector or institution.

I don't believe that's typically the easiest or the best way to go about things in practice. The problem is that traditionally in industrial policy discussions, the country is taken as the unit of analysis: what did Brazil do, what did Korea do, or China, Mexico, Chile or any other country? At an aggregate, national level, it's hard to come up with best practices because countries are so defined by institutions, political leadership, etc.

But things are different if you look at global industries and you're interested in how do you get a country to upgrade in mining, or in fruits and vegetables, or in some kind of electronics. Typically you look into what other countries that are major players in the desired field do. That is to say, if you want to achieve the upgrading you desire, you have to look for best practices.

When you do international competitive benchmarking, you can actually come up with good practices or best practices and policies that are tailored to a particular industry. I think it avoids some of the problems that we have if we just talk about best practices at a country level, because you are already using an industry filter and it also allows you to come up with much more specific policies. For example, if you want to go from full-package production in apparel to own design or own brand, or if you want to go from middle to high-level capabilities, which policies and institutions are needed? In order to do effective matching, it helps to control for industry-level variables.

Finally a point about Brazil. While Brazil may be in aerospace with Embraer and has done a very good job, if you look at its market reserve policy for the computer industry in the 1980s, that was a really bad job. At a country level, we can find these mixes of good and bad experiences, but if we take a global industry cut, I think it allows for much sharper comparisons about appropriate policies that are relevant industry by industry across countries.

## 4.3 Group Discussion

- ▶ There is some debate on whether “market failure” is useful in choosing sectors. It is pointed out that it should be useful, at least, to rule out sectors.
- ▶ Informality was not discussed, but it should be part of the discussion.
- ▶ Unions are NOT complaining because they have been excluded from the “competitiveness” or “productivity” dialogue. This is both remarkable and worrisome.
- ▶ One reason why unions are generally not invited to productivity and competitiveness committees or discussions is because these dialogues are designed to get things done, and when you have distrust from years of fighting then you have high probability of paralysis.
- ▶ Training and education are not part of a coherent human resources policy in LAC; they exist in parallel universes.





## 5. Session 4: The Design of industrial development policy in Latin America

### 5.1 Ben Ross Schneider. Summary of oral presentation

What I would like to do is give you the framework of the book on this subject that I recently published,<sup>3</sup> and then get into some cases that I think it might be interesting to talk about both in terms of how and when can representatives of labour be included, and also in terms of how can employment issues and quality of jobs be included as an explicit part of the design of industrial policies.

Business–government councils come and go, but they will continue to arise, because they are an answer to a fundamental information problem. Reports about industrial policy from all major multilateral agencies have emphasized the problem of asymmetric information and how getting business and government officials together can solve this problem. I think you can do this in industrial policy, energy policy, environmental policy, or defence policy. All of those areas are going to have this asymmetry, so there will always be the temptation to turn to these councils and to try to resolve that. But in none of these reports, as far as I recall, were the issues of job creation or employment discussed at length.

The core of my book is a discussion of what it takes to get more or less successful councils. And while empirically you will find all sorts of different forms of representation, different kinds of processes and exchanges, I think there are three essential things that go on in all successful councils:

- ▶ Meaningful information exchange
- ▶ Authoritative allocation
- ▶ Mechanisms that discourage rent seeking

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3 Schneider, Ben Ross (2015). *Designing Industrial Policy in Latin America. Business-State Relations and the New Developmentalism*. Palgrave Pivot.

These three functions seem rather simple. However, if you go into each of these things deeply then you will see that sometimes there are conflicts among these goals or functions.

To facilitate meaningful information exchange function, a few things will help:

- ▶ Long term time horizon, frequent meetings, reiterated exchange
- ▶ Small numbers (20 members?)
  - ▶ Frequent recourse to business associations to organize representation
- ▶ Strong business associations
  - ▶ High member density
  - ▶ Capacity for interest aggregation and reconciliation
  - ▶ Professional staff
- ▶ Closed meetings
- ▶ Technical staff
  - ▶ Maintains momentum between meetings
- ▶ Some flexibility to revise institutions
  - ▶ Break into smaller working groups

Of these, I think the first two I would consider indispensable; the rest: useful. Ultimately, if things go well, you get into a good dialogue or you may develop some kind of trust that will also help this kind of exchange. One World Bank report said no more than 20 people, but I wouldn't go to that kind of fixed number. However, I know that you are not going to have real information exchange if you look like something like the Brazilian council on economic and social development, which had 160 members. If you are in an auditorium, you are no longer having a sincere discussion. I won't go into detail on the other items in the list, but clearly strong business associations will facilitate interest aggregation and collection of information. I think if people know that they are speaking off the record, and that this will not appear in the press next day that helps things. But these again, are sort of lesser issues.

Allocative authority is essential to make it worthwhile for the private sector to participate in a public-private council. But how do you motivate participation in a council? Business leaders will likely come to the first meeting convened by the authorities, but if it becomes clear that nothing is really going to happen there, resources aren't going to be allocated, then they will send a lower level official or person from the company the next time. For this to work it has to be difficult to bypass the deci-

sions made by the relevant council. If decisions are made elsewhere, business will circumvent the council.

Now, there's no discussion on how great it is to have political will and high level political representation on the public sector side of the councils, to have really powerful people at the table. This will help convince the business sector that important issues will be tackled and decided. However, very high level public representatives – presidents, Ministers – have short time horizons: the duration of one governmental period, at the most. So very high level public sector participation may have the paradoxical effect of undermining the long term perspective of the councils.

And the third function, and this comes up everywhere, is discouraging rent-seeking. Some kind of transparency mechanism is the nearly universal proposal to discourage rent-seeking, but I am not convinced. Trust is essential for meaningful exchange of information, and if everything you say is going to be broadcast, building trust may be difficult. So sometimes it is suggested that transparency should be observed with regard to decisions only, allowing for privacy in discussions. Or others recommend bringing in third party monitoring agencies.

Internal monitoring might be a good alternative to external transparency, which is easily sidestepped. So, for example, if there is some heterogeneity among the business participants, let's say along the productive chain or if they are in slightly different sectors, where they know the business models of the other firms, but they don't necessarily want all the resources to go to them, then this heterogeneity makes it harder for a subset of firms to engage in a kind of direct rent seeking. But of course there are limits, and if there is too much heterogeneity, the discussion may drift into distributional, rather than productivity issues, and this comes up when labour joins the conversation.

Here is an illustrative list of successful – and one usefully failed – councils:

- ▶ Economy wide
  - ▶ Vocational training in Colombia & Brazil
  - ▶ Trade negotiations in Mexico and Chile
- ▶ Agriculture
  - ▶ Coffee in Oaxaca
  - ▶ Apples in Santa Catarina
  - ▶ Wine in Mendoza

- ▶ Industry
  - ▶ Autos in Brazil
  - ▶ Software in Argentina
  - ▶ Fundación Chile (salmon)
- ▶ Illustrative case of failure – Competitiveness Council in Chile
  - ▶ Many diverse members, infrequent meetings, no resources

The book tries to catalogue a longer list than this of successes and near successes just on the sense where the participants were convinced that the policy that came out of the council was better than what would have happened in the absence of that council. So it doesn't necessarily mean all these sectors succeeded in any more concrete material sense.

What is interesting in this last case is that it is emphasized as a case of failure and it's not my interpretation, but in this case we actually had the person who ran the council, who wrote the paper and said this was a failure, Oscar Muñoz. This was a competitiveness council set up in Chile in the late 90s. And this is where I think the distributional issue is key. It was tripartite: business, labour and government. For one of the years, Oscar was not able to get the people to come to the table because the relationships were so bad. Labour said, "I'm not going if business is going, I'm not going to talk about this." So, clearly this is a case where you can't get anything done. The issue is that there are very few examples I can think of in Latin America in which tripartite competitiveness councils have been successful, while there are many good examples in Europe. Could it be that there is some kind of structural level of inequality or distributional disagreement that just makes it impossible to have a successful tripartite dialogue? Is it the case that in Europe these councils do work because distributional issues have been settled before and elsewhere?

So the case of Autos in Brazil would be one where there was a successful incorporation of labour, and here the case was in the early 1990s in what they call the Sectoral Chambers, and this was set up in a couple of industries. The story is interesting: the workers from the union went to Detroit in the early 90s and they saw what they thought was the end of the Auto industry, and so they came back and sort of panicked about what was going to happen to Autos in Brazil, and this was during a very high inflation, stabilization plan. It was a very chaotic macro time and unions pressured the government to do something. It was initially just to stabilize the industries so it was sort of a stabilization pact, and they said, "We are going to reduce taxes, we are going to stabilize prices, freeze wages and we are going to get out of this crisis together". But, after a year, two years of talking together, then the unions and the companies started to



say, “Now let’s talk about productivity issues”. So they actually got around to that and it was working very well until the government changed and the chamber was closed down. But it is a good example of where you can get a constructive engagement with labour at the table.

Let me give a couple of other examples. This is the famous case of Malbec in Argentina and this slide is designed mostly to capture how complex the interaction could become. You end up with lots different instances of collaboration where you have representatives working on particular parts of the problem: commercialization, quality control, processing, bottling, etc. Each one of those can have a separate kind of council working on it. Now again, labour was not, as far as I know, included in the representation; although training was the key component of the whole upgrading process.

Chile has several examples of business government councils. One is a council set up to take royalties from mining and decide to set priorities of how they should be used for investing and promoting innovation. The council has representatives from business (and some are from business associations but not because the association has a right to a seat on this board). But there are no labour representatives. With the help of consulting firms, the council initially decided to support eight sectors. And this is where I think, if you are going to hire a consulting firm, you are going to give them a list of criteria of what you want to see in promising sectors such as how much innovation is going on, where are we in the technological frontier, then you could also very simply say, “What would be the employment effects of each of these different sectors?” And then you could use those as additional criteria to add in for deciding where you are going to do your vertical policies. But then a new government came in and suspended the council activities.

Promimp in Brazil may be one of the more interesting councils for looking at a labour or employment component. Promimp is a programme for the mobilization of the national oil and gas industry in Brazil. Petrobras with all the deep sea drilling has a massive investment budget, so the industrial policy part of this is that they decided, ok, we want as much of the equipment and inputs that we need to be manufactured in Brazil. This is local content, so for each piece of equipment we are going to work to get a certain proportion of that part or item produced in Brazil. This is where you get a very detailed ongoing intense negotiation. Petrobras runs this council and then they break up into different groups, and they do it by particular types of drill vessels, particular types of tubing, pumps. Then they discuss business representatives, and these are all from the associations, and then they say, “We can produce that screw, we can produce that valve, we can produce 50 per cent of this”; and then Petrobras will

say, “I doubt it, I don’t think you will be able to deliver and so let’s say 40 per cent”. So they go back and forth about how much equipment precisely of each piece of equipment they expect to produce. They have a lot of practice; this particular council was set up in 2003, when the PT government came in, but Petrobras has been doing this on its own throughout its history since the mid-50s, so they have a lot of experience doing this. They certainly had the information exchange, there are certainly resources on the table, but it had the heterogeneity of the memberships there that were seeing what was being done and Petrobras, you know that there is an international market for each of these pieces of equipment. It was going to cost more to produce them in Brazil, but they wanted to make sure that those costs would not get excessive.

Now, there was an explicit labour component to this in the sense that Lula very explicitly said, if we are going to do this investment with Petrobras, we are going to need dozens, probably hundreds of ships in the end, we are going to build those ships in Brazil. Brazil had a shipbuilding industry before the 1980s, but let it die. So Lula said, “We are going to get it back.” And he said explicitly that this was to create those jobs. We do not need to hire workers in Korea, we are going to hire Brazilians. And a lot of the planning that went on within Promimp was manpower planning. So, not only were they discussing the percentages of what could be produced, but they were also saying, if they were going to produce these things in Brazil, what kind of workers were they going to need with what kinds of skills, particularly in the shipbuilding industry. This was the basis for the massive training programme for tens of thousands of workers.

At this point it looks likely that this industrial policy will end badly; they have had a lot of problems. The idea was that if you create a shipbuilding industry, you force Petrobras to buy locally, there’s going to be a steep learning curve but within a decade or fifteen years you would be able to produce ships equivalent more or less to those you could get in Korea, or elsewhere. That’s not happening except in a few shipyards for a few products.

