

October 26, 2022. Critical Issues Confronting China featuring Ken Rogoff, Yuanchen Yang, and David Yang

- I'm looking for my phone.

- What time is it now?

- Call it?

- What time is it now?

- 12:03 pm.

- So I Still have time to run upstairs?

- Yeah, at least five minutes, yeah.

- Dinda just went to get her phone, yeah. She'll be back down and we'll still be on Harvard time. We have 170 people registered for, so you've got a sizable audience.

- [Computer] Recording in progress.

- All right. Okay. Well, let's get started. Welcome, everyone, to today's Critical Issues Confronting China program. And thank you all so much for joining us today. We're excited to tell you that we've got 170 people who signed in on online as well. So, you guys draw a big audience. We're really grateful for that. Well, after last week's party congress, we certainly all know that Xi Jinping is in charge. So now the question is of course is how is he going to revive the economy? Xi made it clear that houses are meant for living in, not for speculation. So given that housing and speculation were such important drivers of the economy, now what? Today we are so thrilled to have one of the, to be hosting one of the world's best minds on this subject. Professor Kenneth Rogoff, who's done deep analysis on the subject and recently co-authored paper for the IMF. I am Dinda Elliot. Sorry, I'm a little breathless. I just ran up and down some stairs. I'm Executive Director of the Fairbank Center for Chinese Studies. And our mission, as you know, is to support dialogue and research around China, and perhaps especially, given the current increasingly anti-China environment here in the us, we continue to believe in the importance of open dialogue and discussion. And though it's getting tougher and tougher given some of the domestic pressures in China, we will continue to strive to bring both Western and Chinese voices to our Harvard audience so that we can study today's challenges from all angles. So, the speaker series, of course, as you know, was founded by Professor Ezra Vogel, who believed deeply in the idea of intellectual exchange. And inspired by that vision, we invite speakers from all corners to share their insights on the latest about China. So before

we dive into today's program, just very quickly, I wanted to give a little plug, for a few upcoming talks as well. I hope you'll all come to those too. Next Wednesday, we have Winston Ma Wenyan, a China digital expert, who's gonna be talking about China's cryptocurrency policies. And the following Wednesday, Wall Street Journal reporter, Wei Lingling, will talk with us about how the private sector is dealing with Xi Jinping state driven policies. So now on today's program, I'd like to introduce our moderator, professor David Yang, whose research focuses on political economy, behavioral and experimental economics, economic history and cultural economics. Professor Yang will introduce our speaker today and then following the talk, he will moderate a conversation and questions from the audience. So, think about your questions as they speak. So over to you Professor Yang. Thanks so much.

- [David] Right. Great pleasure and honor to introduce Professor Rogoff. He is the Maurits C. Boas Chair of International Economics at Harvard, and was the Chief Economist at the International Monetary Fund from 2001 to 2003. And is a member of the National Academy of Sciences at the American Academy of Arts and Sciences. And one of the most cited economists and author, probably the most impressive accomplishments of all an international grandmaster of chess. So today, we're talking about real estate surge in China, about 30% of its GDP falls into this, much larger than United States and any other countries. Kenneth Rogoff had worked on several important pieces, understanding the real estate surge, which can tell us about, the extent to which these sectors boom and bubble both above and beyond whichever ones and most of them are.

- Thanks, David. Thank you very much. And all of you are here in person and to the online audience. And I just wanna start by sharing the director's sentiment that I think it's very important to have open dialogue between the US and China. And that concerns me a lot to see that to the extent that might become more difficult. I think the US and China, clearly the two most important countries of the 21st century and need to find ways to communicate. I think under virtually any circumstances, it's important to have a scholarly exchange and discussion. So, let me start out by saying, The work on which my comments are based is, is a joint with Yuanchen Yang, who's was at Tsinghua, visited Harvard, when we did our first papers, now at the International Monetary Fund. However, the views expressed in my comments are mine and mine alone. She is not guilty of any mistakes I make, which I'm sure I will, nor of any overly strong statements that I might make, that our paper makes in very new nuanced ways, and certainly do not reflect the views of the International Monetary Fund. So, I think I've made that clear. So this paper does have the title the "Tale of Tier 3 Cities", as David said, not advancing the slides. Apologies. I'm glad to see it's not just in the economic department.

- It just does not like me.

- Yeah, I wasn't able to do the keyboard either.

- I apologize.

- No worry. We could just use that.

- There you go.

