



*A podcast about the economics of trade & policy*  
with Chad P. Bown

## Episode 187. Industrial policy and the rise of Romania's Silicon Valley

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Transcript

(lightly edited)



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**Chad Bown:** Industrial policy is back. Governments are turning to industrial policy to shape certain sectors of their economies – semiconductors, electric vehicles, and clean energy, just to name a few. And it's not just China now actively pursuing industrial policy. The United States, European Union, Japan, South Korea and loads of other countries are trying it out too.

Historically, government use of industrial policy often didn't work. Industries didn't grow to become competitive. Taxpayer money was wasted.

But sometimes it did.

This episode explores one industrial policy that worked. This industrial policy example is also one that you probably have never heard of.

In 2001, Romania targeted an income tax break toward a selected group of workers in its information technology sector. At the time, Romania was a small country struggling to transition from communism to capitalism. Behind the industrial policy idea was a little known PhD mathematician turned politician named Varujan Pambuccian. This mathematician's idea helped turn Romania into what some have called the Silicon Valley of Eastern Europe.



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To help me tell this incredible story of industrial policy, I will be joined by a very special guest.

**Isabela Manelici:** Isabela Manelici, London School of Economics.

**Chad Bown:** Isabela Manelici is a professor at the London School of Economics. Isabela is a trade economist, she is Romanian, and she is also a scholar of industrial policy. And today, Isabela is going to share some of her research on Romania's creative use of industrial policy for its IT workers, as well as the policy's impact on her country's economic development.

**Chad Bown:** Hi, Isabela.

**Isabela Manelici:** Hi, Chad.

**Chad Bown:** You are listening to an episode of *Trade Talks*, a podcast about the economics of trade and policy. I'm your host, Chad Bown, the Reginald Jones Senior Fellow at the Peterson Institute for International Economics in Washington.

## THE EPISODE

**Chad Bown:** Romania is located in southeastern Europe. It shares borders with lots of countries, including Bulgaria, Hungary, and Ukraine. Today, Romania has developed to become an upper middle income economy with a population of about 20 million people.

During the Cold War, Romania lived under communism, loosely aligned with the Soviet Union. It was ruled by a brutal dictator, Nicolae Ceaușescu, for over 20 years. Then, in 1989, Romania had a revolution. After a trial, Ceaușescu and his wife were executed.

Like many countries in eastern Europe at the time, Romania began to transition. By 2004, it had joined NATO, the western military alliance. And in 2007, Romania became a member of the European Union. But Romania's road during that economic transition was bumpy.

Isabela, to begin, tell us about Romania starting from those early days of its economic transition from communism to capitalism in the 1990s.

**Isabela Manelici:** Romania in the 1990s was an exciting and chaotic place. After the fall of communism, the transition to a market economy was clunky. Policies were enacted fast and without much thought. The opening to trade and foreign direct investment was extremely fast.



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The first private enterprise that was registered in 1990 was a passenger transport company that was ensuring transportation between Romania and Turkey. That was the first source of imports of jeans and other consumer goods that the thirsty Eastern Europeans were looking forward to once Romania opened to free trade and the market economy.

**Chad Bown:** What was the Romanian economy like at the time?

**Isabela Manelici:** Romania was at the time low income. It was struggling to find its place in a world where it was facing worldwide competition. Its industries had been dominated by state-owned enterprises that had been heavily subsidized for decades. But once Romania opened to free trade, the majority of those industries were no longer competitive. There was a lot of job loss, a lot of crisis of identity of our economy, and the reforms that were undertaken at the time were confused and confusing. There was a lot of corruption, a lot of quick sales of state-owned assets where political elites were becoming nouveaux riche. And Romanians were facing two options – either to stay and try to navigate these stormy waters or take the path of the West now that Romanian borders were finally open to that option as well.

**Chad Bown:** Did Romania have a lot of manufacturing under communism?

**Isabela Manelici:** Romania during communism was very obsessed with self-sufficiency along all dimensions. And as a consequence, we had a very strong manufacturing sector. The emphasis on engineering degrees was very heavy. President Ceaușescu felt a lot of pride from Romania's production of trucks and any sort of equipment. As Romania transitioned from communism to capitalism, it had this legacy of a strong engineering and manufacturing background. STEM degrees were very well developed, and the career track of an engineer was the one that was the most respected.

