

ICT and Innovation for Structural Change

Comisión Económica para América Latina y el Caribe (CEPAL)

División de Desarrollo Productivo y Empresarial (DDPE)

Mario Castillo

ALCUE NET - Latin American, Caribbean and European Union

Thematic Workshop on Information and Communication

Technologies

Santiago, Chile

19 – 20 March, 2014

ICT and Innovation for Structural Change

Three perspectives

- Structural change and industrial policy
- Latin America and the global context
- Policy guidelines for ICT and innovation



Structural change and industrial policy



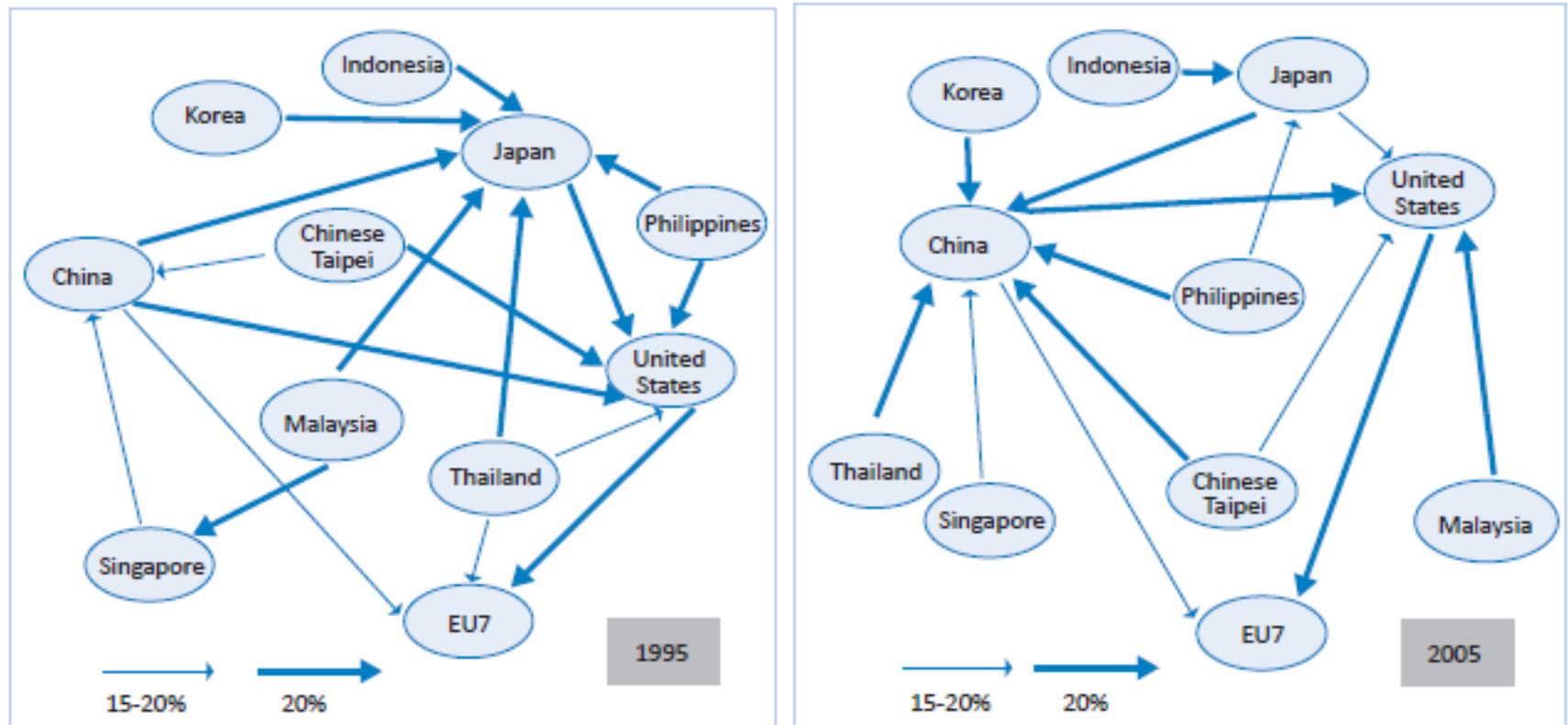
CEPAL

Table 1

Industrial shift toward China

Integration of intermediate goods and services: 1995-2005

Asian economies are increasingly integrated with China through supply chains



Source: OECD (2010a), Southeast Asian Economic Outlook 2010, OECD Publishing, Paris.

