Thank you, do I need that microphone? I guess I'm all wired, yes, great good to be here this this evening and be back at Stanford, and Jean thank you for that warm welcome and there are a few faces in the audience I know and I hope to have the opportunity to interact with the rest of you as the occasion may present itself.

This whole topic of infrastructure and connectivity and where infrastructure fits in economic development, political and military strategy is all a set of interesting questions, and I've been, I knew when I came here that that was an overlapping set of interests that many here had, and so it's been already only three weeks I've been here but been very productive, the opportunity to interact with people who share the interests that I have, and, indeed, many graduate students have come by and chatted about various aspects of this, so I’m very glad to talk with people that share my interest. I also at SAIS, Frank Fukuyama was there for many of the years that I was there, and I saw him the other day and he came and handed me a paper on Chinese and Western approaches to infrastructure development and a very interesting set of discussions about changing policy in the World Bank and then did some recommendations for the United States, so I had even been unaware that Frank was working on all of that.

In any case, let me just sort of paint what sort of four things I'd like to raise, and then we'll throw it open to Q&A and I won't go more than 40 minutes, I've promised Jean. First of all I'd like to tell you a little bit about the project because I think if I had fully understood what was involved when I had started, I would have given more thought to starting than I did, a very complicated, indeed vast project. Secondly I'd like to talk a little bit about the background of rail development because this is not a Chinese idea, this wasn't even a Chinese initiative, you might say China has jumped on somebody else's train in a sense, so I want to talk a little about where this idea comes from because I think China sort of has the capacity to, just by its participation, or its policies embrace things that really have other sort of genesis to them, so I'd like to talk just a bit about that. Then I'd like to talk about some of what I think are the intrinsically interesting questions this raises, which doesn't imply I have answers to all of those questions, but I think they are of interest and important not only in this current context but to other preoccupations in our field, then I'd like to just in a few cases point out where I have some preliminary conclusions, and I hope you will react to those conclusions because I'm in the process of writing this book with two colleagues that I'll describe in a minute. And we're gonna get the manuscript to the publisher hopefully in March or April, and so if you can help me improve that manuscript, I'm all all ears, and the ideas that go into it.

Now, the project began with a grant from the Smith Richardson Foundation and I got a word of the grant in 2015, late in 2015, and it was a proposal essentially to study rail development between southern China and Singapore, potentially going through seven Southeast Asian countries. So, we're talking about a study and it turns out to be a comparative study of really eight countries and so that's what I meant if I had fully understood the implications of all that up front, I might have been a little more reserved. So in any case, began and in 2015 just because I got the grant late in the year I went to China first because that was where I had the most contacts and could begin to go immediately, and that turned out to be a lucky choice, there's no substitute for luck sometimes in research and I was lucky because since 2015 China's become at least less and less open to discuss the kind of interviewing research that I do. But I caught them in a moment when they were relatively open,
made a bunch of contacts within bureaucracies that I didn't necessarily have a lot of prior contact with, and so I, actually even though China has been getting more constrained in its openness to some of this field research, China really has been really quite open to me but it's partly a function, I've gone throughout the whole period, but I made the key contacts before policy really began to change.

The project, you might ask, well what was the central animating question and the central animating question was that China, in a sense, is proposing, we'll say high-speed rail but high-speed rail sort of technically is 250 kilometers and up, and in fact China is building all sorts of railroads with all sorts of different speeds and so forth, but I'll just sort of slip into high-speed railroad even though China's scaled back the speed of a lot of the systems it's proposing to build. But in any case, the system they were proposing to build is in eight countries including obviously itself and my very central animating question is, we're talking about Chinese power, well, here is a case study you know can China do it. Can it do it financially, can it do it technologically, can it do it and, I think this is the hardest, politically, to make that many arrangements with that many players in totally different cultural and political systems, and the system has to fit when you're done with all this political engineering.

