



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

Episode 189. South Korea's controversial industrial policy

[Episode webpage](#)

July 23, 2023

Transcript

(lightly edited)



Chad Bown: For decades, South Korea has been at the center of a big economic puzzle.

In the early 1950s, South Korea was one of the poorest countries in the world. Just a few decades later, South Korea had grown to become both an upper income country and one of the largest economies around.

The puzzle was how did South Korea do it.

Some point to the early 1970s. At that moment, Korea implemented a massive industrial policy called the Heavy and Chemical Industry Drive.

The first really hard question is whether these two events were connected. Did South Korea's industrial policy contribute to its miraculous economic growth? Or would South Korea's economic growth have happened anyway?

The second question involving that South Korean industrial policy was almost as hard. Did South Korea's industrial policy of the 1970s even work. Some say yes, others say no.



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This episode shares a fresh approach examining that second question into South Korean industrial policy. To do so, I will be joined by a very special guest.

Nathan Lane: Nathan Lane, University of Oxford.

Chad Bown: Nathan Lane is a professor at the University of Oxford. Nathan is a scholar of industrial policy and today, Nathan is going to share some of his new research into the old question of how did South Korea's industrial policy work, and might it have been an important ingredient into that country's economic success story after all?

Chad Bown: Hi, Nathan.

Nathan Lane: 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: This story begins in the early 1900s. Between 1910 and 1945, the Korean peninsula had been occupied by Japan.

When Japan surrendered at the end of World War Two, Korea was liberated.

But much like Europe at the end of the war, Korea was then split in two – the Northern part was communist and run by the Soviet Union. The Southern part of Korea was backed by the United States.

But neither the North nor the South liked the idea of them being split. Each government installed on either side of the temporary border thought it should be the one ruling the entire country.

In 1950, North Korea invaded South Korea. Supported by the Soviet Union and China, the North wanted to reunify the country and to rule it under communism. To fight back, the United States and 20 other countries contributed military troops to a United Nations force. The Korean War was suddenly on.



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

After 3 years of fighting, the war ended in a stalemate with no clear winner. Roughly 3 million people had been killed in the conflict. Thousands of civilian massacres had been committed by both sides. Virtually all of Korea's cities were now destroyed.

Nathan, what was South Korea like at the end of the Korean War?

Nathan Lane: South Korea coming out of the Korean War is a place that is devastated. It's a place that is transitioning to a democracy under the leadership of a guy named Syngman Rhee, who is a deeply complicated and corrupt person. South Korea is a place that is really complicated in the post-war and a place that people are really cynical about. It's a place that a lot of people are not placing bets on.

South Korea is not a place that looks hopeful if you're a Korean standing there in a war-torn, devastated country run by a puppet regime. It's a place that's agrarian. It's a place that people have very little hope internally of progressing. There's land reform, there is some developmentalism, but it's a place that's largely pretty bleak.

Chad Bown: How would you describe South Korea's economic policy in the 1950s?

Nathan Lane: If you had to characterize what South Korea was doing in the 1950s, it was import substitution industrialization, or ISI.

It broadly typified an ISI-type regime. The government was very much using it as a vehicle for corruption. Insofar as being a developmentalist country, Korea was a place that was trying to protect consumer facing goods in order to incubate a domestic industrial base. And they were doing that pretty badly.

Chad Bown: How did things begin to change in South Korea in the 1960s?

Nathan Lane: By the 1960s, a very interesting fellow, Park Chung-hee, comes to power.

Park Chung-hee is a guy who's very much inspired by what Japan had done, and he's very much shaped by his experience as a Japanese colonial military officer.

He comes in and his goal for South Korea is to develop its way out of poverty and that is the keystone of his regime that he's building. And through some experimentation, through some initial five-year plans, they start an all-out export promotion push, which is very much a new thing.



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

So, he pivots very strongly from what had been happening prior to him and embarks on this complete export led mission of industrialization.