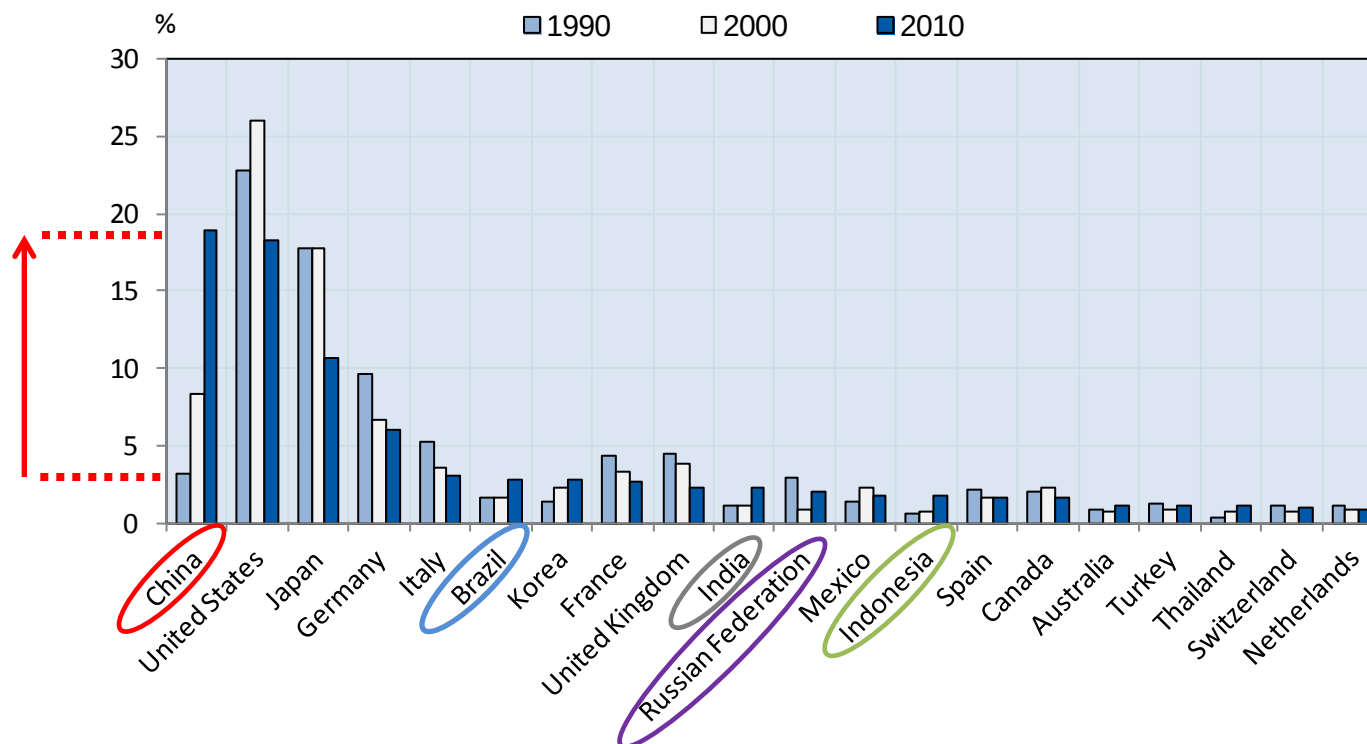
Table 2

The geography of global manufacturing 2010

Although China is the main actor, other countries also contribute to value added manufacturing