**Chad Bown:** What were you doing at this time?

**Isabela Manelici:** I was still in Romania. I was in high school, and I was taking a path towards becoming an engineer. It was an industry that was booming, and I wanted to position myself in one of these booming industries.

**Chad Bown:** An important part of Romania's story involves its information technology sector, or IT.

In the United States and then subsequently elsewhere, the 1990s featured the rise of the internet. All sorts of companies began to adopt information and communications technology



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(ICT) into their business plans to help them compete and to grow. IT was also quickly becoming an important part of a country's economic development.

What was the state of Romania's IT industry as of the late 1990s?

**Isabela Manelici:** Romania's IT industry was extremely tiny. It had very few firms, very few employees, and in its beginnings, it was more focused on the repair and maintenance of hardware than it was focused on creating novel software products. We were importers of computers and other types of goods necessary in the industry. There was hope that, given our engineering heavy past, that this would be an industry where Romania could blossom. But there was not yet any concrete evidence that that's where the industry was heading.

**Chad Bown:** Were Romanian politicians considering policies to boost the country's IT sector?

**Isabela Manelici:** The major parties and the major decision makers at the time were too involved in petty fights over Romania's factories and forests. They were not thinking ahead in terms of Romania's competitiveness and what were strategic industries.

However, one particular individual, Varujan Pambuccian, who was an independent member of the Chamber of Deputies, a mathematician, had this hunch, this intuition, that this was the industry of the future. If only Romania had an early start in this industry, it would greatly benefit the economy.

**Chad Bown:** Why did Varujan Pambuccian think it would be good to have a strong set of software programmers in Romania's IT sector? Did he see this as part of a bigger part of Romania's economic development?

**Isabela Manelici:** I believe that Varujan Pambuccian, this Deputy, was a visionary. I think he did anticipate that the development of an information technology industry was not just an aim in itself.

IT is a highly specialized, high-skill industry, so I do not think you would expect that this would be an industry that would be a heavy employer for the masses. But I do believe – listening to his interviews, reading his books – that he felt that this was an industry that would have spillovers to both other industries and to consumers. The way I read him is that, indeed, he had expectations of widespread spillovers from this industry.

**Chad Bown:** Varujan Pambuccian, this one politician, has a plan for Romania's IT sector, seeing that IT might have broader spillover benefits for the rest of the economy.



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But what was wrong in Romania that meant the country would need some sort of plan?

**Isabela Manelici:** In short, Romania was experiencing a marked outflow of programmers that was stifling the industry.

Romania did a good job of training these programmers, and unfortunately did not do as good of a job in keeping them in the country.

**Chad Bown:** You were a kid growing up in Romania during this time. Was there much emphasis on IT training in the schools?

**Isabela Manelici:** I was growing up at this stage of my education in the early 2000s, and there was this sense that computer science was the future. More specifically, everyone wanted to be a network manager, and Cisco was having Cisco Academies all through Romania. I have a degree from my high school in network management from Cisco.

You need to be a programmer and you need to know English. These were the paths for the future.

**Chad Bown:** Amazing!!! Why then was Romania's IT and software programming sector struggling? What was holding it back?

**Isabela Manelici:** I would say there were two challenges that the IT sector was grappling with.

One of them was the high labor cost and high labor taxation. At the time, the personal income tax was progressive. Marginal tax rates went from 8 percent to 40 percent. In addition to very heavy social security contributions, it was hard to pay attractive net wages to software and hardware engineers.

On the other hand, this was an industry where it is easy to take one's skills and knowledge and transfer it abroad. It is easy to appraise one's skills. Typically, programmers are also good speakers of English.

Programmers are an ideal immigrant. There were countries around the world who had policies of attracting high-skilled workers from Eastern Europe and other countries. For instance, Canada was a magnet for Romanian programmers.

If you put together the less attractive compensation packages in Romania with countries such as Canada and others easily attracting Romanian programmers, the industry was not set to flourish.