- Amazing, amazing. Fantastic, thank you, thank you. Anyway, so, before I talk about the paper that we finished quite recently, they're both National Bureau of Economic Research papers, a 2020 paper and a 2000, and this 2022 paper. I wanna talk a little bit about our first paper called "Peak China Housing." The point of that I think is pretty clear. And there were actually a number of academic papers written, which we cite in both papers written before us, although I must say it had been many years in between the last paper and when we wrote our paper. And China, as you know, moves very fast, and so, four or five years can make a big difference. But I would say, I'd say theme of the papers, for example, the paper that my colleagues Ed Glaeser and Andrei Shleifer did in the Journal of Economic Perspectives, I think it was 2017 and based on 2013 data, sort of the conclusion, boy, prices are going up really fast, but probably they can manage it under most circumstances, whatever goes on. And I think that was a theme of the previous literature. And I think a lot of the more sanguine conclusion was that the problem was manageable because you couldn't have a western style banking crisis in an economy where the government kind of controls everything, which doesn't mean houses couldn't be underwater in a sense, but it means that instead of taking years and years to go to court and to work everything out about who bears the burden, that the Chinese government in principle could do accelerated bankruptcy, could do things much more quickly and efficiently. So, we, our paper came to a different view and we didn't say that it would have a financial crisis, although I think that's absolutely possible in the broader sense of the term. What, we had a couple points. One is the Chinese housing sector is actually quite big in the economy, if you take into account direct and indirect effects. So, if you just looked at construction and real estate, which counts commercial real estates, something like 70% of construction, it's, you know, it's a sizable number, I'll show you in a second. But you wanna take into account, you know, the cement, the steel, the banking services, the property management services, real estate sales, all these things, you get a much bigger number. And you get a much bigger number for China than you get from most countries. So, we came to the conclusion that housing accounted, depending on whether you look at final demand or input, if you're looking at the domestic inputs, 23% of GDP, indirect and direct. But if you counted the imported content which would constitute final demand, it was larger, more on the order of 26%. When we gave these estimates, they were much larger than had been out there. It was just a different way of looking at things. They were

much larger than had been out there. I would say by and large, the academic literature and policy literatures moved around to our estimates. I did notice that in the world economic outlook they gave by 20% as their estimate. And the Economist magazine cited that or used that number. I honestly don't know where it came from because if you just did the construction number, you get a number like 12%. But if you do the direct and indirect, you get more like 23% maybe in some of years, 22 maybe they rounded it down. It's also true that the Economist magazine published an article about article quoting Economist, the Asian Development Bank, who had arrived at a much smaller number, like 13 or 14%. I just have no idea where that came from. That was intended to include direct and indirect. I think the Asian Development Bank has since corrected themselves, although the Economist did not. So, as I mentioned, the total domestic share of real estate and China's GDP is big, but it's actually bigger than Spain and Ireland just before they had a crisis. This is something we looked at in our earlier paper. Obviously it's a major engine of growth and when you read that China's doing stimulus, a very large part of it refers to real estate because real estate, again, combining housing and construction, combining housing and commercials, a very large share of total construction. And in this newer paper, we actually bring in infrastructure as part of the thinking about it. And so our basic thesis, and I'll come to it, you know, and I'll show you a few slides in a second, is that the, it's not just that the housing sector's big, there's been too much focus on that. It's that it's big and it's been big for a long time, and they have just built a lot of real estate at this point. I mean I suspect many in this audience have been to China and seen the amazing infrastructure all over the place, and it is absolutely amazing. But I think our basic thesis is that even so you run into diminishing returns, and in a way there's a parallel between what's going on in China and what happened in Russia, the old former Soviet Union, what happened in Japan, the Soviet Union built steel mills and they were really good at building railroads and steel mills. But then after a while, they were diminishing returns, and Japan, it was actually infrastructure, and they started building the famous bridges to nowhere and that was preceded their crash. So, in the newer paper, we updated our calculations through 2017. I went through 2021, the original one went through 2017. And I won't dwell on this, but you can sort of see for example, in the 2021 numbers, if you're adding just the direct real estate activity being real estate services and construction, it's actually not such a big number, it's about 12%. It's a large number. But when you do the indirect and direct, you get something much larger. My luck ran out with advancing this, but I was able to do it another way. So this is a figure from our first paper and we've done further work on this, where we constructed measures of living space per capita for China and compared it to other major countries. And this is actually a very important part of our argument. It's not all that they have a big construction sector, it's how much is there. So, this doesn't capture commercial real estate, it doesn't capture infrastructure, but it does have