Top 20 Industrial Countries 2010

Participation in value added manufacturing worldwide, by country



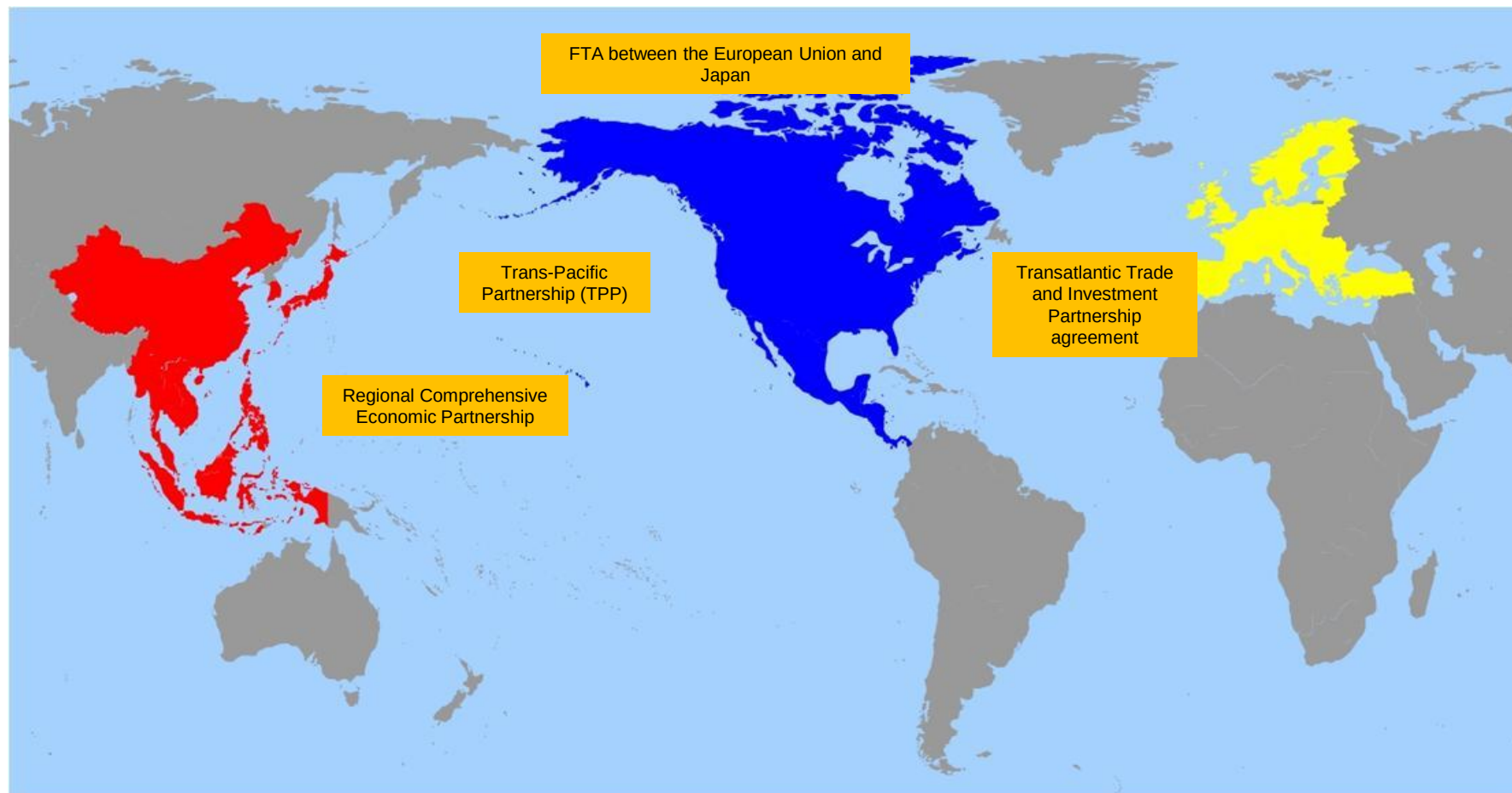
Source: OECD (2013), *Perspectives on Global Development 2013 -Shifting up a Gear: Industrial Policies in a Changing World*, OECD, Paris.

Mega trade negotiations and global value chains

The new world trade and investment governance

- **Transatlantic Trade and Investment Partnership** agreement between the United States and the European Union.
- **Free Trade Agreement between the European Union and Japan.**
- Regional Comprehensive **Economic Partnership** among the 10 member countries of the Association of Southeast Asian Nations (ASEAN), Australia, India, New Zealand, China, Japan and the Republic of Korea.
- **Free Trade Agreement** among China, Japan and the Republic of Korea.
- These four processes, formally launched in 2013, come on top of **the Trans-Pacific Partnership (TPP)** negotiations under way since 2010 encompassing 12 countries of Latin America, North America, Asia and Oceania.

Three major production network or “factories” with high rates of intraregional trade



A debate on the Feasibility of a Re-industrialization of the U.S. and other developed countries

- The major reasons for off-shoring over the past 10 years has been access to cheaper labor. The most aggressive off-shoring of production capacity occurred over the 2001-2007 period.
- A revolution in unconventional oil and gas production in the U.S. and rapidly rising labor costs in China are leading to a renaissance in U.S. manufacturing activities.
- The trend of off-shoring US manufacturing into China and other emerging markets has stopped. The impact of this on emerging market economies will be mixed:
 - Shorter and less complex supply chains.
 - Mexico is the best-positioned to benefit.

Source: Morgan Stanley research (2013), UU Manufacturing Renaissance, April 29.

U.S. Industrial Policy's Public Policy

Compete for the next round of innovation

- New technologies in areas such as robotics, 3-D printing and advance materials will accelerate leadership in design and production within the manufacturing and service sector.
- Manufacturing innovation hub and R&D on-shore.
- Location and proximity matter to the spillover effects. The proximity of manufacturing and design.
- Co-investment in world leading capabilities. Connecting businesses, universities and federal agencies.
- The industrial commons or the strength of the supply ecosystem.
- The interplay between manufacturing and services. Jobs developing IT services and applications embedded into product manufacturing.

Source: Morgan Stanley research (2013), US Manufacturing Renaissance, April 29.



