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Brazil in the Global Innovation System

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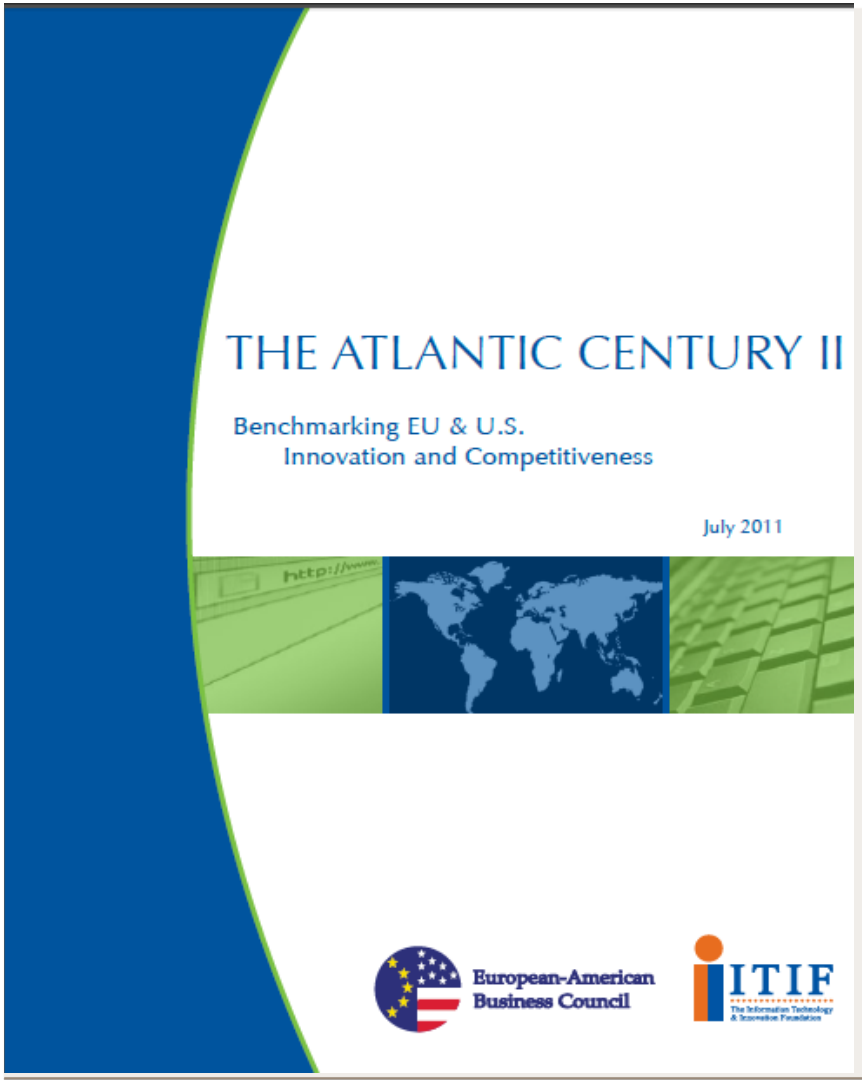
The Information Technology and Innovation Foundation (ITIF) is a Washington, D.C.-based think tank at the cutting edge of designing innovation policies and exploring how innovation will create new opportunities to boost economic growth and improve quality of life. ITIF focuses on:

- Innovation "verticals": energy, life sciences, manufacturing, Internet and information technology, and telecommunications
- Innovation "horizontals": regulatory, trade, tax, talent, and technology policy
- "Innovation economics" as an alternative to mainstream neoclassical economics

Today's Presentation

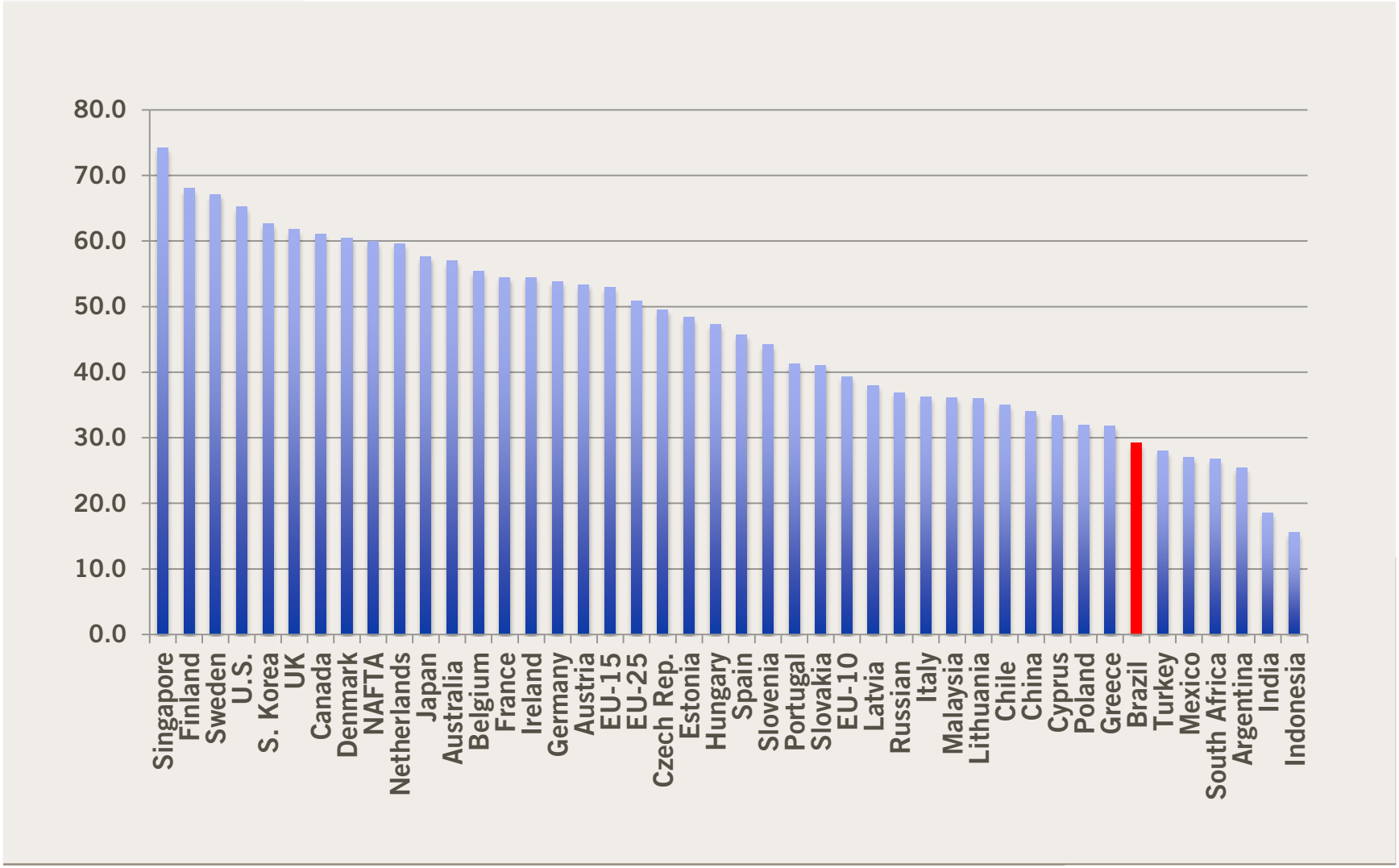
1. How is Brazil Doing on Innovation?
2. How is Brazil Doing on Innovation Policy?
3. Implications for Policy Makers

