

# Digital Technologies and Globalization: A Survey of Research and Policy Applications - Appendix

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Integration and Trade Sector

DISCUSSION  
PAPER N°  
IDB-DP-00934

March 2022

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# Digital Technologies and Globalization: A Survey of Research and Policy Applications\*

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This version: March 2022

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\* We would like to thank Jaime Granados and Sandra Corcuera Santamaría for their valuable, insightful comments and suggestions. We are also grateful to Elena Fernández Ortiz for her excellent research assistance and Victoria Patience for super editorial assistance. The views and interpretations in this article are strictly those of the authors and should not be attributed to the Inter-American Development Bank, its Board of Directors, or any of its member countries. Other usual disclaimers also apply.

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**Appendix**  
**Empirical Studies on Digital Technologies: Data**

		ICT					
Technology		Study	Data				
			Variables		Level	Period	Source
ICT	Internet	Freund and Weinhold (2002)	Trade	US export and import growth	Country-industry	1995-1999	US International Transactions Accounts
			Internet penetration	Number of top-level domain names attributed to each country	Country	1995-2000	Internet Software Consortium
			Macroeconomic	GDP growth	Country	1995-2000	World Development Indicators
				Real exchange rate appreciation	Country	1995-2000	International Financial Statistics
				Population	Country	1995-2000	International Financial Statistics
				Financial depth: M2/GDP	Country	1995-2000	International Financial Statistics
			ICT	Internet	Freund and Weinhold (2004)	Trade	Bilateral export growth (goods)
Internet penetration	Number of web hosts attributed to each country	Country				1995-1999	Internet Software Consortium
Macroeconomic	GDP growth	Country				1995-1999	IMF
	Population	Country				1995-1999	IMF
Gravity	Distance (country-country)	Country				1995-1999	Shang-Jin Wei (1996)
	Common linguistic heritage	Country				1995-1999	Rand McNally and Co. Historical Atlas of the World (1994)
	Colonial links	Country				1995-1999	Rand McNally and Co. Historical Atlas of the World (1994)
			Free trade areas	Country	1995-1999	WTO	
ICT	Internet	Akerman et al. (2015)	Norwegian nonfinancial joint-stock firms	Revenues	Firm	2000-2008	Administrative registers
				Capital	Firm	2000-2008	Administrative registers
				Labor	Firm	2000-2008	Administrative registers
				Intermediates	Firm	2000-2008	Administrative registers
			Worker	Level of education	Employee	2000-2008	Administrative registers
				Annual labor income	Employee	2000-2008	Administrative registers
			Internet	Internet connections with download speeds of over 256 kbit/s	Firm	2001-2007	Annual Community Survey on ICT Usage of Firms
				Fraction of households with access to broadband internet	Municipality (IV)	2001-2007	Norwegian Ministry of Government Administration
			Demographics	Gender	Individual	2000-2008	Central Population Register
				Age	Individual	2000-2008	Central Population Register

				Marital status	Individual	2000–2008	Central Population Register
				Number of children	Individual	2000–2008	Central Population Register
			Socioeconomic	Educational attainment	Individual	2000–2008	Annual report of Norwegian educational establishments
				Income	Individual	2000–2008	Administrative and tax registers
				Employment status	Individual	2000–2008	Administrative and tax registers
			Labor	Hourly wages and occupation	Employee	2001–2007	Statistics Norway's Wage Statistics Survey
ICT	Internet	Akerman et al. (2021)	Norwegian nonfinancial joint-stock firms	Revenues	Firm-year	2000–2008	Administrative registers
				Capital	Firm-year	2000–2008	Administrative registers
				Labor	Firm-year	2000–2008	Administrative registers
				Intermediates	Firm-year	2000–2008	Administrative registers
			Trade	Imports: free-on-board value	Firm-year-product	2000–2008	Administrative registers
				Exports: free-on-board value	Firm-year-product	2000–2008	Administrative registers
			Internet	Internet connections with download speeds of over 256 kbit/s	Firm	2001–2008	Annual Community Survey on ICT Usage of Firms
				Fraction of households with access to broadband internet	Municipality	2001–2008	Norwegian Ministry of Government Administration
			Demographics	Gender	Individual	2000–2008	Central Population Register
				Age	Individual	2000–2008	Central Population Register
				Marital status	Individual	2000–2008	Central Population Register
				Number of children	Individual	2000–2008	Central Population Register
			Socioeconomic	Educational attainment	Individual	2000–2008	Annual report of Norwegian educational establishments
				Income	Individual	2000–2008	Administrative and tax registers
				Employment Status	Individual	2000–2008	Administrative and tax registers
			Gravity-related	Bilateral distances between countries	Country	NA	CEPII
				GDP	Country	2001–2008	World Development Indicators
				Internet usage	Country	2001–2008	World Development Indicators
				Total annual income	Norwegian municipalities	2001–2008	
				English proficiency	Country	2016	EF
ICT	Internet	Fernandes et al. (2019)	Chinese manufacturing firms	Real output: firm nominal total output deflated by an	Firm-year	1998–2007	Annual survey conducted by China's National Bureau of Statistics