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**Chad Bown:** Romania was worried about what is sometimes called “brain drain.” It is a country traditionally strong in educating its students in STEM (Science, Technology, Engineering, and Math), including Computer Science. But instead of working locally, Romanian STEM graduates would emigrate to Canada, and other countries, and be employed as computer programmers there.

To try to keep those software programmers in Romania, what was Varujan Pambuccian’s big policy idea?

**Isabela Manelici:** Mr. Pambuccian, the champion of this policy, had an idea to reduce the personal income taxes for programmers from the burdensome 18 to 40 percent progressive personal income taxes to a lower 8 percent tax rate that was constant. And there were two aims for this reduction.

One was to reduce the tax burden on the firms themselves. Another was to allow the firms to propose a more attractive compensation package for its workers.

**Chad Bown:** Did the Romanian government just agree to adopt Pambuccian’s proposed tax break to 8 percent?

**Isabela Manelici:** The proposed 8 percent tax rate was actually deemed cumbersome by the Ministry of Public Finance because it would require introducing some new forms. They said, “Why not completely exempt these workers from personal income taxes?”

There was already a specific form for no personal income taxes that was used for workers with disabilities; they would just be able to recycle that form. There are so few workers in the IT industry that this was not going to be a big deal anyway, so we might as well move them to the 0 percent personal income tax rate.

That was excellent news. Mr. Pambuccian had not anticipated that he would be able to actually obtain a full exemption from personal income taxes. And at the time of the introduction of this policy, this was a very generous reduction in taxation.

**Chad Bown:** Were there specific conditions that firms and workers would have to meet in order to take advantage of this exemption from Romania’s personal income tax?

**Isabela Manelici:** There were five conditions that had to be met, all at the same time, for a worker at a firm to be able to benefit from this exemption:



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The worker had to have a bachelor's degree that was from a certain set of eligible bachelor's degrees. The worker had to be employed by a firm which was in a particular industry in charge of software consultancy and supply. The worker needed to be employed, in the organizational chart of the firm, in the unit in charge of software development. The occupation of the worker within the firm had to be eligible, such as a programmer. And last, the firm itself had to keep separate balance sheets and be able to show that it was generating at least \$10,000 from software creation per exempted worker.

**Chad Bown:** Why did the Romanian government set up these 5 conditions? Eligibility for the subsidy seems pretty complicated. What were they worried about?

**Isabela Manelici:** The concern of both Mr. Pambuccian and the government that he was trying to convince to put this policy forward was that firms would relabel activities in an illegal way in order to claim this personal income tax exemption.

For instance, they might relabel hardware repair, or the accountant working for them, as being a software creator. He felt that this overlap of conditions – that were both were very precise and very hard to meet – this overlap was necessary to make sure that those workers and firms that were benefiting from this personal income tax exemption were, in truth, creating new software as opposed to misreporting or relabeling activities.

There was a second reason why Mr. Pambuccian was thinking of the policy to be implemented the way it was – namely that he was seeing the shift of the tide towards Romania joining the European Union and other organizations that would have a say in the type of industrial policies that Romania could set in place. And he wanted to make sure that this was a policy that could be kept in place for a long time. And because the policy was, in a statutory way, applying to workers, it was not under the umbrella of what was considered industrial policy at the time.

**Chad Bown:** In your view, was this Romanian policy an industrial policy?

**Isabela Manelici:** It is! There was a very clear sense of what were the activities that the policy wanted to support, namely the creation of software – a very knowledge-intensive, future-looking activity.

So yes, this is as industrial policy as it gets.

**Chad Bown:** Industrial policy is not just for manufacturing sectors to make physical stuff that you can touch. Industrial policy can also be used to promote service sectors, like software.



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Industrial policy also does not have to mean direct subsidies to companies for production. Here, industrial policy was coming through lower income taxes for a certain type of worker to try to get them to stay in Romania to help build up this IT industry.

Isabela, you told us earlier how the programmer's tax rate might be as high as 40 percent. This 2001 tax break that brought that tax rate down to zero could mean a lot more income. Suddenly, it might be attractive for a Romanian software programmer to stay and work in Romania's IT sector and not move away to a country like Canada.