The Atlantic Century II

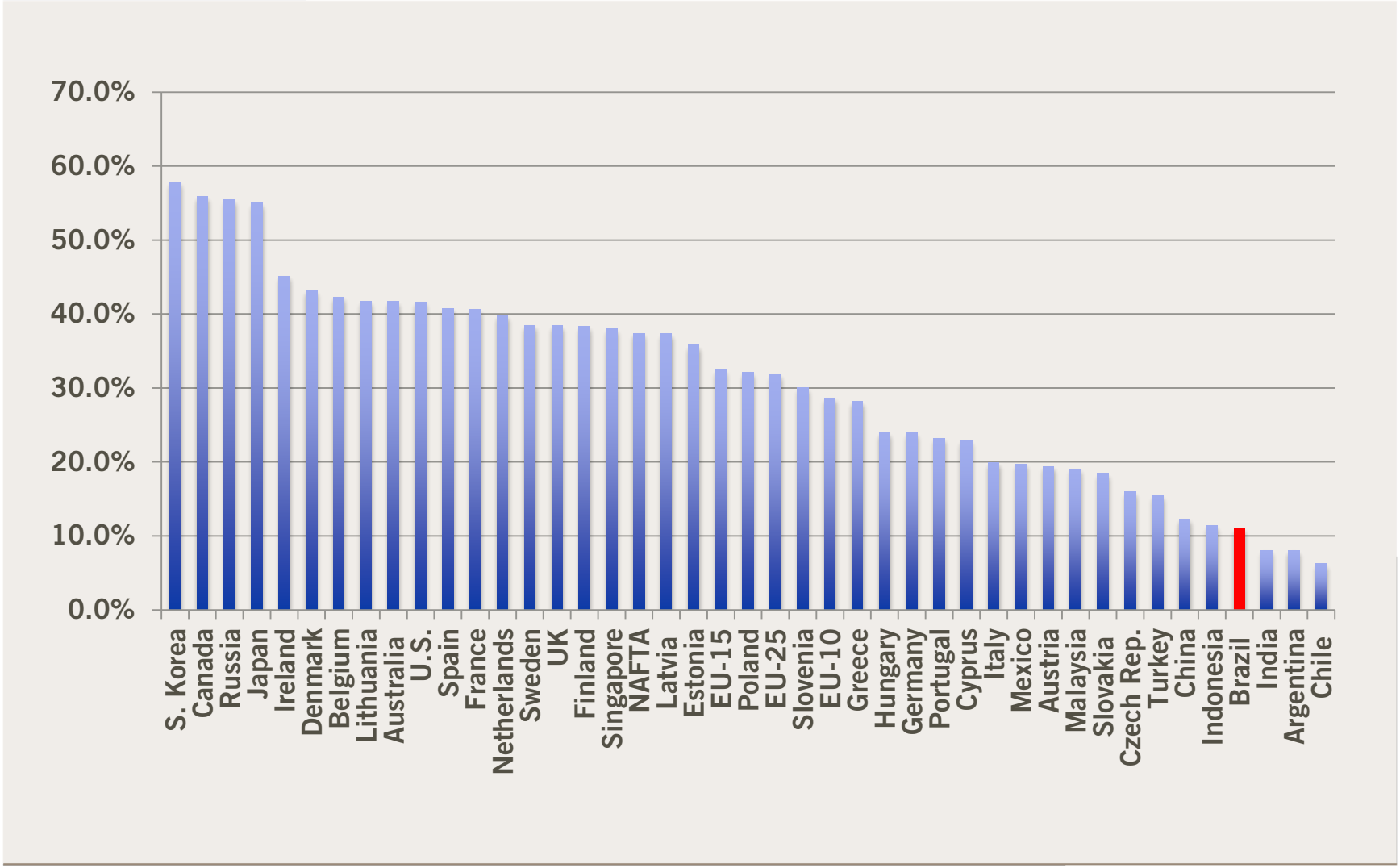


- **The Study:** compares innovation-based competitiveness of 44 nations and regions.
- **16 indicators:** including corporate and government R&D, scientists and engineers, new firms, corp. tax, productivity growth and others.