Chad Bown: Park Chung-hee, the new President of South Korea, had been very influenced by his time living in Japan. And by the 1960s, Japan was doing really well. Japan had managed to reindustrialize following the Second World War. It was exporting a lot and its economy was growing. For South Korea, Park got rid of import-substitution industrialization as a development strategy. He wanted to switch to using exports and trade to help the country grow instead.

What was the new policy approach? What industries did Park want to focus on?

Nathan Lane: Park decides to focus on – actually you could say they didn't really focus on any industry specifically. If you could export, you got goodies, if you could export, you got subsidies, you got tax breaks, you didn't have to pay customs duties. You could import inputs and resell them on the domestic market.

Park had built a regime that was able to carry out a rather sophisticated export promotion policy. At some point he's having regular export promotion meetings where he's bringing together captains of industry and various capitalists, making public export targets. (How binding these were bit of a mystery.) But there's this very public facing export push. You read newspapers and this stuff is all over the newspapers. And there's a bunch of devices he's using bureaucratically.

De jure, they really didn't have a sectoral focus. But implicitly what it promoted was the labor-intensive manufacturing industries that South Korea had then a comparative advantage in. So it really benefited these industries.

So, this is a place that's focusing on cotton textiles, footwear, plywood, vinyl siding. And oddly enough, they were really focused on wigs. Some people say you could think of the Korean export regime through the lens of wig manufacturing.

Chad Bown: We looked it up, and indeed, by the end of the 1960s, wigs made up apparently 10 percent of South Korean exports.

OK, let's turn now to the United States. Again, this is toward the end of the 1960s, and there are still roughly 50,000 American military troops stationed in South Korea to help protect it from the North. Lyndon B. Johnson is US president at the time. But Johnson does not run for re-election and Richard Nixon is inaugurated as President in January 1969. What happens?



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

Nathan Lane: Of course, at this time the US is very much engaged in the Cold War in the Asian Pacific Theater. South Korea itself is very close to Lyndon B. Johnson. They're sending troops over to Vietnam. They are an anti-communist stalwart, part the US war effort, very close to the US.

And Nixon comes into power, sees the writing on the wall – the Vietnam War and US activity in Southeast Asia – is not going great it decides with this announcement, people call the Nixon Doctrine, or the Guam doctrine decides and announces surprisingly to South Korea and many stalwarts, many allies that the US is going to end its direct military involvement in the Asian Pacific Theater. And that very much catches South Korea flatfooted.

In the summer of 1969, things really heat up and Nixon's Guam doctrine is in motion.

Chad Bown: How did the Park regime in South Korea react to this new Nixon policy proposing to pull the US military out of Asia and the Pacific?

Nathan Lane: So the Park regime hears this. There's shock, there's dismay. There are hopes that they would maybe be exempt from this. When that doesn't look like it's happening, and when the US starts pulling troops out, it's an existential moment for South Korea.

They look over at Vietnam. How could they possibly stave off an invasion from North Korea, if the US military troop presence is withdrawn?

This is a place that is a light manufacturing center. This is not North Korea. This is not a place that is building tanks domestically. It's a place that actually can't, it's a place that's very much reliant on that permanent US troop presence.

And so, when the US starts pulling troops out there is panic and there is the thought, “What are we going to do?”

Chad Bown: How did South Korea compare with North Korea at this time in the late 1960s?

Nathan Lane: At this time South Korea is very much dependent and it has been dependent on the idea of a permanent US presence there. Meanwhile, North Korea is doing stuff that looks a lot like what North Vietnam was doing. There are military incursions and there's worry about a full on Blitzkrieg.

In the 1950s as South Korea was futzing around with corruption and really being bad at development, North Korea had a head start and had rebuilt tremendously and had been



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

pursuing an all-out military push funded by communist allies. They're very much ahead of the game as Nixon is making this announcement.

Chad Bown: You described South Korean industry at the time as labor intensive, light manufacturing – clothing, footwear, even wigs. Did South Korea ever really try to make its own arms and military equipment to defend itself?

