



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

Episode 182. Is China's industrial policy working?

[Episode webpage](#)

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Transcript

(lightly edited)



Chad Bown: China's industrial policy is one of the most important trade issues of our time.

In 2015, Chinese leaders announced a new “Made in China 2025” program. It became hugely controversial. Made in China 2025 was a big reason why American president Donald Trump started a trade war. The trade war resulted in tariffs and retaliatory tariffs on more than half of US-China trade. It put the two countries on a costly path of decoupling parts of their economies.

At the same time, China's industrial policy has become something to emulate. Policymakers in the United States, Europe, Japan and elsewhere have all begun to implement new industrial policies of their own. For semiconductors, electric vehicles, and other industries – if China is subsidizing, then we must now too.

But what do we know about China's industrial policy? Is China picking winners effectively? Are China's subsidies making its companies more productive players in the global economy? Even if not, can the United States and China's other trading partners afford to sit back and not respond?

This episode explores these questions as well as why this matters. To do all that, I will be joined by a very special guest.



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Lee Branstetter: Lee Branstetter, Carnegie Mellon University.

Chad Bown: Lee Branstetter is an economist at Carnegie Mellon University and an expert on industrial policy. Lee is going to share some brand new research describing what we know about how China is implementing its industrial policy, as well as the effectiveness of its subsidies so far.

Chad Bown: Hi Lee.

Lee Branstetter: 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.

PART I. THE THEORY (02:14)

Chad Bown: Before we get into China and its industrial policy, I want to do the really nerdy thing and talk about economic theory. There are lots of reasons why governments – including the Chinese government – might subsidize.

Lee, maybe we can begin by having you walk us through why markets fail and where there is an important policy role for government subsidies.

Lee Branstetter: Markets underinvest – systematically underinvest – in lots of things that are really, really important for economic growth, productivity, innovation, and development.

For instance, research and development: Even in a world of strong patents and strongly enforced patents, firms can't prevent other firms from learning from the successes and the failures of their own R&D programs. A lot of the benefit of their R&D programs will necessarily flow to other parties. And so it's perfectly legitimate for governments to invest in basic R&D.

We also know that markets underinvest in human skill. If a company trains a worker and that worker is free to take the benefits of the training and put it to use for another company, then the first company pays the cost, but doesn't reap the benefit.

And yet human capital is probably the most important asset that any modern economy has. Since the market underinvests in education and training, governments should make that investment. They should subsidize.



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Chad Bown: Governments can also subsidize to provide public goods, to tackle other externalities, or for strategic reasons.

Lee Branstetter: Public good-like infrastructural elements that we know the private market systematically under invests in – governments have to make this investment and they should.

Governments can also subsidize things that limit pollution or other social externalities that we want to avoid.

And in the strategic trade literature of the 1980s and early 1990s theorists have actually shown that it's theoretically possible in oligopolistic industries for subsidies to tip the rents in an industry from one country to another.

Chad Bown: There is also local politics, even in China.

Lee Branstetter: Any government, even a government in a non-democratic system, has to assemble a coalition of interest that supports it, and that keeps it in power. And governments will often compensate the losers in order to keep their coalitions together.

Chad Bown: Governments have lots of reasons to subsidize. Sometimes a subsidy can improve upon what the market would deliver on its own. Other times subsidies are given for political purposes and create waste. In the real world, the US government subsidizes, European governments subsidize... so it's not just China.

How is China similar to and, maybe more importantly, how is it different from the United States in the way that it subsidizes?

Lee Branstetter: The unique structure of the Chinese economy affords the government lots of ways to subsidize firms and industries and activities that it wants to support. So the government can give firms direct cash payments – a very open, clear, explicit subsidy. The government can also give firms tax breaks.

But in China, subsidies can take other forms as well. The major banks in China are state-owned enterprises that operate under considerable political influence. The top leadership of those banks are appointed not by an independent board of directors, but by the party state.

If the Chinese government wants its banking system to provide loans, even massive loans, on favorable terms to targeted industries and targeted firms, that's likely to happen.



