Understanding the Use of New Technology in Manufacturing

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Michael J. Ferrantino
Lead Economist and Global Product Specialist

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"Trouble in the Making?"

How do advanced manufacturing technologies affect the prospects for developing countries to promote shared prosperity through manufacturing?

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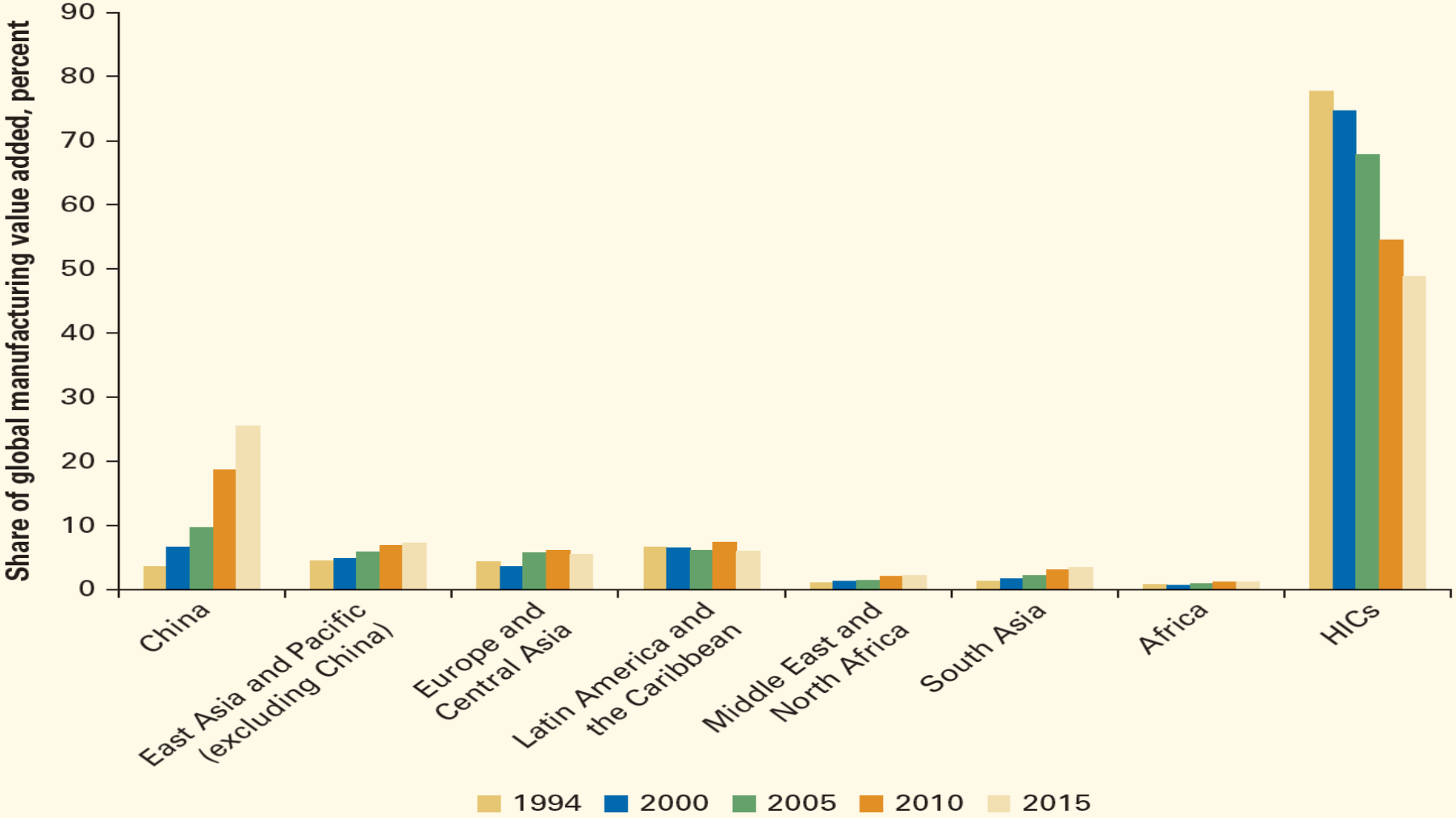
Figure O.2 Although Still Significant, High-Income Countries' Global Share of Manufacturing Value Added Has Been Declining, as China Stands Out as an Expanding Producer

Share of global manufacturing value added in China, global regions, and high-income countries, 1994–2015



Source: World Development Indicators database.
Note: High-income countries (HICs) as defined in 1994 are those whose gross national income per capita was at least US$8,955.

