

SPEAKER 1: Hello, and welcome to the Growth Lab at Harvard University's weekly podcast.

SPEAKER 2: The creators of Harvard Growth Labs, Atlas of Economic Complexity, are proud to introduce Country Profiles-- a first-of-its-kind platform that revolutionizes how to think about economic strategy, policy, and investment opportunities for over 130 countries. Country Profiles invites users to take an interactive step-by-step journey to analyze a country's economic dynamics and future growth prospects, including identifying what new industries are poised to take off.

ANNIE WHITE: I'm Annie White, product manager for the Atlas of Economic Complexity. And today, I'm here with Professor Ricardo Hausmann, director of Harvard's Growth Lab. Ricardo, thank you for taking the time to chat about our new country profile.

RICARDO HAUSMANN: Thank you so much for having me.

ANNIE WHITE: Ricardo, can you start by telling us a little bit about your Growth Lab?

RICARDO HAUSMANN: Well, the Growth Lab is a unique group of people. We are a little bit over 15 now, and we are organized around three work lines. Some of the activities are about basic research. We're just working on a question that is general about economic growth and development.

A second line of activity is we work with countries trying to understand their growth challenges and working on strategies to overcome those challenges and helping them implement those strategies. And third, we have a group that develops tools that are coming out of our research and allow our research to speak to the problems that people face. And our premier tool is this Atlas of Economic Complexity, which is this fabulous thing that you direct.

ANNIE WHITE: That's right. So, Ricardo, when did the Atlas come onto the scene, and what was the inspiration behind it?

RICARDO HAUSMANN: Well, the idea that emerged from a set of papers I wrote in the early 2000s with Dani Rodrik was the idea that countries don't grow by making more of the same. They grow by changing what they make. And it seemed to me that the process of changing what you do is not random, that it has some structure. And I was trying to figure out a way of how can I capture the structure of how you move from one thing to another.

You don't go from making coffee to making airplanes in one fell swoop. And the reason why you don't is because there's a set of capabilities that are needed to make airplanes that are not needed to make coffee. But those sets of capabilities may be much closer to making cars than making coffee.

So there's a certain logic to the way countries are able to move from less, call it, sophisticated products to more sophisticated products. And that led me to an idea of how to go about it and to a very fruitful collaboration with Laszlo Barabasi and Cesar Hidalgo, where we developed this concept of the Product Space, which is just like a space

that relates each product to other products in terms of how close they are in terms of the capabilities needed to make them.

And when we published that initial paper in 2007, it became a good idea to try to make that tool available. And since then, we've been advancing both on the theory and on the implementation of that tool.

ANNIE WHITE: That's right. So in the last couple of years at the Growth Lab, we've had a lot of discussion about wanting a big new feature called Country Profiles. What was the inspiration behind that?

RICARDO HAUSMANN: Well, the tool that we had developed was sort of like a tool for ourselves that we made available to people. Now, we know why we have developed the tool, but it was not obvious for people how to move around the tool.

The tool is super powerful because it has data on 6,000 products, 130 countries plus, where you have all the exports, all the imports. So with that, you can do a thousand different things, and you can lose yourself in asking yourself questions. Who export macadamia nuts? Who imports macadamia nuts? Or whatever other thing that strikes your fancy.

The way we used it was as a window into what are the capabilities that countries have. Exports are a reflection of the things that a country is able to do well enough it can sell them abroad. It's a window into their productive capabilities, and that's what we're interested in exploring those productive capabilities.

Now we know how we were using it, but our audience wasn't necessarily initiated in this particular view of the world. So we decided that to make life much more accessible and to make our use of the data, our view of how we use the tool more accessible to more people, it would be great if we could insert it in a narrative-- in a narrative about the country, in a narrative of what is this country in terms of the capabilities it has. Where is it coming from? What has been its recent evolution?

And then the most exciting thing, where it could possibly go? And we do this with 10 graphs that are automatically generated. By the way, you can play around with them. You can change the parameters and make them speak to details and aspects of the story. So these are 10 interactive graphs and with something that you developed, which I find incredible, which is the idea that the text is automatically generated.

ANNIE WHITE: It's dynamic.

RICARDO HAUSMANN: It's dynamic. It's incredible. The text is automatically generated. I mean, you're going to drive us all economists out of a business, I guess. It tells the story of a hundred and thirty-plus countries in a very peculiar way. And in particular, it's not about just where the country is coming from, but the most exciting thing, where it may go to.