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In the United States, land is for the most part, a private asset that's freely traded in a pretty well-defined market. In China, land is owned by the state. The government and its agents have a lot of power over the allocation of land, and they have a lot of leeway to provide land, a pretty critical asset, to favored firms and industries, on favorable terms.

Chad Bown: The Chinese government also interacts with firms – both state-owned enterprises and private companies – in ways that end up acting like it is providing subsidies to other firms.

Lee Branstetter: State-owned enterprises play a much larger role in the Chinese economy than they do in most western economies, certainly more than they do in the US economy. And these state-owned enterprises are often key players in important sectors like civil aviation, power generation, and mobile telephony.

These state-owned enterprises can be directed by their state owners to favor a particular group of suppliers over another potential group of suppliers on the basis of the government's policy priorities rather than strict commercial considerations.

Finally, the Chinese government can try and make market access for foreign companies contingent on providing sensitive technology to indigenous Chinese enterprises on favorable terms.

Chad Bown: The Chinese government and the Chinese economic system subsidize firms in a lot of ways, some of which are very different from how things are done in the United States and more market oriented economies.

PART II. CHINA'S INDUSTRIAL POLICY (08:26)

Chad Bown: Let's go back in time and work through China's history of industrial policy.

Perhaps begin in the 1950s, with the Maoist era, and take us through when China started its reforms in the late 1970s.

Lee Branstetter: China's history of industrial policy goes back all the way to the Maoist era when industrial policy was extremely directive, extremely dirigiste, and extremely specific. When China entered its reform era, the Chinese government embraced the idea that within industries the government was going to allow markets to play a much bigger role in the allocation of resources and which firms sold what products and how prices that were generated.



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But the government, in its official policy documents, always held firm to the idea that the government's guiding hand would continue to guide the allocation of resources across industries. It would continue to guide the evolution of Chinese industry in general, even as the government allowed market forces to play a much greater role.

But during the first two decades or so of China's reform period, it was really this relaxation – this handing over greater play to market forces, this economic liberalization within industries – that was the driving force. So if you think about China's net movement, it was definitely toward the market in those early decades of reform.

Chad Bown: What was the economic impact of those first two decades of reforms?

Lee Branstetter: As we got to the end of the 1990s and the early 2000s, a lot of that within industry market liberalization had happened. The low hanging fruit of market liberalization had been harvested. Much of the basic transition to market mechanisms had been complete. And so at that point – you can think of this as being U-shaped – the trajectory of Chinese economic policy has reached the low point of government intervention because all this within industry liberalization has taken place, now the growth effects of that are subsiding. And we're really back to this continuing and ongoing effort to guide the allocation of resources across industries and to guide the overall evolution of the Chinese economy. And before the 2000s, even in the industrial policy documents, there was a lot of emphasis on developing within China capabilities that already existed elsewhere.

And the targeted industries were extremely broad. If you read these documents, China is really focusing on almost the entire manufacturing sector and then some. There was less emphasizing one particular industry at the exclusion of all others and really just trying to boost industrial growth writ large.

Chad Bown: China reformed and became more market oriented. The government is still giving out a lot of subsidies, but in terms of industrial policy, those subsidies were not precisely targeted. And I suppose when you are subsidizing everything, you are preferencing and targeting nothing.

Now I want to turn to your research on China's industrial policy. What specifically happened in China in 2007?

Lee Branstetter: In 2007, China made it mandatory for companies listed on a Chinese stock exchange to disclose in their annual reports the subsidies that they received from the Chinese government. What that means is that starting in 2007, at least for China's list listed companies,



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we can get pretty rich firm-level data on the subsidies they received, and we can actually use that data along with all the other data disclosed by these firms to their investors to try and get a sense of how subsidies are correlated with firm characteristics, especially productivity.

If the focus of Chinese industrial policy after the mid-2000s was really to strengthen the innovative capacity of these national champions, then it should be making firms more productive.