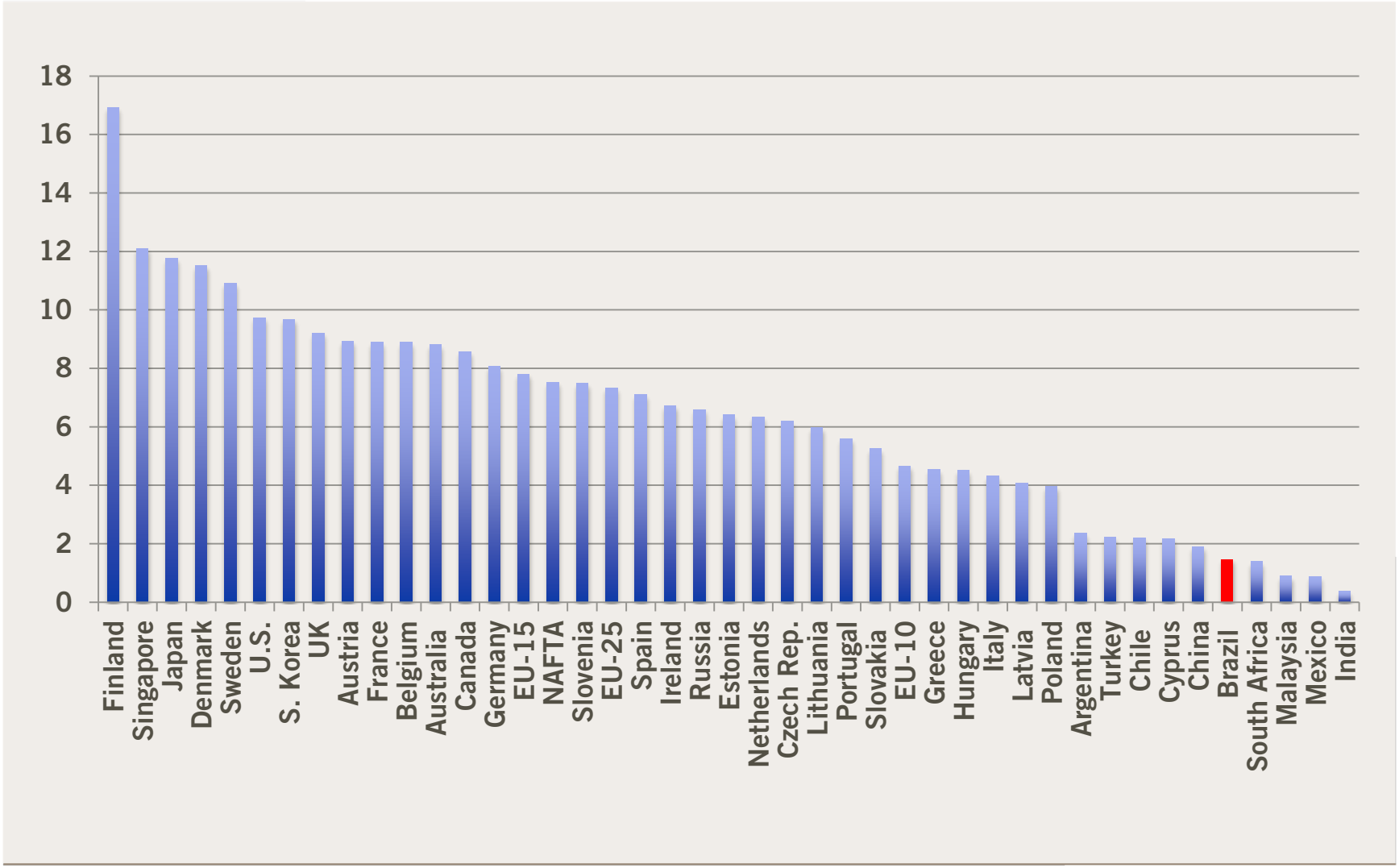
Overall Score: Brazil ranks 38th



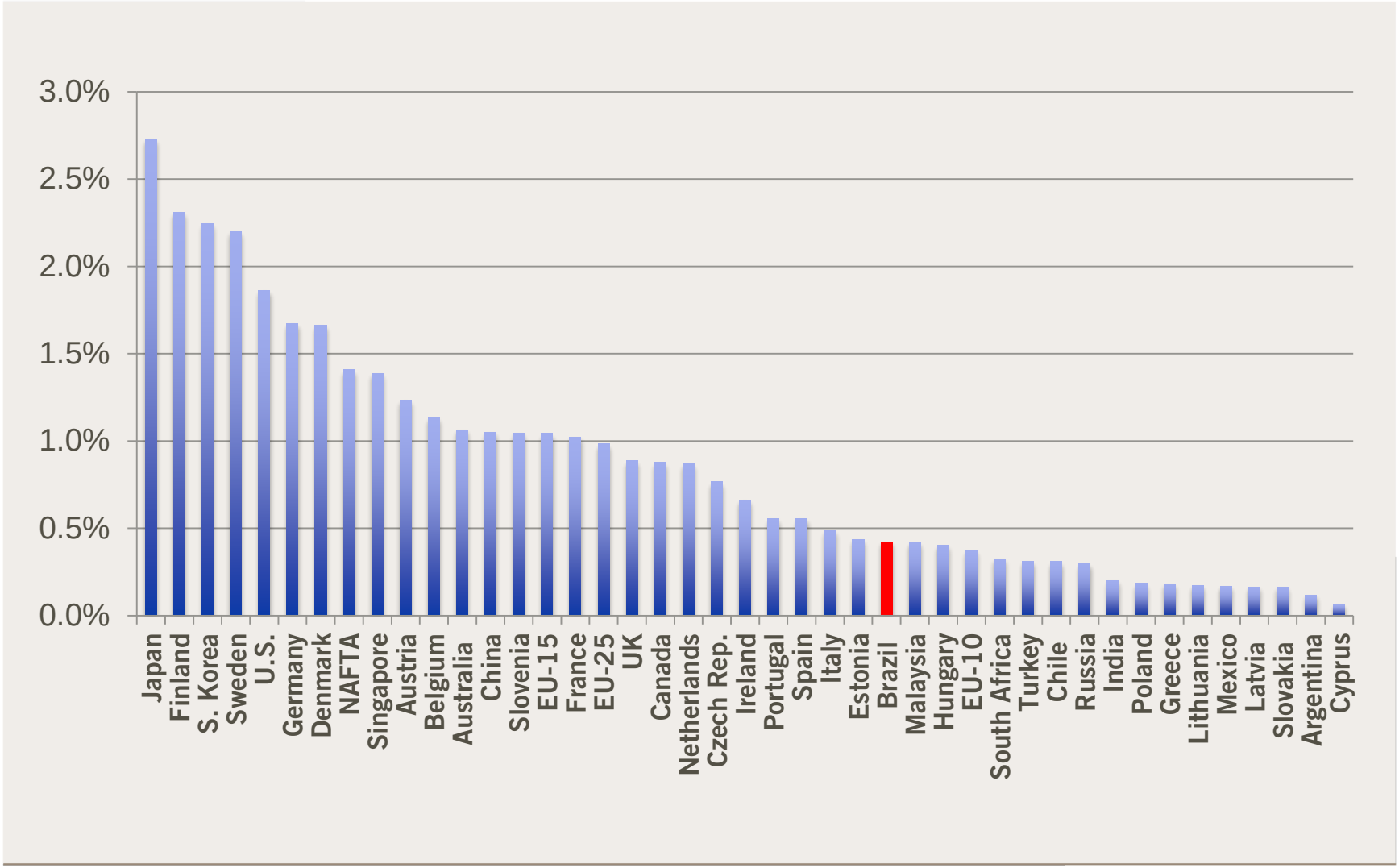
Education (college-aged pop. with tertiary degree) [Brazil, 40th]