Nathan Lane: As Nixon's making this announcement in the early 1970s, as the Nixon doctrine is becoming more of a reality, South Korea was actually experimenting with maybe producing domestic arms. And they're bad at it. They're bad at it, and they know that.

The way around this, and the linchpin to actually producing this stuff, they realize is, is the inputs into this. It's the steel, it's the chemicals, it's the precision machinery. And so, it occurs to them, "Aha! If we create the inputs, we can eventually create the outputs. And so, we're going to target upstream, towards the source types of hardware."

It occurs to them that they can target the, the raw materials, the more upstream sectors, and they can circumvent this issue. And in fact, they can export this stuff and maybe get up to scale. They can maybe be big enough to produce this stuff competitively to eventually then create the weapons.

Chad Bown: With that goal in mind – of eventually having its own military industrial complex to defend itself – how did South Korea actually change its policy?

Nathan Lane: South Korea starts doing real hardcore industrial policy in 1973.

So South Korea starts pursuing something that will be called the Heavy and Chemical Industry Drive, or HCI. And the goal of this policy, and it's the cornerstone of Park's autocracy, is really to create a domestic military industrial base – one that's eventually able to produce domestic military hardware.

In secret, Park starts planning this with, with some technocrats and engineers. He's very much involved in the process. Park decides to target six other sectors. He targets steel, what we could call other metals (non-ferrous metals), machinery, petrochemicals, electronics, and shipbuilding, things that we think of as primary inputs into military hardware. The idea being that these are things that we could produce at scale. They're not too technologically advanced or out of our reach potentially.



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

And importantly, these are things that we've seen other people produce who might be like us. These are things that we've seen Japan successfully produce just decades or a decade prior.

Chad Bown: You mentioned President Park had spent part of his life living in Japan as a military officer. Tell us more about how his government saw the Japanese economy at the time.

Nathan Lane: So South Korea is very mindful – even though there is resentment towards Japan – but they're very mindful of what Japan had done. And they're very mindful of what Japan's industrial project consisted of. And they really see themselves technologically, and capability-wise, able to follow in their footsteps. They are really a blueprint to what they are doing.

And in fact, if you look in some of the planning documents, you could see them using Japanese input output coefficients from years prior. This is an economy like ours lagged.

Chad Bown: OK. With the announcement of the Nixon Doctrine, Park sees the writing on the wall and wants Korea to pursue this HCI industrial policy. What are his first steps?

Nathan Lane: During the Nixon Doctrine, during the heat of the Nixon Doctrine in the 1970s, South Korea is trying to get investment and trying to fund these projects. They're trying to fund the projects that would constitute HCI.

So, they tour around, they go around the world, they go to the US, they go to multilateral funders, they go to the World Bank, and they get rejected. They famously reject them. They famously reject loans towards these projects. And the rationale is usually “You do not have the comparative advantage to do this. You do not have the capacity to do this. What are you doing?”

So, Park and the South Korean government really realized, “We have to do this on our own. We're going to have to go it alone.”

Chad Bown: To the Korean government, they think there is a market failure. Capital markets won't finance the industries they want to see grow.

How did the Korean government eventually step in and come up with funding to target this HCI policy?

Nathan Lane: So South Korea gets creative. Serendipitously at this time, Japanese war reparations come online. They set up a pension scheme that essentially forces domestic households to save. Eventually, the international capital markets do come around and they are able to tap them. And what they do is they centralize this credit, they centralize this money,



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

and they direct it through the domestic banking system, through both what we think of as more conventional banks, but also through development banks like the Korean Development Bank. And their goal was really to, as one scholar puts it, “hemorrhage as much credit as they can in into these six strategic sectors.”

And what this means is that a South Korean HCI firm could borrow really cheaply at below market interest rates and for the long term.

And that wasn't all, they did a bunch of other stuff too. The tax system and public finance system really tried to incentivize investment as well.