Chad Bown: Making firms more productive means companies are getting better. Firms are doing more with fewer resources. This is important because making firms more productive is what leads to economic growth for countries, which means a bigger pie to potentially be shared through things like higher wages for China's 1.3 billion people.

Your research wants to figure out whether the Chinese government is picking winners with its subsidies. How do you tackle that question?

Lee Branstetter: In order to determine whether the Chinese government is actually effectively picking winners we might imagine two possible statistical associations in these data. One is that the subsidies are being directed at firms that are already more productive. They're already more innovative, they're already more efficient, and additional subsidies will help them become even more so.

The subsidies will give them the wherewithal to leapfrog their Western rivals and become those global technology leaders. So it makes sense to see if the subsidies are being directed initially to firms that are more productive than others. If that is the case, and even if that's the case, for the Chinese government policy to be successful, it should also be true that after these firms receive these subsidies, they become more productive than they were before.

Chad Bown: What do you find?

Lee Branstetter: We find that the Chinese government is not giving subsidies to initially more productive firms. If anything, the statistical association is actually negative. The Chinese government is, on average, giving more subsidies to less productive firms.

Chad Bown: Overall, the Chinese government is not giving out subsidies to the winners.

Now, in your data, there are different types of subsidies. Firms often provide reasons for why they have received a subsidy. So you can look deeper. When you examine the subsidies that seem more likely to target innovation – for those subsidies – is there any positive impact on the firms' productivity?



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Lee Branstetter: Chinese firm's annual reports do often include language that describes what particular subsidies were for. But if we focus on that subset of subsidies that are meant to promote research and development, or the subset of subsidies that are meant to support upgrading of equipment, even for these specific subsidies, we find no relationship with productivity. It's not the case that firms that are more productive are more likely to receive these subsidies in the first instance. And it's not the case that firms that receive these subsidies become more productive later.

Chad Bown: If China is not picking winners, who is it picking? Which types of firms receive these subsidies?

Lee Branstetter: Firms that are larger, as measured by total assets or employment, appear to be somewhat more likely to receive these subsidies. As we dug into this data, it became increasingly clear to us that the subsidies provided to Chinese firms had lots of objectives, many of which were not connected to productivity. We see significant quantities of subsidies going into declining industries like mining. We see significant subsidies that appear to be designed to support employment in large firms.

And this makes sense. When industries are contracting, when firms that employ lots of Chinese citizens are threatening to lay off large numbers of their current employees, that could be a source of instability that could destabilize communities. The Chinese government would prefer that not to happen, and subsidies can delay – perhaps for some time – the day of reckoning or maybe even stabilize these firms so that large scale layoffs are not necessary.

It's understandable why the government would pursue this objective, but it's also crystal clear that the pursuit of this objective directly undermines the pursuit of turning the already more productive firms into super innovators. The money that's given to prop up failing firms is money that cannot be given to support the technology leaders of the future, and the more you do the former, the less resources you have to do the latter.

PART III. MADE IN CHINA 2025 (17:58)

Chad Bown: By the mid-2000s, the thinking of the Chinese government had begun to change. Chinese policymakers recognized a problem developing within the Chinese economy.

Lee Branstetter: China has emerged as a major manufacturer of commodity goods. It's won a very large place in global supply chains.



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But that's not enough for China's leaders. Right now they're thinking, "we don't just want to be the world's factory. We want to be an innovating country. We want our firms to be among the technology leaders in the world's technology-intensive industries." And, at some level, this is part of the natural process of economic development.

What was also clear is that as we move into the 2000s and the 2010s, we start to see total factor productivity growth decelerate as, again, a lot of the growth boosts from these early market liberalization episodes began to fade. Part of restoring productivity growth is enabling domestic firms to innovate more, to become more productive. There's nothing intrinsically wrong with that either.

Chad Bown: Also in the mid-2000s, something began to change in the Chinese government policy documents.

Lee Branstetter: The Chinese government began to articulate a clear strategy of displacing western leaders in technologically dynamic industries with homegrown national champions.