			industry output deflator			
			Firms' total number of workers	Firm-year	1998–2007	Annual survey conducted by China's National Bureau of Statistics
			Expenditures on intermediates	Firm-year	1998–2007	Annual survey conducted by China's National Bureau of Statistics
			Labor productivity: firm real value-added over employment	Firm-year	1998–2007	Annual survey conducted by China's National Bureau of Statistics
			TFP Törnqvist index	Firm-year	1998–2007	Annual survey conducted by China's National Bureau of Statistics
			Total assets	Firm-year	1998–2007	Annual survey conducted by China's National Bureau of Statistics
		Trade	Export participation: dummy variable = 1 if firm nominal exports > 0	Firm-year	1998–2007	Annual survey conducted by China's National Bureau of Statistics
			Export intensity: ratio between firm nominal exports and nominal total output	Firm-year	1998–2007	Annual survey conducted by China's National Bureau of Statistics
			Real exports: firms' nominal exports deflated by output deflator	Firm-year	1998–2007	Annual survey conducted by China's National Bureau of Statistics
		Internet penetration	Number of internet users	Province-year	1999–2007	Annual reports on the internet carried out by the China Internet Network Information Center
			Number of .cn domain names	Province-year	1999–2007	Annual reports on the internet carried out by the China Internet Network Information Center
			Length of the fiber optic line (in km)	Province-year	1999, 2002, 2003, and 2005–2007	Annual survey conducted by China's National Bureau of Statistics
			Telecommunication prices (IV): ratio of mobile revenues to the volume of minutes used	Province-year	1998–2007	Author's calculations using data from the Ministry of Information Industry of China
		Internet use	Share of post and telecommunications expenses in total intermediate expenses	Industry	1998	World Input-Output Database
			Share of information and communications technology capital services in total	Industry	1998	KLEMS database

				capital services in the US			
				Share of firms with a website in Vietnam	Industry	2007	2007 Vietnam Enterprise Census
ICT	Mobile phones	Jensen (2007)	Mobile phone use	Fishermen usage of mobile phones	Fishing unit	1997–2001	Author's survey (Kerala Fisherman Survey)
			Price dispersion	Average price of fish (rupees per Kg.)	Day-market-region	1997–2001	Author's survey (Kerala Fisherman Survey)
			Waste	Percent of fishermen reporting not selling their catch	Fishing unit	1997–2001	Author's survey (Kerala Fisherman Survey)
ICT	Mobile phones	Aker (2010)	Price dispersion	Grain price absolute differences between two markets	Market-trader-month	1999–2006	AMIS
			Mobile phone	Mobile phone coverage: introduction of mobile phone towers	Market-month	1999–2006	Mobile phone providers
			Controls	Transaction costs	Market-trader	1999–2006	Syndicat des Transporteurs Routiers
				Rainfall	-	1999–2006	Direction de la Météo
				Gas prices	Month	2005–2007	Niger trader survey
				Road quality	-	2005–2007	Niger trader survey
				Trade flows	Month	2005–2007	Niger trader survey
				Population levels	District	1999–2006	Primary and secondary sources
			Grain markets	Census of all grain markets	Market-trader	2005–2007	Niger trader survey
ICT	Mobile phones	Allen (2014)	Trade	Philippines' domestic agricultural-commodities trade flows over water	Province-year	1995–2009	National Statistics Office of the Philippines (DOMSTAT) and Philippines Port Authority (PPA)
			Prices	Wholesale prices	Commodity-province-year	1995–2009	Integrated Agricultural Marketing Information System
			Production	Volume of production	Commodity-province-year	1995–2009	The Palay and Corn Production Survey, the Crops Production Survey, and the 1991 agricultural census
				Area harvested/planted	Commodity-province-year	1995–2009	
			Rainfall (IV)	Computed using distance weighting techniques (See Dirks et al. 1998)	Province-day	-	Philippine Atmospheric, Geophysical & Astronomical Services Administration
			Mobile phones	Number of civilian cell phone towers in operation	Province-month	1990–2009	National Telecommunications Commission of the Philippines
			Land distribution	Total land area under a farmer cultivation	Farmer-province-commodity	1992	Census of Agriculture, Philippines National Statistics Office
			Farmer sales	Farmer-trader transactions	Farmer-trader-commodity	2000–2009	Farm Price Survey



			Ethnicity and religion		Province	2000	Philippines 2000 Census of Population and Housing
			Marketing costs	Total costs of bringing a crop from the farmer to a consumer	Province	2002, 2003 and 2007	Marketing Cost Structure Reports
			US data	Commodity flows	State	2007	2007 Commodity Flow Survey
				Prices of corn and grain	State	2007	National Agricultural Statistics Service
				Rainfall	Weather station-monthly	2007	Global Historical Climatology Network
ICT	ICT	Alfaro and Chen (2018)	FDI	Subsidiaries established in host country	Cross-country firm-level (panel dataset)	2002–2007	Orbis Database
				Subsidiaries established in an industry	Cross-country firm-level (panel dataset)	2002–2007	Orbis Database
			ICT	Host countries' ICT characteristics: proportion of businesses using computers, proportion of businesses placing orders via the internet, internet bandwidth, mobile phone subscriptions, and phone call prices	Host countries	2005–2007	ITU ICT Development Indicators and UNCTAD's Business Usages of ICT
				Industry ICT intensity: industry task routineness, ratio of information capital to total assets, ratio of computer capital to total assets, and ratio of communication capital to total assets	Industry	2005–2007	Bureau of Labor Statistics, O*NET
			Multinational firms	Manufacturing firms in 60 countries, nonconsolidated data	Cross-country firm-level (panel dataset)	2002–2007	Orbis Database
				Industry information: 4-digit NAICS code of primary industry	Cross-country firm-level (panel dataset)	2002–2007	Orbis Database
				Ownership information: domestic and global parents, domestic and foreign subsidiaries	Cross-country firm-level (panel dataset)	2002–2007	Orbis Database
				Location information	Cross-country firm-level (panel dataset)	2002–2007	Orbis Database
				Financial information: revenues, employment, assets, investment, and material cost	Cross-country firm-level (panel dataset)	2002–2007	Orbis Database
			Multinational activity	Market potential	Host country	2005–2007	CEPPI
				Income level: GDP per capita	Headquarter country	2005–2007	CEPPI