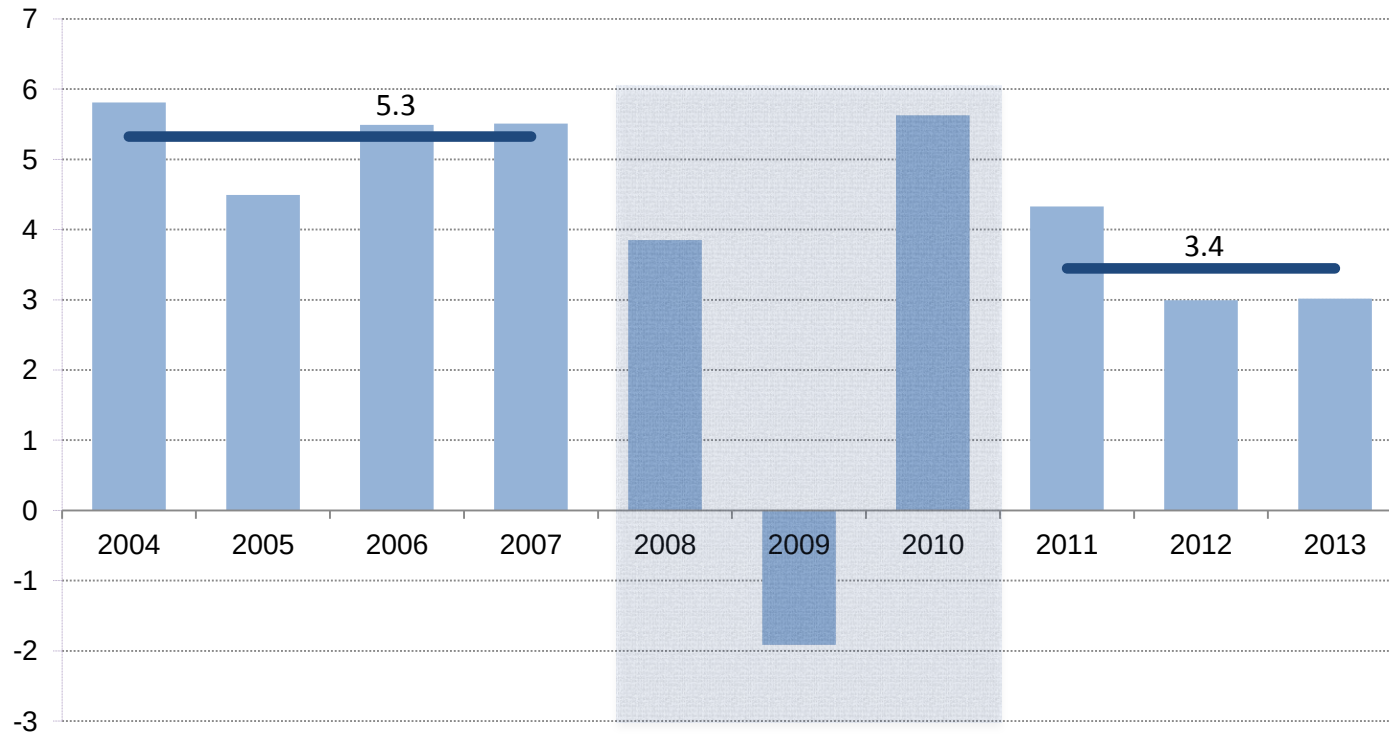
Latin America and the world stage



CEPAL

A decade of growth in Latin America

Latin America and the Caribbean: GDP growth
(in percentages)