And this gets us to the question of how you incorporate labour issues into the industrial policies, because it was not only that the shipyards were to be in Brazil; but Lula then went on beyond that and said, “I want a ship building industry for this governor and for that governor.” And he split the ship yards all across the coast up and down from Rio to the Northeast. So there was very little economy of scale, very little interaction across these shipyards. The lesson would be that industrial policy can incorporate labour, but employment goals have to be incorporated in a way that doesn’t jeopardize the rest of the industrial policy.



So, let me wrap up there, there is a lot of experimentation, a lot of diversity in the way these councils are set up, who's at the table, whether they are associations or individual business people. There are many ways in which you can bring business in, but in the successful ones you do see the three functions that I spoke about: the information exchange, allocation of resources, and mechanisms impeding rent-seeking. For the most part, I gave the examples of the several dozen there are in the book that included labour, most of the others did not include it in terms of representation. Employment for the most part was not an issue on the table for designing these policies. Thank you.

## 5.2 Commentary. Charles Sabel

Industrial policy has to do three things: organize information exchange, allocate resources, and worry about rent-seeking. Active policies are vertical or sectoral and produce a public good; passive policies are horizontal and involve either physical or regulatory intervention. Your book suggests that in Latin America, councils are an example of a high level, tri- or bipartite dialogue, some of which are supposed to be very successful at industrial policy. European cases, especially Finland as presented in a book by Darius Ornston, are used as a benchmark for success.

I don't think the European examples serve your argument. The title of Ornston's latest book is "Good governance gone bad". It's about how the policies he was praising in his first book have gone bad. Not everyone will be as surprised as he is by his findings, but this time he got it right.

But the European excursion is probably not relevant to you study. Many of the examples you give are not of full-fledged, stable national councils at all. Rather, they are sub-regional entities that don't really correspond to what you present as the archetype. I suspect you are drawn to the archetype because it has a vague resemblance to something that we know once worked.

Very generally you emphasize that the fundamental design choice is between a one shot meeting, which doesn't produce any results, and a long term stable relation, which can evolve and generate trust. Trust in turn makes it possible to manage information asymmetries among the participants.

There are cases where that is exactly what happens. But the crucial new development is that many very successful, current industrial policies, like this Malaysian case, don't have that structure at all. Instead they create the conditions for meaningful information exchange through the elaboration and quick revision of initial plans. You build a relation as you go. This is exactly what we heard about the Peruvian *mesas ejecutivas*

*sectoriales* last night. In these newer kinds of policies, the whole point is that the information exchange, the allocative authority and the prevention of rent-seeking are integrated into one governance structure, so you set goals, monitor and bump coordination problems to higher levels on the rare occasions they can't be solved lower down. The President is barely there. Transparency comes from rigorous monitoring of pursuit of the goals, not least because it's very hard to organize a conspiracy of absolutely everybody to falsify the relevant data.

I want to come back to this point about the distinction of passive and active policies, which will leads us back to the potentially important role of labour in this kind of institutions.

I don't think there are passive policies today. Let me explain why.

The examples you give are the simple cases where you have less red tape or you eliminate a bottleneck in infrastructure. If you are talking about underground mining, or producing foodstuffs for export, or worrying about labour violations in sugar cane, what is the opposite of a lot of red tape? Plainly not "no red tape".

You do need regulations to protect workers and firms themselves from potential catastrophes. You need public goods, the kind that would be in Ernesto's vertical public goods quadrant. And this is the sort of public good that has to be updated very, very quickly, with the involvement of the stakeholders because realities in the field change rapidly. The regulator can't just , "From now on all regulations will be suitable". A rather complex process has to be set in motion if regulations are indeed going to be suitable.

Similarly, what is the opposite of bottlenecks in infrastructure? It isn't "no infrastructure". It is infrastructure that accommodates very particular purposes, for example, a road to a port that has to accommodate certain kind of intermodal carriers.

Here is the connection with labour. The ILO gradually consolidated its countless standards into a manageable core group. But even these core standards will only work if you actually know how to apply them in concrete cases.

You can't say we are going to be against child labour unless you can figure out how to restructure the production process which induces people to use child labour. You can't just outlaw it. It turns out you can pay the mother the opportunity cost of the child's employment, contingent on the child attending school – but that's a regulatory solution that needed to be discovered through dialogue and experience – an active effort at learning, with complex interventions as the result.



If there are no such things as passive policies, if they are all active, then all involve these regulatory interventions – active learning – and they point to a further conversion of ILO interests in a direction that has been opened for exploration but only fitfully explored.

## 5.3 Group Discussion

- ▶ Are there settings where either distributional issues have been taken care of, or settings in which distributional issues and productivity issues can be separated, so that labour can join productivity dialogues without turning them into distributional dialogues?
- ▶ For example, if wages are set at the national level, can unions be part of the productivity dialogue at the regional level?
- ▶ A difficulty may arise when the productivity dialogue is organized around value chains, but unions are organized by firm or sector, not by value chain.
- ▶ The intensity of union–management dialogue can vary even within the same industry in the same country. There is more labour–management dialogue in foreign owned car manufacturers in the United States than in domestically owned firms in the same industry.
- ▶ Labour markets in LAC are less flexible and more regulated than even those of Eastern Europe. Labour market reform would be helped if there was some labour buy-in, which would require labour participation in the policy dialogue.
- ▶ There are policies, PDPs, where there is no expectation of reciprocity, of performance on the part of the beneficiaries, so it might still be useful to call these policies “passive policies”.

## 6. Session 5: Global value chains, PDPs and job creation

### 6.1 Gary Gereffi. Productive Development Policies and upgrading: The need to link firms, clusters and value chains

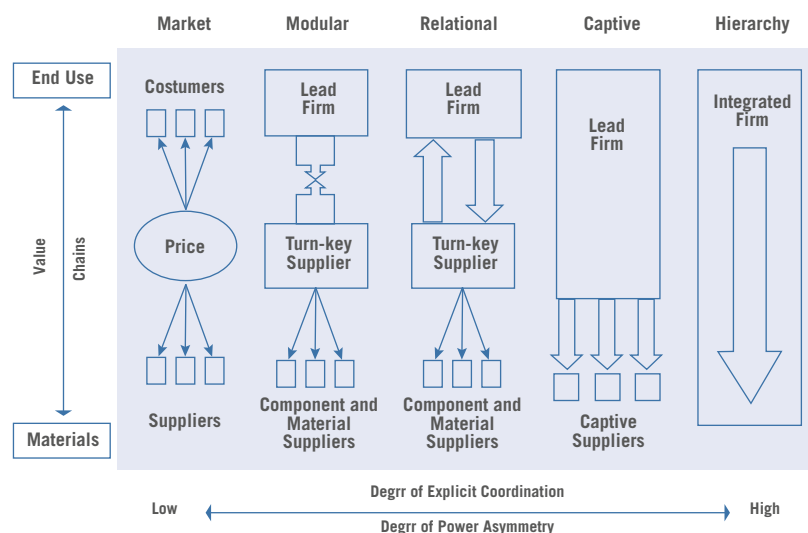
#### 6.1.1 Integrating GVC and cluster-based approaches

The global value chain (GVC) methodology is a systematic approach to economic development that combines broad analyses of global industry structures and trends with detailed mapping of national value chains and local economic clusters based on existing economic statistics, supplemented by interviews and field research involving international lead firms and intermediaries, domestic suppliers and institutional stakeholders (Gereffi and Fernandez-Stark, 2011; Gereffi and Lee, 2012). This approach enables GVC researchers to map an industry's main economic actors and activities, while also tracing flows of value-addition across national boundaries from product conception and design, through complex production and distribution networks, to the organization of consumption by large global retailers and brands. As the primary actors within value chains, firms are of central importance in the GVC methodology. GVC analysis seeks to determine what makes firms productive in the context of highly dispersed international supply chains, how private-sector governance and public policies influence firm performance, and what factors and strategies allow firms to move into higher-value segments of the value chain.

The concept of governance is central to GVC analysis. It examines the ways in which corporate power can actively shape the distribution of profits and risk in an industry. Power in GVCs is exerted by lead firms. In its initial formulation, GVC governance was characterized by the contrast between producer-driven and buyer-driven commodity chains (Gereffi, 1994). In a subsequent and more elaborate fivefold governance typology (outlined in Figure 6-1), the market and hierarchy poles of the GVC governance continuum are driven by price and ownership within large vertically integrated firms, respectively. The remaining three categories are stable forms of network governance (modular, relational, and captive), in which different kinds of GVC lead firms control

the ways in which global supply chains operate and the main winners and losers within these chains (Gereffi et al., 2005).

**Figure 6-1. Five Types of Global Value Chain Governance**



**Source:** Gereffi, Humphrey and Sturgeon, 2005, p. 89.

While governance issues have attracted a good deal of attention among GVC scholars, the research on economic upgrading has been at least as important because many of the people who use the GVC framework have a strong development focus. “Economic upgrading” is defined as the process by which economic actors—firms, workers, local clusters and even national or regional economies—move from low-value to relatively high-value activities in GVCs (Gereffi, 2005, p. 171). The challenge of economic upgrading in GVCs is to identify the conditions under which developing and developed countries and firms can “climb the value chain” from basic assembly activities using low-cost and unskilled labour to more advanced forms of “full package” supply and integrated manufacturing.

Possible GVC upgrading strategies and corresponding policy interventions vary by cluster and/or industry, as do the relevant actors for effecting change (Cattaneo et al., 2013). A GVC analysis of potential upgrading trajectories examines appropriate comparative cases and identifies the constraints firms face that stem from the local institutional context in which they are embedded. Several common constraints to GVC upgrading in developing countries have been identified, including:

- ▶ poor productive capacity (e.g. human capital, innovation systems, certification of local firms);
- ▶ weak or inadequate infrastructure and related services;
- ▶ restrictive trade and investment policy;
- ▶ shortcomings in the business environment; and
- ▶ insufficient institutionalization within the industry (e.g. presence and relevance of industry associations and public–private partnerships).

The relative importance of these factors can vary by industry and the level of development of specific clusters. At times, workforce development must be prioritized; other times, infrastructure impediments are the most important constraints and potential transportation, logistical and/or administrative improvements must receive primary attention. Additional recommendations to support upgrading can include strategies such as bolstering government enforcement capabilities, developing upstream or downstream industries to improve local linkages, or increasing access to finance for small and medium-sized firms. Once these constraints have been prioritized, stakeholder analysis is used to determine appropriate roles for key actors in driving the changes required.

A key challenge today is how productive development policies (PDPs) can link global chains and local clusters in order to increase the likelihood of joint economic and social upgrading in national and regional economies. There is a voluminous literature on the role of clusters in economic development, and how these clusters relate to GVCs (Schmitz, 2004; Bair and Gereffi, 2001; Pietrobelli and Rabellotti, 2005, 2006; Sturgeon et al., 2008; Contreras et al., 2012; Padilla-Pérez, 2014; Blyde, 2014). However, we still do not have a fully integrated framework that identifies the conditions under which sustainable and inclusive development is attainable.

While the cluster and the GVC frameworks both analyse economic development from a firm-based perspective, there are differences in how these two approaches understand the drivers of economic performance.

The cluster-based perspective places an emphasis on locality—within clusters, local enterprises are bound together in dense networks that cooperate and/or compete within a set of interrelated business activities, and public authorities play a key role in developing supportive institutions, including those that provide education and training for the local workforce.



The GVC approach analyses how local firms and/or clusters participate in global markets. Emphasis is placed on understanding drivers of global demand, power relationships among firms operating in multiple geographic locations, international standards, competitors and global industry trends.

This think piece will use recent GVC and cluster research to illustrate a path for addressing two related questions: (1) How can a country exploit its current labour-specific comparative advantages and use them as stepping stones into higher value-added activities, including skills upgrading of the workforce? (2) How can linkages with local suppliers in global value chains be enhanced in export-oriented industries, particularly as economies shift from traditional labour-intensive manufacturing sectors (like apparel) into more technologically advanced sectors (such as medical devices and aerospace)? My empirical grounding for these reflections will be the apparel industry in Nicaragua, Lesotho and Swaziland, the medical devices sector in Costa Rica, and the aerospace industry in Mexico.