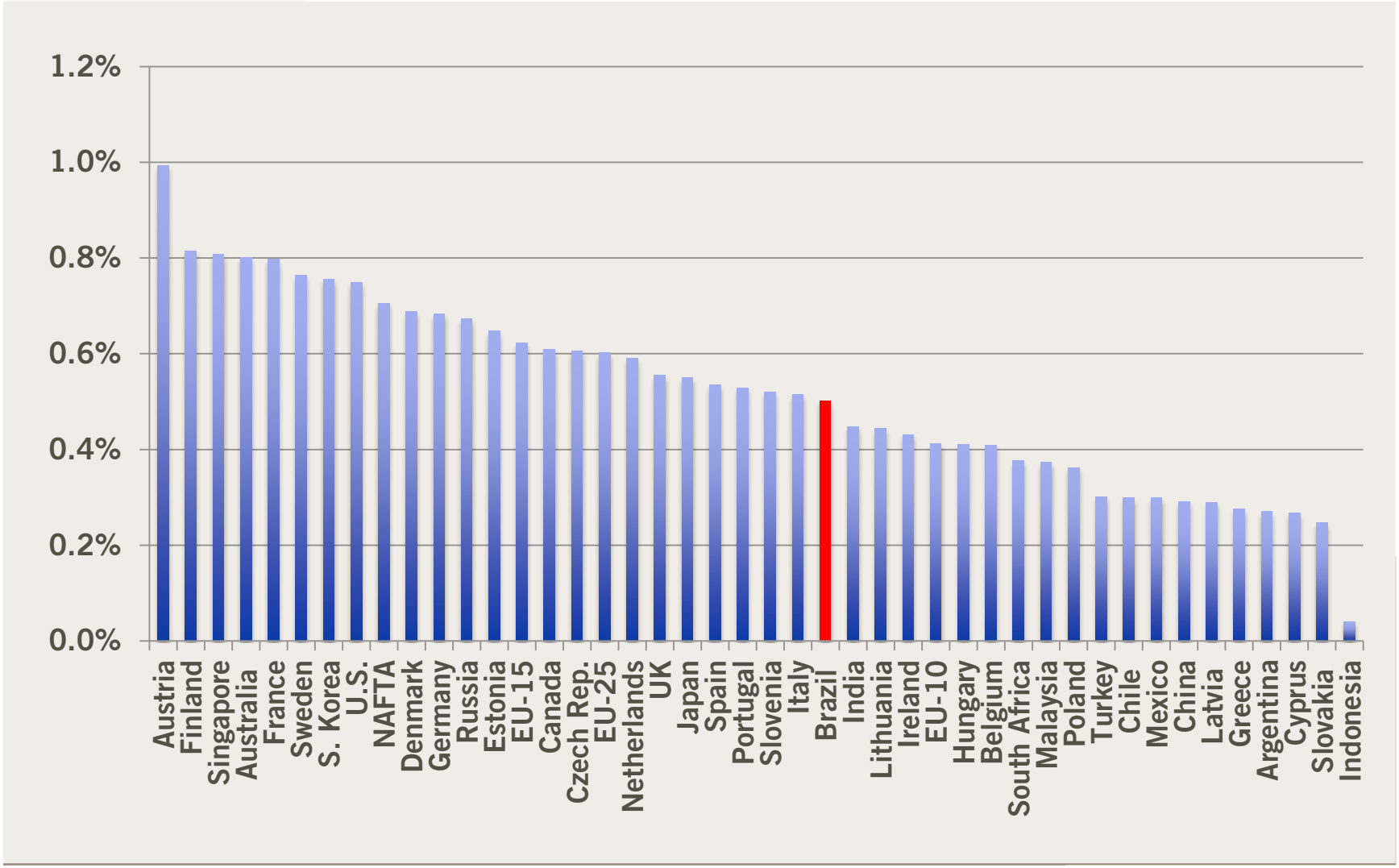
Researchers, per 1,000 employed [Brazil 39th]



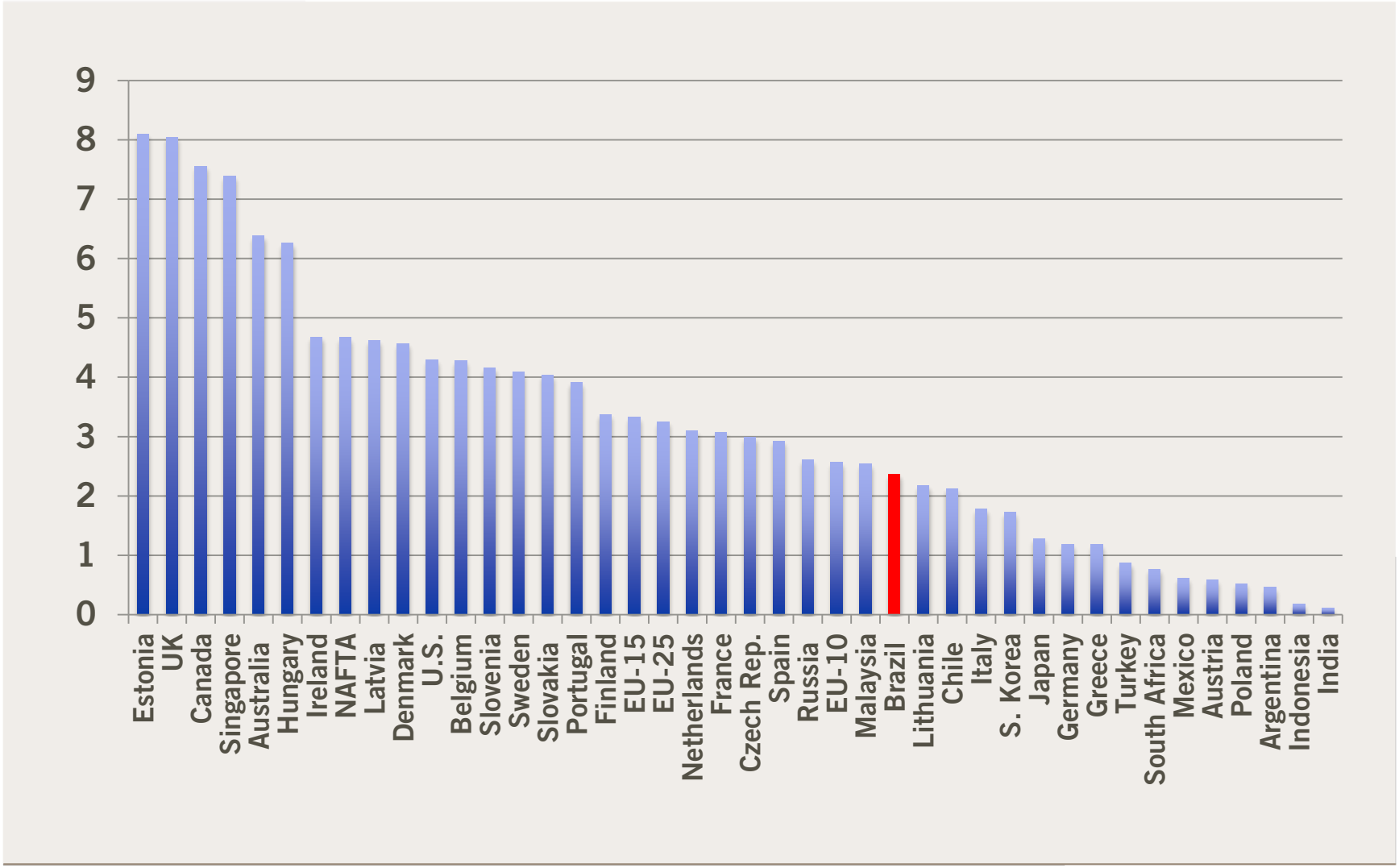
Business R&D (% of GDP) [Brazil 27th]