				Differences in skilled labor endowment: average years of schooling	Hos- & headquarter countries	2005–2007	WDI	
				Skilled labor intensity: share of nonproduction workers	Industry	2005–2007	US Annual Survey on Manufactures	
				Trade costs: host-country tariffs, bilateral country distance, contiguity, colonial relationship, and common languages	Country-country	2005–2007	UNCTAD TRAINS and CEPII Gravity Database	
ICT	Internet	Hjort and Poulsen (2019)	Socioeconomic	Employment status and occupation type	Household	2006–2014	Afrobarometer, Demographic and Health Surveys, and the South Africa Quarterly Labor Force Survey	
				Educational attainment	Household	2006–2014	Afrobarometer, Demographic and Health Surveys, and the South Africa Quarterly Labor Force Survey	
				Internet use	Household	2006–2014	Afrobarometer	
				Firms: 12 African countries	Number of employees per firm	Firm	2006–2013	The Ethiopia Large and Medium Scale Manufacturing Industries Survey
					Salaries: high and low-salary	Firm	2006–2013	The Ethiopia Large and Medium Scale Manufacturing Industries Survey
					Output: value-added	Firm	2006–2013	The Ethiopia Large and Medium Scale Manufacturing Industries Survey
					Capital: total book value	Firm	2006–2013	The Ethiopia Large and Medium Scale Manufacturing Industries Survey
					Intermediate inputs	Firm	2006–2013	The Ethiopia Large and Medium Scale Manufacturing Industries Survey
					Number of employees per firm	Firm	2006, 2007, 2013 and 2014	The World Bank Enterprise Survey
					Sales per unit of labor costs	Firm	2006, 2007, 2013 and 2014	The World Bank Enterprise Survey
					Direct exports	Firm	2006, 2007, 2013 and 2014	The World Bank Enterprise Survey
					Communication with clients through website and email	Firm	2006, 2007, 2013 and 2014	The World Bank Enterprise Survey
					Provision of employee training schemes	Firm	2006, 2007, 2013 and 2014	The World Bank Enterprise Survey

			Internet	Internet infrastructure: landing points and times and locations' connectivity	Location	2014	Mahlknecht's map of submarine cables and AfterFibre's
				Data speed: average connection speeds	Location – Quarterly	2007–2014	Akamai Technologies Inc.
ICT	ICT	Goos et al. (2014)	Employment: 16 Western European countries	Weekly hours worked	Individual	1993–2010 1993–2008 (DE)	European Union Labor Force Survey and the German Federal Employment Agency's SIAB (for DE only)
			Routineness of occupations	Routine Task Intensity Index: impact of recent technological progress	Occupation	1993–2010	Autor and Dorn (2013)
			(FDI) Offshorability of occupations	Based on professional coders' assessment of the ease with which an occupation can be offshored	Occupation	1993–2010	Blinder and Krueger (2013)
				Production: value of goods or services produced in a year (sold or stocked)	Industry	1993–2010	OECD STAN Database for Industrial Analysis
				Prices: relative output prices	Industry	1993–2010	OECD STAN Database for Industrial Analysis
				Costs: industry average costs	Industry	1993–2010	OECD STAN Database for Industrial Analysis
ICT	Internet	Blum et al. (2006)	Internet	Activity of US consumers on non-US websites	Household (aggregated to country-service level for analysis)	December 1999– March 2000	Plurimus Corporation
			Trade	Trade in purely digital goods, 2 types: goods that require a financial transaction, and goods that are free	Household (aggregated to country-service level for analysis)	December 1999– March 2000	Plurimus Corporation
			Distance	Distance in km between capital cities	Country-country	-	Jon Haveman (EIIIT)
			Country	Country of origin of the visited websites	Country	December 1999– March 2000	Plurimus Corporation
				GDP	Country	2003	CIA World Factbook
				GDP per capita	Country	2003	CIA World Factbook
				Number of internet hosts	Country	2000	International Telecommunications Union
				Number of internet users	Country	2000	International Telecommunications Union
				Political stability	Country	2000	PRS Group's International Country Risk Guide
				Rule of law	Country	2000	PRS Group's International Country Risk Guide
				Immigrant population in US	State-country origin	2000	US Census
American travelers abroad	Country	1995		US Department of Transportation			