### 6.1.2 Developing economies in GVC: upgrading experiences in three sectors

A main theme running through these three cases is that understanding the strategies and governance structures of lead firms and their suppliers in GVCs is a prerequisite for effective PDPs. A second theme is that the analysis of upgrading policies and trajectories for specific GVCs requires detailed institutional comparisons and competitive benchmarking of multiple countries in the same chain.

#### Nicaragua, Lesotho and Swaziland in the apparel manufacturing GVC

The Nicaraguan apparel industry's exports nearly doubled from US\$716 million in 2005 to \$1.36 billion in 2011 (Bair and Gereffi, 2014, p. 256). Nicaragua mainly participates in the low-value "Cut-Make-Trim" stage of the apparel value chain (see Figure 6-2). Leveraging the country's competitive wage advantage, the industry employed more than 51,300 people in 2010 (Portocarrero-Lacayo, 2010).<sup>4</sup> In 2009, 89 per cent of Nicaraguan apparel exports were destined for the United States. The country is still considered a small regional supplier, but since 2004 it has steadily gained US market share in certain segments, such as woven trousers and cotton shirts, as a result of its preferential trade status within the Dominican Republic–Central American Free Trade Agreement (Bair and Gereffi, 2014). Apparel manufacturers in Nicaragua focus on trousers, mainly denim jeans and twill trousers, as well as t-shirts.

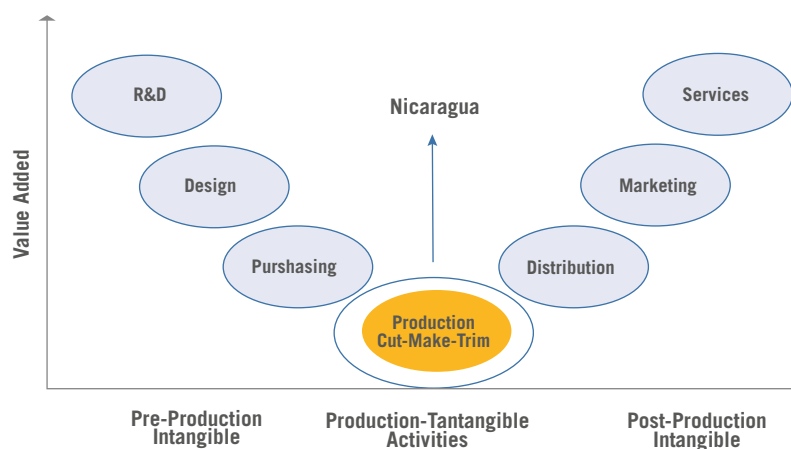
<sup>4</sup> The industry reached a peak in employment in 2007, with 88,700 employees. However, pressures from the economic crisis forced layoffs and closures during 2008 and 2009.

Between 2005 and 2010, the volume of Nicaragua's apparel exports grew by 8.6 per cent, but despite this increase, Nicaragua has had limited success in moving up the apparel value chain and mainly competes through low-cost apparel assembly. The country's apparel exporters have not achieved significant product upgrading; the value of exports only increased by 4.5 per cent (ProNicaragua, 2010). Rather, this period was characterized by an increase in the production of t-shirts and knitwear, which are low-value-added product segments. Prior to the economic crisis, the country had seen increases in the value of its exports in woven trousers, but due to the economic slowdown in the United States, 2009 exports fell back to their 2006 levels.

Nicaragua's assembly-oriented production model is dependent on imported textile inputs which, following the rules of origin requirements of the CAFTA–DR regional trade agreement, would normally have to come from either the United States or a country within the region. Although Nicaragua (along with Haiti) was granted a temporary exemption from full compliance with the US rules of origin – specifically, the Tariff Preference Level or TPL exception that allowed Nicaragua to import up to 50 per cent of its textile inputs from East Asia for a ten-year period, 2004–2014 – Nicaragua did not take advantage of the window of opportunity provided by the TPL regime, and it remains locked into a predominantly low-value apparel niche (Bair and Gereffi, 2014).

A GVC perspective adds two elements to this picture: (1) global buyers in apparel require “full-package” production or one-stop shopping, meaning that apparel exporters in Nicaragua need to solve the problem of how to get appropriate textile inputs; and (2) the highest value elements of the apparel “full-package” are actually pre- and post-production services, such as R&D, design, branding and logistics, rather than product or process upgrading solely at the factory level (see Figure 6-2).

**Figure 6-2. Curve of value-added stages in the apparel GVC: Nicaragua**





A potential solution to this problem from a PDP vantage point is to enlarge the geographic scope for “functional upgrading” through backward and forward linkages to a regional scale – e.g. Central America and/or Mexico. For example, Honduras is an important source of textile imports for Nicaragua because of a foreign direct investment (FDI) link whereby a multinational company owns a textile mill in Honduras and apparel facilities in Nicaragua. A more sustainable policy option may be to design a regional integration scheme that focuses on supply-side productive integration (including higher value production-related services and not just goods), rather than the demand-side “market access” approach that currently defines the CAFTA–DR scheme.

The trade-policy dependency of Nicaragua and other CAFTA countries on the US market is paralleled by the similar dynamics found in sub-Saharan Africa’s apparel-exporting economies that are covered by the African Growth and Recovery Act (AGOA), such as Lesotho and Swaziland (Morris et al., 2011). As with Nicaragua, apparel exports by Lesotho and Swaziland are concentrated on the U.S. market, which absorbs over 98 per cent of clothing exports from both countries. However, the phase out of the Multi-Fibre Arrangement (MFA) in 2004, which ended the apparel quota system, and the 2008–09 global economic crisis, prompted a sharp drop in clothing exports by both countries to the United States. Many of the Taiwanese firms that concentrated on supplying the U.S. market left in the wake of the crisis.

However, sub-Saharan Africa had a different dynamic that buffered Lesotho and Swaziland from the global economic recession. A new type of investor – South African clothing manufacturers – moved into Lesotho and Swaziland not as a production base to take advantage of AGOA preferences for access to the US market, but rather because of their lower labour costs in comparison to South Africa as a new export market. The South African Customs Union provides duty-free access for apparel produced in member countries (including Lesotho and Swaziland), which allows South African retailers to maintain low prices and a growing market share (Morris et al., 2011, p. 98). Furthermore, South African-owned firms are far more likely than their Taiwanese counterparts to utilize local production, supervisory and management skills in their apparel operations in Lesotho and Swaziland, thus promoting additional upgrading prospects in these countries. Sustaining these advantages, however, would require more active government policies to incentivize added skill development within local clothing manufacturers in both countries (Morris et al., 2011, pp. 115–117).

## Medical Devices in Costa Rica

In the mid-1990s, Costa Rica sought to diversify its economy by focusing on an FDI strategy to promote high-technology manufacturing exports. The attraction of Intel to

Costa Rica in 1998 to assemble and test microchips was the first major embodiment of this strategy, but Intel's decision to close its assembly plant in Costa Rica in 2014 and lay off 1500 workers highlighted the vulnerabilities of the high profile, single MNC approach. The medical devices cluster is arguably the most successful industry that has been developed in Costa Rica under this FDI-driven, high-tech export strategy.

In 2012, the Ministry of Foreign Trade (COMEX) in Costa Rica commissioned a study of the medical devices GVC by Duke University's Center on Globalization, Governance & Competitiveness (Duke CGGC) with a focus on three questions: (1) How successful has Costa Rica's export strategy in medical devices been over the last 15 years in terms of both the quantity and quality (technological content) of exports? (2) What are the main competitive challenges the industry is facing today? (3) What is the best upgrading path for Costa Rica over the next five years? Figure 6-3 highlights some of the findings of this study (Bamber and Gereffi, 2013), which bear on the questions of both local linkages and skills upgrading.

Some background statistics on the medical devices sector are helpful. The Costa Rican medical device industry dates to 1985, when the first device company established operations in the country. By 2014, exports had reached US\$1.4 billion. Accounting for 12 per cent of the country's total exports, medical devices thus became the largest export industry in Costa Rica (UN Comtrade, 2015).<sup>5</sup> In 2015, more than 50 firms were participating in the medical device supply chain in Costa Rica, with an additional 16 companies providing packaging and support services. Over half (60 per cent) of these firms were from the United States and less than 30 per cent were Costa Rican. The remaining firms came from five countries: one each from Colombia, Germany, Ireland, Japan and Puerto Rico. Companies in the sector are concentrated in the production segments of the value chain, with 70 per cent of them manufacturing components or assembling final goods.

The growth of the medical devices sector has created approximately 17,500 jobs in manufacturing between 2000 and 2015, with approximately 2,000 jobs being added each year since 2012. This job creation has provided opportunities for both men and women; 45.6 per cent of the workforce is male and 54.4 per cent female (CINDE, 2012). The medical devices industry relies on a highly skilled workforce. By 2012, the workforce was comprised of between 10 and 20 per cent of engineers and between 10 and 15 per cent technicians. The remaining 60–80 per cent of direct produc-

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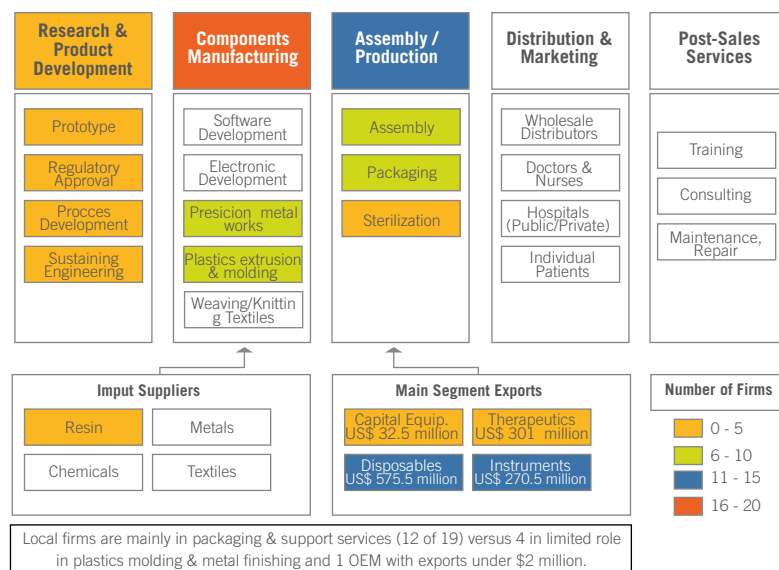
5 This is due both to sector growth, as well as the closure of Intel's semiconductor plant in 2014. Prior to shutting down operations, Intel's exports accounted for approximately 25% of Costa Rica's total exports.



tion workers initially drew from the unskilled labour pool that had served the apparel sector.<sup>6</sup>

What do we learn from the Duke CGGC medical devices study? If we look at a value chain map of the medic devices sector in Costa Rica, we see that its main product segments vary considerably in technological complexity (see Figure 6-3): (a) *Disposables* are single use-products, like catheters and surgical gloves; (b) *Medical Instruments* like surgical scissors are used multiple times and thus have to be sterilized; (c) *Therapeutic Devices* are highly diverse products that are inserted in the human body (e.g., orthopaedic implants, pacemakers, hearing aids, etc.), and they are subject to very high levels of health and safety regulation and quality standards; and (d) *Capital Equipment*, which involves expensive and highly complex products, like MRI machines. Figure 6-3 is colour coded by number of firms in these different product segments, and we see that Costa Rica is primarily involved in component manufacturing and final product assembly.

**Figure 6-3. Costa Rica in the Medical Devices GVC**

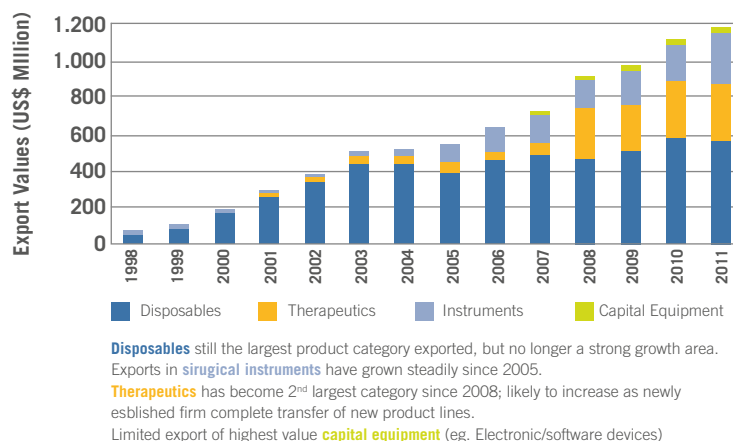


**Source:** Bamber and Gereffi, 2013, Duke CGGC.

<sup>6</sup> However, even these positions have begun to require a minimum of technical high school education, i.e. 9 years primary and secondary education followed by 3 years of technical education. Higher qualifications have helped to raise the average wages in the sector.