housing and it's a measure of square meters per person. We give in detail in the paper how we calculated it. It's actually difficult to make exactly comparable numbers across countries because for example, the way that different countries count interior walls and apartment buildings is different. But, I think no matter how you slice it, China, it's really striking, for a what are still a middle income country has housing per capita comparable to the UK, and France, and Spain. It's really stunning. So, this is a central part of our argument. It's actually maybe the most original point we're making in the work, but it's a part of a argument that you built a lot and you could be running into diminishing returns. When we first presented our paper, we got the response, "What are you talking about? Prices in Shenzhen are soaring." Real estate demand is huge because actually almost all the academic work focused on tier one and tier two cities. So I'll get to talking a little bit more about what I mean by that. But tier one are, there's actually no official categorization. We define it in the paper, but tier one are sort of the marquis cities, the Shenzhen, Guangzhou, Beijing, and Shanghai. And then they're the tier two cities. Again, this is unofficial of the provincial capitals, a few state controls, and a few nationally controlled cities, that is Tianjin, that are larger and richer, than most of the smaller cities. But the point of this paper is that actually a lot of the problems in these poor and smaller, I used the word small and parenthesis like small, can still be many million people in China, the equivalent of a tier three city in the United States, I guess not to pick on Ohio, but maybe would be Cincinnati with 300,000 people, or Rochester where I grew up with 300,000 people. But if you look at these smaller cities, they, a lot of the, what we view as the, and we'll give you some measures is the excess construction has taken place in these cities. It's, I'll come back to talking about that more. So, just a little background still from our first paper, that if you look at western style housing prices, that they're at the epicenter. This is a graph from my book with Carmen Reinhart showing price collapses in, that in housing price collapses and how many years it took from peak to trough, this is from 2009. Some of these went on after that. Again, I've said that we shouldn't assume China has that kind of crisis. Actually my book with Reinhart has two kinds of crises, type one and type two. We call the type two crises these. But there is a type one where it's the government kind of owns everything. I don't know if we probably are gonna need a type three for China when it happens. Okay, so this is a great, this is very familiar to all of you, the next couple things I'm showing, but maybe a few of you it's not. If you think we had a big run up in prices in the United States before 2008, where you know, by some measures, it went up 60% the price the Case-Shiller index are, for example, and then collapsed 36% the growth in the tier one, that it goes by a factor of five in China. And even in the, we break it down here, and the paper discusses how we construct it, but if you break it down for the smaller cities, it's pretty substantial but it's stunning. And of course it translates into just incredibly expensive housing by international measures. This is giving

price to income ratios and you can see China accounts for three of the four most expensive cities. So just to give like Beijing here is over 45%. Like Boston, I think the number in Boston's 12%, and we're considered one of the most expensive cities. And San Francisco is sort of hanging around about the same. Now there are definitely some factors that exacerbate this. For example, the Chinese government limits what you can put your money in. So, a lot of money goes into housing, that's what you're allowed to buy. And that's one of the factors. But it's also true and that's gonna be an important point I'm gonna come to, that China's the country of the future. It's growing like crazy. And I've certainly heard many people, and I probably you have too, you know, say, "Why shouldn't the price of housing in Shanghai or Beijing cost as much as the price of housing in London?" It's going to be an equally important city, even if it's not, you know, even if it hasn't gotten there per capita income today. You got a similar thing if you're looking at price to rents. So, there was the, this gives housing our estimates of housing price just before the pandemic. And I have to sort of note that it was slight there. It was much flatter in the tier one and tier two cities, although they had boomed somewhat before the pandemic. One of the reasons that it's often said that, well, you know, won't be a financial problem, so you need to put a big down payment on China on your house. So first of all, this is BIS numbers, that amount has still gone up. The household borrowing, household leverage ratios in China's gone up and they're probably a lot of off the books borrowing that's hard to capture from the shadow banks and such. And then, making the point that, I don't need to tell you China's growth is slowing down. I've been speculating on this for years actually. I was, had the honor of being a speaker at the big opening panel at the, China has this big economic forum after their party congress. And I was the speaker back in 2016 and said, "I don't see, you know, how your growth is gonna continue, given you're catching up to the frontier, demographics are terrible. You're already catching up to the frontier, so it's hard to keep doing that. And you have this real estate problem, which I hadn't done this research with Yuanchen yet, but think was starting to think about." And then I actually said, "And I really don't see how you reconcile the ever increasing centralization of power with, and I just meant economic power there with having a high rate of growth." I was grateful that they allowed me to leave the country after I said that. But I've been saying this for a long time and I have to say, you have to have the utmost respect, for what the Chinese authorities have done over the past 30 years in what the growth has been. And sort of famously in the case of, you know, Japan, people make predictions that they can have inflation some day and it never happens. I, by the way, predict that, it's called the widow maker trade 'cause it just never proves true. And that's kind of been the case with saying China would slow down, China would have a problem, it just, you know, doesn't ever seem to be true. And they've kept the growth going I think longer than anyone thought possible. But, you know, you heard versions of this statement many times, but the famous Herbert you know, Simon statement that my