ANNIE WHITE: That's right. When we start with a country profile, every country story starts exactly the same way. And that's by showing its export basket. Why do we start the growth story with an export basket?

RICARDO HAUSMANN: I think the export basket reflects what a country is relatively best at. And as a consequence, it tells you something about in what areas of, say, the technological space it excels. For example, you can go to a country like my own, Venezuela, where you'll see that essentially export basket is only oil.

You go to a small country like Slovenia, and you find that it's a country of a couple of million people. They export \$35 billion of the most sophisticated products that you can imagine with enormous heterogeneity. You see, how could these people become so good at so many things? Relative to, say, my country, which is a country of 30 million people, which is only good enough to make oil and sell it to the rest of the world. So I think the export basket is very telling.

ANNIE WHITE: Great. So, Ricardo, after we examine a country's export basket, we transition in country profiles to its market share. Why do we want to examine the evolution of a country's market share?

RICARDO HAUSMANN: One of the most popular ideas in economics is the ideas that countries should specialize in their areas of comparative advantage. That's probably one of the worst ideas that ever existed, and it's one of the most misguided ideas. When you look at the evolution of a country's market share in different products in the world, what strikes you is the fact that countries don't specialize into the few products in which they happen to be very good at, but countries dramatically evolve the areas in which they're good at.

If you look, for example, at the market shares of China, Thailand, Vietnam, you'll see that they used to be very small exporters in agricultural products, and suddenly they got into garments, and 15 years later they got into electronics, and 15 years later they got into machinery and chemicals and so on.

So that what they are good at, which means their export basket, has been evolving, has been changing. When you find other countries that have stagnated, you find them, for example, that they got into agriculture, and then they were more or less beaten around and progressed too much in agriculture. They got into garments, maybe say, like, Sri Lanka or Tunisia. And then they got stuck, and very little happened in terms of other things like electronics, machinery, and so on.

So looking at the evolution of a country's market share in the world, it tells you how they have been able to evolve their comparative advantage. It is a dynamic story of what's been happening to their capabilities.

ANNIE WHITE: Ricardo, we know that the team here has determined that by understanding what a country knows how to produce today, we can start thinking about the higher complexity products it might be capable of producing in the future. So Country Profiles incorporates this really interesting prescriptive element, beginning with what we call the strategy space. Can you expand on how the strategy space can actually tell us something about a country's growth opportunities?

RICARDO HAUSMANN: Well, every country has to play with the cards it has been dealt with. And those cards come from history, come from

geography. But you don't start the game from scratch, and not everybody starts at the same point. So we need to characterize where is a country starting the game. Where is it now? And we do it by looking at two dimensions.

The first dimension is does it have more capabilities than are currently expressed in its level of income? Is it more capable than is currently reflected in how rich it is? Or does it need more capabilities if it were to be richer?

We look at some relationship between its level of income and its level of capabilities. And so we split countries between those that have more than enough capabilities to be richer than we are, and they have yet to express them. I like this expression by this pre-Socratic philosopher called Pindar, who says, "Become who you are," like, do you already have what it takes to be richer than you are or not? And that's the first dimension.

The second dimension is how close are the things that how to do from the things that you don't know how to do. We call it in our language how well positioned you are in the product space. The product space is like a forest where every tree is like a product. And there are some parts of the forest that are very dense where one tree is very, very close to other trees. So if you're in that part of the forest, it's very easy for you to move to nearby trees because they are very nearby.

There are other parts of the forest that are more barren. And if you happen to be there, moving from one tree to the next tree may be much more challenging because the trees are much farther away from each other. So the second dimension is, are you close to nearby diversification opportunities or not? And this gives us sort of like a two by two matrix of saying, do we have more than enough capabilities? Is it easier for you to get more capabilities by just moving to nearby things? And that's where we essentially start by assessing the strategic predicament that our country faces.

ANNIE WHITE: Great. Beyond a broad strategy for a country, what else can country profiles do?

RICARDO HAUSMANN: Well, they tell you not just what is your predicament. They tell you what specific products you could potentially get into? And it tells you that in three dimensions. It tells you or in maybe more dimensions.