Costa Rica's export performance in medical devices between 1998 and 2011 shows a very steady and significant growth in the overall quantity of exports from just under US\$400 million in 2002 to nearly \$1.2 billion in 2011. In terms of upgrading dynamics, however, the most intriguing story is about the shifting composition of Costa Rica's medical device exports in terms of the technological content, using the same product categories identified in our value chain map (Figure 6-3). In 2002, about 90 per cent of Costa Rica's medical device exports were in the low-tech disposables category, but by 2011, the other three higher tech medical devices accounted for more than half of the country's exports.

**Figure 6-4. Costa Rica's Medical Exports by Product Category: 1988–2011**



**Source:** Bamber and Gereffi (2013), Duke CGGC.

How can we explain the shift to higher-technology exports in the medical devices sector? A firm-level focus is critical here. Table 6-1. Firms in Costa Rica's Medical Devices Sector disaggregates the firms that entered Costa Rica's medical devices sector into four waves: pre-2000, 2001–2004, 2005–2008, and 2009–2012.<sup>7</sup> A very clear pattern of FDI succession emerges: the companies that invested in Costa Rica pre-2000 were predominantly in the low-technology disposables product category. In each successive time period, companies with higher-level technology entered Costa Rica. When companies were asked during interviews why they came to Costa Rica, two facts were mentioned repeatedly: (a) latecomers were encouraged by the positive experiences of the earlier investors; and (b) the capabilities not only of Costa Rican

<sup>7</sup> These data were gathered from an analysis of EPZ data in Costa Rica and firm-level interviews by the authors of the Duke study.



managers, but also skills upgrading by Costa Rican employees and local suppliers made the country increasingly attractive to higher technology firms.

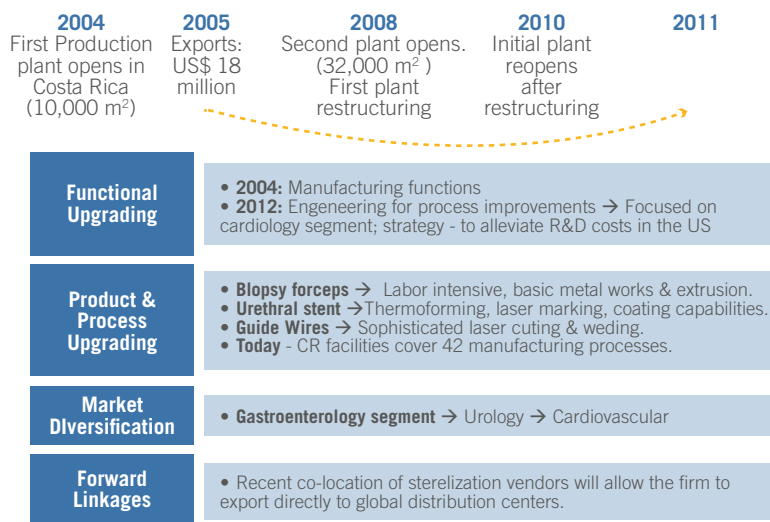
**Table 6-1. Firms in Costa Rica's Medical Devices Sector**

| Entry Year                                                                                         | Firm Characteristics                                                                                    | Main Product Export Category               | Core Market Segments                          | Product Examples                                                                             | Select Firms                                                                               |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <b>Up to 2000</b><br>24 firms:<br>8 US<br>15 CR<br>1 German                                        | 4 OEMs<br>8 Components<br>1 Input distributor<br>7 Packaging<br>1 Finishing<br>3 Support services       | Disposables                                | Drug delivery:<br>Women's health              | Intravenous tubing (I)<br>Mastectomy bra (I)                                                 | Hospira;<br>Baxter;<br>Amoena;<br>Corbel                                                   |
| <b>2001-2004</b><br>13 firms:<br>9 US<br>3 CR<br>1 Colombian                                       | 3 OEMs<br>6 Components<br>1 Finishing<br>1 Logistics provider<br>2 Support services                     | Instruments                                | Endoscopic surgery                            | Biopsy forceps (II)                                                                          | Arthrocare;<br>Boston Scientific;<br>Oberg Industries                                      |
| <b>2005-2008</b><br>8 firms:<br>7 US<br>1 Puerto Rico                                              | 2 OEMs<br>4 Components<br>1 Packaging<br>1 Finishing                                                    | Therapeutics                               | Cosmetic surgery;<br>Women's health & urology | Breast implants (III)<br>Minimally invasive devices for uterine surgery (II)                 | Allergan;<br>Tegra Medical;<br>Specially Coating Systems                                   |
| <b>2009-2012</b><br>21 firms:<br>16 US<br>1 CR<br>1 Ireland<br>1 Japan<br>2 Joint ventures (US-CR) | 5 OEMs<br>7 Components<br>2 Non-OEM assemblers<br>1 Input Distributor<br>2 Sterilization<br>2 Packaging | Therapeutics<br>Disposables<br>Instruments | Cardiovascular<br>Drug delivery               | Heart valves (III)<br>Dialysis catheters (III)<br>Guide wires (III)<br>Compression socks (I) | Abbott Vascular<br>St. Jude Medical<br>Covidien<br>Moog<br>Synergy Health<br>Volcano Corp. |

**Source:** Bamber and Gereffi, 2013, Duke CGGC.

Individual companies were asked about the history of their investments in Costa Rica. A key dynamic that led to upgrading moves was the identification of “gaps” in Costa Rica’s technical capabilities by lead firms themselves, followed by targeted FDI recruitment efforts by agencies like CINDE (Costa Rica’s investment promotion agency) and Procomer (an export promotion agency), which are highly-regarded development institutions in Costa Rica (Cornick et al., 2014). One of the critical gap-filling technologies that came to Costa Rica was sterilization, but only after a critical mass of MNCs in Costa Rica pointed out value-adding advantages for Costa Rica’s medical devices GVC.

**Figure 6-5. Upgrading success with local linkages: A leading medical devices MNC**

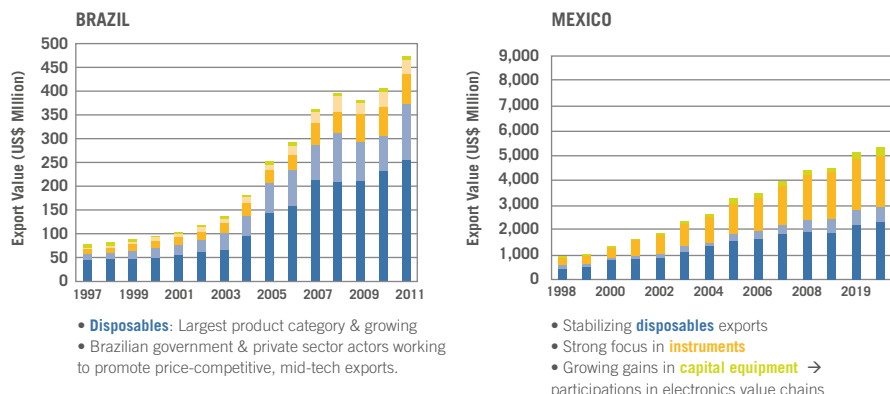


**Source:** Bamber and Gereffi, 2013, Duke CGGC.

If we compare Costa Rica to other leading medical device exporters in Latin America, like Mexico and Brazil, we see they all have shifts in the technological composition of their exports. However, the volume of exports varies markedly. Mexico had over US\$5 billion in medical device exports in 2011, and Brazil less than \$500 million. The reason relates to each country's development strategy. Like Costa Rica, Mexico is highly export oriented with a focus on the US market, while Brazil has a strong medical devices industry, but most of it is oriented to supplying Brazil's large domestic market. Thus, trade statistics alone can't fully reveal the capabilities or development objectives of countries that form part of this GVC.



Figure 6-6. Brazil and Mexico: Medical devices exports, 1998–2011



Among Costa Rica's main problems in terms of future upgrading in medical devices is its serious shortage of high-level technicians and R&D personnel. If we look at the medical devices value chain from a regional perspective, Mexico's far greater size actually presents an opportunity for cooperation since it has a specialized university for medical devices and Costa Rica is looking at opportunities to develop a regional strategy to supply its supply-side shortages. In contrast to earlier studies that highlighted that Costa Rica did not have an adequate strategy to take advantage of FDI spill-overs in high tech industries (Paus and Gallagher, 2008), the medical devices study suggests that Costa Rica may now have a number of positive experiences to share.

### The Aerospace Industry in Querétaro, México

Mexico has been one of the most successful developing countries in attracting aerospace manufacturers and service providers as they pursue these offshoring strategies to improve economic efficiencies, and access both capital and talent. In 2011, Mexico had about 260 plants and 33,000 employees in the aerospace sector, up from 65 plants and 12,500 employees in 2004 (Ornelas, 2011). Mexico's exports in the aerospace sector have nearly tripled from US\$1.3 billion in 2004 to \$3.8 billion in 2011. About one-third of Mexico's parts suppliers for the aerospace industry are located in Baja California, with additional parts supply concentrations in Nuevo Leon, Sonora and Chihuahua. Mexico has only one OEM producer of commercial aircraft, Bombardier in Querétaro, although GE makes aircraft engines in Mexico and thus is a very significant Tier 1 supplier in the sector.

Within the aerospace value chain, the clusters in Querétaro and Baja California provide a good focus because they represent two distinct models of economic agglomeration and upgrading: the former involves an integrated supply base with a relatively advanced ecosystem of innovation (including various specialized institutions), and the latter, the largest grouping of assembly-oriented parts suppliers.

The aerospace industry in Querétaro has grown rapidly.<sup>8</sup> Bombardier – one of the leading companies in the sector, based in Canada – arrived to the area in 2006, marking the entry of Querétaro into the aerospace GVC. The French group Safran and Spanish airframe manufacturer Aernnova quickly followed suit, establishing operations in 2007. Under the leadership of the Secretariat for Sustainable Development, Querétaro's aerospace cluster has since become one of the four leading locations in Mexico. By 2012, there were over 30 foreign firms operating in the state, with projected employment of over 6,000, about 20 per cent of the country's aerospace workforce. Mexico's exports in the sector had reached US\$4.5 billion by 2011, up from US\$1.3 billion in 2004.

Growth was supported by a clear commitment to the development of the industry by the state government, including the creation of the National Aeronautics University of Querétaro (UNAQ) in 2007, which housed several technical programmes developed in public–private initiatives and created the first aerospace engineering programme in the country. State investments in UNAQ amounted to US\$21 million by 2009. In addition to training teaching staff in both Canada and Spain, UNAQ drew teachers from aerospace firms working in the region. By 2012, there were 488 technical and professional students at UNAQ. UNAQ's contributions to human capital development in the state added to an already strong engineering training base. In 2009, engineering graduates accounted for 41 per cent of undergraduate degrees, while 65 per cent of master's degree programmes available in the state were in engineering fields (Casaliet et al., 2011).

Additionally, in 2007 an aircraft maintenance programme was established in Querétaro by the National Mexican Technical Training Institute, which graduates 90 technicians annually. This has supported the ongoing development of the state's maintenance and repair operations capacity, and helped capture large investments, including the 2012 Delta–Aeroméxico deal to establish a US\$50 million maintenance, repair and overhaul (MRO) facility in Querétaro with seven production lines to serve both airlines.

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<sup>8</sup> This section draws from Fernandez-Stark et al., 2014, pp. 98–99.



### 6.1.3 An enhanced role for productive development Policies in GVCs

As Latin America's role in GVCs expands, a new set of issues has emerged regarding how the region can maximize its potential gains from engaging in the global economy. Central to this challenge is how countries can move up the value chain by engaging local firms, assimilating new knowledge and improving employment conditions, with appropriate policies and institutions to facilitate economic, social and environmental upgrading. The various examples of GVC participation in Latin America reviewed in this paper highlight multiple options that countries could consider in trying to improve their global competitiveness. Several targeted recommendations are provided below that highlight what countries in the region can do to improve their positions in GVCs.