Government R&D (% of GDP) [Brazil 25th]



New Firms (per 1,000 workers) [Brazil 27th]



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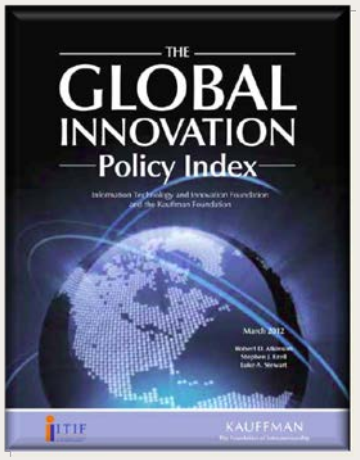
The Global Innovation Policy Index

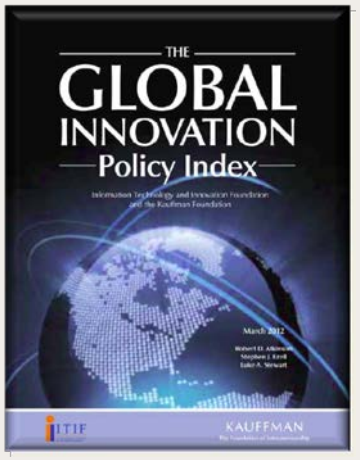
Assesses strength of 55 countries on 7 innovation policy areas:

1. Open and non-discriminatory market access and foreign direct investment;
2. Science and R&D;
3. Openness to domestic competition and new firm entry;
4. Effective intellectual property rights;
5. ICT policies;
6. Open and transparent government procurement;
7. Openness to high-skill immigration.



GIPI and Economic Growth

1. Positive correlation between GIPI scores and per-capita GDP growth from 1995 to 2011.
    1. Lower income nations: **0.51**
    2. Middle income nations: 0.14
    3. High income nations: 0.31



Where is Brazil?

- Brazil scored in the lower-mid or lower tier in all benchmarks of the *Global Innovation Policy Index*
  - Except for Science and R&D

- Brazil is in the Upper-Mid tier on investments in Science and R&D

Overall Ranks

Upper Tier	Upper-Mid Tier	Lower-Mid Tier	Lower Tier
Australia	Belgium	Brazil	Argentina
Austria	Cyprus	Bulgaria	India
Canada	Czech Republic	Chile	Indonesia
Chinese Taipei	Estonia	China	Mexico
Denmark	Hungary	Greece	Peru
Finland	Iceland	Italy	Philippines
France	Ireland	Latvia	Russia
Germany	Israel	Malaysia	Thailand
Hong Kong	Lithuania	Poland	Vietnam
Japan	Luxembourg	Romania	
Netherlands	Malta	Slovak Republic	
New Zealand	Portugal	South Africa	
Norway	Slovenia	Turkey	
Singapore	South Korea		
Sweden	Spain		
Switzerland			
United Kingdom			
United States			

Science and R&D

- R&D Tax Credits
- Intensity
- Univ. R&D
- Cluster development

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Sweden	Portugal	Turkey	
	Russia		
	Slovenia		
	Switzerland		
	United Kingdom		
	United States		

Domestic Market Competition & Entrepreneurship

- Ease of starting or closing business
- # New firms
- Labor market mobility
- Barriers to competition

Upper Tier	Upper-Mid Tier	Lower-Mid Tier	Lower Tier
Australia	Austria	Bulgaria	Argentina
Canada	Belgium	Chile	Brazil
Denmark	Chinese Taipei	China	Greece
Hong Kong	Cyprus	France	Italy
Singapore	Czech Republic	Hungary	Indonesia
Switzerland	Estonia	Israel	India
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	Malta	South Africa	
	Netherlands	South Korea	
	New Zealand	Spain	
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	Sweden	Vietnam	

Intellectual Property Rights Protections

- Park Index
- Integrity of the legal system
- Software piracy
- 301 Watch List

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Trade and Foreign Direct Investment

- Tariff Rates
- NTBs
- Currency manipulation
- # FTAs
- FDI openness

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Digital Policies/ICT Adoption

- ITA membership
- Tariffs on ICTs
- Government IT adoption
- Broadband plan
- Telcom market competition

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Government Procurement

- GPA membership
- Extent of SOEs
- Corruption Perceptions Index
- Government procurement of advanced tech

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High-Skill Immigration

- High-skill immigrants as share population
- Selection rate for high-skill immigrants

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3 Implications for Policy Makers

Implications for Policymakers

1. Innovation and productivity are the key to growth and the right innovation policy drives growth.

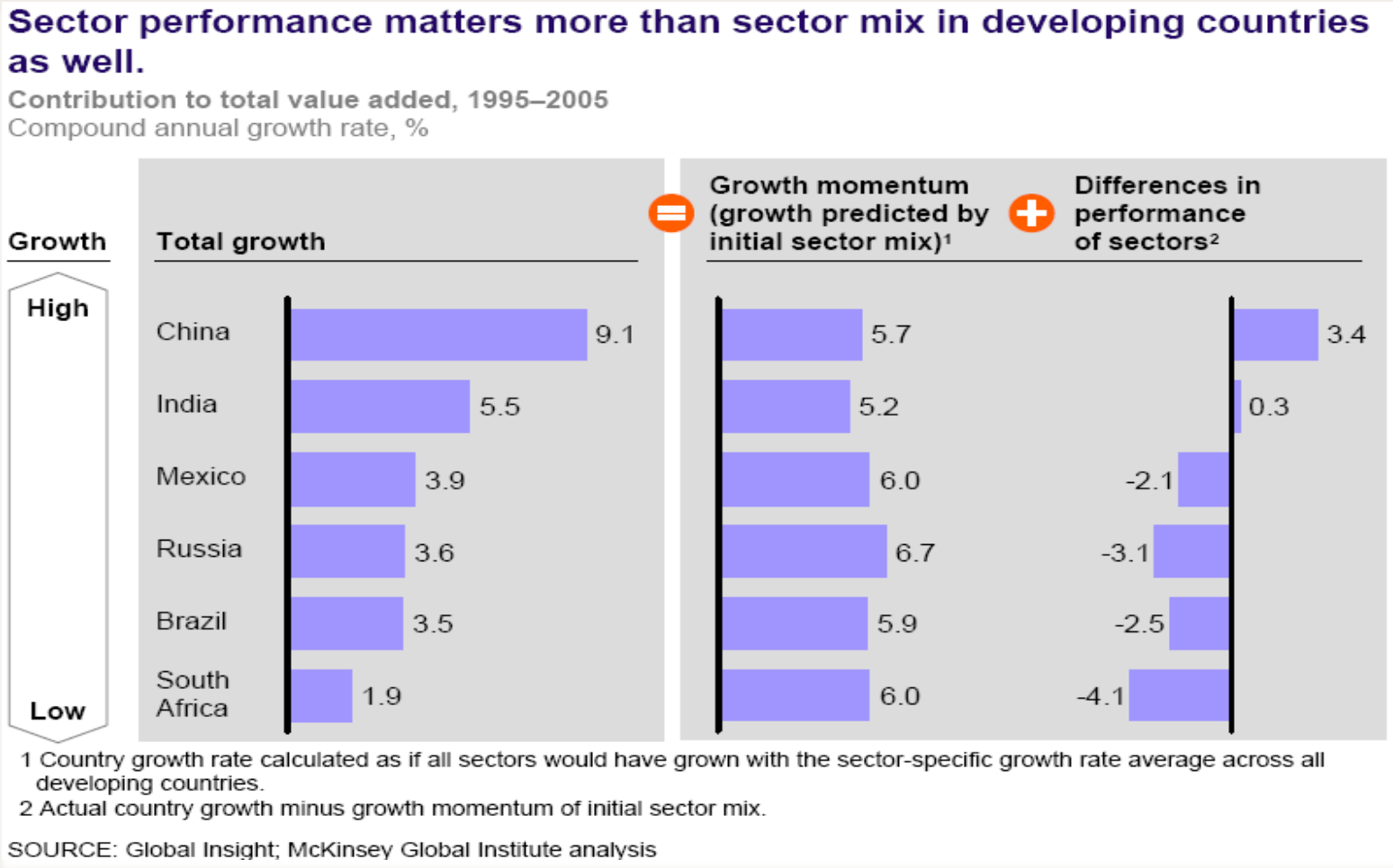
"Productivity growth is the single most important factor affecting our economic well-being." Paul Krugman