This takes us to your research into the impact of Romania's industrial policy. This is a complicated question. What did you examine first?

**Isabela Manelici:** First, we look at what happened to firms in the eligible sector of software consultancy and supply, after the policy was unexpectedly introduced in 2001. And we compare the outcomes for these firms, after the policy, relative to before the policy. And we benchmark what happens to these firms relative to other firms in comparable sectors. We use different sets of comparable sectors, but in general they tend to be sectors that are high-tech and knowledge intensive. You can think of research and development, hardware consultancy, et cetera.

**Chad Bown:** What do you find?

**Isabela Manelici:** We find that 4-5 years after the introduction of this policy, firms in Romania, in the eligible sector, were significantly larger relative to themselves prior to the policy and relative to firms in comparable industries.

To give you an example, they had 24 percent higher operating revenues, 16 percent higher employment, et cetera.

**Chad Bown:** The Romanian industrial policy seemed to work. Firms that were eligible for the tax break grew a lot compared to other similar companies that were not eligible.

At the same time, fulfilling all of these eligibility criterion was complicated. Was there ever concern that not enough software programmers and IT firms were actually taking up the policy?

**Isabela Manelici:** While meeting all of these criteria for eligibility was perhaps challenging, there were incentives for workers and firms to jointly figure this out. And I want to emphasize the word *jointly*. Even from a statutory perspective this was a tax break to the personal income





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of the worker; thus, the worker needed the full buy-in of his or her employer in order to receive this tax break.

It is true that meeting all of these criteria at the same time was not an easy task. It did take time for firms to learn the rules and to understand how to separate their balance sheets. Some of them might not have had an organizational chart of the firm. And I have a hunch that this has restricted the widespread adoption of the exemptions.

**Chad Bown:** Let's turn now to 2013. What happened in 2013 and how did that affect the adoption of these tax exemptions and eligibility for Romania's industrial policy?

**Isabela Manelici:** In 2013, Romania had to switch from one industry code system to another. This was a switch that was happening at the level of the European Union.

This industry switch in the classifications prompted the Romanian government to rethink this particular policy, as this was an industry that was specific to an old industry code. In the switch to the new industry classification, they decided that a slightly larger set of industry codes were plausibly beneficial to the economy.

At the same time, there was a sense in the industry that they were attracting programmers that did not necessarily get a bachelor's degree in the restricted set of bachelor's degrees that were eligible. Therefore, they also decided to slightly enlarge the set of bachelor's degrees that were eligible for the policy.

**Chad Bown:** In 2013, Romania made the industrial policy even bigger. In addition to new industries becoming eligible for subsidies, more bachelor's degrees suddenly qualified too. As one example, even workers with an economics degree who had also studied a lot of computer science might become eligible for the tax break.

OK, what happened in 2013 when Romania expanded tax break eligibility to more firms, as well as to more workers at those firms, as well as the earlier firms that were already receiving tax breaks?

**Isabela Manelici:** We find that upon the policy being rolled out, many firms in the newly eligible industries experienced a jump in workers who are eligible for the tax break, both because of their own industry code and because of the longer lists of eligible bachelor's degrees. And of course, this provided an additional boost for the industry to expand.



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Again, we find that the 2013 episode, similar to the 2001 episode, led to firm growth on all possible measures of firm size – i.e., operating revenues, employment, assets, and the value of production.

**Chad Bown:** Romanian IT companies grew a lot with this industrial policy – both after the 2001 policy and the eligibility expansion in 2013.

What do we know about the workers – i.e., those software programmers that received the income tax break? Did they also benefit?

**Isabela Manelici:** To begin with a caveat, we do not have worker-level data.

That said, we do have suggestive evidence that workers have benefited from this policy. One piece of evidence is that, in a relative sense, we've observed less migration for Romanian programmers relative to other occupations and relative to before the policy. So it did seem that the policy has motivated Romanian programmers to give the Romanian IT industry a chance.