**Trade Policy.** A prominent feature of the global economy in the last several decades has been the rapid growth of regional trade agreements (e.g. NAFTA, CAFTA–DR and MERCOSUR in Latin America), and the proliferation of bilateral trade agreements as well (e.g. Mexico has over 40 such agreements and Chile more than 20). While these policies have greatly facilitated the access of Latin American economies to world-class imports and key export markets, regional agreements can also have a restrictive impact in terms of their country-of-origin requirements. In Nicaragua's apparel industry, for example, the country was able to negotiate a 10-year tariff preference level (TPL) agreement with the United States to provide access to non-US fabrics (mainly from Asia) for Nicaragua's apparel exports. However, the expiry of the TPLs in 2014 has created considerable uncertainty among foreign investors, and could lead to an outflow of FDI that could cripple the country's apparel exports (Frederick et al., 2014).

In general, countries need to be wary of building up their competitive advantage in GVCs on the basis of short-term trade policy advantages. Many of the preferential trade agreements have market access aspects that are of limited duration. Countries should view these as “windows of opportunity” that permit the development of capabilities that could lead to more sustainable niches in specific GVCs. Often this involves the creation of backward or forward linkages, like textiles in apparel and cold-storage facilities in the fresh fruit value chain. Global buyers in GVCs prefer “one-stop shopping”. If these capabilities cannot be built at a national level due to scale or cost constraints, then another option is to develop the capabilities that could permit functional upgrading in the GVC with nearby countries in the region.

**Industrial Policy.** There has been a long history of industrial policy in Latin America and other developing economies built around the import-substituting industrialization

(ISI) strategy of the 1950s to 1970s.<sup>9</sup> From the 1980s through to the early 2000s, state-led industrial policy fell out of favour, and the “Washington Consensus” championed by the World Bank and the International Monetary Fund advocated export-oriented industrialization based on the East Asian model. Due to a variety of factors, including the global economic recession of 2008–2009 and the rise of large emerging economies such as China, India and Brazil, the Washington Consensus is now in disarray and industrial policy is back (Gereffi, 2014). However, as a result of economic globalization and the predominance of GVCs, a return to traditional ISI industrial policy based on protected domestic markets, local content requirements, mandatory joint ventures, and other measures from the ISI toolkit is unlikely to be effective.

Today, GVC-oriented industrial policy focuses to a greater extent than in the past on the intersection of global and local actors. It takes into account the interests, power, and reach of lead firms and global suppliers, accepts international (and increasingly regional) business networks as the appropriate field of play, and responds to pressures from international non-governmental organizations (NGOs) (OECD Development Centre, 2013; Salazar-Xirinachs et al., 2014; Crespi et al., 2014).

There are three distinguishable types of industrial policies: horizontal policies that affect the entire national economy; selective (or vertical) industrial policies targeted at particular industries or sectors; and GVC-oriented industrial policies that leverage international supply chain linkages or dynamics to improve a country’s role in global or regional value chains (Gereffi and Sturgeon, 2013, pp. 342–343). Horizontal policies focus on the basic building blocks of competitive national economies, such as education, health, infrastructure, and R&D expenditures. Although these areas all provide attractive opportunities for private investors, the public sector typically plays a role in providing widespread access to these factors as public goods. Domestic industrial policies tend to be selective or vertical because they are associated with prioritizing particular industries or activities at the national level. GVC-oriented industrial policies go beyond the domestic economic focus of ISI-style policy regimes, which try to recreate entire supply chains within a national territory. Given the expansion of international production networks associated with GVCs, this new type of industrial policy explicitly utilizes extraterritorial linkages that affect a country’s positioning in global or regional value chains.

Several major features highlight the distinctive nature of GVC-oriented industrial policies (Gereffi and Sturgeon, 2013, pp. 353–354). One is the role of global suppliers.

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<sup>9</sup> Although not widely recognized, similar ISI strategies were also prominent in East Asia (see Gereffi & Wyman, 1990).





GVC-oriented industrial policies require an increasingly sophisticated understanding of the global-scale patterns of industrial organization that have come to the fore in GVCs since at least the 1990s. Lead firms are relying on global suppliers and intermediaries for an array of processes, specialized inputs, and services and demanding that their most important suppliers have a global presence. Hence suppliers, not lead firms, are making many of the new investments that developing countries are seeking to capture. Global suppliers often generate the majority of exports as well. The capability to serve multiple customers also takes on heightened importance.<sup>10</sup> Thus, it is no accident that Brazil sought investments from Foxconn, rather than Apple, in its desire to make iPhones and iPads in the country for domestic consumption and for export to other parts of Latin America.

A second feature of industrial policies in the GVC era is global sourcing and value chain specialization. Policies that promote linkages to GVCs have very different aims than traditional industrial policies intended to build full-blown, vertically-integrated domestic industries (Baldwin, 2011). Productive development policies can target specialized niches in GVCs. These can be higher-value niches suited to existing capabilities, or they can be generic capabilities pooled across foreign investors. Either of these can serve both domestic and export markets. This sort of value chain specialization assumes an ongoing reliance on imported inputs and services. Global sourcing means that the entire value chain may never be captured, but it also assures ongoing involvement in leading-edge technologies, standards, and industry best practices.

Third, firms in emerging economies like China and Brazil are seeking to move to the head of GVCs, regionally if not globally. Encouraging global suppliers to establish facilities within a country has long-term advantages. Local lead firms can rely on global suppliers in their midst and on broader GVCs for a wide range of inputs and services, from design to production to logistics to marketing and distribution. This can lower risk and barriers to entry for local firms, provide access to capabilities and scale that far outstrip what is available domestically, and ensure that products and services are up to date.

In this context, there are several key features of GVC-oriented industrial policy that are likely to become more significant in Latin America and elsewhere (Gereffi & Sturgeon, 2013): (1) GVC-oriented industrial policies could target global suppliers or contract manufacturers that make significant investments in developing economies,

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<sup>10</sup> Multiple customers provide global suppliers with sufficient business to justify capital-intensive investments that may have high minimum-scale requirements, such as electronic displays and automated production lines.

rather than the branded lead firms in GVCs;<sup>11</sup> (2) value-chain specialization heightens the importance of joining rather than building GVCs (Baldwin, 2012; Cattaneo et al., 2013), and the policies that promote linkages to GVCs are very different from those intended to build vertically integrated domestic industries; and (3) industrial policies should seek to identify GVC lead firms and global contractors that have an interest in partnering with and developing the capabilities of local firms.

In a GVC-oriented world, the industrial policies among emerging economies are increasingly likely to be in conflict, and China is likely to be in the middle of these controversies. The soybean GVC offers a good example. About 95 per cent of Brazil's soybean exports to China in 2009 were unprocessed beans. In contrast, there were virtually no exports of soybean meal, flour or oil to China. In order to pursue its strategy of promoting the Chinese soybean processing industry, China imposed a tariff of 9 per cent on soybean oil imports, while the tariff on unprocessed soybean imports was only 3 per cent. Imports of products based on processed soybeans were also subject to a higher value-added tax rate in China than unprocessed beans. Similar protectionist policies, including both tariff and non-tariff barriers, have been imposed by the Chinese government on other primary and processed intermediate products from Brazil, including leather, iron and steel, and pulp and paper (Jenkins, 2012).

**Public–Private Partnerships.** Given the key role played by the private sector in GVCs, international donors and development agencies have shown a great deal of interest in supporting public–private partnerships in developing countries (UNGC, 2011; Bella et al., 2013; Abdulsamad et al., 2015). Since private capital and trade flows in the global economy dwarf official donor assistance, these global flows in GVCs raise heightened concerns over how to make sure that positive development trajectories are related not only to economic but also to social and environmental objectives. Thus, multilateral and bilateral donors have engaged the private sector to take on a variety of pro-poor development roles.

While public–private partnerships can positively impact growth at the industry level through increased investment, output, exports, and employment, the economic gains do not automatically translate to smallholders, SMEs and local households due to the power asymmetries that are embedded in many GVC relationships (Mayer and Milberg, 2013). Therefore, the wide variety of “Aid for Trade” schemes and other

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<sup>11</sup> Foxconn Technology Group, the largest electronics contract manufacturer in the world, has its home office in Taiwan, but its production and exports for leading brand name multinationals like Apple are concentrated in mainland China, where it employs more than one million workers, making it by far the largest private employer in the country. Li & Fung, the largest trading company in the world, is headquartered in Hong Kong but does most of its sourcing from China, and it has extensive operations in the Americas (Fung, 2011).

forms of public–private partnerships should seek to assure that SMEs and other targeted beneficiaries of inclusive development projects acquire the productive capabilities needed to respond to dynamic markets through appropriate financing of required infrastructure, affordable certification, technical assistance, improved information flows, and other mechanisms to enhance bargaining power to protect worker rights and community development objectives.

There is no magic bullet to improve international competitiveness in GVCs, given the great diversity of experiences and interests within Latin America. However, by acknowledging and addressing the new realities of the global economy, countries in the region can improve their ability to define manageable goals and capture a greater share of the gains in GVCs.

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## 6.2 Gary Gereffi. Oral presentation

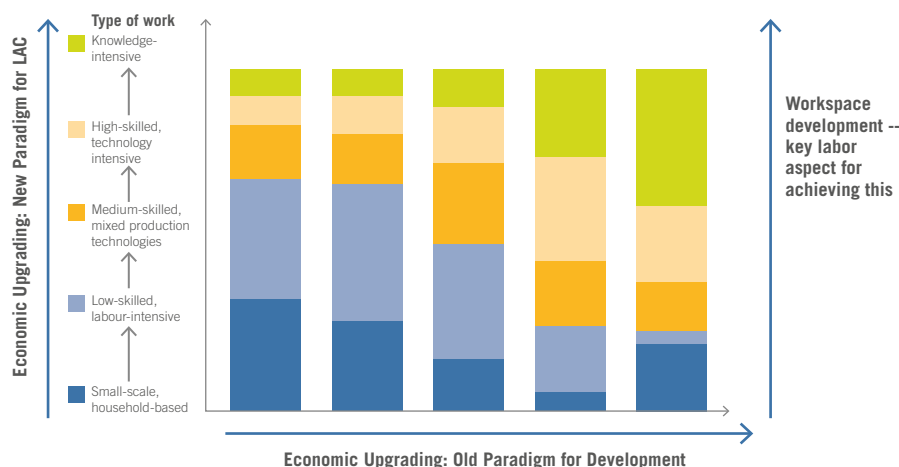
I will focus my remarks on three areas. First, structural transformations and how we can visualize them. Second, how to bring the issue of employment into the GVC discussion, using the Costa Rican medical devices sector as an example. Third, why I think it is useful to link chains and clusters or different levels of analysis like the sub-national, national and supra-national regions in terms of what we are trying to do.

We have been discussing structural transformation. Jose Manuel's book deals with structural transformation and Ernesto's does too.

In Figure 6-7, Economic upgrading in GVC and workforce development, I offer a visual representation of industrial transformation that allows us to incorporate some workforce issues that often are left outside of the discussion.

The horizontal axis represents the traditional way in which we think about structural transformation: a gradual transition from agriculture to industry and then into services. Of course there can be big differences within each sector, between agriculture and mining if we focus on extractive or primary products, and more and less sophisticated activities within manufacturing, but very broadly we can think of this as a transition from agriculture to industry and then to services.

**Figure 6-7. Economic upgrading in GVC and workforce development**



**Source:** adapted from Barrientos, S., Gereffi, G. and A. Rossi (2011). Economic and social upgrading in global production networks: A new paradigm for a changing world.

What I have done in the graph is to add a vertical axis, which represents a different way of looking into economic upgrading by looking into the knowledge intensity of different activities, and I combined it with the horizontal axis that is focused on sectors. In this case, however, rather than including “industry” as a sector, I have included three different manufacturing activities and one type of business services.

Social upgrading can mean a lot of things but one of the them has to be the quality of the jobs created in an economy. So in this diagram the idea is to show that in every one of these typical industries – agriculture, apparel, automotive and IT within manufacturing and business services – we have all types of work represented, from low to high levels of knowledge or technological intensity. Upgrading therefore is not just a question of moving from left to right (from one sector to another), but also from the bottom up (from low knowledge intensity to high knowledge intensity within sectors).

