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WEF Africa 2012: The Observatory of Economic Complexity



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By **CÉSAR A. HIDALGO**

A new online tool monitors “the genes of economic development”

Insensitivity of development advice to a country’s context is a fundamental criticism against the so-called Washington Consensus. This coarseness is reflected in concepts – openness to trade, governance, institutions, intermediate inputs or education – that we have come to believe as real. Yet they are abstractions that hide away complexity and might be blind to the context-specific structure that underpins people’s ability to generate prosperity.

Thinking about international development through aggregate terms might be no better than trying to understand biological organisms as mixes of water, proteins, lipids and nucleic acids. Ultimately, to understand problems of organised complexity we need to develop perspectives that look at these problems with a “genetic” resolution. Most of the tools available, however, do not have that resolution or even attempt to provide it.

During recent years we have found that detailed data on the mix of products that countries export provides a high resolution picture of a country’s economy. No two countries export the same mix of goods, and hence the goods that are associated with each country provide a unique fingerprint, a phenotype, that contains valuable information of a country’s productive genotype.

One important measure that emerges from this high resolution fingerprint is “economic complexity”; a measure that infers the diversity of knowledge available in an economy from binary information on who exports what. Economic complexity matters because it is an excellent leading indicator of per capita income. In fact, it outpredicts the WEF’s global competitiveness index, and standard measures of governance and education by nearly 1000 percent. Yet, the value of a disaggregated approach goes beyond that of predicting the aggregate, since it opens a door to context-specific knowledge.

During the last couple of years we have been designing that door to the disaggregate. Last October, together with a team of colleagues, we launched The Observatory of Economic Complexity (atlas.media.mit.edu). The Observatory is an online tool and API that serves roughly 20 million interactive visualisations. This provides an interface that allows anyone, anywhere in the world, to explore context-specific information about a country’s products, the destinations where these products go, the competition that a country faces at each destination, and the specific avenues of diversification that are implied by its current productive structure.

Whether you are a flower exporter in Kenya, or a peanut oil exporter in Senegal, these are tools that facilitate the exploration of your industry, or the potential industries that you might be considering joining. They also allow you to see how these industries, and your country, connect with the rest of the world. The hope of developing “one-click consulting” technologies is to improve the ability of governments and entrepreneurs to discover and seize opportunities that are specific to their current industrial fabric. Ultimately, a country’s industrial fabric carries information on a country’s context-specific factors. Exporting fresh fruit and fish might be a better indication of having a quick and efficient customs than a survey on the business environment. The export of synthetic polymers might be a good indication of a deep knowledge of material science and chemical engineering. In a world in which industries are affected by specific combinations of a priori unknown factors, the productive phenotype becomes a proxy for a country’s development genotype. The development of a country is not accurately captured by intensive measures, such as years of schooling, or survey-based indicators, such as measures of governance.

Ultimately, an alternative role for the development facilitator, or policymaker, might not be to help draft and promote regulation, but rather to help develop and design tools that promote self-discovery and self-regulation. There is a need to empower those with context-specific knowledge by providing them context-specific information, even if this implies that the most relevant development decisions will be made in the field by people far from Charles River, Pennsylvania Avenue or Lake Geneva.

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