Figure O.4 Labor Productivity Is Rising among the Dominant Manufacturing Countries—As Is the Productivity Gap with Smaller Producing Countries

Manufacturing labor productivity in China, global regions, and high-income countries, 1990–2010

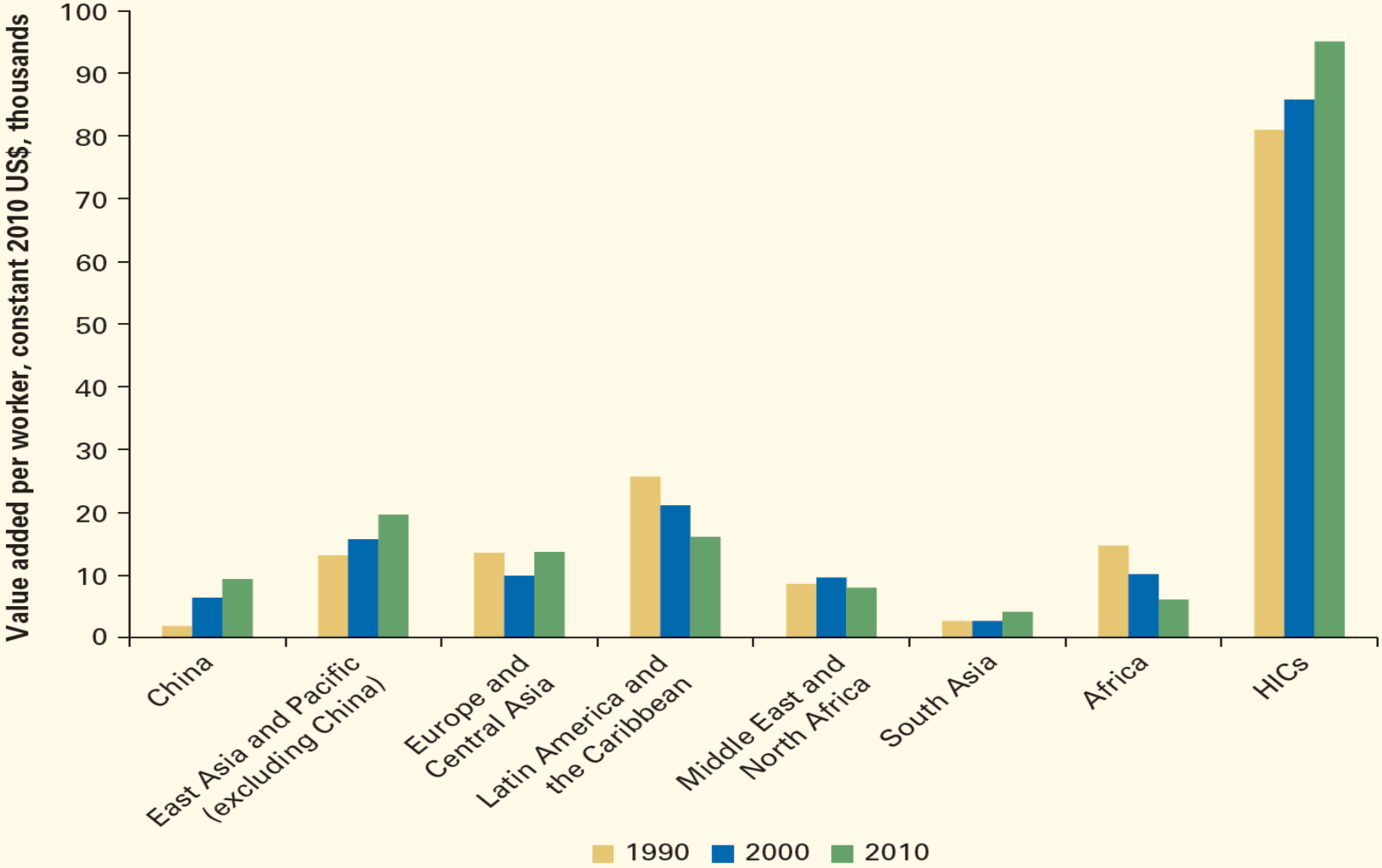
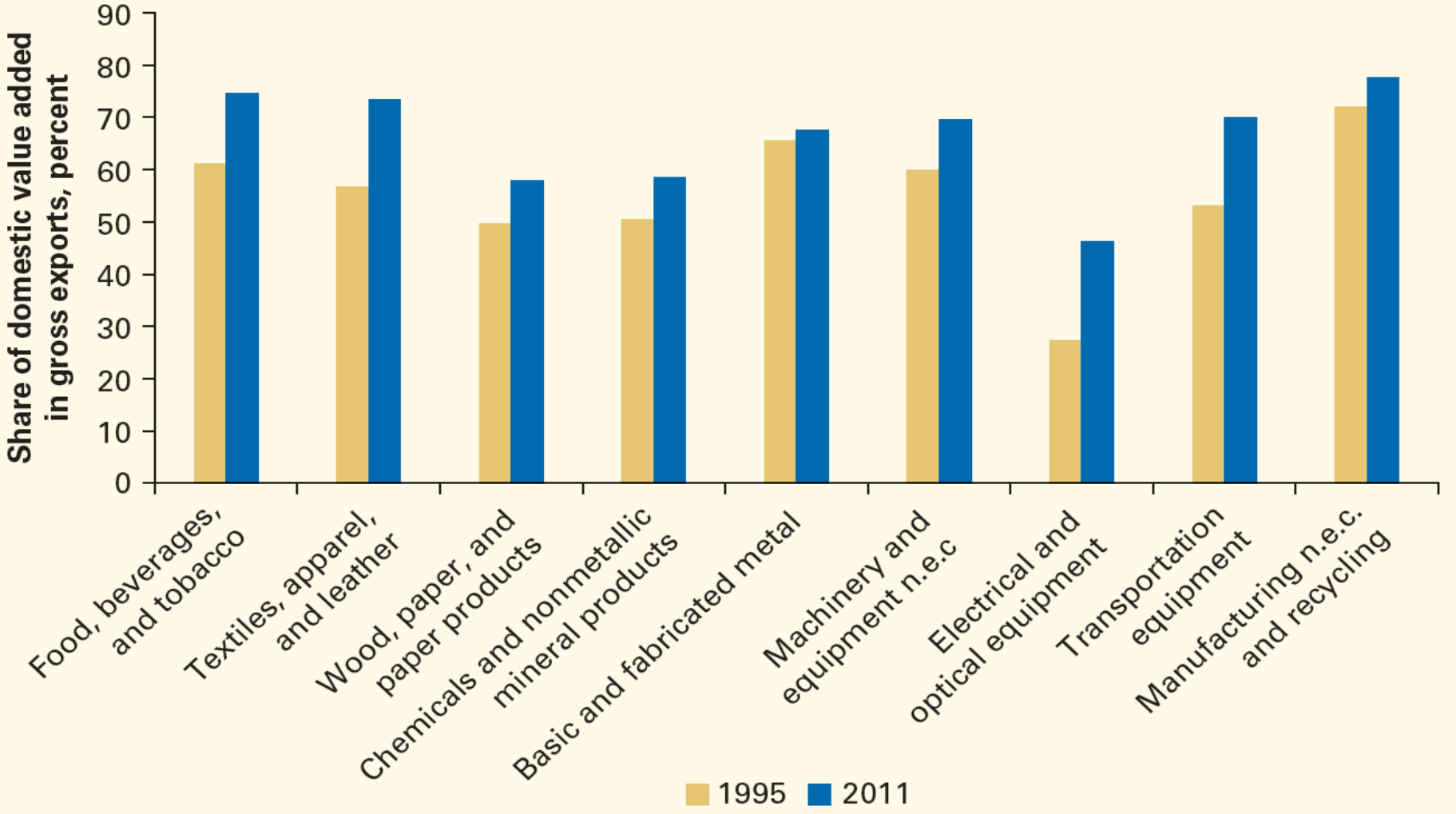