So I I started out my research with what I thought was just a pretty simple question, can China do it, why or why not, or if you have some sort of medium, middle range outcome, that is, it can do some but not all, why can it do some but not the other parts that prove more difficult. So in any case that was sort of the motivating question, now there are all sorts of more specific questions, and I'll get to them later on, but that was really what I wanted to see, if China had the national capacity to do what it was proposing to do. Now, because it involves eight countries, I immediately had enough common sense to realize I don't have contacts in all of these countries that would be sufficient to answer the kind of questions that you have, and so I got two partners, and we're equal co-authors in this whole thing. And they both happened to be former PhD students, but they were from Asia and they went back, one is Dr. Selina Ho at Lee Kuan Yew school, and another is a gentleman Professor Cheng Chwee Kuik at the University of Malaysia, National University of Malaysia. They spoke some of the, and then we got consultants in countries like Laos and Thailand where we had to get out into the field and communicate with people whose language was different than we spoke. So it's a collective project, three people, three different countries trying to understand what's going on in eight with respect to this. I also need to thank, you mentioned, Jean, the Asia Foundation - they have offices in eighteen countries in Asia, most, all of which include the ones that I was studying and the foundation was helpful to me in making contacts and they work in the area of civil society and governance and so that was very helpful. So let's put it this way it was eclectic, lucky set of constellation of relationships and resources that I had.

Now that gets to this map, and somebody came up before the lecture began and said well what are the yellow lines versus the black lines, and basically the black lines are where there is some form of rail, however primitive, and the yellow is basically areas where there isn't and where China sees itself in a sense of filling in the gaps as well as upgrading entire systems. Now, in fact, this line, this map isn't entirely accurate but for the purposes of the lecture I think it it works perfectly well. Now I'm titling the book, and it gives you some insight, I really enjoy talking to people and in Laos, there was one guy who was head of the planning agency, and I asked why you know, why is this little country with 6.7 million taking on a debt load that's about half its GDP to go through areas where relatively few people live and having to mortgage, in a sense, its patrimony into the future for a project like this. And he, the name of the book is Rivers of Iron, and I remember, he says you know great civilizations usually developed on the sea or long big rivers and of course the Mekong is here but
there in Laos upstream considerably and are big variations in water flow, so it's not as good for transportation and in terms of modernization. He says we're really the only landlocked country with no access to the sea among the countries you're talking about and so we have to build our own Iron River. That was sort of where that the topic came from.

So, in any case, where did this idea, though, for the whole connectivity network came come from, or at least elements of it. Well you have to go back to, and won't drag you through all this history other than just to flag it, the British and the French, the British were in Burma, certainly the French in Indochina, built railroads. And particularly in Vietnam, the two spurs that you see going from Hanoi up, and they go over to Haiphong also, were the French and the the British were in between Yangon and Mandalay among other things, and there were some building from Burma towards Siam Thailand, so forth. So this and there was always the vision that the idea was we want to get ultimately to southern China and Sichuan and Yunnan because, of course, the imperialists were on the coast, treaty ports that whole history. But the British, and the French in particular wanted to commercially penetrate southern China from the soft underbelly and tie their colonies to what they saw Sichuan as a potentially rich area, that was always kind of the dream, so key word here, dream, because you're talking about very forbidding terrain in many respects. I've read some of the accounts of what happened to laborers, many of whom on the French railroad were brought from Guangdong from Guangzhou, huge mortality rates and so on, a fascinating story about early rail development.