Sources of Productivity Growth

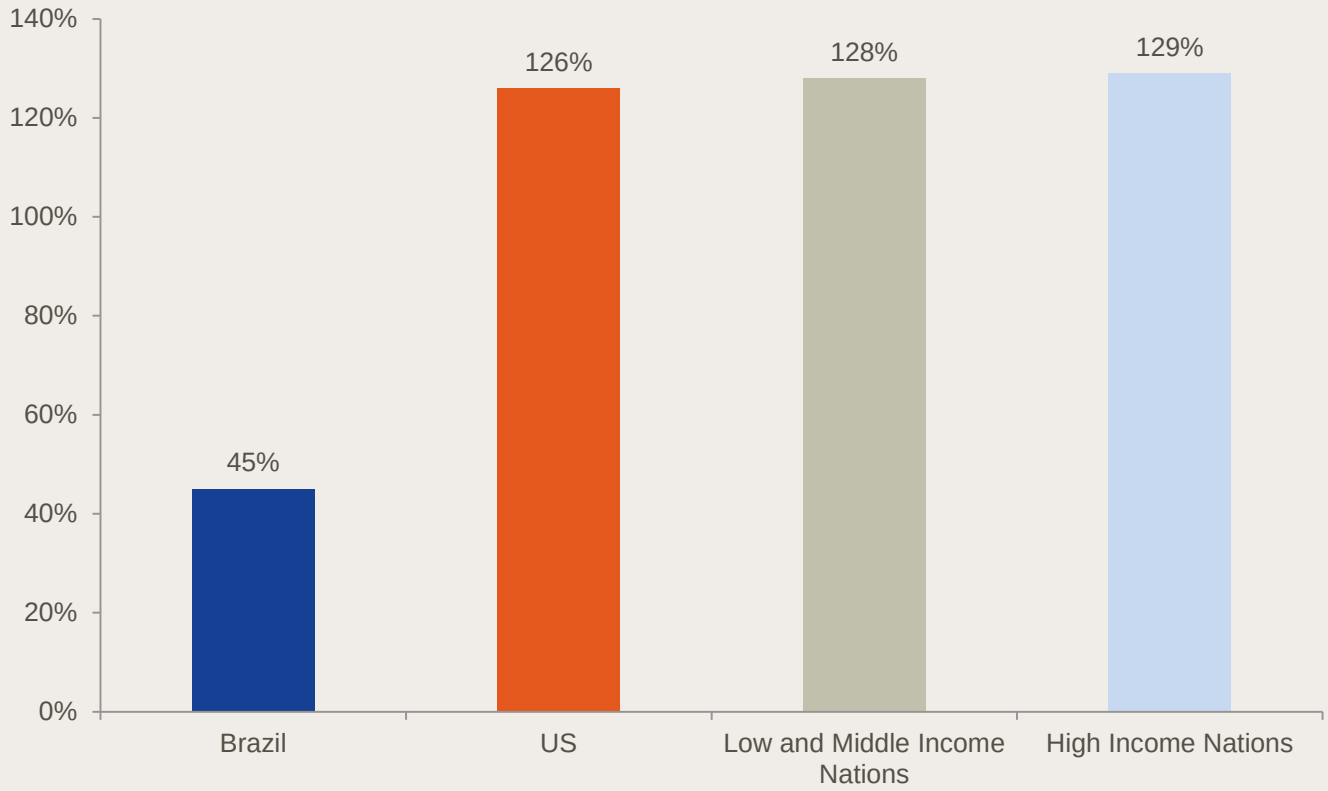
- Growth within sectors

- Growth between sectors

Growth within sectors matters most.