thesis, late thesis advisor, Rudy Dornbusch often quotes, which is, you know, "Things that seem like they can't go on forever, last longer than you think. And when they end, they fall faster than you think." And that may be what we'll see here, but certainly the housing prices that you saw are clearly part, they're partly predicated on all kinds of things the government does to force investment into housing. But they're certainly also predicated on this notion that growth is just gonna go on and on and on. So, I, you know, I don't know the answer to that and I recently did a, I did an event with a leading Chinese economist who said, "You know, growth next year might even be 8%." I guess I won't argue with him except I'd like to see what in 10 years people say the growth was next year as opposed to what the official number is next year. I'm, you know, we'll see. So, I mentioned one of the pushback that we got, was that there was a regional, one of was that the tier one cities were doing great and I think people, here's a list of the tier one and tier two cities. That Chinese national statistics list there, I think is maybe 685 cities in 2020. So, I think what's surprising to people, what really people don't know, you kind of you should, but they don't, is that the Chinese tier three cities, which we're calling everything that's not tier one and tier two, account for a very large percent of GDP. Our calculation from our paper and using the national statistics yearbooks puts it at 60% of GDP. So, it's not just, I think what a lot of people thought is, "Ah, well the prices are high in the big cities, and demand is strong in the big cities, the little cities don't really matter. They don't add up to that much." That's not the case in China. So, I have my, a terrific colleague David Yang here moderating this, another terrific colleague I have in the Economics Department, Xavier Gabaix. And he wrote a famous paper about Zipf's law and mentioned how it applied to cities. So Zipf's law roughly says, that I think, you know, the size of cities decreases roughly logged linearly with their rank, roughly with a coefficient of one that is a very famous regression, true for a lot of countries it's less true for China. So in other words, you know, New York is much bigger than Los Angeles, which is much bigger than Chicago, et cetera. And China has, I think fought that. Now, whether it's through Hukou passes, whatever it is, part of how they've tried to do it is by building a lot of real estate and a lot of infrastructure in the tier three cities, make it attractive. And I think what we're gonna see is, although they've done that, this isn't in our paper, but it's sort of clear the good jobs have not come. And the people are not being attracted as was hoped. And the, I think the intuition by the way, about trying to fight Zipf's law, it makes some sense to me that there's overcrowding in the biggest cities and you wanna spread people out, but they're very powerful economic forces pushing against that. It's actually 78% of the housing stock is in the tier three cities. And a thing I've learned over the course of this project, which shouldn't have surprised me, is that this is also true by value, is not, I'm sorry, by construct. If you just look at the construction costs by value because China has very strict national policies about the quality of housing being built in tier three cities

has to be to the same very high standards. Someone came up to me and mentioned Justin Lin, who was chief economist at the World Bank, and a celebrated Chinese economist. I remember visiting him at Beijing University a long time ago and he was explaining to me, when China builds roads anywhere in the country, you have to be able to land a 747 on them. That was what there was back then, built to very high standards. And the same thing is true of housing. So, there, you know, we've constructed home income prices, I've already talked about that. One of the indicators that we had in this, having this paper and starting to be talking about this, how much unfinished construction there is. So, we measure it here, by how much has been, how much is under construction in any year versus how much was completed. And we explain in the paper how we calculate this. Now if you're a really fast growing market, your building is just increasing, increasing. So the housing under construction could be much bigger than the housing that you've completed in any given year. I guess in a normal situation it would take a couple years to finish a house. But you can see these ratios get up towards 10 and 11 and they're starting to creep articles in the newspapers. They're not looking at aggregate statistics as we are here, but they're finding all these construction projects that have been abandoned and people, who I think, you have to often pay half, or even pay everything in advance and people are complaining about it. Oh, it's not working. But this is, I'm gonna have to skip, in the interest of time, how we calculated the housing stock. But I will say we do a year by year analysis that actually we're able to make match up to the every 10 year census calculation. And as part of doing our calculation, we need to make an assumption about depreciation. So, how much have you built and what was depreciation? And we use 70 years for new construction and 50 years for existing houses. And to the extent those are, I think probably on the pessimistic side, if you really look at how realistic how long housing gets used, it means that the housing they have is even larger. So, again, in the interest of time, I'm not, oops, but I don't wanna skip this. So, something, we form a measure of the price drop in the tier three cities. And we do this by using this measure that's quite tediously constructed, of floor space. There's no data on tier, we don't have data on tier three cities but we do have data on tier one and tier two, and I should mention a lot of the tier two data for the 31 countries, for the 31 cities we have there, we have to go to the provincial, we meaning Yuanchen 'cause I don't read Chinese, have to go to the provincial data in order to pull this out. So they publish data on tier one and we can find data on tier two, but there's also a national measure. And we're able to form our estimate of what's going on in tier three by using the weighted average floor spaces that we calculate for tier one and tier two. And it shows quite a significant drop since 2020, 21. So just in two years a 20% drop, that's from the official numbers, which based on my experience of looking at housing price data all over the world, often significantly lag what is actually going on. You can also, hope this works. You can also look at the total value housing by city tier. This is in Yuan, so tier three