One of the issues that is raised by this notion of horizontal industrial policy is the need to invest in human capital, a point that is relevant across all types of PDPs. I think this is one of the salient points that Chuck brought up in his paper.

Often this is where the analysis stops, because using secondary data it is hard to move any further. But if we are going to do this right, we need to go beyond secondary sources and look into firm and value chain level data, and not only globally but specifically at the country or even regional level. Thus, a key for value chain analysis, in general,



is not just identifying lead firms within any particular value chain, but within the countries that you are looking at. What is the composition of firms by ownership, size, etc.?

This is what led us to do this kind of analysis when we studied the medical devices cluster in Costa Rica. We talked to many firms, and we asked, “Why did they come to Costa Rica?”, “What did they first make?”, “What did they make afterwards?” We then went into the trade, free-trade zone statistics, which are pretty detailed on ownership of firms, etc. This is an advantage when you are working closely with governments because you can get the best available information, which is still not perfect, but allows us to at least link production, employment, trade, etc.

One of the results of our research (summarized in Table 6-1, above) was a big surprise for the Costa Rican Government.

They did not have any information about the pattern of investment over time that showed that the early investors in medical devices, which began in the mid-1980s, but went through to the 2000s, were doing low-tech production involving disposables. Then new firms came in and started making instruments and therapeutics, and in the last wave (2008–2012), they were doing all these things together.

When we asked firms why they invested in Costa Rica, it was really clear that they were talking to the firms that were already there, finding out what was it like working in Costa Rica, and they were getting positive reports about Costa Rica’s working environment, policy makers, the labour force, and all the issues that are important for the upgrading story.

Because so many firms were moving in and going up the technology curve, there was a problem of overcrowding. Most of these firms want to be in the central valley (around San José), which is limited in terms of logistics and space. So Costa Rica had the South Korea footwear problem without the South Korea policy tools; it needed to move out of the low-tech end of the medical devices sector in order to make room for companies in the high end, because it didn’t have enough industrial space or technicians for both.

Thus, part of the diagnosis was: you now have a lot of human capital requirements if you really want to get into R&D or the high technology part of this value chain. Those are some of the things that we ended up discussing with policy makers as a result of this report.

Another nice thing about firm-level analysis is that you can go inside the companies, and ask them about their investment history, and you can see and document a broad

pattern of firms starting in the lower-tech end of their business and gradually moving on to higher-tech goods.

In the sterilization story that Ernesto mentioned, COMEX gets a lot of credit for diagnosing gaps in the value chain; existing firms in Costa Rica weren't doing sterilization, but if it were possible for them to do it, they could move to higher-value activities in the medical devices chain. This is true, but COMEX was able to find this out because the companies that were in the sector that did not have access to local sterilization services, and thus had to export semi-finished medical devices to the United States for this process, were complaining.

Thus, communication back and forth between the policy makers and the firms is a critical part of the story. CINDE is very agile; they got the story pretty quickly and they helped with the screening. But this was possible only because CINDE, PROCOMER, and COMEX were all on the same page; they had a vision, and they were willing to work with firms and listen to firms. So you got an upgrading outcome.

Another thing that happened as a result of the study: the multinational headquarters of companies like Boston Scientific came to us after we did our study, and they wanted to use our results to help decide whether to increase the size of Costa Rican operations, based in part on where Costa Rica fits in the value chain. This is part of the dialogue a GVC analysis facilitates in terms of future investment decisions where you need independent sources of validation.

Now the question would be: How do we know that this isn't just an isolated experience? What can Costa Rica do to ensure that this experience leads to positive spillovers to other sectors?

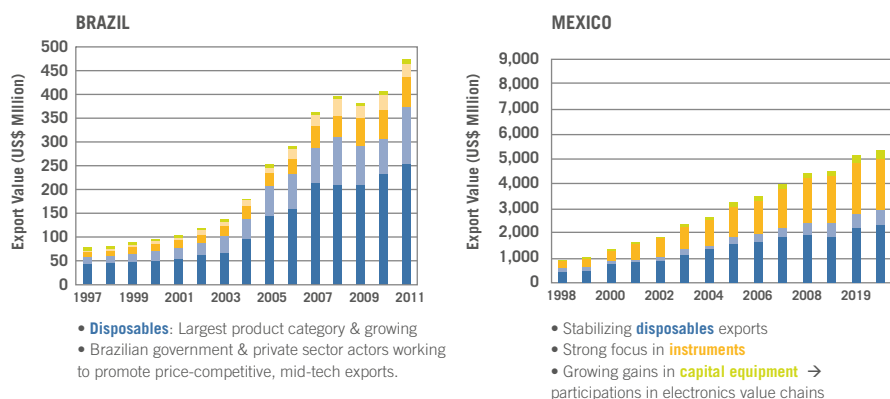
The results of the Duke study were disseminated in a very effective way. When we completed the study, Foreign Trade Minister Anabel González asked us to present the report at a one-day meeting in August 2013 of 120 people from business and government in the four sectors we studied. They asked specifically for half-hour presentations, no more, followed by a five-person panel from the industry and educational institutions, followed by an open discussion.

Thus, there was a mechanism to share the results of the study between government and private sector. I don't know if there were labour people in that room or representatives from the workforce in the four sectors, but a lot of discussion was focused on human capital and workforce issues. Two weeks later, there was a meeting of a public-private strategic council in Costa Rica to discuss the recommendations from the study.



This sounds to me like a pretty good approach to take information: bring the stakeholders together, at least some of them, and then have a mechanism whereby the government says, “Based on what we heard, here is what we are going to do in terms of future bottlenecks.”

Figure 6-8. Medical devices exports: Brazil and Mexico



When we compared Costa Rica with Brazil and Mexico, using the same categories for medical devices in both countries (see Figure 6-8), Brazil had about half of the exports of Costa Rica and Mexico had about four times as many. When people look at the sector from a purely statistical point of view, Costa Rica appears to be doing very well with twice as many exports as Brazil, which is a huge country. But Brazil’s medical devices industry was oriented towards serving the domestic market, especially the Brazilian hospital system, which is the largest public sector hospital system in the world, bigger than China’s. Thus, Brazil was much more interested in domestic demand and a whole set of issues tailored to Brazil’s particular position.

One of Costa Rica’s problems was they couldn’t train enough technicians, and they did not know how to get the technicians and R&D people they needed. Then they discovered that Mexico, a much bigger country, had universities that were graduating people in medical devices specialties, as well as in aerospace.

One possibility that has opened up is whether Costa Rica could collaborate with Mexico to help train the workforce they need on the high-skill end. Either Costa Ricans can go to Mexico and study in specialized universities there or they could set up training facilities in Costa Rica. Thus regional comparison becomes very important. You cannot just look at Costa Rica by itself.

A key recommendation that came out of the study is to be very selective about the kind of foreign direct investment you try to recruit. A GVC analysis can help to identify main strengths and weaknesses. The weaknesses are areas that are underrepresented, like sterilization. Similar issues arise in other segments, like therapeutic devices. Strategic targeting of investments needed is something that CINDE and others would do.

They were very interested in strengthening the role of domestic suppliers. This is a topic that has come up in other studies of Costa Rica's high-tech industries: domestic suppliers can't keep pace. It was also a big Intel problem. Intel came in relying on its international suppliers and its only local purchases were food services and packaging materials and some very low-end stuff. This is the same story almost all the managers of the multinational subsidiaries we interviewed in Costa Rica told us. They all had ties through their school background with local suppliers and they were personally very committed to building up the supply base inside Costa Rica.

There was a form of virtuous circle here. While not every place is going to have this kind of a tight configuration, what can we learn from the way the things have evolved in Costa Rica? How can domestic supplier upgrading and potential international partnerships like the one between Costa Rica and Mexico be facilitated?

Finally, a methodological plea. The aerospace and automotive cases in Mexico highlight a very different problem, as we move from small countries to big countries. In Costa Rica, which is quite small both geographically and in population size (four and a half million people), the medical devices sector is in one place; if we look at aerospace or automotive in Mexico or in Brazil, we have multiple points of production in each of these chains. Mexico has at least five automotive plants, each of which is tied to a key automotive assembler like Volkswagen, Nissan, Ford or General Motors; the same thing in aerospace. You cannot simply talk about national value chains and cover the key issues for global competitiveness. Mexico is tied into the North American value chain, and this regional level needs to be incorporated into our GVC analysis.

Over the last ten years, regional value chains have been gaining in importance over the global fragmentation model. These regional models include East Asia, North America, Eastern and Central Europe, and so on. The research challenge, if we are looking at any of these sectors in bigger countries, is to look at the different types of production that occur within a country. Many places in Mexico make aerospace parts. Some are tied very closely to final aerospace producers like Bombardier, and others focus on the export of parts. You are also getting R&D clusters in some parts of the country. The same pattern exists for autos. You tend to get much deeper technological learning and knowledge transfer where you have integrated clusters of the parts suppliers with the

final goods assemblers, as opposed to the isolated parts suppliers. This is a proposition that needs more systematic analysis.

If we are going to do GVC analysis well, we need a multilevel approach. We cannot simply look at the national level in the big countries; instead, we must look at the different parts of the value chain located in the country, and assess their capabilities and linkages with regional partners. This would give us a better sense of the North American aerospace or automobile industry, versus just the part of these GVCs inside the borders of Mexico or the United States. This is both a methodological challenge and an opportunity.

### 6.3 Commentary. Eva Paus

I found the paper very interesting, in the way that I find your other writings very interesting, because of the detail that you get out of global value chain analysis that you can't get otherwise. The medical devices example that you come back to here and illustrate in your paper is very illustrative. Without global chain analysis you would not have been able to demonstrate the upgrading possibilities.

I would like to talk about something that I find is implicit in your paper but not explicit. Your paper shows us what can work at the global value chain cluster level and, taking the example of medical devices, how it can be done; how the different policy elements fell into place, how you had strategic actors, which was absolutely critical to then generate this kind of dynamic feedback loop that we have been referring to repeatedly today.

So I think it is a brilliant example of how things can come together at the sector level. At the same time, I think the examples in your paper also show the limitations to how far this can go in the absence of a strategic vision at the national level.

So I come back to the larger strategic question. If we look at a number of examples relevant here, Nicaragua is one of the cases you discussed briefly in your paper. In terms of apparel exports, Nicaragua was in this unique position under CAFTA–DR that they had special import allowances, the quota of what could be imported from outside the United States, for ten years. And now the ten years are up, actually they were up in 2014, and nothing has changed. Nicaragua is waking up, and the producers are now saying, “Gosh, we missed an opportunity!” So why is that? I think it's a lack of strategic understanding at the national level, you know, that we need to seek opportunities; here is an opportunity, this is what we have to pursue. I am not talking about planning;

I'm talking about an understanding at the national level that you need to build this up and get the policy package right, that you have ten years.

Costa Rica is another interesting example of missed opportunities from trade preferences, in this case CAFTA–DR. Key parts of agriculture were exempted until January 2016, that's now. When I was in Costa Rica last year, there was incredible anxiety among agricultural producers, "What are we going to do when CAFTA–DR trade protection runs out?" They had the same problems as in Nicaragua. We have the medical device success story, but there wasn't the broader vision to say we have an opportunity here of 8 to 9 years to do something in agriculture because trade liberalization is coming down the pike.

And, not surprisingly, it was last year that CINDE decided to make agriculture one of their strategic sectors because it finally became a concern. I think the counterpart to that, playing into the same argument, is the behaviour of China. You have the example in your paper that China uses trade protection in order to keep out more processed commodities from Latin America. And trade protection doesn't have to be high; we see that across the board: the decline in added value of copper exports in Chile; the fact that Uruguay is no longer exporting sweaters – they are exporting wool because of the tariff structure.

There is a very interesting young political scientist at Bryn Mawr who has studied China's very deliberate use of tariff protection policy to go against what is permitted in order to develop; e.g. local content requirements, though that's in violation of WTO regulations. But by the time you get through the whole litigation process, it's five years later when the verdict comes down. That gives you five years to develop a particular segment of an industry.

Nobody in Latin America thinks in those terms strategically. I am not saying that it is the best policy, I'm saying at a national level there are policy options that are not being used. For me the point is not that everybody should follow China's example of circumventing the rules. Rather, the point for me is to illustrate that China has a strategic vision and is willing to use instruments to promote that vision – in this case upgrading –through different policies.