3D Printing						
Technology	Study	Data				
		Variables	Level	Period	Source	
3D printing	Freund et al. (2020)	Bilateral trade	Exports of hearing aids (robustness: other high-tech products)	Product	1995-2016	WITS, UN Comtrade
			Imports of hearing aids	Product	1995-2016	WITS, UN Comtrade
		Product	Sizes and weights	Product	1995-2016	WITS, UN Comtrade
		Country	117 countries and their income levels	Country	1995-2016	World Bank
3D printing	Abeliansky et al. (2020)	Bilateral trade	Volume of exports of 3D printers	Country	2013	UN Comtrade
		Gravity	GDP	Country	2013	WDI
			Geographical distance between exporter and importer	Country	2013	CEPII
			Regional trade agreements	Country	2013	CEPII
			Common language	Country	2013	CEPII
			Colonial relationship	Country	2013	CEPII
		Transportation costs	Ad-valorem and unitary transportation costs	Country	2013	OECD
			Transportation costs from US/China to 120 destinations	Country	2013	Authors' calculations using FedEx

Cloud Computing						
Technology	Study	Data				
		Variables	Level	Period	Source	
Cloud computing	DeStefano et al. (2020)	Firm	Employment	Firm-plant	2008, 2013, and 2015	Office for National Statistics, Business Structure Database
			Sales per worker	Firm-plant	2008, 2013, and 2015	Office for National Statistics, Business Structure Database
			Concentration of the activity: number of plants, plant deaths and births per firm, and the geographic concentration of a firm	Firm-plant	2008, 2013, and 2015	Office for National Statistics, Business Structure Database
			Age	Firm	2008, 2013, and 2015	Office for National Statistics, Business Structure Database
			Foreign ownership	Firm	2008, 2013, and 2015	Office for National Statistics, Business Structure Database
			Size: number of plants	Firm	2008, 2013, and 2015	Office for National Statistics, Business Structure Database
		Cloud computing	Adoption of cloud computing by a given firm-period	Firm	2008, 2013, and 2015	Ecommerce Survey
		Instruments: predict firm cloud adoption	Access to fiber broadband	Firm	2008, 2013, and 2015	Ecommerce Survey
			Fiber speeds: broadband availability*firms' distance from the telephone exchange	Firm	2008, 2013, and 2015	Ecommerce Survey
Cloud computing	Jin et al. (2018)	Firm	Young (5 years old or less) US manufacturing firms	Plant	2006–2014	US Annual Survey of Manufactures, Quinquennial Census of Manufactures, and the Longitudinal Business Database
			Survival: average annual rate of plant-exit due to failure	Plant	2006–2014	US Annual Survey of Manufactures, Quinquennial Census of Manufactures, and the Longitudinal Business Database
			Performance: revenues, value-added (millions of US\$), total value of shipments (millions of US\$)	Plant	2006–2014	US Annual Survey of Manufactures, Quinquennial Census of Manufactures, and the Longitudinal Business Database
		Cloud computing (IT services expenditure)	IT capital: computers and data processing equipment (millions of US\$)	Plant	2006–2014	US Annual Survey of Manufactures, Quinquennial Census of Manufactures, and the Longitudinal Business Database
			IT services: expenses on data processing and	Plant	2006–2014	US Annual Survey of Manufactures, Quinquennial Census

		other purchased computer services			of Manufactures, and the Longitudinal Business Database
		IT-related investments	Plant	2006-2014	US Annual Survey of Manufactures, Quinquennial Census of Manufactures, and the Longitudinal Business Database
Other measures of cloud computing		Software: operating expenses	Plant	2006-2014	Aberdeen
		Infrastructure as a service	Plant	2006-2014	Aberdeen
		Platform as a service	Plant	2006-2014	Aberdeen
Control variables		Capital	Plant	2006-2014	US Annual Survey of Manufactures, Quinquennial Census of Manufactures, and the Longitudinal Business Database
		Labor: total number of employees	Plant	2006-2014	US Annual Survey of Manufactures, Quinquennial Census of Manufactures, and the Longitudinal Business Database
		Materials	Plant	2006-2014	US Annual Survey of Manufactures, Quinquennial Census of Manufactures, and the Longitudinal Business Database

Artificial Intelligence (AI)							
Technology		Study	Data				
			Variables		Level	Period	Source
AI	eBay Machine translation	Brynjolfsson et al. (2019)	Trade	US exports (quantity and value) on eBay to Spanish-speaking Latin American countries	Transaction	+/- 6 months or +/- 12 months around May 2014	eBay
			Seller	History	Seller	+/- 6 months around May 2014	eBay
				Reputation and feedback	Seller	+/- 6 months around May 2014	eBay
			Product	Homogeneity: product ID	Product	+/- 6 months around May 2014	eBay
				Value: average "buy-it-now" price in the 6 months preceding the policy change	Product	+/- 6 months around May 2014	eBay
			Buyer	Level of experience: time and money spent on eBay	Buyer	+/- 6 months around May 2014	eBay
			Offline data	US bilateral exports	Monthly, country-country	+/- 6 months around May 2014	UN Comtrade Database
AI	Facial recognition	Beraja et al. (2020)	AI innovation	Facial recognition in China: AI firms' software production	Firm	2013-2019	Chinese Ministry of Industry and Information Technology
			AI Firm	Founding year	Firm	2013-2019	Tianyancha and Pitchbook
				Capitalization: millions USD	Firm	2013-2019	Tianyancha and Pitchbook
				Major external financing sources	Firm	2013-2019	Tianyancha and Pitchbook
				Subsidiary and mother firm information	Firm	2013-2019	Tianyancha and Pitchbook
			AI contracts	Good or service procured	Contract	2013-2019	Chinese Government Procurement Database (China's Ministry of Finance)
				Date of the contract	Contract	2013-2019	Chinese Government Procurement Database (China's Ministry of Finance)
				Monetary size	Contract	2013-2019	Chinese Government Procurement Database (China's Ministry of Finance)
				Winning bid	Contract	2013-2019	Chinese Government Procurement Database (China's Ministry of Finance)
				Losing bid	Contract	2013-2019	Chinese Government Procurement Database (China's Ministry of Finance)