Figure O.10 China Increased Its Domestic Value Added in Gross Exports across All Manufacturing Sectors between 1995 and 2011

Change in domestic value added of manufacturing sectors in China, 1995–2011



Source: Calculations based on Trade in Value Added (TiVA) database of the Organisation for Economic Co-operation and Development and World Trade Organization.
Note: n.e.c. = not elsewhere classified.

Figure O.1 Manufacturing Subsectors, Grouped by Pro-Development Characteristics, 2013

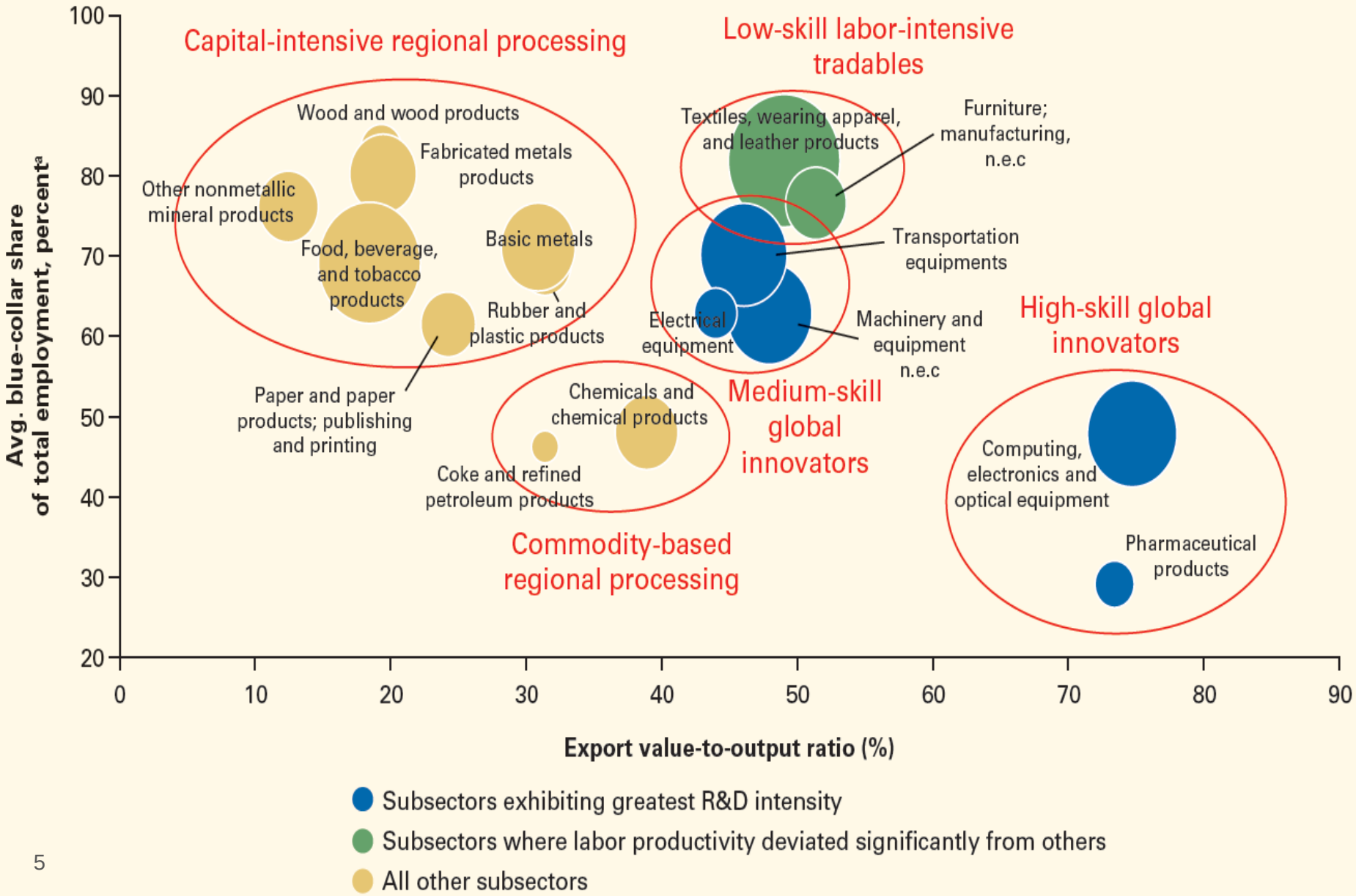


Figure O.12 The Bar Is Rising for Some Manufacturing Subsectors More than Others Owing to the Relative Magnitude of Automation, Export Concentration, and Services Intensity, Conditional on the Extent to Which They Are Internationally Traded

Manufacturing subsectors, grouped by export concentration, degree of automation, services intensity, and tradedness, circa 2011–15