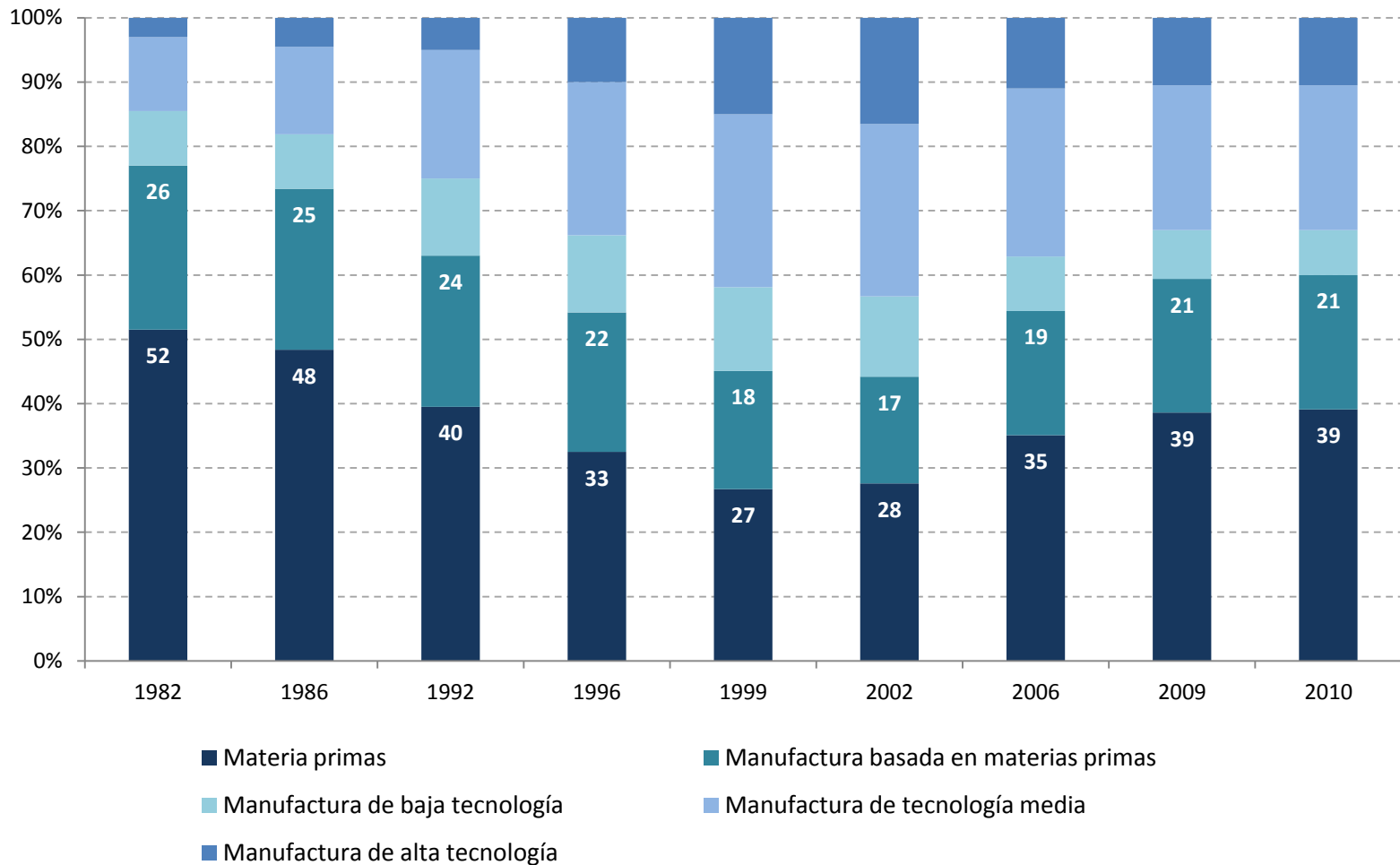


Fuente: Comisión Económica para América Latina y el Caribe (CEPAL), sobre la base de cifras oficiales.

- Pillars: macroeconomic reforms, social policies and investment in infrastructure.
- Economic growth is lower than before the 2008-2009 crisis.

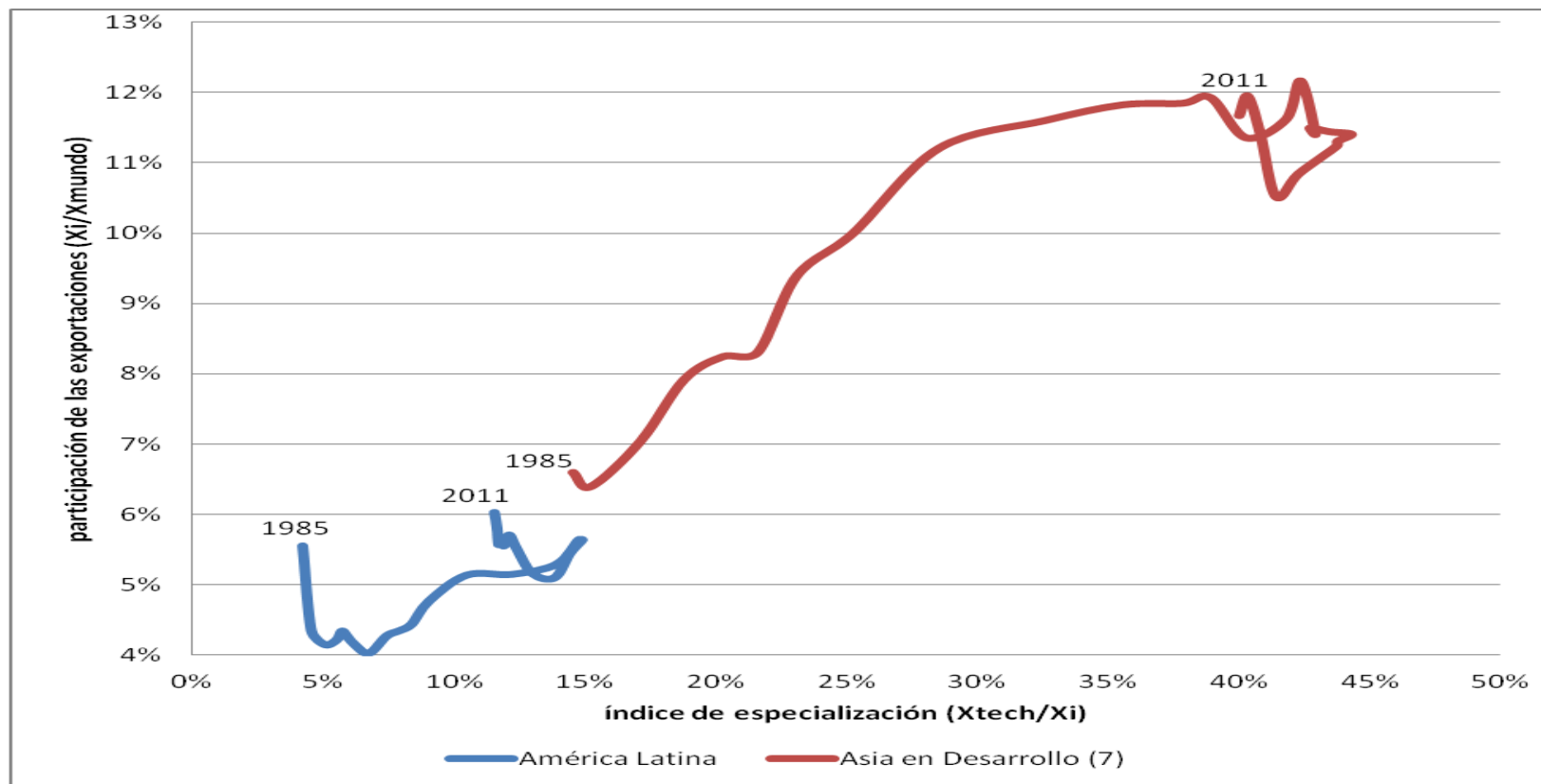
Exports by technological intensity in Latin America and the Caribbean, 1981-2010