At the firm level, we do not observe enough detail in how workers and firms have shared benefits of this personal income tax. Yet, the fact that the policy required buy-in from both parties and the fact that we observe both improvements in average wages for workers and improvements in firm outcomes suggests that both workers and firms have jointly benefited from this policy.

**Chad Bown:** Your first set of evidence was that existing firms and workers in Romania benefited from this industrial policy. What did you do next?

**Isabela Manelici:** What we do next is to look at sector-level outcomes, and we do that for two reasons.

First, all of the firm-level analysis is looking at what is happening to a set of firms that are incumbent and that already exist at either the time of the initial policy in 2001 or of the expansion of the policy in 2013. But you might expect that the policies have affected incentives for new firms to be created in the economy in this industry. Being able to also capture the entry and growth of these new firms that appeared after 2001 and after 2013 is of first order importance.

Second, you might be concerned that the early 2000s were just an auspicious time, in general, and in particular in the part of the world where Romania is situated, for the IT industry to explode.



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For instance, in 2001, we had the dot com crash in the United States and one might think that maybe this led to offshoring of US multinationals towards central and eastern Europe. And maybe what we're capturing in the Romanian case – if we are only to focus on Romania – is the fallout of events such as the dot com crash or other technology or demand shocks that would've spurred the growth of this industry, irrespective of any additional policy that we might be thinking of.

For this reason, not only are we going to look at the growth of the industry in Romania, but we're going to benchmark that growth against the growth of the same industry in comparable countries.

**Chad Bown:** How do you do it?

**Isabela Manelici:** Exactly what we do is to compare the growth of the IT industry in Romania relative to the growth of the rest of the Romanian economy (we want to have a benchmark, maybe Romania in general is exploding), and this relative growth of the IT industry in Romania versus the rest of the Romanian economy – we're comparing it to the same relative growth in comparable countries such as the Czech Republic, Bulgaria, and Slovakia.

**Chad Bown:** What did you find?

**Isabela Manelici:** We find that in Romania, the IT industry grew much faster relative to the rest of the Romanian economy and relative to the same growth in comparable countries – 6, 7, or 8 times faster.

You might be concerned that these numbers are exaggerated. Thus, one can always benchmark this growth that we're finding against the actual growth rate. Just compare the revenues of the industry in 2013 versus 2001, and see whether these numbers make sense. And the actual industry grew 15-20 times.

This was an industry that was booming in general. So part of this growth was not necessarily attributable to the policy in question. And in general, that part of the world was growing in all industries.

**Chad Bown:** Earlier you said that a good software sector might also have spillover benefits for other industries in the Romanian economy. This was part of Varujan Pambuccian's plan.

In your research, how did you investigate whether that happened in Romania?



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**Isabela Manelici:** The development of an IT industry would have wide-ranging effects on consumers and on all sorts of industries.

What we do is split the industries into two groups. One category includes all the industries that are more heavily reliant on IT services as an input in production.

And in contrast, the other category is one that puts together all the industries that, in a relative sense, are less reliant on IT services as an input. So in this latter category, think of industries such as construction, textiles, and wooden products.

What we do is compare the growth of these IT-reliant group of industries relative to the growth of industries that are less IT-reliant in Romania, and again, relative to the relative growth of the same type of industries in comparable nearby countries.

And what we find is that, in Romania, relative to its comparable neighbors, industries that were more reliant on IT inputs grew faster relative to those industries that were less reliant on IT services.

**Chad Bown:** What are some of the ways through which those IT-intensive, IT-using industries were likely to have benefited from Romania having a bigger and better software sector because of this industrial policy?

**Isabela Manelici:** There are several ways in which the development of this industry might have helped them. The quality of the inputs might have improved or the prices might have become more competitive. With the exploding entry of new firms, both domestic and foreign-owned, there was an expansion in the variety of IT services that were being offered.

Through all of these channels – i.e., quality, prices, and varieties – it is very plausible that this has made it much more possible for these downstream industries to benefit.

In addition, we find that industries that were more reliant on IT services not only grew in general, but in particular they experienced an explosion of their exports, and Romania has also become much more attractive for foreign direct investment.

