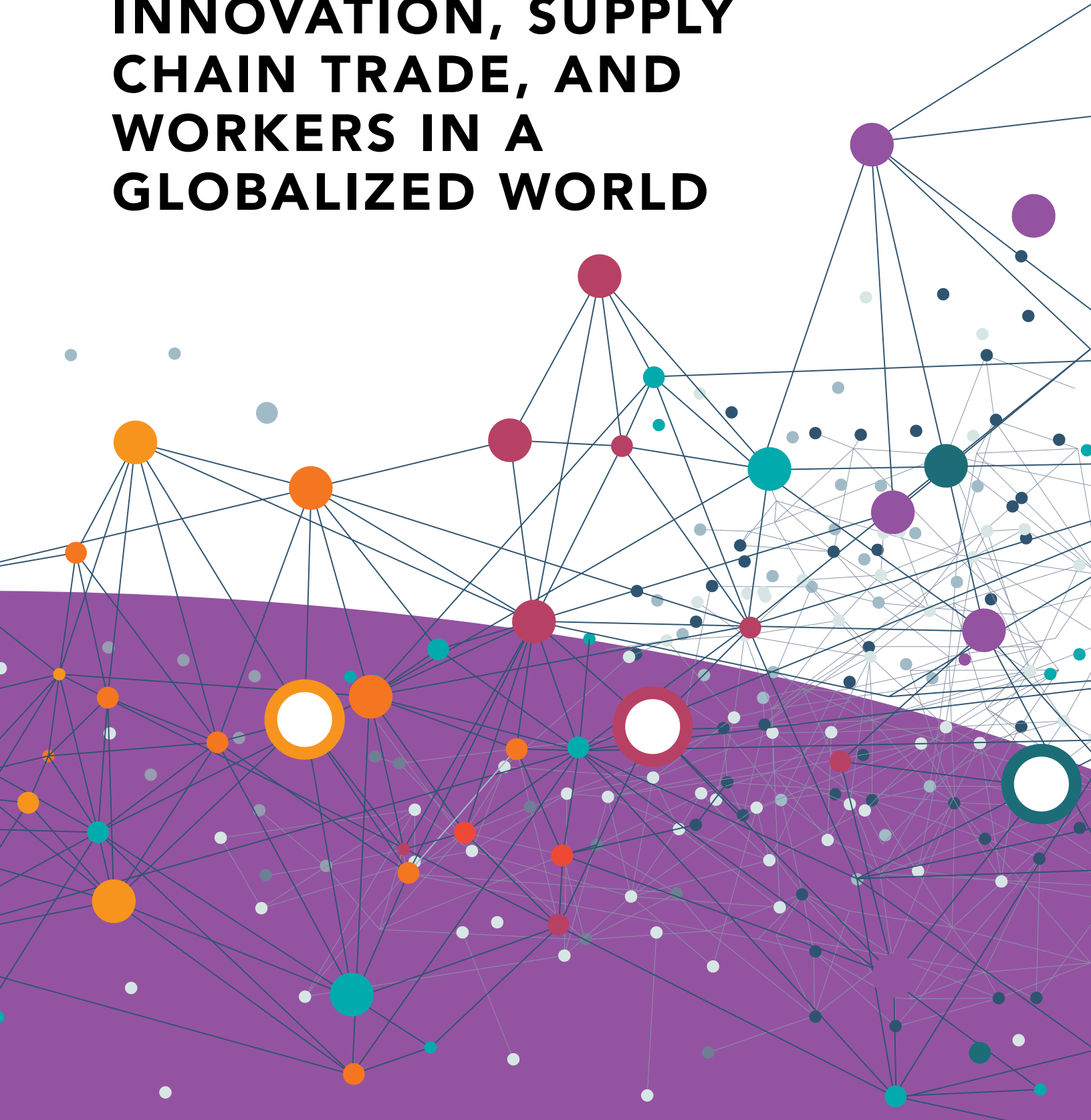


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GLOBAL VALUE CHAIN DEVELOPMENT REPORT 2019

# TECHNOLOGICAL INNOVATION, SUPPLY CHAIN TRADE, AND WORKERS IN A GLOBALIZED WORLD



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## Co-publishing partners

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This work has been co-published by the World Trade Organization, the Institute of Developing Economies (IDE-JETRO), the Organisation for Economic Co-operation and Development, the Research Center of Global Value Chains headquartered at the University of International Business and Economics (RCGVC-UIBE), the World Bank Group, and the China Development Research Foundation.

The World Trade Organization (WTO) is an international organization that deals with the global rules of trade between nations. The WTO administers agreements, negotiated and signed by its members, which provide the legal ground rules for international commerce. Their purpose is to help trade flow as freely as possible for the economic development and the welfare of its members' citizens. The WTO is serviced by a secretariat which provides expert, impartial and independent support to member governments, including research, analysis and statistical information related to the role and developments of trade in the global economy.

IDE-JETRO is a government-affiliated research institute that conducts basic and comprehensive research on economics, politics, and social issues in developing countries. Through its research, IDE-JETRO contributes knowledge of developing economies and better understanding of the regions to the government and public.