(Percentages)



Changes in the composition and presence of trade

LATIN AMERICA AND ASIA: PATTERN OF STRUCTURAL CHANGE AND PARTICIPATION IN EXPORTS, 1985-2011



Source: ECLAC, based on the United Nations Commodity Trade Statistics Database (COMTRADE).

Industrial Policy in Latin America

- The pattern of productive specialization in Latin America has led to the lock-in of a production structure centered on non-knowledge-intensive activities.
- Latin America has had experience in a variety of public policies:
 - The development of horizontal (cross-sector) policies.
 - Support for cluster or production chains.
 - The implementation of sectoral policies.
- Industrial policy began making a slow comeback in the early 2010s: Argentina, Brazil and Mexico.



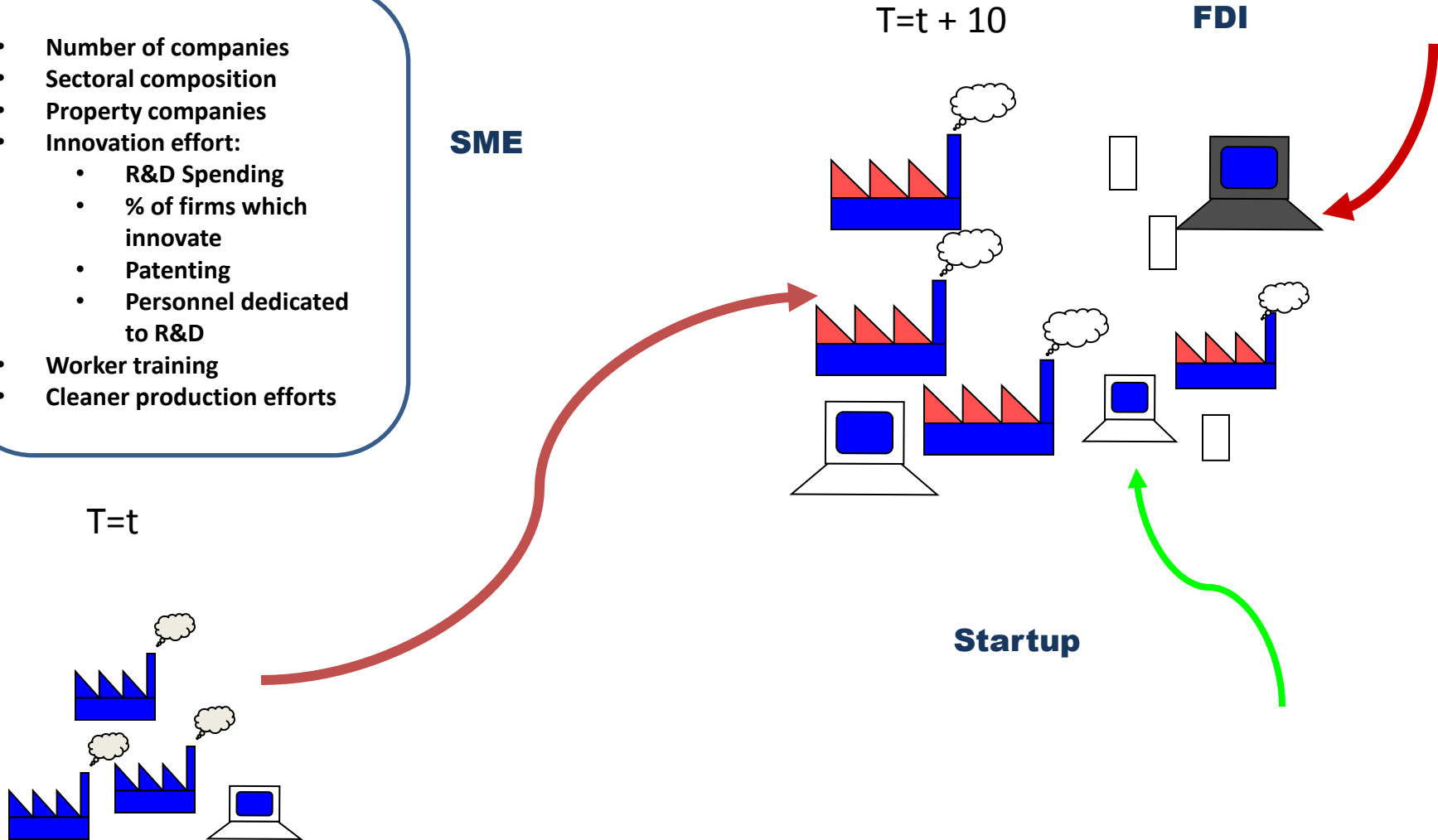
Policy guidelines for ICT and innovation