Brazil lags in share of GDP growth coming from productivity growth



- Productivity growth as a share of GDP growth, 2005-2011

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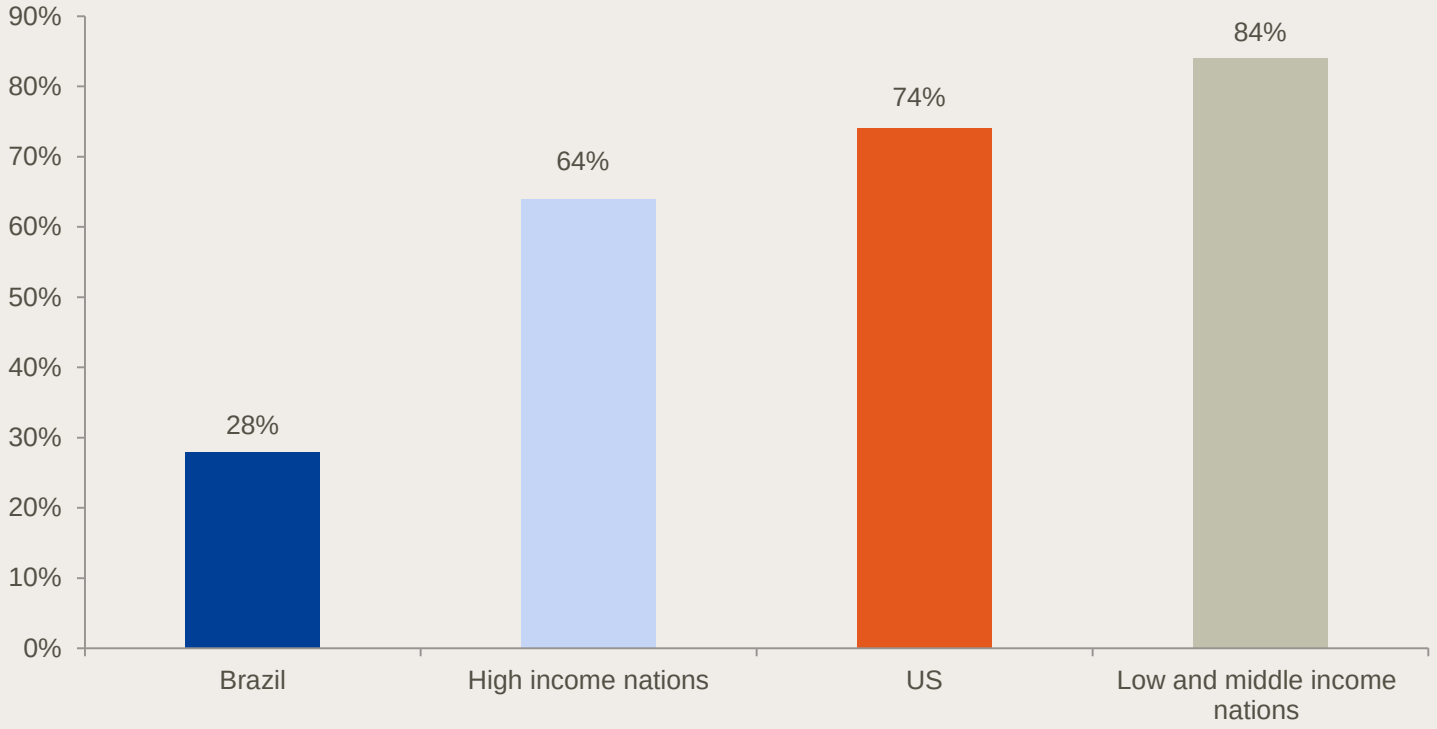

- Productivity growth as a share of GDP growth, 1995-2011

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2. **Effective innovation policy involves more than support for R&D.**

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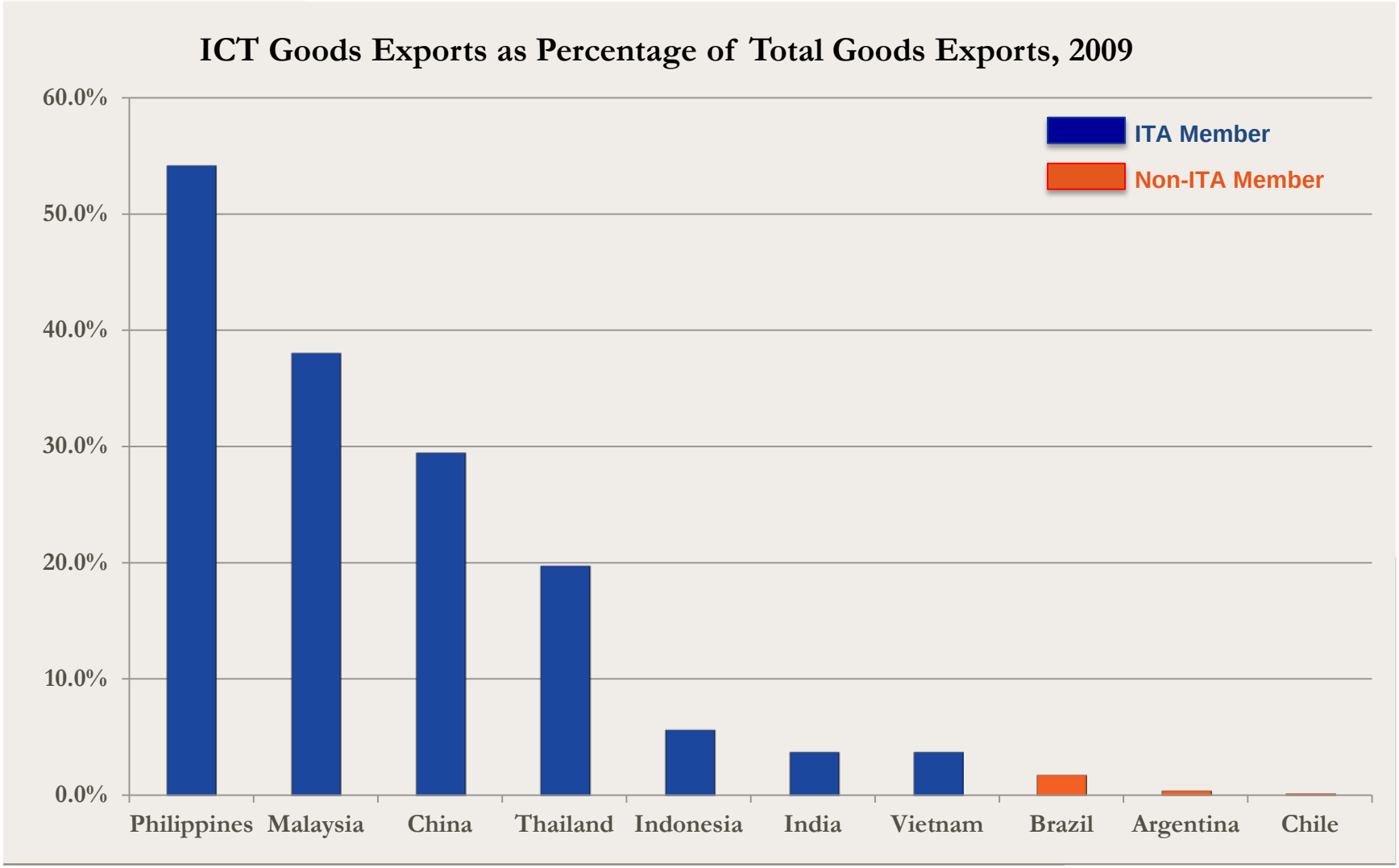
4. **While supporting ICT production is important, supporting widespread ICT usage is even more important.**