The Organisation for Economic Co-operation and Development (OECD) is an international and inter-governmental organization comprising the world's main industrialized market

economies whose mission is to promote policies that will improve the economic and social well-being of people around the world: "Better Policies for Better Lives". The OECD does this by providing a forum for governments to share experiences and by seeking solutions to common problems.

The Research Center of Global Value Chains (RCGVC) is a global academic think tank headquartered at the University of International Business and Economics, focusing on basic and interdisciplinary research activities on the development of global value chains (GVCs) and its implication on global economies.

The World Bank is an international development institution established by Articles of Agreement adopted by its member countries. The World Bank's overarching mission is to reduce poverty, improve living conditions, and promote sustainable and comprehensive development in its developing member countries. It has established two ambitious goals to anchor its mission: end extreme poverty within a generation and boost shared prosperity. The World Bank will achieve these goals by providing loans, concessional financing, technical assistance, and knowledge sharing services to its developing member countries and through partnerships with other organizations.

The China Development Research Foundation (CDRF) is a public foundation initiated by the Development Research Center of the State Council (DRC). Its mission is to advance good governance and public policy to promote economic development and social progress.

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This second report draws contributions from 23 background papers; 16 of them were presented and discussed at the conference “Technological Innovation, Supply Chain Trade, and Workers in a Globalized World” in Beijing during March 22–23, 2018, organized by the RCGVC and the China Development Research Foundation. Drafts of the eight chapters of the report were presented and discussed at the second Authors’ Conference in Geneva on October 8, 2018, organized by the WTO. The editors thank the authors of background papers and individual chapters and the discussants and participants in the two conferences for insightful comments and suggestions that helped draft and improve the chapters (see appendices 1 and 2 for the programs). Special thanks go to our external reviewers: Jonathan Eaton

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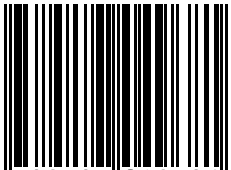


## Abbreviations and acronyms

<b>ADB</b>	Asian Development Bank	<b>IDE–JETRO</b>	Institute of Developing Economies
<b>AI</b>	artificial intelligence	<b>IMF</b>	International Monetary Fund
<b>ASEAN</b>	Association of Southeast Asian Nations	<b>IoT</b>	Internet of Things
<b>B2B</b>	business-to-business	<b>IPR</b>	intellectual property rights
<b>B2C</b>	business-to-consumer	<b>ITC</b>	International Trade Centre
<b>CDRF</b>	China Development Research Foundation	<b>LACEX</b>	World Bank's Labor Content of Exports
<b>CEO</b>	Chief Executive Officer	<b>LDC</b>	least-developed country
<b>CIF</b>	cost, insurance and freight	<b>LMIC</b>	low/medium-income country
<b>CMI</b>	customer-managed inventory	<b>MFN</b>	most-favored nation
<b>DRC</b>	Development Research Center of the State Council	<b>MNE</b>	multinational enterprise
<b>DVA</b>	domestic value-added	<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>DVAR</b>	domestic value-added ratio	<b>R&amp;D</b>	research and development
<b>ECU</b>	electronic control unit	<b>RCGVC</b>	Research Center of Global Value Chains
<b>EDI</b>	electronic data interchange	<b>RFID</b>	radio frequency identification
<b>ESUT</b>	extended supply-use table	<b>SME</b>	small and medium-sized enterprise
<b>FATS</b>	foreign affiliates statistics	<b>SNA</b>	System of National Accounts
<b>FDI</b>	foreign direct investment	<b>STEM</b>	science, technology, engineering, and mathematics
<b>F.O.B.</b>	free-on-board	<b>SUT</b>	supply and use table
<b>FTZ</b>	foreign trade zone	<b>TFP</b>	total factor productivity
<b>GDP</b>	gross domestic product	<b>TiVA</b>	trade in value-added
<b>GM</b>	global manufacturing	<b>UIBE</b>	University of International Business and Economics
<b>GSM</b>	global system for mobile communication	<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>GTH</b>	Global Trade Helpdesk	<b>VMI</b>	vendor-managed inventory
<b>GVC</b>	global value chain	<b>WB</b>	World Bank
<b>HIC</b>	high-income country	<b>WIOD</b>	World Input-Output Tables
<b>ICIO</b>	inter-country input-output	<b>WTO</b>	World Trade Organization
<b>ICT</b>	information and communication technology		
<b>IDB</b>	Inter-American Development Bank		

**This report takes stock of the evolution of global value chains (GVCs) in light of technological developments, such as robotics, big data and the Internet of Things. It discusses how these technologies are reshaping GVCs and examines the effect of these changes on labor markets in developed and developing economies and on supply chain management. The report discusses how technological developments are creating new opportunities for the participation of small and medium-sized enterprises in global value chains and reviews issues related to GVC measurement. The report is a follow-up to the first Global Value Chain Development Report, which revealed the changing nature of international trade when analyzed in terms of value chains and value-added trade.**

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