Chad Bown: This takes us to your research examining the impact of South Korea’s industrial policy beginning in 1973 with the HCI Drive.

Ultimately, you do a lot of different things in your study. But what do you look at first?

Nathan Lane: Like a lot of industrial policy studies, we don't actually observe the government handing stuff or the bank handing stuff directly to the firm or the industry.

What I observe is *responses* to the policy. Do we see investment – investment in machinery, investment in factories, investment in intermediate inputs – i.e., the stuff used to produce the good? Do we see that stuff changing? Not only do we see that stuff changing, do we see it changing differentially relative to other industries, relative to non-HCI industries, the industries who are not receiving the subsidized credit.

Chad Bown: Did Korea’s industrial policy have an impact on these HCI firms? What do you find?

Nathan Lane: We see that, after 1973, for HCI firms and HCI industries, this policy has a huge impact. You see them investing more in capital. You see them using more costly inputs.

This stuff seems to be binding. It seems to be working.

Chad Bown: The evidence of firms investing more in inputs is consistent with the policy working. But ultimately what you care about are outcomes for these HCI firms. For example, do you see these industries growing?

Nathan Lane: Indeed, you see a lot of industrial growth as a result of this investment. We see output expanding, not only comparing South Korean steel to other non HCI industries, but we see exports and output expanding relative to HCI industries elsewhere.



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

We see exports increasing. Not only are exports increasing, we see the comparative advantage – how good Korea is at exporting stuff on the world market – changing. And we see the structure of the South Korean economy start to shift from these light industry goods toward these heavy industrial goods.

So South Korea seems to be getting better at producing and exporting these things internationally.

Chad Bown: What about other indicators for these HCI firms – things like employment, productivity, and prices? What happens there?

Nathan Lane: We see employment increasing in these sectors. We see output divided by workers – i.e., worker productivity – increasing in these sectors within Korea. And also, we do see evidence that, relative to the rest of the world, there is an increase in worker productivity.

We also look at prices – i.e., we also look at the prices of these HCI goods, and we see that they're relatively *lower* than other industries. This is important. This is important stuff because you can expand an industry and it might not be competitive and prices might actually increase in these industries. And we often see that they do with industrial policy, especially heavy industrial policy. So that's an important point.

Chad Bown: Output prices of things like Korean steel and chemicals falling suggests the industries are becoming more competitive. But how about globally? At the time, what was the Korean trade policy toward competition from imports of these HCI goods?

Nathan Lane: I think it's fair to say during Park's tenure, and this is different than what a lot of people write, but if you look at the data, through Park's tenure, in fact, tariffs and protection, output market protection, tariffs, quantitative restrictions, things like that – it's falling. It's falling throughout his whole regime.

There's not a lot of action insofar as him using overt protectionism to protect these markets in the traditional sense of him using tariffs, him jacking up quantitative restrictions on these things.

Chad Bown: You just described the trade policy toward goods that competed with the output the HCI industries were making. But what was Korea's trade policy at the time toward the inputs that these HCI industries needed to try to become competitive?

Nathan Lane: The interesting story is when you look at inputs and input protection.



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with Chad P. Bown

I think an important ingredient too of South Korean trade policy was not output protection, but it was something a bit different. They allowed – throughout all Korean industrial policy periods – strategic industries to import things freely. They didn't have to pay duties. In some cases, they subsidized imports of critical intermediate inputs from abroad.

Chad Bown: The next thing you look at is whether this industrial policy for these six HCI sectors had spillovers to other industries in the Korean economy. Let's start with the firms that use the output from these six targeted sectors.

Nathan Lane: Of course, HCI industries do not exist in a vacuum. They're connected to other industries. And if we look at those industries that are downstream, those industries that use steel to produce stuff – say automobiles, just as an example – you see that those downstream users of HCI products seem to benefit as well.

Their output increases. Their investment increases. There's firm entry into these markets and, in some cases, you see their prices also decline, relatively speaking. And you also see that eventually they too become better at exporting stuff.