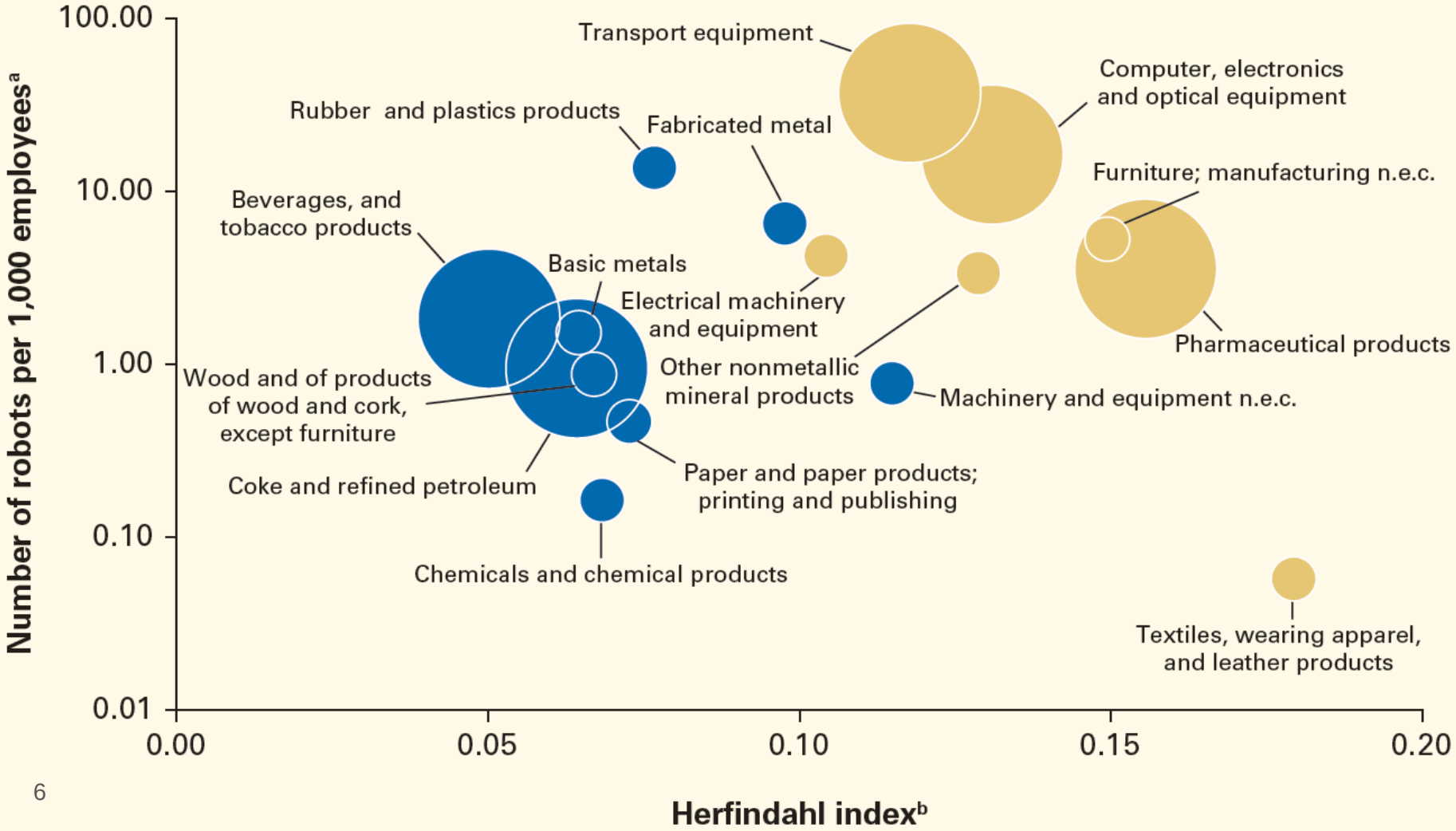


Table O.1 New Technologies Shift the Policy Areas to Prioritize—With Sequencing Appropriate to a Country's Current Position

Policy priorities to strengthen manufacturing-led development, by country's level of competitiveness, capabilities, and connectedness

Dimension	Priorities for countries currently "lower" on this dimension	Priorities for countries currently, or aiming soon to be, "higher" on this dimension
Competitiveness	Strengthen the business environment Promote flexible labor markets Liberalize backbone services critical to supporting manufacturing	Facilitate firm entry and exit, and the reallocation of capital and workers; improve bankruptcy procedures and universal coverage of social protection to facilitate worker mobility and to lower costs of disruption
	Develop mobile finance to facilitate use of embodied and embedded services	*Set competition policy framework for network platforms; adjust regulations for new business forms* *Facilitate contracting, to enable greater use of sharing economy on production side*
Capabilities	Prioritize literacy, numeracy, basic ICT, and socioeconomic skills, but also invest in the development of advanced skills for people with access to higher education	*Develop programs to strengthen more-advanced skills, creativity*
	Improve basic management skills and processes	*Emphasize the use of data and data processes within production*
	Develop certification of quality standards	*Support the development of a data ecosystem (access to ICT, policies on localization, network security, IPR)*
Connectedness	Reduce restrictions on trade in goods, particularly inputs (lower tariffs and NTBs, support trade facilitation)	Further facilitate trade in services, including removing restrictions on FDI
	Strengthen basic logistics	*Support IoT logistics systems* *Develop regulatory frameworks to support cross-border data flow*