

# Researchers Map Building Blocks of Economic Complexity

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Since the times of Adam Smith, economists have had the intuition that prosperity emerges from the division of labor, that is, from the interaction of thousands of individual activities. This idea has been present for a long time in economic theory but has been never been measured empirically. In this week's edition of the *Proceedings of the National Academy of Science (PNAS)*, Ricardo Hausmann, director of Harvard's Center for International Development (CID) and César A. Hidalgo, a research fellow at the Center, show how to measure the complexity of a country's economy by applying a new method of Network Science.

“Suppose countries differ in the variety of capabilities they possess and products differ in the variety of capabilities their production requires. Then you would expect countries with more capabilities to be able to make more products and to make products that few other countries can make. Rich countries in fact have those characteristics and getting to be rich implies accumulating capabilities and developing the products that use them. The data strongly supports this view,” said Hausmann, an economist and professor at Harvard University's John F. Kennedy School of Government.

“We were not very surprised to find that our measures of economic complexity were imperfectly correlated with the level of income of countries. What really surprised us was to find that the imperfections actually predicted future growth. Countries that at a point in time we expected to be richer, exhibited faster growth in the subsequent years. It

is as if countries converge to the level of income that their complexity can support,” said César Hidalgo, a physicist and network scientist who is also an adjunct lecturer at Harvard Kennedy School.

Moreover, Hausmann and Hidalgo show that the complexity of a country’s economy at a point in time is a good predictor of the complexity the new products it will be able to export in the future. These findings represent strong empirical evidence that the level of [prosperity](#) that a country can achieve is determined by the variety of the capabilities it has been able to accumulate. This view has important implications for development policy,” said Hausmann. “For countries, developing the capacity to make new more complex products is difficult because the requisite capabilities may not be present. By the same token, accumulating new capabilities is difficult because the products that require them may not yet exist. This chicken and egg problem is a major obstacle in the path to prosperity. Finding ways of addressing this coordination problem should be the fundamental goal of a development strategy.”

Provided by Harvard Kennedy School

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