Chad Bown: Looking in the other direction, it's possible that there might also be spillovers to the firms that sell inputs to these HCI sectors. Do they also benefit from the industrial policy?

Nathan Lane: So, if we think of those industries that sell stuff to HCI sectors - just to fix ideas, think of mining or a mineral type sector – we see very little action there. That might be puzzling. You might think, if the HCI sectors expanded then we should also see the expansion of those sectors who sell stuff to the HCI industry.

In reality, these are already pretty upstream sectors to begin with. This is steel and other non-ferrous metal industries.

And they're allowing HCI sectors to import things from abroad. Thus, what we see are pretty muted effects of this policy on upstream industry – i.e., on the mining and mineral type sectors of this economy.

Chad Bown: Overall, you find evidence that between 1973 and 1979, South Korea's industrial policy of targeting cheap credit toward firms in these six industries worked. Relative to firms that did not get the cheap credit, it impacted their input choices, how productive they became, how much output they generated, their prices, it impacted their exports, it shifted their comparative advantage, and it spilled over to downstream, using industries in the Korean economy as well.



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

So what happened in 1979?

Nathan Lane: Going back to the political world, in 1979, things really changed for South Korea.

President Park Chung-hee is assassinated by the head of the Korean Central Intelligence Agency at a giant New Year's party. And that effectively ends his regime, and it effectively ends the cornerstone policy of HCI.

1973 through 1979 was a very dramatic period for Park. He made a lot of enemies. This policy created a lot of labor tensions. It created a lot of tension amongst the capitalist class. There were a lot of people who weren't fans of this. There were losers of this policy. There were capitalists who were left out.

There is political turmoil happening across the Korean economy throughout this period, and that, of course, comes to a head with his assassination.

Chad Bown: Why did the HCI policy end in 1979?

Nathan Lane: The regime that eventually replaces Park is a regime that is very distrustful and very reactive against the policies he had pursued. This is a regime that is very much in favor of liberalization, especially liberalization of the capital markets.

They see the HCI policy as very emblematic of the distortions and the opulence of the Park era. And they start to retrench and rip out this policy. They further liberalize product markets, but they importantly start liberalizing the financial sector and the banking sector.

As a result, this period of cheap directed credit to these firms as it existed in the Park era was over.

Chad Bown: For economics researchers interested in infant industry protection and the effects of a temporary policy, why is the HCI policy ending *unexpectedly* so important?

Nathan Lane: The ideas of infant industry protection – these classic ideas – are often about a temporary policy, hopefully, paying dividends into the future.

We hope that industrial policy has long run effects. We often hope that a temporary policy casts a shadow. We hope that a temporary policy has effects far into the future.

The assassination and the removal of the policy is important for those of us interested in industrial policy and infant industry because industrial policy, if it gets put into place, there's



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

often huge incentives to keep it in place. There usually is no “post” period. These things are usually pretty sticky because there are a lot of incentives to lobby to keep these things around. Thus, in many circumstances, we do not see their removal, especially in such a sharp way.

This means we can use this rare occurrence – we can use the liberalization of this policy – to actually study the post-1979 period – i.e., what happens after an infant industry type policy.

Chad Bown: The Park assassination provides a rare opportunity for research to look at what happens *after* an industrial policy is suddenly taken away.

OK. So, for all of those effects that you identified earlier, what happens to them after the policy is removed in 1979?

Nathan Lane: You see some persistence of these effects. Output still stays relatively high in these industries. You see the continued development of their export advantage, or their comparative advantage, in their export industries. This, in fact, comes to a head really only after the fall of the regime.

Chad Bown: What about productivity?

Nathan Lane: As economists, we really think that productivity is important as well, especially when it comes to industrial policy. And so I look at productivity or, or to get wonky, total factor productivity. And I look at this in South Korean plants, and after 1979, you see that productivity is still relatively higher in HCI plants relative to non-HCI plants. Maybe that's the result of liberalization. Hey, it could be.

