

# Is a country's ability to generate and distribute income determined by its productive structure?

*Dominik Hartmann, Fraunhofer IMW and University of Leipzig, Cristian Jara-Figueroa and Cesar Hidalgo, the MIT Media Lab*

**Decades ago, Simon Kuznets proposed** an inverted-u-shaped relationship describing the connection between a country's level of income and its level of income inequality. The Kuznets curve suggested that income inequality would first rise and then fall as a country's income moves from low to high levels. Yet the inverted-u-shaped relationship fails to hold when several Latin American countries are removed from the sample, and the upward side of the Kuznets curve has vanished in recent decades, as inequality in many low-income countries has increased. Moreover, several East Asian economies have grown from low to middle income while reducing their income inequality. These findings undermine the empirical robustness of the Kuznets curve, and indicate that gross domestic product (GDP) per capita is a measure of economic development that is insufficient to explain variations in income inequality. **Therefore, new measures of economic development are necessary.**

Recent studies argue that inequality depends not only on a country's rate or stage of growth but also on its type of growth and its institutions. Hence, we should expect more nuanced measures of economic development, such as those focused on the types of products a country exports, to provide deeper insights into the connection between economic development and income inequality, beyond the limitations of aggregate measures of output, such as GDP. One such measure is the Economic Complexity Index (ECI), which is a measure of the knowledge intensity of an economy that is expressed in the type of products it makes. The most complex products are sophisticated chemicals and machinery, whereas the least complex products are raw materials or simple agricultural products. A country is considered complex if it exports not only a large number of different products but also highly complex products. Countries such as Saudi Arabia, Chile and Ghana rely heavily on a very limited number of simple and resource-exploiting products, such as crude petroleum, copper or cocoa beans, and, therefore, have a low ECI. Conversely, countries such as Japan, South Korea and Germany export a high diversity of very complex products, such as microchips, medicaments and sophisticated car parts; therefore, their ECI is very high.

**Using multivariate regression analysis, Hartmann et al. (2017) show that economic complexity is a significant and negative predictor of income inequality,** and that this relationship is robust in controlling for aggregate measures of income, institutions and human capital. Virtually all economies that have a diversified and sophisticated productive structure tend to have comparatively low levels of income inequality, whereas all economies that are strongly dependent on simple products tend to have high levels of income inequality.

**But why do complex economies have lower levels of income inequality?** Scholars from different disciplines have argued that income inequality

depends on a variety of factors, from an economy's factor endowments, geography and institutions to its historical trajectories, changes in technology and returns to capital. Hartmann et al. (2017) argue that a likely explanation for the association between economic complexity and income inequality is that productive structures represent a high-resolution expression of a number of these factors, from institutions to education, which co-evolve with the mix of products that a country exports and with the inclusiveness of its economy. Because of this co-evolution, productive structures are not only associated with income and economic growth but also with how income is distributed. For example, post-colonial economies that have specialised in a narrow set of agricultural or mineral products tend to have more unequal distributions of political power, human capital and wealth. Conversely, sophisticated products, such as medical imaging devices or electronic components, are typically produced in diversified economies that require more inclusive institutions. Moreover, complex economies require a large network of skilled workers, who receive better remuneration and have more bargaining power than unskilled workers. Finally, diversified economies tend to be associated with a better distribution of political power (and lower levels of political capture of economic benefits and rent-seeking) than economies that are dependent on few resource-exploiting products.

In a related study, Hartmann et al. (2016) compared **the structural constraints of income inequality between Latin America and high-performing Asian economies.** They argue that while recent social policy programmes, such as conditional cash transfer programmes, had a positive impact on the reduction of income inequality in Latin America during the early 2000s, most Latin American economies have remained dependent on simple and resource-exploiting products. In consequence, once the commodity boom was over, several Latin American countries suffered from the global economic crisis while simultaneously developing an institutional crisis. Conversely, during the last decades many Asian economies have successfully combined social and economic policies, diversifying into more complex products. Not surprisingly, they have also been more resilient to the economic crisis.

The findings of these two studies suggest that social policies alone might lack the strength required to modify a country's level of income inequality beyond the range of values expected from that country's productive structure.

#### References:

- Hartmann, D., M. Guevara, C. Jara-Figueroa, M. Aristrán, and C.A. Hidalgo. 2017. "Linking Economic Complexity, Institutions and Income Inequality." *World Development* 93: 75–93.
- Hartmann, D., C. Jara-Figueroa, M. Guevara, A. Simoes, and C.A. Hidalgo. 2016. "The structural constraints of income inequality in Latin America." *Integration & Trade Journal* 40. Washington, DC: Inter-American Development Bank.