I want to stress a point you made at the end about foreign investment, which was one of the elements I listed in my presentation this morning about obstacles to successful systemic innovation, and I think CINDE is more of an exception than the rule. I think many Latin American countries have not adopted a strategic approach towards foreign investment. They need to leverage foreign investment in a more targeted way to help production move up the value chain.



I would like to close with a question: what is the impact of the new technological revolution on the governance structure of global value chains? It will obviously depend on the sector of the chain we are looking at. One of the recommendations that you have, the reason I am bringing it up, is that producers in Latin America instead of looking at Apple need to look at Foxconn. so you need to look maybe a couple of levels down. But as you know, Foxconn is the promoter of robotization. In China, Foxconn has a goal of having robotic factories. If that is indeed the case, how does it inform the strategic pursuit of foreign investment? Thank you.

## 6.4 Group Discussion

- ▶ Do you really need a long term strategy? Is it even possible to have one? Traditional long term planning may no longer be feasible in a world where radical uncertainty is a dominant feature. Instead of a strategy in terms of what to do (what sectors to support, that kind of thing) maybe what you need is a strategy on how to respond to uncertainty, to unforeseen and rapid changes that demand very quick adaptations and considerable flexibility
- ▶ In all successful cases, you see at work non-governmental or semiautonomous institutions as a source of policy continuity. You need to delegate policy to agencies that have long term time horizons, with a good technocracy and stable finance. That is the case of Cinde, COMEX and PROCOMER in Costa Rica, but also of the Office of the Chief Scientist in Israel.
- ▶ Costa Rica is in fact a case of picking winners “light” and in the right way.
- ▶ The employment story in Costa Rica behind the FDI attraction story has not been written in an integrated way, it is a tremendous economic and social upgrading story, very transformational. But its success has to be put into perspective: Costa Rica still has a dual production structure, informality is between 35 and 40 per cent and poverty has been stuck at 20 per cent for 20 years.

## 7. Summing it all up

### 7.1 Charles Sabel. Final comments

This is a very interesting discussion, not least because it brings to the surface a tension between two completely legitimate points of view, one of which I think is especially relevant to the task before us and sitting down to actually get stuff done.

The tension is on the one hand between the analytic academic mind-set of trying to put conceptual order on these things, and on the other, the day-to-day reality of flux and change of events that disconcert the actors, the firms, the countries in which they are locating labour, while at the same time opening up all sorts of new opportunities.

Let me refer very briefly to what people said.

Eva wants to find ways to focus the actors on the very great challenges that they face, the need for strategy. I think that is important; I think much more needs to be done in that way, and the sense of urgency is never urgent enough. I think that there are enough actors of all kinds who are deeply alarmed whether or not they share the same perspective so that there are interlopers for pretty much any damn thing you can think of. So, the world is not so set in its ways that we alone are speculating, not in the least.

This is the second point. We seem to have been drawn into these discussions already, in ways that are reshaping our work. So, one way to interpret for example, Ernesto's presentation, is a way of setting up the stage for very deep changes. It's the change from a world where industrial policy of any form was taboo and unthinkable to a world where you have some analytics of caution to guide you in prudent choices and cause you to pay attention to possible dangers but open a space where you need essentially to enter into unfamiliar forms of dialogue with other actors to make crucial choices. So this is a framework, which explains and legitimates that. And so it's an actor's framework, it's an actor who is explaining to the other actors why this is now legitimate and creating a framework on which everybody else can draw.

I find Gary's presentation fascinating because the starting point is global value chains but – not that I didn't know from reading your work – now it's regional value chains and this is profound change since the original innovation. The conceptual innovation was to say, wait, the unit of analysis has to be different; it's not the firm, it's not even the sector, it's the value chain; it's the global value chain; no, it's the regional value chain. This is not a sign of haphazard thought, this is a reflection of the brute uncertainty of



reality. The point is not that one should refrain from the reconceptualization through fear of undermining; the point is one should embrace it but understand exactly that we are creating a debate here, participating in a debate. And I find the fact you have been drawn to your centres, drawn into these things in a way which deepens the analysis even as it makes conceptualization furtive – not futile, furtive – is a sign that you are now a participant in a certain sense. This is the opposite of a criticism, but the point is similar in intent to Ernesto's.

I think the political science of this is very hard because it asks very global questions about what the contexts are; what the background coalitions are, what the deep institutional prerequisites are, and the more uncertain, the harder it is to come up with possibility conditions.

And I think it's completely legitimate to have a circumscribed thing. Here is one effort, let's see what we can make of that.

Now, the larger lesson that I take from this, the fact that we have all in different ways become participants in these debates, is that there is a debate to participate in. You know, I think that academic self-absorption explains a lot of the world but it doesn't explain a lot about academic choices, but our little group is absorbed in a way which brings it beyond the limits of its own absorption, changing its conceptual languages, languages that have to be open to these things. I think this is an important sign and a possibility. There's only one final thing I want to say about labour.

The more I listen and the more I talk with José Manuel, and Anne and others, the more I admire your courage. This is a gamble. Because of all the actors, labour is both the most vulnerable and is in certain ways the most entrenched. Most vulnerable because labour is exposed to informality, labour is exposed even in the sectors in which it is most ensconced. Labour will bear the cost of all the mistakes of all the other actors before anyone else and in larger measure. Because labour has found the way in many countries to persist as an institution even without the necessity of deeply involving its membership; it's deeply entrenched.

And we have a situation where labour, depending on where you look, you find either a great willingness to try new things – at the local and regional levels – and at the higher levels – at the national level and at the confederate and national level, – you also find suspicion verging on disdain, shot through occasionally by flashes of deep insight and so on.

This is not my credo, but this is the kind of moment where it is definitely worth trying to find places where labour is in motion as a part of this complicated process, Ernesto's non-gridlocking gears. Wherever labour is one of the wheels in these non-gridlocking

machineries, it is a place from which we and the rest of labour can learn. And I can imagine that there is an advantage in being on the periphery in countries where so much is in flux and therefore much escapes central attention; using that as an open field for very focused relentless investigation for whatever, a year or two years, to see whether it is possible to find the kinds of cases that can involve people in the kinds of discussions where the actors are reflecting themselves and drawing their own lessons. There is a frame provided in that and amplifying results and seeing whether or not there is an opening in what it appears to be the opening.

## 7.2 Jose Manuel Salazar-Xirinachs. Final comments

Thank you, Charles, for your excellent final comments, which are spot on with respect to the objectives of this session and help us finish on a positive note. And thanks indeed to each and every one of you for having accepted our invitation and your magnificent contributions today.

As I said at the beginning, our main objectives for this session were:

- ▶ To help us identify key knowledge gaps to feed into our research agenda.
- ▶ To help us think through the role of the ILO in the PDP and employment space, in particular regarding such leading edge issues as the institutions and coordination/collaboration challenges for effective policy, and the role of different actors, and their “social dialogue” processes.

And in this respect I think the discussions today confirm our intuition that we need a much more rigorous approach to the strengths and weaknesses of different institutional settings, and that we need to look not only into labour market institutions for social dialogue but into the nature of social dialogue of institutions focused on broader economic, skills, productivity and competitiveness issues. You have discussed the enormous variety of experiences in the region and beyond in these institutions, and the fact that quite often labour is not present or consulted, and the complex set of reasons why this is the case. In productivity, innovation and related institutions, the practice is to set up business–government councils only, with other actors not sitting at the table. As a tripartite organization, we would like to rigorously discuss the challenges for effective participation of both employers and workers organizations, and the needs they have in terms of technical, operational and political capabilities to participate in the discussion of the full range of policy challenges. This requires significant

changes of mind-set, and a different approach on how to build trust, as several of your interventions today suggested.

In one way or another, you all referred to the distance that often separates the key actors in the social dialogue scenarios, differences influenced by ideology, perspective or mind-sets but also by fundamental objective. Ernesto said one of the reasons labour is not invited, or often does not want to sit at the table of productivity and productive transformation discussions, even if invited, is that those tables are “to get things done”. There is a major insight here. Because it is true that most of the time, the traditional tables where workers’ representatives sit are to discuss or negotiate improvements in wages and working conditions, or violations of workers’ rights, and these are tables and dynamics which are all characterized by conflicts, complaints, and zero-sum game frameworks. In comparison, the tables to discuss productivity growth, productive development policies, inclusive growth, skills bottlenecks and their removal, and support to cluster development or value chain upgrading policies are necessarily tables or settings where the challenges have to be perceived as common interests, as win-win to all. So to be successful, the forums in which the common interests are to be furthered and those in which conflicts are resolved must be separated, and this of course is not easy, particularly if the same actors take part. I find this clarification from the discussions today extremely useful and quite central to the work of the ILO on these issues.

Another issue at the heart of the employment creation challenge that you touched upon is the fundamental one of human talent, and its links to the growth of productivity, to economic and social upgrading, including in value chains, and the role of employers and workers in addressing human talent challenges in the specific conditions of Latin America and the Caribbean.

And thank you, Charles, for reminding us of the challenges of productivity in the public sector, not just the private sector, where the role of unions also becomes key.

This discussion has been very useful and very encouraging for me and for my colleagues, because we could have concluded that what we have defined as one of three key priorities for work of the ILO in the region, that is, “PDPs for inclusive growth with more and better jobs” was inappropriate for an organization like the ILO, or that the field was sufficiently covered by other institutions. Instead, it is clear to me that you see an enormous value in this direction of work, and unique challenges and opportunities for the ILO related to addressing key challenges of the region in this area.

Collectively in this session you have reviewed an impressive list of issues, most of them at the cutting edge of knowledge about policy formulation and implementation and the

social processes to make policy effective. As you said, Charles, we move in a challenging space between the academic approach of trying to put conceptual order on these issues and the challenges facing the region, and the day-to-day reality of flux, in an environment of great uncertainty and change, and unfortunately also mistrust, not just between different social actors, but often vis-à-vis the government itself.

This is the space in which we have to balance our inputs of policy knowledge and expertise with the social and political realities in countries and the perspectives of our constituents. Again, thank you, and rest assured that we will think hard about how to share your considerable insights of today with ILO staff as well as constituents, and to translate them into our concrete work-plans and programmes.



# APPENDIX

## Jorge Cornick: Charles Sabel's experimentalism and other iterative methods of public policy governance

Jorge Cornick, September 2016<sup>12</sup>

### 1. Before we begin

The following notes are not meant to be a complete summary or a rigorous examination of “experimentalism”, as defined by Charles Sabel and his collaborators, or of similar ideas that are also discussed in the text.

These notes are rather an extended but informal response to a question posed after the Brainstorming Sessions on “Productive development policies for inclusive growth with more and better jobs,” whose minutes are presented in this volume.

Maybe, it would be better to think of these notes as an invitation to the read a boty of literature that is highly relevant, yet little known in Latin America.

Given that this is not a formal study or analysis, the text does not include the regular structure of references, quotes and footnotes. However, texts by Professor Sabel and other authors who have explored similar ideas are easily accessible on the web and a short list of references is provided at the end of the text.

If this note induces at least some of its readers, be it scholars, policy makers or simply citizens interested in public policy, the note will have accomplished its purpose. Each reader will ultimately decide whether it does justice to the ideas it presents.

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12 Founding partner of DRP *Consultores and Coordinator of Economías Empresarial*, LEAD University. Contact: jcornick@eurekared.com

## 2. A conceptualization, not a doctrine

Experimentalism, as the concept is used by Charles Sabel and his co-authors, is not a normative theory or a prescription on how to organize the governance of public policies. In this regard, it differs both from the traditional and from the new theory of public administration, which are largely prescriptive: they tell us **how** the management of public policies **should be organized**.

Quite the opposite, experimentalism is mainly a conceptualization that seeks to capture the central elements of how the management of public policies **is actually organized under specific circumstances**.

Both qualifications are relevant: this is not about a doctrine, but about a conceptualization that stems from the empirical research on a specific way to manage public policies. And this emerging way of managing public policies is not a universal phenomenon or a phenomenon that tends to be universalized, but rather something that arises and is appropriate under specific circumstances.