						Ministry of Finance)
		AI "consumers"	Private or public institutions	Consumer	2013-2019	Chinese Government Procurement Database (China's Ministry of Finance)
		Macroeconomic	GDP	Prefecture	2013-2019	Global Economic Data, Indicators, Charts & Forecasts (CEIC)
			Population	Prefecture	2013-2019	Global Economic Data, Indicators, Charts & Forecasts (CEIC)



Automation							
Technology		Study	Data				
			Variables		Level	Period	Source
Automation	Robots	Artuc et al. (2018)	Firm	Stock of industrial robotization in advanced economies	Country-industry-year	1995–2015	International Federation of Robotics
				Labor hours	Country-industry-year	1995–2015	EU KLEMS
				Material inputs	Country-industry-year	1995–2015	EU KLEMS
				IT capital	Country-industry-year	1995–2015	EU KLEMS
				Non-IT capital	Country-industry-year	1995–2015	EU KLEMS
			Trade	Imports: from developing country to developed	Product	1995–2015	BACI
				Exports: from developed country to developing	Product	1995–2015	BACI
				Tariffs	Country-product-year	1995–2015	TRAINS
			Macroeconomic	GDP per capita	(Developed) country	1995–2015	WDI
			Automation	Robots	Stapleton et al. (2020)	Firm and technology use	Robots
CNC machines	Firm-year	1990–2016					Survey of firm strategies (Encuesta sobre estrategias empresariales)
FMS	Firm-year	1990–2016					Survey of firm strategies (Encuesta sobre estrategias empresariales)
Total employment	Firm-year	1981					Spanish Census of Population and Housing
Output: total value of production of goods and services (millions of Euros)	Firm-year	1990–2016					Survey of firm strategies (Encuesta sobre estrategias empresariales)
Value-added per worker	Firm-year	1990–2016					Survey of firm strategies (Encuesta sobre estrategias empresariales)
Labor share of income	Firm-year	1990–2016					Survey of firm strategies (Encuesta sobre estrategias empresariales)
TFP	Firm-year	1990–2016					Survey of firm strategies (Encuesta sobre estrategias empresariales)
Trade	Value of imports of Spanish manufacturing firms from low-income	Firm-year-region				1990–2016	UN Comtrade

				countries (millions of Euros)			
				Share of imports	Firm-year-region	1990–2016	UN Comtrade
				Import intensity	Firm-year-region	1990–2016	UN Comtrade
				Multinational activity (affiliates)	Firm-year	1990–2016	Survey of firm strategies (Encuesta sobre estrategias empresariales)
				Share of affiliates in less developed countries	Firm-year	1990–2016	Survey of firm strategies (Encuesta sobre estrategias empresariales)
				(Import) tariffs on goods in same industry	Product-year	1990–2016	TRAINS
				(MFN import) tariffs on imported inputs	Product-year	1990–2016	TRAINS
Automation	Robots	Rodríguez Chatruc and Nieves Offidani (2019)	FDI, offshoring	Industry's share of imported intermediate goods	Country-sector-year	1993–2015	Eora Multi-region Input-Output Matrix
			Robotization in manufacturing	Number of robots per thousands of workers	Country-sector-year	1993–2015	International Federation of Robotics
			Control variables	Tariffs	Country-sector-year	1993–2015	CESifo Group-World Bank
				Employment	Country-sector-year	1963–2016	INDSTAT2
				Wages	Country-sector-year	1963–2016	INDSTAT3
			IV	(Change in aggregate robot density in a country)*(initial share of the world robot density in a sector)	Country-sector-year	1993–2015	International Federation of Robotics
				Replaceability of human tasks by robots	Country-sector-year	1993–2015	Graetz and Michaels (2018)
Automation	Robots	Graetz and Michaels (2018)	Productivity	Real value-added to hours worked	Country-industry-year	1993–2007	KLEMS
				Output prices	Country-industry-year	1993–2007	KLEMS
				TFP	Country-industry-year	1993–2007	KLEMS
				Average wages	Country-industry-year	1993–2007	KLEMS
				Labor share	Country-industry-type of worker-year	1993–2007	KLEMS
				Share of hours worked	Country-industry-type of worker-year	1993–2007	KLEMS
			Robots	Robot density: stock of robots per million hours worked	Country-industry-year	1993–2007	International Federation of Robotics and KLEMS