Then, of course, the World Wars intervened and the next sort of interesting part is Japan. Japan had the idea of really essentially going from the Korean Peninsula to Singapore by train late in the war because they were losing so much tonnage of shipping in the Pacific to the Americans, they were looking for an alternative route, and in 1944, in April to December, there was a project that I'd read about for many years in another context was called Ichigo and the idea was partly to bottle up and annihilate Chiang Kai-Shek's troops in southwest China, that was one of the objectives, but also to clear a route to build a railroad and they got started but didn't get very far before a World War II ended, so, long and the short of it is, the Japanese had essentially for a different set reasons. And then, of course, you had the end of the war and postcolonial revolutions and the liberation of the colonies to various extents, and took them a while to get their national governance structures and development plans in order, but in 1995, ASEAN had its fifth summit and adopted as a matter of ASEAN policy to build a Singapore-Kunming rail line, so that's essentially, and I think the idea was to, I'll talk about the central route, but it's essentially this line is what we're talking about. So ASEAN from it, from early days, 1995 being early days had the idea of a rail line that would go all the way from Singapore to China and tie ASEAN into China, of course China was a much more modest economic player in '95 than it is today. Then the next thing about that same time, of course Mahathir, we'll talk about him in terms of the recent election and so on in Malaysia, he, it turns out, grew up in an area where the British had been building railroads, was very influenced by the idea that rail could drive development and we had the opportunity to talk for him for about two hours, and it just goes to show when you find a leader who's interested in what you're actually interested in, they go on and on, and what became very clear as he was very much a devotee - is a devotee of development and railroads as a central part of that. And he was, in fact, as so motivated that in about 2001 when Zhu Rongji was Premier he spoke with Zhu Rongji and asked China to get involved in rail cooperation, and Zhu Rongji basically said, good idea, but not now, China needs railroads itself, we can't be building them for somebody else, and, by the way, we don't yet have the technology and so forth, we're gonna acquire it, but not now, that's not the time for us. Then, in 2010, ASEAN put forth, I mean you can just download the plan, it's the connectivity plan for 2025,
and once again railroad development is a prominent part of this plan. Then in 2012 after you had this connectivity plan, they formed a cooperation committee which China itself agreed to join in 2012.

Notice everything I've said about rail development had nothing to do with Xi Jinping, and he wasn't really, for these purposes, even in the picture here. And it was only in 2012-2013 when he took over that in 2013, and you know the talk Liz gave last week you gave, you mention the BRI OBOR 2013 Kazakhstan Indonesia speech. That's where China now has the technology, has the capital, has governments, some of which are more enthusiastic than others willing to cooperate and so you now, in this moment of Xi Jinping, have a Chinese leader who's interested, money, technology and at least some partners that are actually willing to cooperate, and others who are willing to talk. So the long and the short of it, this is a long story, but the point of departure ought not be this is something the Chinese have forced on their unwilling neighbors, now when you get down to the details and the financing and all of that, yeah, the Chinese are putting a lot of pressure and a lot of the propositions are worthy of skepticism, right? But the long and the short of it is, this is China recognizing an opportunity in a region and there is receptivity in the region to some version of this, although of course all the details are what matters.

Now there's one other, that's sort of the historic background, but there's another background, and I just sort of skated over by, I said China now has the technology and the industry right? Well, in 2001, China did not have the technology and the industry and in fact it wasn't even really a national aspiration. And so one of the interesting things, and I have a small part, sniffing part of one chapter on the development of the high-speed rail industry in China, and you can go several ways, this is important in several ways, but just as a sort of overall statement, in 2001, China had no high-speed rail industry. You just, pretty much zero, a few labs they had bought, I think, in like 2000 something, high-speed trains from Sweden, so can't quite say zero, but for all practical purposes, they had no domestic high-speed or even higher speed, you know, 160 km/h, China had no industry, and so it's a fascinating story how China did it. And China essentially did it through industrial policy, to find a purpose, put together about, I think the number was, don't hold me to it, 57 different research labs, dumped in lots of money, bought a lot of technology, they traded market, told foreign manufacturers, give us the technology, we'll buy it from you, but we have to, in the end, have the right to make that technology and put our own brand name on it. And there's a long discussion among those European primarily manufacturers about whether in the retrospect it was a wise idea to cut that deal, but they essentially traded market for technology. Now, in all honesty, too, a lot was stolen, and I'm not in a position to tell you what percentage was borrowed, let's say, or not borrowed, heist, heisted and what percentage was sort of through legitimate commercial transactions, but it was significant intellectual property that went. And some of the companies, Siemens and so on, are sort of replaying this back, did they make a wise set of decisions along the way. But the long and the short of it is, that by 2013, 2014 China had a technology that was worked and had built out a system that by 2014 was four trunk lines north-south, four trunk lines east-west and a high-speed grid that now was very close to reaching Kunming here and they wanted to export and you had this pre-existent set of ideas here so it was really quite natural for the Chinese to try to get each of these seven countries interested in their project.