CEPAL

Channels for transformation of business demographics

- Number of companies
- Sectoral composition
- Property companies
- Innovation effort:
 - R&D Spending
 - % of firms which innovate
 - Patenting
 - Personnel dedicated to R&D
- Worker training
- Cleaner production efforts



Factors critical to institutional innovation

Figure 5.3. **Arrangements contributing to the co-ordination of innovation policy, 2012**

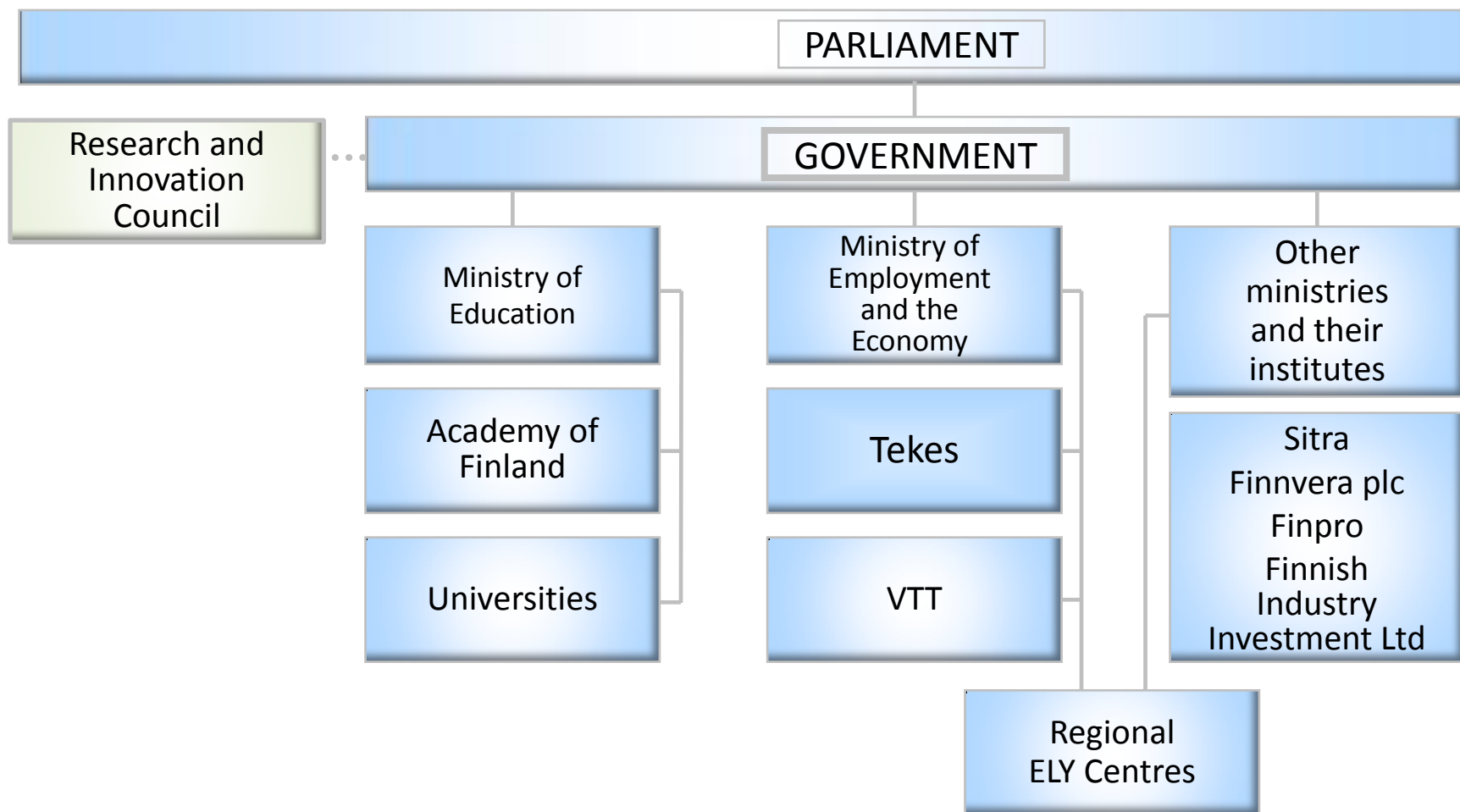
Based on own country ratings, where 7 = high importance, 1 = low importance and 0 = non-existent