The first one is it tells you what things are relatively near to your current productive capabilities. Number two, it tells you, if you want, how sexy are those things? In a couple of dimensions, how large are those markets? How dynamic are those markets? And very importantly, how complex is that product? Because we find that the complexity of products is very important.

If you export products are more complex than your current level of income, you're probably competing with countries that are richer than you that pay higher wages, and you soon might have an opportunity, if you were good enough to get into those industries to be competitive in those industries, and so on.

Second, it tells you if you want how sexy it is. The third dimension

tells you in some sense how strategic is that move. Because it tells you, if you were to become good at that product, how much easier it will be for you to continue with other ideas of diversification? How much closer does it get you to other sexy products that you might want to get into in the future?

And with these three dimensions, we're able to create a recommendation or a ranking of products. And in the current version, we are offering 50 products out of 6,000 if you want. So it's not one product. It's a whole menu of things, but it tells you more or less where your comparative advantage might evolve. And I think that these are things that are potentially useful, not just for policymakers but for investors.

If I'm an investor, I'm thinking, gee, I want to create an enterprise in this country that's going to produce X. How likely is this X to be viable, successful in this country? And the same question if I'm a country, for example, we're now working on Ethiopia. And Ethiopia has been trapped in exporting only essentially agricultural and some mineral products, and they might want to move into manufacturers.

What are the manufacturers that look more feasible now? And maybe, from then, what would come next, et cetera. So the country profile tells you this list of products that are most attractive in these three dimensions. How close they are? How sexy they are? How strategic they are in terms of opening up further doors to diversify down the road? And you can play around with it. You can play around with it. You can play around with weights, et cetera, and get an idea of what the future might look like.

ANNIE WHITE: A really cool feature is that once a user discovers those 50 new products, they can actually click through on any one of them and explore the import, export markets, the evolution of that product over a number of decades in the Atlas.

RICARDO HAUSMANN: That's incredible because who could your potential customers be? Who your competitors are going to be? How dynamic has this market been? Where is the market been growing? So all of these things are answerable through this tool.

ANNIE WHITE: Great. So one of the things a user will discover in a country profile is we actually say based on those two criteria. We think we can assign you a particular strategy based on which quadrant you fall in in the strategy space. So let's say I'm a policymaker or an investor, and I get to my strategy space, and I'm assigned, for example, the light touch policy or a parsimonious industrial policy. What kind of insight can I expect to gain now that I've been assigned that approach?

RICARDO HAUSMANN: Well, if you are a country, say, what you call a light touch policy, it means it's a country that has more than enough current capabilities to be richer than it is. And if it wanted more capabilities, it's easy for it to get them because there are many things nearby that it could move into.

So, in that country, you're probably not going to need to make too many efforts to have this economy grow. For example, countries that happen today to be in that quadrant are countries like India, China, or

Vietnam. And in our mind, it's no surprise that these are countries that are growing relatively fast.

At the opposite end are countries that need more capabilities to be richer than they are, but it's hard for them to get them because there is nothing nearby, and the things that they could get into would require a lot of coordination, solving a lot of chicken and egg problems that always hamper the development of new things.

So for them, it will require a lot of effort, a lot of coordination, a lot of willful policies to get them to move. And they are in the space that we call strategic bets. And one strategy that you mentioned was parsimonious industrial policy. It's countries that need more capabilities. They can't become much richer than they are with what they have. But it's relatively easy for them to do that because there are many diversification opportunities that are relatively nearby. So they would require a different strategy of how you go about it.

ANNIE WHITE: Country Profiles is now transitioned out of beta mode, and we're really excited for what comes next. Do you know what comes next for the Atlas?

RICARDO HAUSMANN: Well, that's a great question. The Atlas has been amazingly successful. We're close to getting to our one-millionth individual user. And we have an open mind of what might come next, and we are listening.

Now that the Country Profiles will be out, we are going to expect to hear from our audience what new features, what new things they would like to see there. We've added a bunch of new features. There's a lot of things that we want to do that we haven't had the time to do, but there will be new releases going forward. But I want to invite people to test it out, try it out, and maybe make suggestions of where the Atlas might continue to go.

ANNIE WHITE: Great. Thank you, Ricardo, for taking the time to chat today, and congratulations on your new tool.

SPEAKER 2: If you want to learn more about the growth lab's latest research and events, please visit growthlab.cid.harvard.edu. See you next week.