But one thing I also look at is industry-level productivity. And that had been trending upwards through the policy period.

I think it's fair to say that productivity did not decline for these industries. There was maybe even some relative growth.

Chad Bown: Why might we expect there to be growth happening then, after the policy was removed?

Nathan Lane: We think there might be what we call “learning by doing” effects that may be being promoted by this policy – i.e., as you are learning to produce stuff, you are getting more productive at producing that thing.



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

With your experience you're lowering your cost of production, you're becoming more efficient. And I do see some evidence of this type of learning happening.

Chad Bown: Stepping back from all of this, how would you characterize what we can learn – and what we can't learn – from this kind of research.

Nathan Lane: What I find is that this policy seemed to work, this directed credit thing – directing resources in this way to these sectors seemed to promote investment. It seemed to promote the industrial development of these sectors. And there seems to be evidence of spillovers from this policy. And this policy seems to have lived past its expiration date.

What I cannot show, what I do not show, is what was the aggregate cost vs. benefit of this policy?

What was its effect on aggregate productivity? What was its effect on aggregate growth? These are things that scholars really ought to study. And these are aggregate questions I think scholars really ought to develop.

Hopefully, we can develop the tools to explore these things better. So, this is only a jumping off point for this research.

Chad Bown: Now, we haven't really gone into it, but there are dozens of scholars before you who have also studied South Korea's HCI policy. And compared to those studies, you have some really novel results for us to now learn from.

For others now studying industrial policy, what have you learned that might affect their approach to tackling these questions?

Nathan Lane: I think what's really important here is getting the details of the policy and, in particular, its implementation right. I think what's really important with HCI is unpacking and getting right what were the actual policy levers at work. People say all sorts of things about the policy and when you look at the data, the policies that seemed to matter were directed credit. Surely allowing firms and industries to import things, like important inputs, really mattered too. And I think the devil is in the details of getting the implementation right.

Chad Bown: As my last question, I wanted to ask for your advice. Both for scholars of South Korea's HCI Drive who might be thinking about what to study next and for policymakers wondering whether applying this kind of industrial policy could be good for their country, what would you advise them?



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

Nathan Lane: What I really hope scholars focus on next, and where I think the literature should really go, in order to get policy lessons from these episodes, is to really focus on two things.

I think we should really focus a lot on getting granular about the policies, the way they were implemented, how they were implemented, and getting into the details.

And also getting the political economy right. I think ultimately a lot of this rests on getting the political institutions and the political incentives right to carry out these things properly.

Park had a very sophisticated regime to pull off this type of stuff. So I think a major question people should ask themselves in applying these types of lessons is, “Do other economies have the same capacity? Do they have the same capabilities to do these things in the way South Korea was able to do?”

Chad Bown: Nathan, thank you very much.

Nathan Lane: Thank you so much, Chad.

Chad Bown: To conclude this episode, I wanted to make two other points.

First, this is only one piece of research. Nathan’s study is amazing and a huge contribution, but it will not resolve the debate about Korea’s industrial policy. As Nathan indicated, there is a lot more work to do to examine the welfare consequences of the HCI Drive or to try to connect it as a key ingredient to Korea’s growth miracle. Even if the policy was effective, was it efficient? What were the costs of the policy to benchmark against its benefits.

Second, I also agree with Nathan that to understand industrial policy we really need to dig into its details. His research is an important example of how to treat those details seriously and is an approach that I hope a lot of scholars apply to their own research questions – whether investigating the impact of industrial policy, of trade policy, or of some other policy altogether. Details matter.

GOODBYE FOR NOW

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



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

A huge thanks to Nathan Lane at the University of Oxford. Do check out Nathan's amazing paper titled "Manufacturing Revolutions - Industrial Policy and Industrialization in South Korea." I will post a link to the paper 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>. ■

Read more...

- Lane, Nathan. 2022. "[Manufacturing Revolutions - Industrial Policy and Industrialization in South Korea](#)." University of Oxford manuscript, November.