So, there's a lot more to be said about each one of these but, just to relate it to one thing that we're all thinking about now, is the current trade discussion between the United States and China, is importantly over our unhappiness with Chinese industrial policy. And China, I've studied two areas where China had industrial policy, they're all complicated, one is this railroad story, concentrating
resources, negotiating with foreigners, trademark, temporary market for technology, subsidizing heavily the undertaking, then fencing out competition and using your government as a sort of focal point for negotiation in these countries. So that's the model the US doesn't like, just to put it crudely, but if you're the Chinese, you say what you know wait wait a second what's wrong with this model, we have an industry now that's exporting, competitive in the world that we didn't even have a decade and a half ago. I think from their point of view, they're gonna be a lot more reluctant to give up on this, and not even to mention it's sort of political centrality, the whole planned economy idea, and so forth. So it bears on China's experience of focusing resources on industries, and driving them forward and getting exports, they did a similar thing working with Toshiba and Westinghouse on civil nuclear power plants, so those are two cases I know quite a bit about.

So now with all that background, sort of what is the state of play, I mean, what's actually happening on the ground. Basically, you've got lines now to Kunming. Kunming, then, they're building this, essentially, this is under construction, that yellow line, and it goes from Kunming to the border with China, a town called Botan. You get an idea of what it means, we went all the way from Bangkok by land clear up to the Lao border, so we stop right along the train line stopped at construction sites, talked to workers, talked to train station masters because there's in Thailand a single track system, so there are stations along the way in Thailand, so the point is we went all the way up to the China border in 2017. And what I can tell you is, and it's what I saw in building the line from Shanghai to Nanjing, it isn't like you just lay one rail on the end of the next and you go linearly, the Chinese organize brigades, it's the military sort of nomenclature to the organization, and there's a brigade in this stretch and there's a tunnel digging group, there's a bridge building group, there's a rail laying group, and you go very rapidly from nothing to a system, because there are so many components working in parallel, not linearly. So, they're making great progress, I mean, I'm just describing the prior progress, what you think about it, that's a more complicated question.

But people who use the conditional, 'if' China reaches Vientiane which is on the Mekong, you don't need to use a conditional, they are going to reach it, and we can debate what the window of uncertainty is, but just circle the date 2021 and China is gonna be here. It's already underway, it's unbelievable, and I mean, maybe I'm too easily impressed, but I was interested in the tunnel boring machines. I thought, man, this has got to be German or something, right, very complicated. The Chinese are manufacturing the equipment, they're using to do it, its GPS-guided tunnel boring machines, just to a non engineer type, it was very impressive. Yes? [Question from an audience member – indistinct.] Well, I'll be honest and and, don't be offended, the Chinese sort of have a formula. A Chinese worker is the standard, a Vietnamese workers, five Vietnamese workers to a Chinese. Ten Laotian workers to a Chinese, so there's, the point is, it varies by their experience in the Laos will tell you, we don't have very many skilled people. So, but the answer is, it varies, but Chinese workers, and particularly in any kind of management role are very, and now I didn't have full access, they were surprised when I would show up at a construction site, right, and they they were pretty sure I wasn't supposed to be there, but I demonstrably was there, but it was a constrained interview situation, let's put it that way, and I kept waiting for the red lights of the local constabulary to show up, so these weren't always as extensive as I would like. But Chinese very obvious, but for some of the rock-crushing and all of that kind of stuff, you not only have Chinese poor laborers but labor prices are going up in China so China is now looking to Cambodia and surrounding countries for cheap labor to bring in, so there's the issue of foreign labor in the country, and then there's the issue of Chinese labor in that country, but it varies by the Chinese assessment of what the local labor is capable of doing - I'm not saying that assessment is correct, but I think, it sounds right in the sense of how they might think about it. Okay, so what's really happening is,
you're gonna I think be here with as close to certainty in this life as you can have on something like that, around 2021. That then brings the real prize, if you think about it China has to go through this sort of economic, I'm not trying to be disrespectful of Laotians, but there are an awful lot of mountains and not very much economic activity and urban areas, right, it's not where you would choose to build high-speed rail, but what you do want to do is get to Bangkok and this this whole area, and you got to go through Laos to do it, it's the shortest route and it was politically most feasible for the Chinese.