has dropped, it's only dropped by 15% because they're still, this is the value of the housing, so over the time that the housing's going down in price, they're still adding to the quantity. So, I think as I mentioned, so our paper has a demand element to it that I'm not gonna go over. We follow UN projections and Chinese projections to see what the demand for housing is and there's some other scholars who've done this and we sort of follow in their footsteps in doing this. We estimate that overall, the demand for construction services is gonna decline about 3% a year through the year 2035. But it could be larger in the tier three cities. Now there's still a demand for replacement. We estimate that of the construction going forward, actually a lot's gonna be replacement 'cause they built a lot, in fact a little more than half. But even so, that's a pretty substantial shrinkage. And you can see in the tier three cities people aren't moving in, the good jobs have not been coming and they're actually experiencing a fall recently. So, very well known to all of you, so this isn't, again, but we do this by tier, is that Chinese cities are very dependent on land revenue, land sales to support themselves. There are many scholars in here who know much more than I do about this, not least my co-author, but the center just doesn't allow them to have a lot of taxing power. And so this whole land boom has been central to how local governments finance themselves. And in fact, when real estate prices fall, it's not just the local banks that are gonna suffer, but a lot of the local governments are really gonna be in trouble. And we can talk about what some of the solutions are to this. An obvious thing would be to have property taxes, although it must be noted, as again, you well know that in China you don't own the land that your house is built on. So it's a little confusing to know how to do that. The housing sector's very important to employment. I won't try to interpret this graph because this is actually about total construction employment, but a lot of it is in the tier three cities. Let me just, before I sort of close my remarks, and go to Q and A, mention that I've been talking about housing, it's just the same and worse probably for commercial real estate. One follows the other, our data on real estate's actually, a lot of it combining housing and commercial real estate. and many of the lending, even though some of the housing is financed by the unfortunate individuals who put their life savings into these tier three houses, a lot of the commercial real estate really financed by local governments and banks, and I, let's just say, pretty sure, that they're in huge trouble if prices aren't going up and it's acute in the tier three cities. We also can make the same comments about infrastructure. I don't think, I don't, yeah, well I'll just go to this, of how much is in the tier three cities, a huge percent of roads, new road construction, we also look at water pipes and other measures. There's a lot of infrastructure going on accompanying this, and it's been the go-to stimulus policy in the Chinese. So, this is sort of giving the key messages from our newer paper. So will there be a western style financial crisis? It's easy to, there are arguments why that won't happen, but on the other hand, trying to digest such a big transition from being this very real estate and infrastructure

focused economy, to something that's more balanced is I think going to be very difficult to do. You can retrain the construction workers, you can shift things around, but that's hard to do. Most economies suffer for a long time in that transition. So even if China finds a smooth exit from this, it still could just at a minimum slow growth a lot. We give an estimate in our first paper that the demand for final demand for real estate services were to fall by, you know, something like 20%. You still could get a couple percent a year fall just from that without any financial crisis for quite a while. And let me just conclude there and forgive me for repeating it, but these remarks are mine and do not represent the International Monetary fund even though I have a co-author from the International Monetary Fund.

- [David] Thank you Ken since you first started local governments in China were charged to spend percent of gross revenue We're all short of money, and then revenue, as you have shown revenue for the government. Had that not been sort of resolved and restructured, local government's demand for using land should be more possible . And what's your view on what's the way out of this? And then it's sort of a, it's the strong structuring of this whole of that system?