And the documents really began to emphasize something the Chinese called "indigenous innovation." Chinese firms inventing stuff is not a bad thing. You and I could benefit from that technology, and so could everybody else in the world. But again, the focus was on displacing existing western incumbent technological leaders with Chinese national champions doing very similar things.

Now, in the early 2000s, the Chinese economy was still small enough and poor enough, and its emergence as a major manufacturer was still recent enough that these documents weren't necessarily taken that seriously.

Chad Bown: In 2015, the Chinese government announced its new industrial policy called "Made in China 2025." To China watchers, there was something different about this version of Chinese industrial policy.

Lee Branstetter: "Made in China 2025" was new first in the sense that it was the policy document of the new Chinese leadership that had come into power in 2012. Some of the earlier policy documents that had emphasized indigenous innovation were the product of the previous leadership team.

Now a new leadership team is coming into power and at first they're making noises like they're going to double down on market liberalization. Like they're going to accelerate market-oriented reforms That had stalled a bit in the later years of the previous administration.



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But when Made in China 2025 came out, it was clear that the new leadership was doubling down on this idea of promoting Chinese growth through indigenous innovation, defined as using government resources to enable Chinese national champions to displace Western incumbent technology leaders.

And now, in the Made in China 2025 document, there were explicit market share targets with explicit dates attached to them. This looked like premeditated import substitution driven by subsidies, and it targeted sectors like new energy vehicles, renewable energy equipment, industrial robots, high performance medical devices. And the targets were extremely high – i.e., that Chinese producers would supply 80 percent or 70 percent of China's total consumption of these products.

Chad Bown: There were even more differences with Made in China 2025.

Lee Branstetter: The other thing that was new is that the new leadership appeared to be resolved to put very large amounts of money behind this. Now, exactly how much money is being spent supporting Made in China 2025 goals is a little unclear. It's hard to actually add all the sums together, but critical reports by the European Union's industrial group suggest that the numbers are in the hundreds of billions of dollars.

So this is serious money being put forward by a determined new leadership team that's well established in power. They're setting very specific market share goals, and they seem to be taking this very seriously.

And of course, by this point, Chinese companies had come closer to the frontier and the threat seemed much more real. By 2015, the world had already seen Chinese indigenous manufacturers take very large chunks of the global market in highly visible sectors like ship building and solar PV modules, just to name a few.

Chad Bown: OK. In your research, you are also able to collect information on which firms report that the subsidies they receive are tied to the Made in China 2025 program.

So, back to the picking winners type of question. First, are the firms receiving these Made in China 2025 subsidies different from other Chinese firms?

Lee Branstetter: The firms that receive subsidies that we associate in our data with Made in China 2025 are somewhat different from firms that are not. These are firms that do appear to be on a somewhat more innovative path. At the time that they receive the subsidies, they're more likely to have patents. Their patents are more likely to grow over time, and they are firms



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that are in the targeted industries. So there is some difference between the subsidy recipients and other firms.

Chad Bown: What impact did the Made in China 2025 program have on these firms? Do they behave differently or become more productive?

Lee Branstetter: The Made in China 2025 subsidies do not seem to be having the desired impact on the firms that disclose that they received these subsidies.

In a way, innovation is a hard thing to measure. So economists tend to look for proxies, or outcomes, of innovation. One outcome is an increase in measured productivity growth. Another, more indirect outcome could be a rise in the number of patents.

But there's no statistically significant positive impact on patenting in China. There's no statistically significant positive impact on patenting in the United States. There's no statistically significant positive impact on labor productivity, and there's no statistically significant positive impact on total factor productivity.

Chad Bown: Tell us a bit more about the logic behind looking at a company's patenting behavior. The Made in China 2025 program did only start in 2015, but still, even with a couple of years of data, would we have expected the impact on patenting to show up?

Lee Branstetter: You can make the case that there's innovative capability being built here and it just hasn't yet shown up on the data. And if all we had to go on was productivity, I might be inclined to agree. But firms around the world tend to have strong incentives to take out patents pretty early on in a successful research program because if you don't take out that patent, some other firm might.