			Instrumental Variables	Replaceability of human tasks by robots	Country-industry-year	1993–2007	International Federation of Robotics and US Census
				Reaching and handling	Country-industry-year	1993–2007	International Federation of Robotics and US Census
Automation	ICT Capital	Das and Hilgenstock (2018)	Routinization	Propensity to adopt labor-displacing information technology	Country-industry-time	1960–2015	IPUMS, EUFS, UN, and ILO databases, national population censuses, labor force surveys, and other sources
			Control	Relative price of investment goods	Country-industry-time	1990–2015	IPUMS, EUFS, UN, and ILO databases, national population censuses, labor force surveys, and other sources
				Structural transformation: ratio of agricultural value-added to the sum of manufacturing and services value-added	Country-industry-time	1990–2015	IPUMS, EUFS, UN, and ILO databases, national population censuses, labor force surveys, and other sources
				Initial middle-skill share of employment	Country-industry-time	1990–2015	IPUMS, EUFS, UN, and ILO databases, national population censuses, labor force surveys, and other sources
				Participation in GVC (trade)	Country-industry-time	1990–2015	IPUMS, EUFS, UN and ILO databases, national population censuses, labor force surveys, and other sources
Automation		Faia et al. (2020)	Labor market	Number of employees	Worker level aggregated to country-sector-occupation-year	1995–2010	European Labour Force Survey
				Number of hours worked	Worker level aggregated to country-sector-occupation-year	1995–2010	European Labour Force Survey
				Number of unemployed workers	Worker level aggregated to country-sector-occupation-year	1995–2010	European Labour Force Survey
			Mismatches	Unemployment duration	Worker level aggregated to country-sector-occupation-year	1995–2010	European Labour Force Survey

			Educational mismatch: over/under education	Worker level aggregated to country- sector- occupation- year	1995-2010	European Labour Force Survey
		Automation	routine task intensity (RTI) index	Country- sector- occupation- year	1995-2010	Based on Acemoglu and Autor (2011)
		(FDI) offshoring	Index: highly non- offshorable-highly offshorable	Country- sector- occupation- year	1995-2010	Based on Blinder and Krueger (2013)

Fintech						
Technology	Study	Data				
		Variables		Level	Period	Source
Fintech	Cornelli et al. (2020)	Fintech	Volumes of credit per capita	Country	2013–2018	Global Alternative Finance Database
		Big tech	Volumes of credit per capita	Country	2013–2018	Global Alternative Finance Database
		Total alternative credit	Sum of fintech and big tech credit	Country	2013–2018	Global Alternative Finance Database
		Economic	GDP per capita (thousands of US\$)	Country	2013–2018	World Economic Outlook, World Bank
			Lerner index: banking sector market power	Country	2013–2018	World Economic Outlook, World Bank
			Regulatory Stringency	Country	2013–2018	Bank Regulation and Supervision Survey (WB)
		Control variables	Growth in GDP	Country	2013–2018	World Economic Outlook, World Bank
			Total credit	Country	2013–2018	World Economic Outlook, World Bank
			Real short-term interest rate	Country	2013–2018	World Economic Outlook, World Bank
			Mobile phone subscriptions per 100 people	Country	2013–2018	World Economic Outlook, World Bank
		Dummy	Suffering a crisis since 2006	Country	2013–2018	World Economic Outlook, World Bank
			Advanced economies	Country	2013–2018	World Economic Outlook, World Bank
Fintech	Jack and Suri (2014)	E-money	Mobile phone money (usage of M-PESA, Kenya)	Household	2008–2010	Household survey carried out by the authors
		Outcome variable	Per-capita consumption	Household	2008–2010	Household survey
			Sending and receiving remittances: probability of receiving, number received and total value received	Household	2008–2010	Household survey
		Controls	Cell phone usage and ownership	Household	2008–2010	Household survey
			Composition: household size	Household	2008–2010	Household survey
			Demographics: education and occupation of household head	Household	2008–2010	Household survey
			Wealth and assets: use of financial services, savings, etc.	Household	2008–2010	Household survey
			Shocks to income	Household	2008–2010	Household survey
Fintech	Jack and Suri (2016)	Economic wellbeing	Per-capital consumption and poverty rates	Individual and household	2008–2014	Household survey
			Physical and financial wealth	Individual and household	2008–2014	Household survey

			Occupational and migration choices	Individual and household	2008-2014	Household survey
	E-money		Access to mobile money: geographic proximity of households to M-PESA agents	Household	2008-2014	Household survey
			Density: quantity of M-PESA agents within 1km of the household	Household	2008-2014	Household survey
	Controls		Education	Individual and household	2008-2014	Household survey
			Gender	Individual and household	2008-2014	Household survey
			Age	Individual and household	2008-2014	Household survey