But if experimentalism is an attempt at capturing the common elements of a series of administrative practices which arise in before and regardless of the conceptualization, then, it could – in a second moment and acting cautiously – become a guideline for the management of public policies, **under specific circumstances** and bearing in mind that in itself the experimentalism can never provide recipes on how to organize the management or decide what direction a given set of public policies should follow. Experimentalism can contribute to organize the search for answers, but it cannot provide them automatically.

## 3. Common elements of the experimentalist governance

Sabel and his coauthors define experimentalism as an “architecture of governance” when there is:

- ▶ A widely shared perception of a problem.
- ▶ A common framework of understanding of objectives and provisional metrics, subject to review, whose definition include “central” and “local” units, as well as other stakeholders.
- ▶ Local units have full freedom to use the means they consider most appropriate to achieve the objectives, as set in the common framework.

- ▶ As return for this autonomy, local units are required to report to central units their progress in the fulfillment of jointly defined objectives and to participate in peer review processes, where their methods and results are compared with those of other local units.
- ▶ The objectives themselves and the metrics and decision-making procedures are reviewed on a regular basis according to the results of the peer review process.

According to Sabel and his co-authors, this form of governance has arisen as a widely spread answer in turbulent and polyarchy settings (i.e. where the effective power is distributed among several units) and where strategic uncertainty implies that effective solutions can only be defined in the solution-finding process itself, and not a priori.

At least two situations where experimentalism would not be appropriate can be inferred from this characterization of experimentalist governance and circumstances whence it emerges.

First, situations where there is no common perception of the problem to be solved, either because stakeholders have not been able to identify their common interests or because they have conflicting interests and are participating in a zero sum game.

Second, situations where there is no uncertainty. If so, there is no risk either, and if both the problems and their technical solutions are known, the search and trial and error processes—typical of the experimentalism—are unnecessary. On the other hand, if the risk can be quantitatively measured, actuarial instead of experimentalist methods can be used for risk protection.

A useful way of understanding the distinctive features of the experimentalism is by comparing it with other perspectives on the management of public policies.

### 3.1 Experimentalism and public-private cooperation

In the classical argument favoring private cooperation, the distribution of information between public and private agents is the key factor. In other words, the starting point is that there is a problem whose solution requires knowledge that is partly found in the public sector and partly in the private sector. The cooperation, then, plays the role of aggregating both parties' knowledge to design and implement a solution.

There is a clear difference between the cooperation and the experimentalism, and the key element of this difference is uncertainty. By definition, in contexts of uncertainty, not all the elements that define a problem can be known beforehand. The fundamental role of the public-private cooperation, in this case, is not to **aggregate** the knowl-

edge distributed between the parties, but to organize **the joint discovery of central elements that define both the problem and its solution.**

## 3.2 Experimentalism and public-private partnerships

The term “public-private partnerships” is usually used, mainly in infrastructure, in a very limited sense to refer to processes through which the provision of a public service is hired to a private entity. For instance, the construction and operation of a port or highway, or in other cases the supply of some services, such as public safety or sanitation.

These methods can be appropriate in situations where a problem is well defined, the technical solution is known, and the metrics to assess the service provider hired by the public sector to the private sector are clear. Without these elements, an agreement between the parties is impossible or involves high levels of risk for one or both parties.

But this situation is opposite to that for which the experimentalism has arisen as a solution: strategic uncertainty.

## 3.3 Experimentalism and the new public administration

The main proposal of the “new public administration” consists in using, in the public sector, management practices usually associated with the private sector, such as “performance contracts” between ministerial organizations responsible for policy-making and decentralized institutions in charge of implementing them; outsourcing of non-core services; performance-based compensation schemes and other, similar tools.

Just like public-private partnerships described in the section above (which can be considered a special case within the wider family of the “new public administration”), these techniques allow to achieve, more effectively than those supposedly associated with the traditional public administration, objectives laid down in advance, through the implementation of appropriate technical solutions. These techniques are suitable when both the problem and its solution are known (or at least can be known) ex-ante. Unlike experimentalism, they are not a governance architecture that arises partly as a solution to strategic uncertainty.





### 3.4 Experimentalism, principal-agent and street bureaucrats

In the traditional view of the public administration, a benevolent planner or “policy-maker” diagnoses a problem and designs a solution, whose implementation is delegated to an implementation or executive agency. The public policy-making and implementation processes are not only clearly separated, but the purview of separate institutions. A third institution is usually responsible for policy evaluation.

In any case, once the policy has been formulated, the planner’s key challenge is to find a mechanism that ensures proper execution of the solution by the executive agency; in other words, to find a solution to the old principal-agent problem.

Things change in the experimentalism.

Since policy-making and implementation become an iterative process, the neat separation between policy design and policy implementation fuzzy instead; implementation becomes, inevitably but also deliberately, part of the policy re-designing and adjustment process, that continuously incorporates new knowledge that is the product of the implementation process itself; objectives, metrics and methods are reviewed on a regular basis according to the experience in policy implementation and the discoveries taking place in this process.

Central and decentralized bodies, or those that are formally in charge of the policy-making process and those who are in charge of implementing it, do not have a strictly hierarchical relation: they are, at least to some extent, rather partners, co-discoverers of problems and solutions, with other stakeholders that can be included in the private sector. Collaboration is more important than subordination.

However, in experimentalism the “street-level bureaucrat” is not irreducibly independent. His autonomy, as indicated in the initial section, brings with it the obligation to submit detailed reports, document and justify deviations from established procedures and assess the results of such deviations, as well as the requirement of participating in both peer and hierarchical-based and assessment and monitoring processes.

The autonomy of the street bureaucrat is at the same time acknowledged and used as a systematic learning instrument.

## 4. Experimentalism and Problem Driven Iterative Adaptation

Problem Driven Iterative Adaptation (PDIA) is a proposal that was born in the Harvard Kennedy School as an alternative to the adoption of “best practices” and as a solution to the trap of lack of capabilities for implementing public policies.

Some context is needed to understand the proposal.

In short, a popular recipe to support the modernization efforts of developing countries has been to recommend adopting the “best practices” available in different areas of the public policy. The proposal is undeniably reasonable: if “the best way” of managing public transportation, regulating public services, or promoting economic diversification is known, why not to use it?

Nonetheless, attempts at implementing “best practices” in developing countries have usually led to disappointing outcomes. The promoters of PDIA point out three complementary reasons for this: first, institutional practices can only be partially coded and have a significant component of tacit knowledge; second, the best practices defined for a given social context could be inappropriate out of that context; and third, the best practice approach is a solution-focused approach (for presumably well-defined problems), but the problem in the developing world usually lies precisely in the fact that development problems and obstacles are not well identified.

The proposed solution is to focus on the construction of the problem (“problem driven”) and the trial of provisional solutions that are gradually adapted according to the results of the experience (“iterative adaptation”).

Thus, PDIA shares some of the features of experimentalisms, but unlike it, places greater emphasis on the initial construction of the problem, and does not pay much attention to the circumstances and conditions where its implementation is a better option than the traditional methods of the public administration or the new public administration. Likewise, it favors the construction of problems “from the bottom-up”, while experimentalism does not favor this approach nor the opposite, i.e. “top-down”, but understands that both can be complementary and help correct each other.

Finally, unlike experimentalism, PDIA is explicitly presented as a prescriptive approach: it is a solution to escape from what authors call the low public capability trap, rather than a conceptualization of previously existing governance practices and methods.



## 5. Experimentalism, better adaptation and EFA cycles

As an alternative to the adoption of “best practices” a new proposal has been recently presented: the adoption of those practices that best suit the existing institutional capabilities and that are, in general, consistent with the previously defined policy objective.

Since there is no simple or unequivocal way of identifying the “installed” institutional capabilities when launching a policy, the proposal of “better adaptations” inevitably require a trial and error process, i.e. discovery of practices that can be adopted by an institution at a certain point. This, complemented by the proposal of Experimentation, Feedback and Adaptation (EFA) makes this proposal very similar to the logic of the experimentalism, with a couple of important differences: on the one hand, it is proposed as a methodology that can be implemented even in situations where there is no strategic uncertainty: the problem and the optimal technical solution can be well defined, and the implementation of EFA cycles can still be a suitable method to develop the institutional capabilities needed for the implementation of this technical solution. On the other hand, it does not imply objectives widely shared among participants in the process of public policy-making and can, therefore, be appropriate in situations where there is no common perception of a problem, or even in situations where there are different levels of conflicts of interest between the parties.

## 6. Experimentalism and PDPs in Latin America: opportunities and challenges

The poor productivity performance of Latin America and the Caribbean is well documented: productivity growth has been slow and mainly the result of factor accumulation rather than productivity increases. The productivity gap between the region and both converging and developed nations is increasing rather than decreasing.

Regarding productive development policies, it seems evident that the region does not know quite well “what the solution is”, and it seems reasonable to assume, according to PDPs rough outcomes, that it also fails to understand “what the problem is”.

Besides, PDPs are typically “polyarchy” policies, because as Sabel and his co-authors say: there is not a single agent or institution, either public or private, with the required authority to impose behaviors and policies on all other agents for the success of the PDPs.

They are also policies where important groups of stakeholders have converging interests: businessmen from target sectors of those policies, public bodies and officers in charge of promoting them, the treasury (depending on the shaping of policies) and even workers and their organizations, provided that PDPs are drivers of “more and better jobs”, which, in turn, depends both on the PDPs and the policies of human resources training, as training for work and labour market management to take advantage of the job opportunities that the PDPs can potentially provide.

Finally, the success of PDPs, by definition, requires the success of companies that operate in a setting characterized by globalization, disintegration of productive processes, short learning cycles and production methods characterized by the deliberate vulnerability to face disruptions, real time error detection, and forms of collaboration among companies, and between rapidly evolving companies and workers. In short, an environment of strategic uncertainty.

All the above seems to create a situation where the “governance architecture” typical of experimentalism appears to be a promising option compared to the traditional methods of public policy management.

Is this the right path for Latin America and the Caribbean?

It might, but it is important to remember that the experimentalism was not born as a recipe or prescription on how to organize the management, but as a conceptualization of governance patterns that had emerged “organically”, not by design.

Certainly, the conceptualization can then become a tool to improve the management of public policies (by implementing the experimentalism methods themselves: reporting and monitoring of different experiences, compared analysis, peer review). It is also important to take into account the difficulties and failures of the proposals to adopt “best practices” and, therefore, to resist the temptation of considering experimentalism itself a “best practice” that can and should be implemented in any context should be avoided.

Therefore, the first question to be asked is whether in the most successful cases of productive development policies in the region and the corresponding development of productive development agencies, new forms of governance have emerged that are in line with the experimentalism. And if so, and they have been successful, try to systematize those experiences and identify why they have not been more widely adopted in the public administrations of the region.

On the other hand, it should be noted that many of the distinctive features of the experimentalism are in direct conflict with the prevailing tradition in many public administrations of the region, and can be even seen as dangerous proposals in a

region where corruption has an important impact on the management of public affairs and citizens' perception.

Experimentalism requires a focus on goals and objectives (open, provisional, subject to review) rather than strict adherence to approved procedure; accountable autonomy rather than blind subordination from street level agents; real time joint monitoring and evaluation of public policy outcomes by “central” and “decentralized” or “planning” and “executive” agencies, rather than (exclusive reliance on) ex-post, third party evaluation; it is characterized by flexibility to redefine, in an iterative process of indefinite duration, objectives, procedures and metrics, rather than by a one directional sequence of discrete steps that go from problem identification to policy design, policy implementation and finally, policy evaluation.

All this is almost exactly the opposite of the prevailing administrative tradition, which seeks, on the contrary, to guarantee the adherence to procedures and sanction deviations; usually without assessing outcomes, but focusing on the use of inputs and expenditure targets; and facing important difficulties to redefine, in a flexible and timely manner, objectives, procedures and goals.

Notwithstanding the above, my impression is that “*eppur si muove*”; which means that there is an important number of development experiences of successful productive development agencies in the region that operate based on the facts, if not formally, with rules that differ from the conventional public administration and are closer to the experimentalism. Thus, it would be advisable to better understand these experiences, and directly address the question on how to promote their development and generalization. Many development institutions of the region are working on this task, and the ILO Regional Office is fully involved in it.

## 7. Some references

An invitation to read would not be complete without suggesting some texts, which are listed below. This list is not meant to be definitive; it is rather presented as a potential starting point.

### On experimentalism

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## On a related vein

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