And we just don't see the impact. And given how easy it is for firms to get patents in China, given the strong incentives they have with subsidies available at the local government level and elsewhere to take out these patent applications, it's really surprising that we just don't see any impact that these subsidies are making these firms more innovative or more productive.

Chad Bown: Before we turn to the policy implications, we should go through some of the caveats that you note about the limits to this research.

Lee Branstetter: China's listed companies play a disproportionately important role in Chinese output, Chinese exports, Chinese corporate R&D spending, but they constitute a small minority of the firms active in the Chinese economy.



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What's also true is that we're only capturing direct subsidies. So to the extent that these firms are also being subsidized through concessionary state-owned bank loans, through favorable government and state-owned enterprise procurement, through favorable allocation of land assets, and through being the beneficiaries from government orchestrated forced technology transfer, we're not capturing any of that.

Finally, our data is limited in time. Now in the paper, we stress results based on a data set that ends in 2018. In some of the robustness checks that we've done, we can follow firm attributes to more recent years, into the early 2020s.

Chad Bown: So it is possible that the positive impacts on Chinese productivity take a long time and just have not shown up yet in the data. There's no evidence yet, but we'll see.

PART IV. THE POLICY IMPLICATIONS OF MADE IN CHINA 2025 (27:47)

Chad Bown: Let me begin by playing devil's advocate. What's wrong with the argument that Made in China 2025 was just an aspirational policy. China had gone from a policy of near autarky in the 1970s, where the country was poverty-stricken, to opening up to the world and developing rapidly.

But by the early 2010s Chinese policymakers were worried about getting stuck in the middle income trap. Chinese leaders knew that to escape the middle income trap and get richer and become an upper-middle income country, it would need to become more innovative.

Lee Branstetter: When Western criticism of the Made in China 2025 plan began to mount the Chinese seemed quite surprised. And perhaps one of the reasons why they were surprised is that they'd introduced some of these ideas and aspirational targets in earlier documents, not generated a firestorm of controversy, and not triggered a trade war with the United States.

I think the Chinese leadership was taken aback by this and part of the defense that was offered was that the West was misreading this document and its angst. That this was actually not that different from the German government's fourth industrial revolution and strategic plan for trying to help the German economy evolve to the next stage of industrial development, with less emphasis on the industries of the past, more emphasis on the industries of the future. If it was fine if the Germans did it, what's wrong if we do it?

There's nothing wrong with the Chinese government wanting to expand the innovative capacity of Chinese firms. And let's be clear, a huge chunk of the human race's capability to invent is in China. A huge chunk of the world's engineers and scientists are in China. It is in the interests of



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the human race, with all the problems we face, that that resource be leveraged and utilized and that it generate lots of inventions.

The problem Westerners have is that they did take those market share targets seriously. That, in its initial articulation, Made in China 2025 really did look like a premeditated attack on Western sources of comparative advantage. And it looked extremely heavy handed. This was not an investment in innovative capability in general. This was an allocation of resources designed to limit the market share of Western firms to something like 30 percent of Chinese industrial robot consumption. It was a different animal.

Chad Bown: Going back to your research, how should Chinese government officials interpret your results? Has Made in China 2025 been good for China?

Lee Branstetter: When we try to evaluate the net benefits, if any, of Made in China 2025, it's hard, at least on the basis of our analysis, to come to a very positive conclusion. Resources have been expended, but the desired innovative outcomes have not yet emerged.

Now that in itself might be disappointing enough. We all know that you can spend a lot of money and not get what you want. I think anybody who's been through a kitchen remodeling experience has had a taste of that. But the problem for the Chinese government is not only have they spent money and at least not yet apparently achieved the desired innovative outcomes, but they've alienated and angered their trading partners and arguably brought down on Chinese firms and the Chinese economy a whole range of sanctions whose costs, at least in part, probably have to be added to the cost of the resources that were directly expended on this program.