- So, I think David, you're given why this isn't just a question of transitioning people out of construction. They're, so just if Japan built bridges to nowhere, I can say somewhat provocatively that China's building houses and apartments nobody lives in. And even in China, you know, at some point, it's hard to sell these things when no one, there's no demand. And it's a profound problem, governance problem, that China has, how to provide revenues. So, you know, I'm sure you know more than I do, you know, some of the solutions on some of the problems, would say the borrowing therefore the risk and yeah, the banks and assets and planned developments goes down. I mentioned property tax, I mean it's, that's been politically fraught in China to try to do that, but if they have to do that, does have the problem that you don't have the land and that they tax on it. And yeah, I mean, I suppose, you can try to just force people to live in these houses and pay a lot for them. But the problem is you can build the infrastructure, but if you don't have the broader advance in the economy, if you're just really good at building infrastructure, that's not creating jobs to fill real cities.

- I think one solution you mentioned is property tax. The proposal part has being tried out in many tier one cities for about a decade and there's a lot of resistance. Particularly using property tax which they refuse to do on land they don't own. They don't have much say in the process. So it's, but on the other hand, the mentions of the passing to one of the other shocking . So a number that you show is there are different views of the size of it. And the biggest operationally in China. Have been sent to So one of them was talking about the standard for local governments marketing their city, were they marketing in vain? It's supposed to be for people who are not,

are left behind the rural area, which many of them are not into the market, or have just recently accessed it and are competing with their consumer to attract .

- But I think there's a better question, why would any individual could be you're tier three, and I guess this is like, I'm thinking of football leagues in Europe, you can kind of move on into the first premiere league, and you can get booted down to the lower competition at the margin. But I don't know if in the environment of shrinking population, there is a solution. The fundamental problem is China is overbuilt. And they do have better infrastructure now. I mean it's like ridiculously better, but they're decreasing users for it. And so, you know, how do you, generating product, how do you shift demand or how do you change your economy? I don't know how you would do it.

- Let me talk, let me explain one more product, it's I think even more complicated, but we're talking about Zero Covid policy that's not gonna probably go away for a while. And the government is trying very hard to experiment, and to work on overcoming from different covid policy resistances. On the other hand, you have the wealth stock in the housing sector increasing for the many urban residents. respectful world, and to what extent is dissent .

- Well, I'd have to say is the question answers itself. There was one thing I forgot to say and I meant too, but sort of that prompted me to say. I see a lot of people write that the reason China's prices are going down, is government crack down on borrowing, construction, company bankruptcy, not just aggregate demand and otherwise everything would be booming. And I think our, going back to our 2020 paper, we challenge that view, it's, yes the government has a lot of control, but, they can't, you know, create this incredible imbalance and you're caught in between everything else and real estate. And that really is something about lending policies, and financial policies. I mean, the zero Covid policies, if it ended tomorrow, clearly there be some huge boost in growth right away, I guess out of euphoria, just like we have here and Europe. But I don't think it would make this problem go away. I think the problem is, you know, if you look at the size of how much they built and where their income is, it's that imbalance that the center can push at the margin for a while but just not forever. So, there are many challenges China faces, on water, environmental degradation, demographics that's slowing productivity, centralization. I think of the property sector as an amplifier, because when it slows down, suddenly this all comes tumbling like a house of cards. And so what seemed like it might be a slow moving problem, when the growth slows, becomes a fast moving problem, I think that's what's gonna happen and you can suppress it but not all that much. I mean there's lots of pretty centralized, economy is not run by economists instead of running to the .

- All right, any roving microphone? Anyone has questions?

- [Dinda] We've got microphone coming your way. Give me a minute, now it's here.

- [Bill] I guess I can speak.

- [Dinda] Bill, you can go for it. Go first, go on .

- [Bill] I'm Bill Xiao. I'm an economist but not trained in housing. I'd like to go back to the, thank you very much, Ken, for very thorough factual based analysis. And it's enlightened us great deal. I'd like to follow up on the question about structure. The structure cost for this phenomenon, that would actually shape how China could get under it. And my question are two parts, from the obvious sources is because the tier three cities generate their revenue by selling land, leasing up land, that's really how Shanghai generate is resources to modernize and build up Shanghai and other city actually emulated. The second reason is China has a very weak financial market. So people do not have other avenues to channel their domestic savings. So why is actually the government promotes development because their land sales, and then people are don't have the financial market. I'd like to hear your comment whether that those reasons are valid or not? If they're valid, now how could China get out of this current situation?

