Online appendixes

Online Appendix A. Variables definition and sources

Variable	Source	Definition
% pop using Internet	ITU	Internet users are individuals who have used the Internet (from any location) in the last 3 months. The Internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV etc.
Ln # mobile subscript / 100 people	ITU/World Bank	Mobile cellular telephone subscriptions are subscriptions to a public mobile telephone service that provide access to the PSTN using cellular technology. The indicator includes (and is split into) the number of postpaid subscriptions, and the number of active prepaid accounts (i.e. that have been used during the last three months). The indicator applies to all mobile cellular subscriptions that offer voice communications. It excludes subscriptions via data cards or USB modems, subscriptions to public mobile data services, private trunked mobile radio, telepoint, radio paging and telemetry services.
Fixed (Wired) broadband Internet monthly subscription	ITU	The monthly subscription charge for fixed (wired) broadband Internet service. Fixed (wired) broadband is considered any dedicated connection to the Internet at downstream speeds equal to, or greater than, 256 kbit/s, using DSL. Where several offers are available, preference should be given to the 256 kbit/s connection. Taxes should be included. If not included, it should be specified in a note including the applicable tax rate.
International Internet bandwidth per user	ITU	Total capacity of international Internet bandwidth in Mega Bits Per Second (Mbit/s) per user. If capacity is asymmetric (i.e., more incoming than outgoing), the incoming capacity should be provided. This is measured as the sum of capacity of all Internet exchanges offering international bandwidth.
Fixed-phone line faults	ITU	The total number of reported faults to fixed telephone lines for the year. Faults that are not the direct responsibility of the public telecommunications operator should be excluded. This is calculated by dividing the total number of reported telephone faults for the year by the total number of fixed lines in operation and multiplied by 100. The number of faults per 100 fixed lines per year should reflect the total reported by all PSTN service providers in the country.
Ln GDP/cap	World Bank	GDP per capita in 2005 constant USD
Population size	World Bank	Logarithm of total population.
% of 15–64yrs	World Bank	Population ages 15–64 (% of total)
% urban pop	World Bank	Urban population (% of total)
Electric power consumption (kWh per capita)	World Bank	Electric power consumption measures the production of power plants and combined heat and power plants less transmission, distribution, and transformation losses and own use by heat and power plants.
Electricity access (%)	World bank, author	Percentage of population with access to electricity. Electrification data are collected from industry, national surveys and international sources. Missing data have been inter- and extrapolated using five-year moving average.
Democracy (imputed version)	Quality of Governance Database, constructed from Freedom House and Polity IV dataset	Scale ranges from 0-10 where 0 is least democratic and 10 most democratic. Average of Freedom House political rights and civil liberties variables is transformed to a scale 0-10, and Polity from the Polity IV database is transformed to a scale 0-10. These variables are then averaged. The imputed version has imputed values for countries where data on Polity is missing by regressing Polity on the average Freedom House measure.
Government expenditures	Quality of Governance Database, drawn from World Economic Outlook database (IMF)	Public expenditures share in GDP (% variation)
2^{ary} Education index	Ferdi/UNDP	Gross secondary school enrolment ratio. According to the UNDP, this

		indicator measures the number of pupils enrolled in secondary schools, regardless of age, expressed as a percentage of the population in the theoretical age group for the same level of education. Missing raw data have been filled through linear interpolation and extrapolation, and transformed into an index between 0 and 1 by a minmax procedure (Feindouno & Goujon, 2016).
# SMCs	Author from Telegeography database	Number of submarine cables laid in a given country
# IXPs	Author, from Telegeography, Author, Packet Clearing House and Peering DB databases	Number of Internet exchange points built in a given country

Online Appendix B. Number of IXPs in 2019.
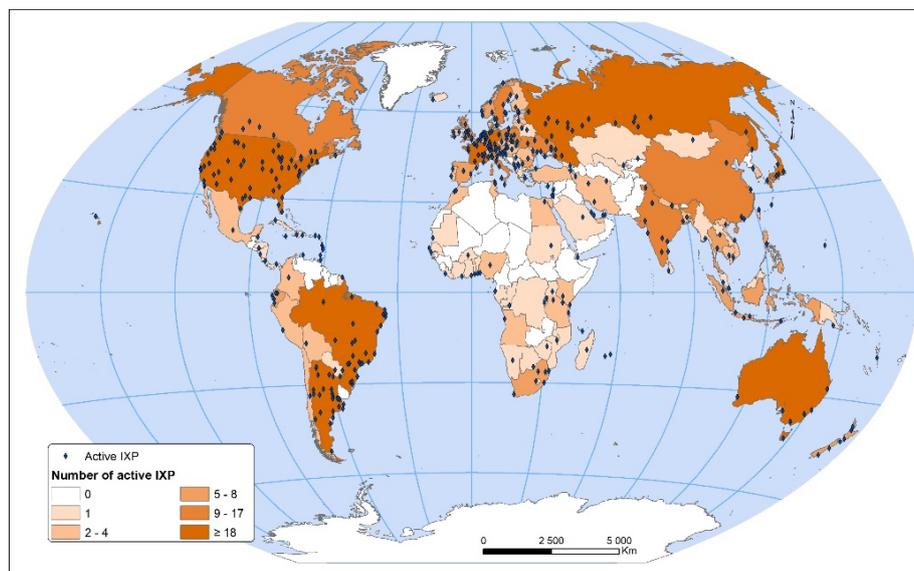
Sources: author. Raw data from Telegeography, Packet Clearing House, and Peering DB databases, 2020.