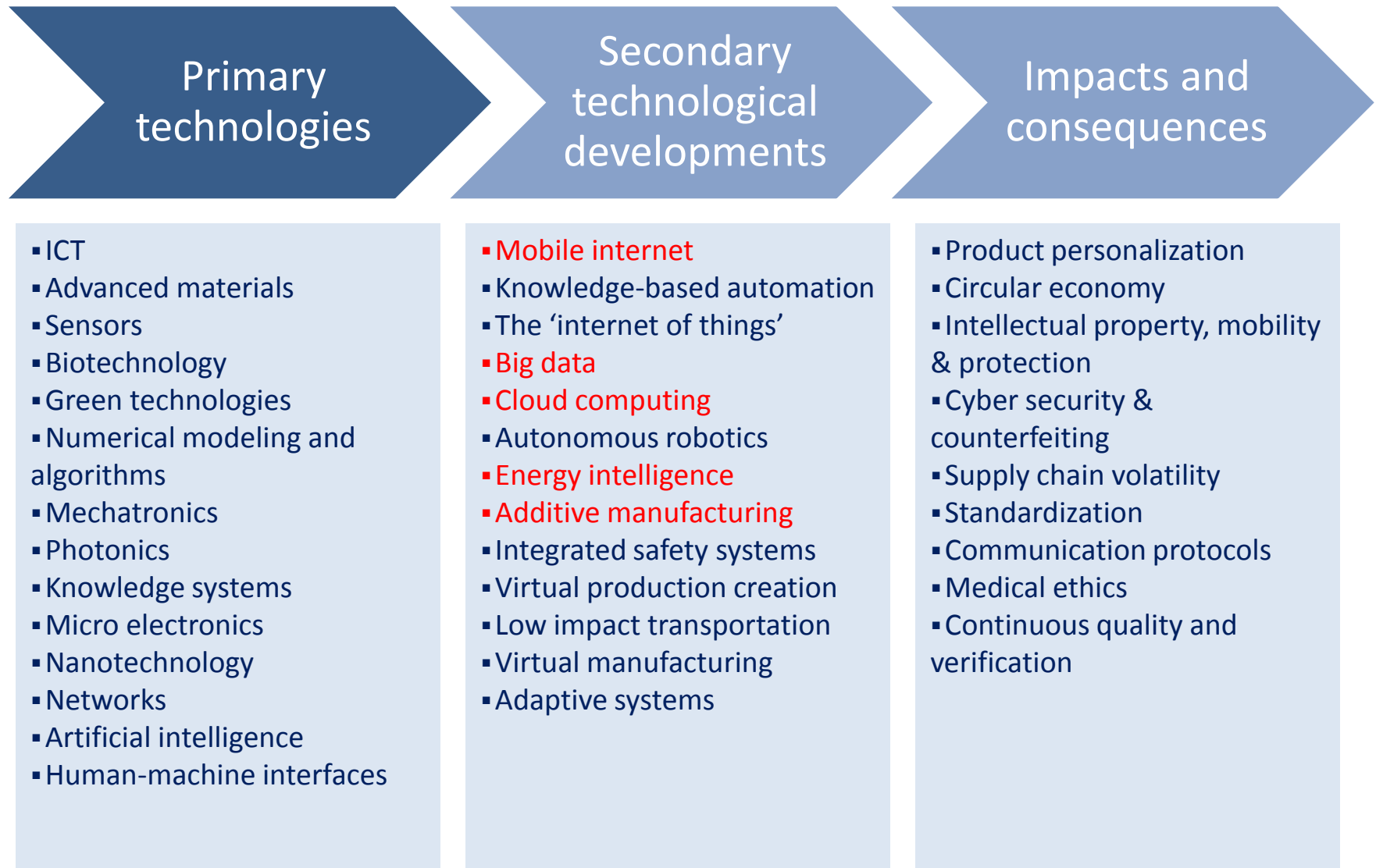
Source: Country responses to the OECD Science Technology and Industry Outlook 2012 policy questionnaire.

StatLink  <http://dx.doi.org/10.1787/888932689845>

Institutional innovation in Finland



Designated technological cooperation: primary, applications and regulation



ICT and Innovation for Structural Change

Three perspectives

- Structural change and industrial policy
- Latin America and the global context
- Policy guidelines for ICT and innovation



Division of Production, Productivity and Management



NACIONES UNIDAS

CEPAL