**Chad Bown:** Over time, how did Romania's neighbors respond to this policy?

**Isabela Manelici:** I think, with time, our neighbors understood what we were doing. Certainly Romania has become a magnet for worldwide known multinationals to set up an affiliate in the country. There are many Romanian entrepreneurs that have both a presence in Silicon Valley



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and in Romania. They have the day-to-day operations in Romania and the marketing or branding office in Silicon Valley.

We also have Romanian success stories. You might have heard about the antivirus Bitdefender. It's a Romanian brand.

We were starting to stand out in terms of our industry. We started being called the Silicon Valley of Eastern Europe.

So, of course, our neighbors also noticed, and with time they also introduced their own policies to support this industry.

**Chad Bown:** Now, with limited data, you were not able to do a formal cost-benefit analysis of Romania's industrial policy. But as a sort of back-of-the-envelope calculation, do you have estimates for the size of the revenues created by these IT firms? Can you compare them to, say, Romania's foregone collection of income tax revenue from the software programmers?

**Isabela Manelici:** To give you a specific number for every €1 of taxes that the Romanian government did not collect from the personal income tax that programmers did not pay for, those firms that experienced growth have generated more than €7 in revenues.

The back-of-the-envelope analysis is not exhaustive, but it is indicative that the foregone tax revenues that the Romanian government has experienced, due to this exemption from the personal income tax being much smaller than the revenues that were created by the firms that have grown as a result of the initial policy back in 2001 and the expansion of 2013.

**Chad Bown:** We've talked about how the benefits of this industrial policy were shared between the firms and the workers in Romania's IT sector.

But what about the distributional impacts between software programmers and other workers in Romania? Has this Romanian policy come under any criticism for targeting benefits to only those lucky enough to work as software programmers?

**Isabela Manelici:** The policy has become more politically sensitive with time. Programmers, in general, tend to be among the highest earning workers in the country. Some of them are working for foreign multinationals – Oracle, for instance. Others work for high-paying Romanian companies. So of course you can imagine that the average Romanian does not feel comfortable knowing that these already high earning individuals are, in addition, also exempted from the personal income tax.



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There are two ways that the government has managed to continue making the policy more palatable. First, by emphasizing that there are very attractive outside options for these programmers and that they can, any day, pack up and head to Silicon Valley or more attractive IT hubs around the world. They're very footloose and very easily adapted to other circumstances. This is a way to continue signaling to the IT community in Romania that we're invested in your development.

And second, just emphasizing the widespread gains for the economy of having a strong IT industry. That it's not just about this particular industry, but it's the kind of knowledge-intensive, high-paying, high-quality jobs that are permitted in downstream industries by the stronger IT industry.

**Chad Bown:** With industrial policy now emerging in lots of places around the world, the next thing I want is to have you help us put Romania's industrial policy into context.

Can you start by explaining the difference between the *effectiveness* of an industrial policy and the *efficiency* of an industrial policy.

**Isabela Manelici:** To put it simply, the effectiveness is answering the question, "Did it work? If you favor through, in this case a tax break, a particular industry, did that industry grow?"

The efficiency question is asking a slightly different question, namely, "Was this good for the country overall? Was this the policy that has improved the wellbeing of the country the most? Would there have been an alternative policy that would've led to even better outcomes for the country overall?"

The paper is answering the first question, "Did the policy work? But we don't claim to fully settle whether the policy was efficient.

**Chad Bown:** But on the first question, was it obvious that Romania's industrial policy for the software sector in 2001 would even be effective?

**Isabela Manelici:** It is not obvious that an industrial policy would be effective. For instance, if an industrial policy is targeting a sunset industry – an industry that is really in its last days, corrupt, where you have lobbyists trying to resurrect it – if that industry is not in a ripe condition to grow, one can throw as much money at it as possible and it will not grow.

Second, in a context of weak governments, it's not obvious that the government would know how to design and implement an effective industrial policy. In the context of the Romanian



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government in the early 2000s, it wasn't obvious that this would work. I just wanted to emphasize this because even the effectiveness of an industrial policy cannot be taken for given.

On the efficiency story, the typical justification for an industrial policy is that the country should have some sort of latent comparative advantage in that industry, and it needs only a policy signal, a policy push, to align resources towards that industry.