ITA Expansion Benefits Developing Countries



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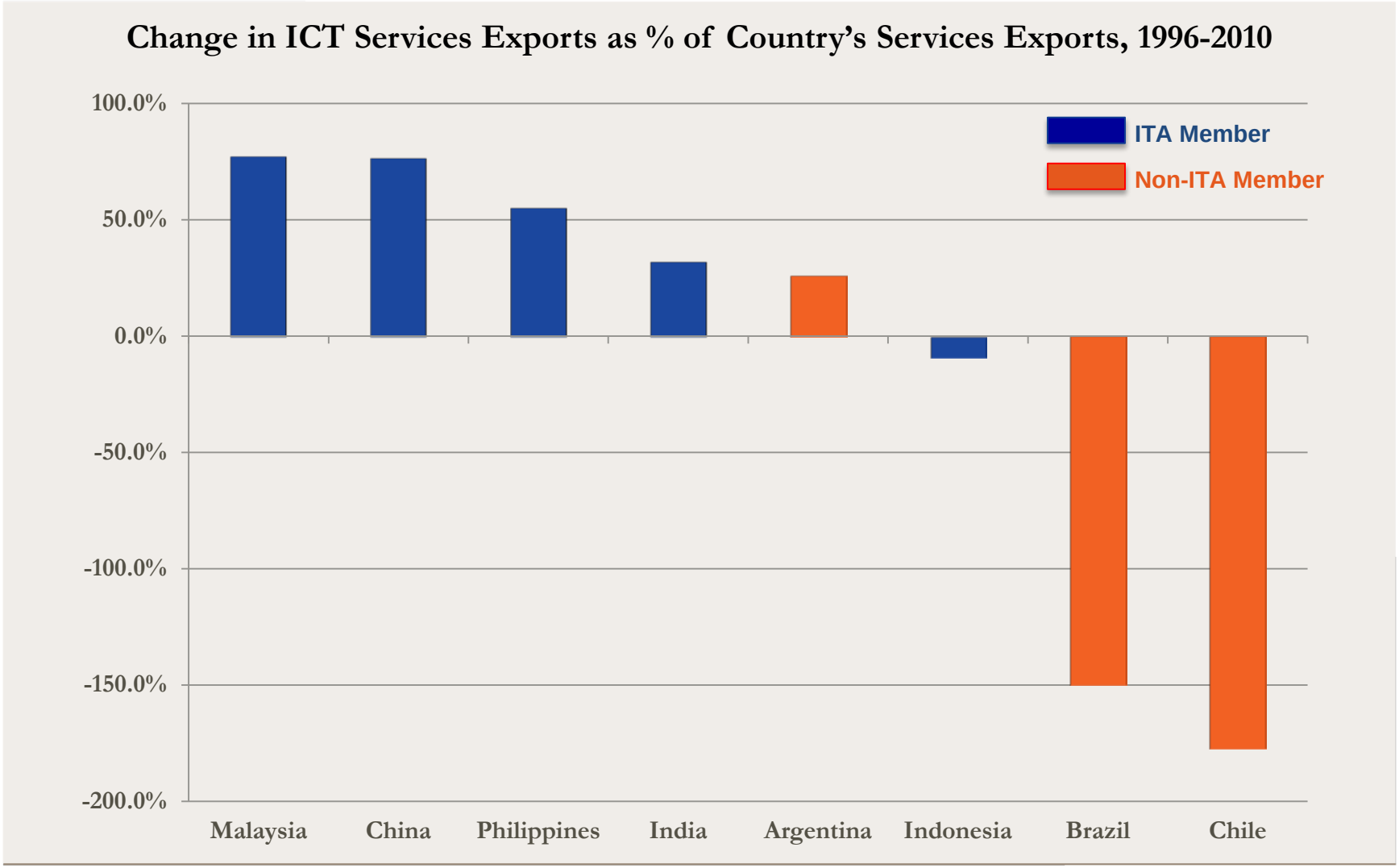

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4. While supporting ICT production is important, supporting widespread ICT usage is even more important.

5. **Strong IPR delivers positive results for developed and developing nations.**

Why IPRs Matter to Developing Economies

- Strengthening of IPRs to increased inflow of technology-intensive FDI and trade in high-tech products.

- Stronger IPRs lead to increased levels of R&D and innovation.

A 1% ↑ in: copyright protection = 3.3% ↑ in domestic R&D
trademark protection = 1.4 % ↑ in domestic R&D
patent protection = 0.7 % ↑ in domestic R&D

- OECD's *Policy Complements to the Strengthening of IPRs in Developing Countries:* "The results point to a tendency for IPR reform to deliver positive economic results."

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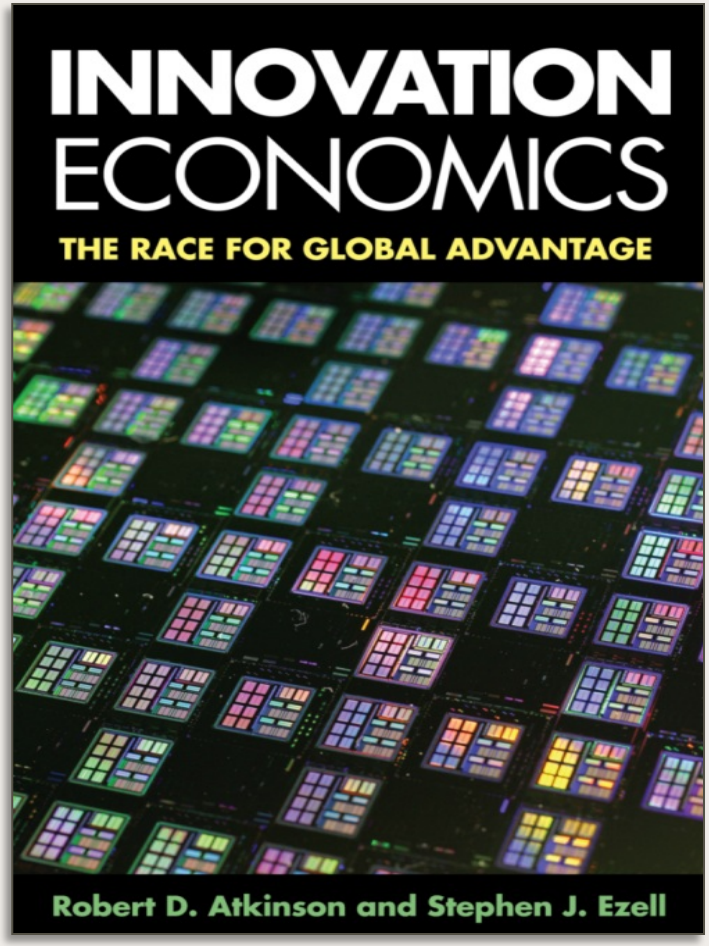
6. **Embracing "creative destruction" and competitive markets is key to fostering innovation and entrepreneurship.**

How Brazil Can Improve Its Rankings

- Boost competition.
- Avoid "innovation mercantilism."
- Expand support for innovation building blocks (e.g., education, R&D).
- Create the right incentives for innovation (e.g. IP protection; tax policy).

- www.globalinnovationrace.com



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