So the question is, well what about this to this, this incidentally is, if it is built, which I think it maybe, will be built probably by the Japanese, so this isn't part of the Chinese thing and that's an interesting thing, why would the Thais want the Chinese building one railroad and the Japanese precisely because they don't want to be too dependent on anybody, so there's political calculations in all of this. But I think you're going to see a railroad from here to here, and I have to explain what I mean by the railroad because there already is a railroad there, probably around 2026, if I had to circle a date on the map. Now, this line here, I said there already was a railroad and I said we when we were on the ground we stopped in various rail stations to talk to people, but it's just for the most part a single line and when I talk about the Chinese line it's 1.435 meters, that's what's called standard gauge, but the old lines that the French and the British built were basically one meter. So, but the Thai Rail Authority has a huge right-of-way, I mean it was King Rama V, I believe, of Thailand was father of the railroads and the railroads got a huge right-of-way, sort of like when we built the Transcontinental you induced people to build the technology by giving them land. Anyway, the Thai Rail Authority has a huge, so there's this single line going through and in much of the area they're double tracking it, but keeping it one meter. And a lot of people ask well high-speed trains aren't very good for freight, I think they want to use this one meter double track train for freight and local passengers, and then the high-speed train for more through-passengers between big urban centers. I think that's sort of the evolving idea, but the point is, there is along here a one single track line to here. Now what the Chinese have agreed, I think tentatively, and of course tentative is the key word which I'm a lot less certain about this link than that, but they've agreed, I think the Chinese have got a deal from the Thais, this double track will go in parallel and they're building stations that can take a high-speed train or they're making provisions within the right-of-way so I think the basic decision by the military government which wants good relations with China in part because the military government doesn't have good relations with us so, there's a kind of strategic aspect. But in any case, on this whole 653 kilometers thus far, they've only built 3.5 kilometers, which is to say virtually nothing, but I think they are going to do it, but key word in that sense is “think” and if you had another coup, or another change of government in Thailand, realities could change, so this is one of the difficulties China's has it's going through not only geologically difficult areas but politically, I don't want to say unstable, but let's say fluid kinds of areas. But I believe they'll be here by about 2026.