- Those are excellent points. And they kind of explain why you're seeing the price income ratios in China at a level that can't even be imagined in other parts of the world. Particularly that there's not another place to put your money. But, you know, at the end of the day, there have to be some, either explicit or implicit rental value to these properties to justify prices. And if you believe China was gonna grow at 6% forever, much less 8% forever, it's actually quite reasonable that you could get very, very high prices. But if that's not the case, the two things interact and that, I think that's really, really, so relevant. And I'm thinking the tier three cities you point to the local governments, but I think it's actually something, or get speculate completely, but probably, the central government, wanted to see the building. They did not wanna see everyone move into Beijing and Shanghai. If you look at some of the other great cities of the world. And I'm thinking of Calcutta, Sao Paulo, these were thriving cities that just got a crush of people moving into them and they couldn't handle it. And it's very reasonable to say we have a lot of state control. It's not something I've ever, you know, I'm something, I'm very sympathetic, to the thought they have, we have a lot of state control, let's fight Zipf's laws because then people tend to congregate in the tier one city. Let's resist it, let's give incentives for it not to happen. And, they have to work on the employment side, is basically the problem, and maybe there's a solution to it. And if there is a solution to it, I suppose China will find it. But it's not, I think that easy.

- [Grace] Good to, so happy to be here, and thank you for the very insightful presentation. I'm Grace Chen from MIT Sloan. I'm originally from China. So I kind of wonder what does this whole thing mean to Chinese people who own a house, for example, my parents, or like just imagine, a general common middle class in China who has, let's say, 50 to 70% of their asset in property, what should they do? Should they sell their house? Or downgrade into a smaller one? Or like no action? And what and how would that be different from tier one to tier two, tier three cities?

- Well, I mean you're very constrained, on what you could do with the money if you sold your house, is sort of the problem. That's not so straightforward because they're lacking alternatives, but I think it's probably fair to say, to hold investment in China for three years. I think it's fair to say that most people are quite worried about the value of their house and the concept that it could only go up up, and could never go down, much as Americans learned in 2008 and I'm sad to say again now, that's just not true. But, so, hard to know about it, but it's a major problem for people. It's a major problem for the government. It's, I think in terms of social stability, it's a massive issue. I mean got, you know, I don't want to go there about what will happen, what I would say, people are gonna be pretty unhappy about it.

- [Attendee] Hi, my name is Li Jen. I'm an Associate in Research at Fairbank Center, and we have a common friend that we both know-

- I remember.

- [Attendee] You remember?

- Of course.

- [Attendee] And I remember about even 20 years ago, close to 20 years ago, Bob Berg, another financial economist, was talking about China's real estate like situation. And back then, say 18 years ago, his pitch was almost exactly the same as yours, except he was not overwhelmingly concerned with tier three. He was not explicit about that. And his analysis of the real estate sector, price to income ratio, price to rent ratio, was, resemble your analysis very much. And he was more or less the same conclusion as you do. And this reminds me of what Dawn Bush said, you anticipate something going to happen for a long time, and it's looks like not going to happen. In fact, that it happens, it takes longer time than you think it would happen, and once it happens, it happens faster than you think it would. So it seems to me, that was changed or changed between 18 years, and say 18 years ago to now, is more of degree rather than qualitative difference from a decade ago. And the problem is more severe than a decade ago or 18 years ago. But the qualitative factors have not changed much in the sense that the government still has control of the banking situation. The capital

market is not open, and capitals and sanctions are not open, foreign capital cannot easily go in and out of the country. And Chinese residents' savings bottle up inside domestic markets, and therefore it captures all the savings. So if they want, if they choose to keep the policy steamrolling, they could, it seems to me it could last for a while, and especially if Xi Jinping stays in control and keeps higher and tighter control both politically and economically. And it seems to me it could last longer in the fundamental structure. That point has remained more or less the same from me. From a decade ago.

- Brian Cox, I've heard he's a brilliant man so, happy that I have found the same thought. So, yeah, clearly, if you look over the last 18 years, no one would've predicted China would've done so well and that they've just done two standard deviations better than anyone thought, it's lasted longer that they haven't had a crash, and that they've been consistent with the housing prices too. But they are having a crash and prices are falling precipitously. And once they start falling, people see they're falling, the same dynamic that makes, you know, everyone having problem and apparently they're gonna go up forever change it. So that is a tough thing to push back against, we're seeing that the government they've been trying to keep the lid on information. I think it was a paper published in 2016 or 17 by a Tientsin Professor that had some data and vacancy rates in China. And now they're maybe no better, there are, it seems to be a state secret what's going on. The vacancy rates in different parts China would reinforce the idea that's something's probably going to happen but of course you never know. I mean I'm not going to get into that. I will say we wrote our first paper a couple years ago before this, it started happening and when it wasn't the consensus, I think the consensus moved in this direction. But the consensus could be wrong.

- I would like to add one quick comment on that last one this recent article on

- This is a tangent but, but I thought it was interesting they delayed publishing the third quarter's, you can remember that when the preliminary, findings were published about a couple days ago. And that there are delays. They're, you know these are But the fact that they delayed the number tells me that the guess

- [Dinda] So we've got a question from the, our online audience, if I may. "Do you think that," this is probably for both of you. "Do you think the recent policies regarding rural revitalization are related to the overbuild? Is it an excuse to build more infrastructure or a solution to the overbuilt challenge?"