The US-China trade war is a really big deal. And it's not just the United States. European multinationals and multinationals based in East Asian industrial democracies have also strongly criticized this policy and related policies. I think if you look closely, you can see evidence of declining willingness to invest in the Chinese market, some desire to find alternatives to Chinese source of supply, and a surprising degree of compliance with efforts by the US to limit the access of Chinese firms and certain industries to the most advanced technologies. This has been incredibly costly.

Chad Bown: Made in China 2025 has not really worked at making Chinese firms more productive or innovative. But how does China compare to other countries. Was it worth the try? Maybe Chinese policymakers were just uniquely bad at implementing industrial policy.



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Lee Branstetter: Some may interpret our paper as being especially critical of Chinese industrial policy. While our results do suggest that they are by and large not accomplishing the goal of enhancing innovation or productivity in a systematic way, I think it's fair to point out that this kind of industrial policy is hard for everybody.

Chad, you and I are old enough to remember when many in Washington looked to Japan as an outstanding example of a country that had skillfully used industrial policy to turn itself into an economic superpower. But the evidence that supported this view was largely anecdotal, and when economists actually dug into industry-level and firm-level data and started testing the hypothesis that Japanese government subsidies, or other forms of goodies, were going to the productive industries and made them even more productive, the economists found results that are very similar to the results my co-authors and I are finding.

And the reason is that in Japan too, the government policy objectives of stabilizing declining sectors, avoiding politically painful layoffs, compensating the loser – those were very real – and their pursuit undermined the objective of using subsidies to transform more productive firms into the technology leaders of the future.

Japan clearly grew very well for a very long time. It did produce some great companies and some great innovations, but it's really hard to connect much of that to what we now think of as industrial policy.

And to be fair, when the United States and Western European countries tried to do this, and we have tried to do it from time to time in the past, we often run into exactly the same policy challenges, and the same disappointing results.

Chad Bown: I also want to push you to clarify how we should interpret some of your results. Saying that Made in China 2025 did not have an effect on the productivity or innovation of Chinese firms is not the same thing as saying Chinese subsidies do not impact China's companies and their ability to compete with Western firms. You are not claiming that these Chinese subsidies are no big deal and that they are not imposing big costs on China's trading partners, and that we shouldn't worry about them.

Lee Branstetter: So it's natural to ask if the component of Chinese industrial policy that we're able to capture in our research is not leading firms to be more productive, then is it something that we even need to worry about?

The problem unfortunately, is that subsidies can distort trade, they can distort the global allocation of production, and they can have significant negative effects both for China and for



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the world, even if they're not systematically leading to better innovation outcomes or more productive firms.

When a subsidy is big enough, it can do all kinds of things. With enough subsidized water, you can grow cotton in the Arizona desert. With enough financial subsidies, relatively inefficient firms could still outcompete more innovative, more productive firms outside of China.

If you rig the playing field enough and you're really constraining the ability of the better firms to create the innovations that would benefit the world. If you're limiting the ability of the more productive firms to innovate, then you could be in a situation where, basically the bad firms outweigh and outproduce the good ones, the global rate of innovation falls, the set of innovative new products that could be available to consumers around the world is smaller than it otherwise would've been, and the whole world, including China, experiences a welfare loss.

Chad Bown: Chinese subsidies leading to less innovation and productivity and growth in the rest of the world – in addition to China itself – could be one big global problem. Are there other problems with China's policies?

Lee Branstetter: It may be that some Chinese firms are just not fated to become highly innovative developers of world transforming technology, but they're amazingly efficient and cheap producers of goods that already exist.

One could imagine a very productive division of labor in which Chinese firms are good at doing certain things, western firms are good at doing certain things, both sides specialize and what they're best at. And the entire world benefits from the efficient allocation of resources and the efficient production chains that thereby arise.

But if Western firms don't feel that they're welcome in the Chinese market, if they don't feel that their intellectual property is going to be protected, if they feel that they're going to be targeted, and the sources of their comparative and competitive advantage are going to be taken from them by government market intervention, then these win-win collaboration opportunities just aren't pursued, and the world as a whole is poorer for it.