Now the next thing that gets on the situation is, Singapore up to Kuala Lumpur. The Singaporeans and the Malaysians were in discussions between themselves because there's about 4% of the track line would be in Singapore, because it's so small and about 95% would be in Malaysia, so it was always Malaysia was going to drive the deal in all probability with the Singaporeans just trying to make sure the whole thing stayed technologically competent and in terms of financing and corruption and so forth, so Singapore played a big role along with Malaysia in sort of negotiating the parameters of this, but Malaysia and, they fought a bit over who's gonna pay how much, because of course the Malaysians would want the Singaporeans to pay more than four percent, which was their mileage. So it was a long complicated agreement, but basically they were on the verge about last
December of issuing, in December of 2017 of issuing tenders and it was going to happen mid in 2018 but an election in Malaysia, Mr. Mahathir came back, the proponent of railroads, and said his predecessor Mr. Najib had cut unconscionably corrupt deals with the Chinese. And to make a long story short, I believe that to be true, but that's a whole other story. Also, if you look at it, just such an interesting, Malaysia is a federation and in Malaysia the states control religion, water and land. Well, if you want to build a railroad you need land and right down here is Sultan of Johor, there are several Sultans I believe 13, is that right, here in any case, each has a palace each has its span of control and I won't say which senior leader in Malaysia I talked to, but that person was quite honest in saying the Sultan of Johor had his hand out to extract as much from this deal as possible, so it's not just Kuala Lumpur and Singapore, it's some you know Federated Sultan who is also seeing what's in it for his local domain. Any case, I believe this was going to be done by 2026, that was the thought, they were about ready to issue tenders and then in May of 2018 you had an election, Mahathir came in and he threw the kibosh on not only what was gonna be the high-speed rail going this way, already under construction with a different Chinese company was the East Coast rail line, which the Chinese were already digging and building into which we went. On this coast, and he basically at various times said, it's cancelled, it's postponed, it's delayed, I didn't know there were so many ways to describe “stop,” but, in any case, well I think what he's trying to do is tell the Chinese on your sign, you know your signature project here you're going to renegotiate this deal until it's in our interest, and you didn't with our predecessor, and in fact Mahathir even talked about unequal treaties, their experience with unequal treaties, and how did you like that.

So you've got, but it was kind of a similarity with the Transcontinental Railroad. The Transcontinental Railroad started from two ends of a continent and met at Promontory Point in Utah, and what you had is essentially, until that election, the same process, well what Malaysia and Singapore have now done is negotiate, we'll return to this issue in five years, so they've just put the whole thing on ice. I believe that you'll note at each key point, “I believe” is the operative word here, I believe at about '25 '26 they will get going again, I just, that'd be my guess, and part of my guess on that is because Mahathir himself thinks railroads are really important, and it was only Malaysia's financial exigency and his need to get legitimacy in the face of all of Najib's, his predecessor's, corruption that he, that I think he's postponed this. Now that's a judgment call, maybe it will happen, maybe it won't, but if you say, ok it's going to get here, it's probably gonna get here, already China and its whole high-speed rail system gets to Bangkok and the Thais have a kind of notion of Bangkok and I think it's objectively based, it's sort of the equivalent geo-economic position that Chicago was in the United States. And so, you're already, I believe, with a high degree certainty, you're gonna have a high-speed railroad to Bangkok, you know, '26 '27 somewhere in that, and, that then raises the question, well, what are people talking about between Bangkok and Kuala Lumpur, and you have instability in South Thailand lots of, no big cities in the sense that would justify, so you've got a lot of uncertainty here, but basically the Thais and the Malaysians have already begun to talk about how you might do this in a kind of indefinite future. So, but so, what you're talking about is various states of probability over various states of time, but I think a high degree of likelihood, certainty, practically, there will be to Bangkok and what we'll do is be arguing about how and exactly when. And you'll have the Japanese, I think, building a parallel system, but it's going to stop here, and it's mainly for tourist traffic and that kind of thing.