- This has been going on for a long time. That has been the policy to try to make it more attractive to stay in the rural areas. Again, here, if you're looking at it as a central planner, even at the United States, we have the same problem. Our small and medium sized cities at

just got emptier, and it's a disaster, because it ends up there are no jobs and you know, many of the, stresses, and frankly political problems we have come from this. So, I'm very sympathetic to it. But I think what we learned from the Chinese experience so far, is just building roads and hospitals, and bridges, and apartment buildings is not enough. If they're somehow networking that you get in big cities, whether it's social, whether it's coming from interaction that you get among companies is very important. And we, again, we have many colleagues in Economics Departments, but particularly at and next to that following the urban studies program within .

- [Attendee] So, I'm a second year graduate student here, finishing a PHD in sociology. We've also heard a lot about maybe advocating affordable housing could be a solution, we know that this is also a problem facing China, mainly in many tier one and tier two cities. And we also haven't miss out the problem you talk about between the different tier cities' excessive building. My question is what do you think about the overall how the local housing initiatives could add up to the solutions or a problems and this crisis for your comments on maybe how they are or are not able to use it as a tool to maybe slow down the collapsing process?

- [Attendee] We've heard a lot about the choices of advocating affordable housing.

- Affordable housing.

- [Attendee] Yeah, yeah. The question that, my question is just what do you think about overall how the affordable housing issues may lead to overbuilt cities and the misallocation problem between the excessive building in different tier cities to add up to some problems related to this crisis, or comments on maybe how they're able or are not able to use it as a tool to maybe slow down the crisis?

- So we're sure there's problem with their housing stock it's all very sunk, . Some people build houses and bought them for their children. Some people then, you know, square the circle on how you , that work and how do you make it up. Now, you can certainly provide affordable housing. I hate to pick on California, but I love to pick on California. I'm sure you'd rather balance what they've done in Los Angeles. So their homeless problem, they're building units that cost \$500,000 per house. In order to provide for 5,000 homeless people to live in California, I don't think I have to explain, you know, that causes a lot of taxes and expenditures I mean there are many instruments, but at the end of the day, they have already built a lot of past, question how to reallocate. Do they, people, are buying houses . Maybe all this can be done under particular, under sufficiently powerful federal government. Although good luck having 3% well, government, where you're dealing fact like that, much less having 5 or 6% for that. There's a lot. New York City had rent

control, is was basically seizing property and some economies have done that to benefit some people, and hurt other people. But it's not good for growth. So I taught at Berkeley, California for a while it has a very strong housing market That's a way to provide affordable housing, but it's difficult to make it sustainable. They're definitely things they manage should do, but they're not easily, especially, if you were really depending on growing at 4 or 5% and becoming a giant superpower, it's not easy to reconcile massive redistribution with rapid growth. I don't wanna say it's impossible, but very difficult.

- [Attendee] Thank you, my name's George . But I'm just wondering on things you think, you know, incentives you think that factors like resources ? Has it just saturated the market beyond

- Yeah, well I mean the, I think the, I saw a study in finance and development with by David Dollar, the co-authors, about product estimated productivity. They had estimated of what happened in 2015, maybe 2013 to 2019. It has collapsed, measures of productivity, but for a long time the economy may, you know, a lot of China's growth in stocks and assets . Out of the small productivity in one year, getting more out of the same amount of the source . China needs to regenerate that continued growth 'cause otherwise investment runs into decreasing returns I don't think they'll do it, I think every economy has run into this problem with having massive investment. Forget about, you know, not just Russia, Japan, Singapore, all the other Asian economies they all hit a wall on this. And the argument's been given, but this time it's different. China won't, but I think it is, of course you need to do this in Asia, their productivity collapsed due to lots of reasons. It's not that China . I cannot hesitate to say the China leaders , the expansion of China last years. But we've already, I think pretty that we've seen, that China hasn't. I've noticed in past few months, people sort of taking our title and saying I don't know if I agree with that, but our paper is about economic growth.

- Well we're, unfortunately, out of time. I wanna add a word .

- Well, I think it's phenomenal what China had done. Every country who's had a bit of boom like us has had to go through a period where they've got, I think it's just hard to be, you know, perfect all the time. So, and, I could put it, view this a fairly absolute phenomenon. But they can't keep doing it the way that they're doing like everybody else. And there's probably gonna be a period that's much worse than that. Like everyone else.