And not only that, but that particular industry or sector or activity that is being fostered is one that would have broader benefits to the economy. So, for instance, it would generate externalities for other industries.

Our evidence on the growth of downstream industries is suggestive. It's a necessary but not a sufficient condition that there were externalities. Moreover, it's an industry that is thought to be knowledge-intensive, which is another typical justification for choosing between one industry versus another to foster.

**Chad Bown:** One big-picture concern with infant industry policies historically has been that, like a kid, the infant industry may just never grow up and move out of the house to live, independently, on its own.

Here, it seems like Romania's IT sector did grow up and is now competitive internationally. Yet, Romania has not removed its industrial policy for these IT workers. Why?

**Isabela Manelici:** The threat of the footlooseness of the industry is the main reason why the policy is still in place.

The general argument in favor of infant industries is that that they need an initial policy push, but that, with time, the industry would become self-sustaining and there wouldn't be a need for the continuing subsidies or tax breaks to that industry.

So I agree that, in theory, if this were a successful infant industry, the fact that the policy is perceived as still necessary might raise a question mark.

There is a discussion among policymakers and the industry as to whether this tax break could be removed. There is a sense that this is such a footloose industry that any advantage that would be removed from Romania would be an advantage that would be offered elsewhere. And Romania would lose from not having this vibrant IT industry.



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What is the actual credibility of this threat? An actual, proper analysis has not been carried out. I think the Romanian talent is sufficiently broad that I would be skeptical that this tax break is the only reason that these Romanian and foreign companies are thriving in the country.

**Chad Bown:** Stepping back from your results, the evidence elsewhere for industrial policy seems really mixed. Many times, industrial policy does not work, it is not effective, and government tax revenue ends up being wasted.

Why do you think this particular Romanian industrial policy worked?

**Isabela Manelici:** My conjecture is that there are several ways in which this policy has helped the Romanian IT industry and the country more broadly.

First, it has focused people's attention, the attention of workers, firms, and policymakers. There was this new and exciting industry that had the potential to grow and the government was willing to support it through a generous tax break.

Second, it has put Romania on the map. Here is a country that is committed to developing this industry. Therefore other companies, other multinationals around the world, both in the industry, and in downstream industries that were reliant on IT services, all of a sudden saw Romania as an attractive destination for foreign direct investment.

I will give an anecdote here. There is an extensive article written by Renault, the French car manufacturer, that explicitly said that they decided not only to manufacture cars in Romania, but also to move one of its R&D centers, its *technocentres*, to Romania because of this well-developed IT industry.

And last, because Romania came about with this industry quite early on in the game – i.e., 2001 is prehistoric for the times of the IT industry – I conjecture that this has allowed Romania to have a first-mover advantage. Of course, other countries around the world have paid attention.

They have their own industries, and Romania now needs to compete with other countries to succeed from within and to attract FDI and so forth, but at the time, it did allow Romania to stand out.

**Chad Bown:** As my last question, whatever happened to Varujan Pambuccian?

**Isabela Manelici:** Varujan Pambuccian, the initiator of this policy, is indeed beloved by all those who understand the critical role that he has played for the development of the IT industry.





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Despite the fact that he has not taken a more prominent political position, he has always remained a Deputy and a Professor of mathematics, this particular policy is, I would say, his political legacy.

**Chad Bown:** Isabela, thank you very much.

**Isabela Manelici:** Thanks for having me.

## GOODBYE FOR NOW

**Chad Bown:** And that is all for *Trade Talks*.

A huge thanks to Isabela Manelici at the London School of Economics. Do check out Isabela's amazing paper with Smaranda Pantea titled "Industrial Policy at Work: Evidence from Romania's Income Tax Break for Workers in IT." It was published in *European Economic Review*, and I will post a link to the article on the episode page of the *Trade Talks* website.

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<insert super funny double underscore joke here>. ■

## Read more...

Manelici, Isabela and Smaranda Pantea. 2021. "[Industrial Policy at Work: Evidence from Romania's Income Tax Break for Workers in IT.](#)" *European Economic Review* v133: 103674.