So that is that, now sort of, to me, are what are some of the intellectual questions here, complicated process, it has an uncertain outcome in the future, but what are some of the interesting questions at least for me. First of all what, there is an argument about all this, what is the role of infrastructure in economic development, and what is your attitude about that, and I would say the United States and
the World Bank and Frank's paper doesn't talk about it in the same terms that I talk about it, but I think we're intellectually in the same zone and that is you know people like Mahathir, people like Xi Jinping, there's a whole constituency in China that believes you build infrastructure to drive growth, that means it's sort of like a “Field of Dreams” you know, build it and they will come. You know, you build them, and the Chinese have a whole set of slogans in which the Chinese at every interview tell you, if you want to get rich, build a road, that's sort of the ideology, but the notion is, you don't wait for all of the numbers to work because when you put this thing in, cities are going to grow, economic patterns are going to conform to the transportation, small and medium business is going to have all sorts of development opportunities, China needs to now begin to move its value-added chain southward to take care of, you know, to take into account rising labor costs in China, lower labor costs elsewhere, so if you try to do a cost-benefit cash flow analysis, a lot of these projects look like they don't work. But, on the other hand how many cars do you take off the road, how many roads don't you have to build, how much executive time do you change, how many cities are going to be able, so there's a kind of there's a very big constituency both in China and in these countries to put in infrastructure in the hope that it will drive growth, not with the certainty that a Western banker financier would want and then the flip side of the argument is, hey, if it doesn't have cash flow and basically the revenues you can't see anyway, the revenues and the expenditures then it doesn't make sense. It's sort of but these are two very different views and what I would say is that the United States has generally been on the conservative financial side, we'd like to see the numbers on this, and many in China, are we, 5 minutes yeah, so I think that's one whole set of interesting questions. But I would just say, it appears that the World Bank and the United States is looking at its own infrastructure, not to mention elsewhere, I think we're moving and we just passed in 2018, I think, was called the Build Act, now not much money was appropriated for it and so forth, but anyway the question is what's your attitude towards infrastructure, and China is not completely in terms of attitude about infrastructure and development, is more on the same page than I think are more conservative accounting predilections would make you, so that's I think sort of certainly one issue.

Second thing, what is BRI and what does it tell you about Chinese politics and BRI, I'm absolutely convinced is not a plan. I don't want to be, it's a happening, in a sense, now there is a plan and my book goes through all the planning finance and economics committee meetings, NDRC, I mean there are plans, but what you've got is a sort of an umbrella policy that creates a predisposition to build infrastructure and then you've got an entrepreneurial SOE, provinces, localities, overseas Chinese all trying to force their pet projects or their local aspirations into the national plan or into the national largesse of, and it has a lot to do all this, local, you ask, well, how do provinces have this kind, you look at the way that tax reform in 1994 occurred in China, and it provided a lot of local money and they have an infrastructure bias particularly because they believe it drives growth and growth is sort, of at least along with law and order, a central objective. So a whole other, I think you get some insight into Chinese politics, you've got the national umbrella policy, but what makes this so dynamic and often rapacious with respect to the transit countries is, there are so many actors that are marginally, if at all, under central control. In fact, one interviewee says, you know, he gave two examples of, this one was Yunnan actually starting a railroad without central approval. The center eventually tunes in and tries to exert its control, also Guangdong dealing with Malacca area in Malaysia, developed its own special economic zones and big initiative port development all without central approval, and the center had to try to grab back and get some, exert some control. So, the point I'm making is, BRI isn't just about Xi Jinping and Beijing center, it's about local initiative and how Beijing can or cannot control or under what circumstances, it chooses to control. I find that to be a whole interesting, just one last and that is and I'll just end on the industrial policy.
You know, the Chinese think they've accomplished a lot, I mean, that's basically their mindset and they look at that domestically built high-speed rail system and say, you know we came in the space of a decade and a half from nowhere to global competitor, and this is what we aspire to in terms of innovation and sort of central architecture of big undertakings and so I think they look at this as their domestic system as successful. And so if the U.S. is really about trying to get China to fully play by market principles, we can come to the same conclusion by many routes but I get to that conclusion, it's going to be a very tough argument precisely because they think at least under certain circumstances, they've done very well. And then they look at our record, global financial crisis and all of that and say maybe all the knowledge isn't with the Americans, right I'm not endorsing that, but I think you have to put yourself in the shoes of the other guy and I think that's what the Chinese think. Well any case I won't go on, I promised I would adhere to the time and I probably said enough to raise a lot of questions.