Online Trade Platforms							
Technology		Study	Data				
			Variables		Level	Period	Source
Online trade platforms	eBay	Lendle et al. (2013)	US Firms	Domestic and international sales	Firm	2010	eBay
			Trade	Total export value	Firm-destination country-product	2010	eBay
				Number of firms exporting to a destination	Firm-destination country-product	2010	eBay
				Number of products per firm exported to a location	Firm-destination country-product	2010	eBay
				Average exports per product per firm	Firm-destination country-product	2010	eBay
				Gravity	GDP	Country	2010
			Distance		Country	2010	CEPII
			Border		Country	2010	CEPII
			Common language		Country	2010	CEPII
			Colonial link		Country	2010	CEPII
Online trade platforms	Alibaba/ AliExpress	Chen and Wu (2021)	Trade	Number of tank top exports	Transaction-daily	February 2014–January 2015	aliexpress.com
			Transactions	Buyer ID (unique)	Seller-buyer-transaction	February 2014–January 2015	aliexpress.com
				Buyer origin country	Seller-buyer-transaction	February 2014–January 2015	aliexpress.com
				Transaction price and quantity (exclusive of transportation costs)	Seller-buyer-transaction	February 2014–January 2015	aliexpress.com
				Order and transaction date and time	Seller-buyer-transaction	February 2014–January 2015	aliexpress.com
				Transaction feedback: rating of product quality and service from seller	Seller-buyer-transaction	February 2014–January 2015	aliexpress.com
				Product	Price: current listing price	Seller-buyer-transaction	February 2014–January 2015
			Bulk price: discount price		Seller-buyer-transaction	February 2014–January 2015	aliexpress.com
			Total number of ratings, number		Seller-buyer-transaction	February 2014–	aliexpress.com

			of ratings at each score, total number of transactions, and average rating score		January 2015	
			Number of previous transactions since the product was listed	Seller-transaction	February 2014–January 2015	aliexpress.com
			Number of available colors	Seller-product	February 2014–January 2015	aliexpress.com
			Number of available sizes	Seller-product	February 2014–January 2015	aliexpress.com
			Available quantity in stock	Seller-product	February 2014–January 2015	aliexpress.com
			Stylized product characteristics: type, target gender, material, etc.	Seller-product	February 2014–January 2015	aliexpress.com
			Number of customers who added a given product to their wish list	Seller-product	February 2014–January 2015	aliexpress.com
			Store promotion	Seller-product	February 2014–January 2015	aliexpress.com
			Return policy	Seller-product	February 2014–January 2015	aliexpress.com
			Seller guarantee	Seller-product	February 2014–January 2015	aliexpress.com
			Types of payment form	Seller-product	February 2014–January 2015	aliexpress.com
			Shipping costs	Seller-product	February 2014–January 2015	aliexpress.com
			Estimated delivery time	Seller-product	February 2014–January 2015	aliexpress.com
			Packaging information	Seller-product	February 2014–January 2015	aliexpress.com



				Number of images posted in a given product description	Seller-product	February 2014–January 2015	aliexpress.com
				Related products	Seller-product	February 2014–January 2015	aliexpress.com
			Seller	Name, address, start year, and number of online sales	Seller	February 2014–January 2015	aliexpress.com
				Top-selling product list	Seller	February 2014–January 2015	aliexpress.com
				Trending product list	Seller	February 2014–January 2015	aliexpress.com
				List of other products	Seller	February 2014–January 2015	aliexpress.com
				Categories of products offered	Seller	February 2014–January 2015	aliexpress.com
				Feedback score, percentage of positive feedback, and detailed ratings	Seller	February 2014–January 2015	aliexpress.com
Online trade platforms	AliExpress	Bai et al. (2020)		Trade	Orders (exports) of children’s t-shirts: quantity sold	Firm-product	2017 and 2018
			Current prices		Firm-product	2017 and 2018	aliexpress.com
			Discounts		Firm-product	2017 and 2018	aliexpress.com
			Ratings		Firm-product	2017 and 2018	aliexpress.com
			Buyer protection schemes		Firm-product	2017 and 2018	aliexpress.com
			Product specifications		Firm-product	2017 and 2018	aliexpress.com
			Transactions	Sales quantities	Transaction	2017 and 2018	aliexpress.com
				Ratings	Transaction	2017 and 2018	aliexpress.com
				Previous buyers’ countries of origin	Transaction	2017 and 2018	aliexpress.com
			Quality of products, shipping, and service from seller	Actual purchases: durability, material, and softness of t-shirts	Firm-product	2017 and 2018	aliexpress.com
				Interactions with sellers	Firm-product	2017 and 2018	Collected from sellers by authors

				Third-party assessments	Firm-product	2017 and 2018	Collected from third parties by authors
Online trade platforms	eBay and MercadoLibre	Hortaçsu et al. (2009)	Interstate trade: number/dollar volume of transactions of nonlocal end products between individual US economic agents on online auction sites: eBay and MercadoLibre	eBay: description of item sold, seller's location, shipping and handling fees, seller's feedback ratings, insurance and payment methods available, and listing time	Aggregated at the state/province level	February and May 2004	eBay
				MercadoLibre	Aggregated at the state/province level	August 2003 to July 2004	MercadoLibre
			Control variables	Distance: great-circle distance between state capitals	Aggregated at the state/province level	February and May 2004/ August 2003 to July 2004	eBay/MercadoLibre
				Shipping costs: median transportation cost for state-to-state shipments (%)	Aggregated at the state/province level	February and May 2004/ August 2003 to July 2004	eBay/MercadoLibre
				Time zones: differences in time zone among states (dummy)	Aggregated at the state/province level	February and May 2004/ August 2003 to July 2004	eBay/MercadoLibre
				Taxes: level of seller-state sales taxes	Aggregated at the state/province level	February and May 2004/ August 2003 to July 2004	eBay/MercadoLibre
				Trust: based on median values of sellers' ratings	Aggregated at the state/province level	February and May 2004/ August 2003 to July 2004	eBay/MercadoLibre
Online trade platforms	eBay	Lendle et al. (2016)	Trade	Cross-border transactions on eBay (imports)	Country-product	2004-2009	eBay
				Total trade	Country-product	2004-2009	Comtrade
				Shipping costs	Country-product	2004-2009	eBay
			Distance	Shipping time	Country (port-port)	2004-2009	searoutefinder.com
				Postal time	Country	2004-2009	Universal Postal Union
				Shipping costs	Country-product	2004-2009	eBay
			Gravity	Distance	Country	2004-2009	CEPII
				Common language	Country	2004-2009	CEPII
				Common legal system	Country	2004-2009	CEPII