Chad Bown: Even if China's subsidies are not accomplishing what we would consider to be their most important goals, they can still be a source of inefficiency and competitiveness concerns for the rest of the world. These subsidies are creating huge trade fights between China and its partners. But how should trading partners respond?



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Lee Branstetter: The question of what China's trading partners should do about all this is a really difficult one. At some level, I think it's going to be very difficult for the United States or any other country to take the position that it's just not legitimate for China to become more advanced, more innovative, and more productive. I don't think the rest of the world would go along with it. And there are 1.3 billion human beings that live in that country. I personally do not want to see them condemned to a future of stagnation or worse.

What I would hope we could eventually do is all learn from what this analysis seems to be saying, which is that if China wants to improve productivity and increase innovation, this does not seem to be a particularly effective way to do it.

Chad Bown: Are there other ways for China to accomplish its long-run objectives of becoming a more productive and more innovative economy?

Lee Branstetter: Absolutely. Recent research has demonstrated that China's coastal cities have created a pretty good public education system, but in the rural interior, the public education system leaves much to be desired. China's rural children, who are the majority of children growing up in China, are not being sufficiently educated. It's an educational system that under invests in the majority of Chinese citizens that live in that part of the country in their youth. It's going to inevitably limit the ability of these people to innovate, to produce, to enjoy high incomes, and to eventually reach a first world standard of living. And as economists, we think it's really hard for the government to imagine where, or in what industry, or by what individual, world-transforming innovations are going to come into the marketplace.

What if the Chinese government took the money that it allegedly spent on Made in China 2025 and had instead spent that money on shoring up the educational and social support programs that nurture its rural children? I've got to think the payoff for China and the world would've been better.

Or if China had taken that money and invested it in improving the ability of Chinese universities to conduct the kind of basic scientific research upon which all industrial innovators build.

Chad Bown: As my last question for you, let's turn to a potential off ramp for the trade tensions and industrial policy arms race now emerging between China, the United States, Europe, Japan and other countries. If you could advise these governments to sit down and start somewhere on these policies, what would you suggest?

Lee Branstetter: If both China and its trading partners / rivals could take their industrial policy competition – that's focused at the production stage – and move it upstream into education,



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into training, I think it would be much easier to avoid this kind of arms race dynamic that we're currently in, in which, when China subsidizes something western countries feel like they have to institute a government intervention of their own. And of course our intervention might undermine the Chinese government intervention and so they have to intervene more, or in a different way, and then we have to respond. It's bad enough that we're stuck in this dynamic, but if we're subsidizing things that don't seem to work, that's even worse.

Are there ways that we could put guardrails around this competition, around this rivalry that can move some of that expenditure upstream where it's more likely to actually accomplish the articulated long-term goals of the Chinese government and avoid this kind of poisonous, tit-for-tat trade friction that we seem locked into?

Chad Bown: Lee, thank you very much.

Lee Branstetter: Thanks for having me.

GOODBYE FOR NOW

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

A huge thanks to Lee Branstetter at Carnegie Mellon University. Do check out his brand-new research on Chinese industrial policy – he has two fabulous papers – I will post links to both on the episode page of the *Trade Talks* website.

Thanks to Melina Kolb, our supervising producer. Thanks to Sarah Tew, on digital. As always, thanks to Collin Warren, our audio guy.

Do follow us on Twitter or Mastodon, we're on @Trade__Talks. That's not one but two underscores, @Trade__Talks.

<insert super funny double underscore joke here>. ■



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Read more...

Lee G. Branstetter, Guangwei Li and Mengjia Ren. 2022. [Picking Winners? Government Subsidies and Firm Productivity in China](#). *NBER Working Paper* No. 30,699, December.

Lee G. Branstetter and Guangwei Li. 2022. [Does "Made in China 2025" Work for China? Evidence from Chinese Listed Firms](#). *NBER Working Paper* No. 30,676, November.