				Shared border	Country	2004–2009	CEPII
				Colonial history	Country	2004–2009	CEPII
				Free trade agreements	Country	2004–2009	WTO
Online trade platforms	Connect Americas	Carballo et al. (2020a)	Trade	Exports of Peruvian firms (export value in US dollars)	Firm-destination-year	2010–2016	SUNAT
				Firm-destination export extensive margin: probability of exporting	Firm-destination-year	2010–2016	SUNAT
				Foreign buyers of Peruvian exports	Firm	2010–2016	SUNAT
			ConnectAmericas	Firms' activities within the platform: number of days firms visit CA	Firm	2010–2016	ConnectAmericas
			Notification about platform	List of firms that received email	Firm	2016	PromPerú
			Control variables	Use of trade promotion assistance	Firm	2010–2016	PromPerú
				Firms' age: proxies firms' experience and performance	Firm	2010–2016	Authors' calculations based on SUNAT
Online trade platforms	Connect Americas	Carballo et al. (2022)	Trade	Exports of Peruvian firms (export value in US dollars)	Transaction (product-destination-semester-year)	2010–2018	SUNAT
				Destination country	Transaction (product-destination-semester-year)	2010–2018	SUNAT
				Weight in kilograms	Transaction (product-destination-semester-year)	2010–2018	SUNAT
			ConnectAmericas	Presence in CA: visits a firm receives in CA (dummy)	Firm-destination-semester-year	2010–2018	ConnectAmericas
			Firm characteristics	Location	Firm-semester-year	2010–2018	SUNAT
				Activity sector	Firm-semester-year	2010–2018	SUNAT
				Year of establishment	Firm-semester-year	2010–2018	SUNAT
				Number of employees	Firm-semester-year	2010–2018	SUNTA
				Trade promotion support status	Firm-semester-year	2010–2018	PromPerú
Online trade platforms	eBay	Hui (2020)	Trade	US firms' exports on eBay (export sales). Total exports= extensive+ intensive margins	Seller	July 2012–December 2013	eBay
				Number of internationally available listings (intent to export)	Seller	July 2012–December 2013	eBay

			Item characteristics	Characteristics and attributes of item listings (differentiation)	Items	July 2012-December 2013	eBay
				Product details	Items	July 2012-December 2013	eBay
			Seller characteristics	Seller's history	Seller	July 2012-December 2013	eBay
				Seller's reputation and feedback	Seller	July 2012-December 2013	eBay
				Size: based on sales in the past year	Seller	July 2012-December 2013	eBay
			Buyer characteristics	Buyer's checkouts	Buyer	July 2012-December 2013	eBay
				Buyer's history	Buyer	July 2012-December 2013	eBay
				Distance from seller	Buyer-seller	July 2012-December 2013	eBay
			Online trade platforms	Google Play Store	Jeon et al (2021)	Trade	Cultural goods: books, music, songs
Market share of English content	Engagement data: number of apps downloaded and active users	Country				December 2019-February 2020	SimilarWeb Analytics
Market share of native content	Engagement data: number of apps downloaded and active users	Country				December 2019-February 2020	SimilarWeb Analytics
English language proficiency	English proficiency index	Country				December 2019-February 2020	EF Education First
Online trade platforms	Mango	Simonovska (2015)	Prices	Prices of identical goods sold exclusively online in Europe, Asia, and North America	Item-country	Summer 2012	Mango online catalogue
			Macroeconomic	Income per capita	Country	2010	WDI
			Trade	Tariffs	Destination country	2012	WITS
				Taxes	Destination country	2012	European Commission
				Import shares (competition Mango faces)	Destination country	2005, 2008	UN Comtrade, ICP expenditure data, gross output data
				Shipping and handling costs	Destination country	2012	DHL
				Population size	Destination country	2010	WDI
Gini coefficient	Destination country		CIA World Factbook				

Online trade platforms	Taobao	Couture et al. (2020)	Household	Retail consumption expenditure	Household	2015–2016	Household survey (baseline survey)
				Income	Individual/household	2015–2016	Household survey (baseline survey)
				Hours worked	Individual/household	2015–2016	Household survey (baseline survey)
				Occupations and sectors	Individual/household	2015–2016	Household survey (baseline survey)
				Asset ownership	Household	2015–2016	Household survey (baseline survey)
				Financial accounts	Household	2015–2016	Household survey (baseline survey)
				Internet usage	Household	2015–2016	Household survey (baseline survey)
				Migration	Household	2015–2016	Household survey (baseline survey)
			Products	List of products consumed by rural households	Household	2012	China Family Panel Study
				Prices	Product	2015–2016	Local Retail Price Survey Data
			Administrative	E-commerce purchases	Purchases	2015–2017	Taobao
				Sales transactions: out-shipments from the villages	Shipment	2016–2017	Taobao