

**“CHINA’S TRANSITION AT A TURNING POINT:
CRISES, CHALLENGES, AND OPPORTUNITIES”**

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“CAN CHINA SUSTAIN ITS ECONOMIC MOMENTUM?”

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SPEAKERS:

DR. NICHOLAS LARDY,
INSTITUTE FOR INTERNATIONAL ECONOMICS
“THE ECONOMIC RISE OF CHINA:
THREAT OR OPPORTUNITY FOR THE UNITED STATES”

PROFESSOR THOMAS RAWSKI,
UNIVERSITY OF PITTSBURGH
“WHAT ARE THE WEAK LINKS IN CHINA’S DYNAMIC
ECONOMY?”

DR. ADAM SEGAL,
COUNCIL ON FOREIGN RELATIONS
“GLOBALIZATION AND CHINA’S EMERGING TECHNOLOGICAL
TRAJECTORY”

MINXIN PEI: Good afternoon. We are now going to hear the economic panel. I know it's been a long day, but this afternoon's program is going to be very, very stimulating.

Close the door. Sorry about this.

One advantage of moving from the Senate to Carnegie Endowment is that you had a much better lunch. We held a similar event on the Hill last year and the food was really awful. (Laughter.) We were told that it was the product of a monopoly. It was crony capitalism in action on Capitol Hill. Today we had full market economy in – I think – in evidence here.

This afternoon we are going to start with the panel on the Chinese economy. We have three very distinguished speakers. Nick Lardy is a senior fellow at Institute for International Economics just across the street. He's really one of the most authoritative experts on the Chinese economy. Then we're going to have Tom Rawski, professor of economics at University of Pittsburgh. Until a few years ago he was considered a friend of China. Then he did something which upset the Chinese government when he tried to measure the real rate of growth in China, and he showed me some Chinese publication in which he was identified a pessimist on China, while Nick was identified as somebody who really understands China. (Laughter.) And then we'll – Nick – then we'll have Dr. Adam Segal of the Council on Foreign Relations.

Nick will talk about whether the Chinese economy really poses a competitive threat to the United States. Tom will analyze some of the weak spots in the Chinese economy, even though the Chinese economy is very dynamic at this moment. And then Adam will talk about the trajectory of China's high-tech industry development. We'll start with Nick.

NICHOLAS LARDY: Thank you very much. Thank you very much, Minxin. I'm going to use some diagrams that are located about half way through the packet of supplemental materials. These diagrams relate to the issues that I'm going to talk about, and if you could look at those I think it will be helpful.

I am going to try, given the limited time, to make only a few points. I certainly want to answer the question in the affirmative. I think China's economic rise is an extraordinary opportunity for the United States, and I want to address some fundamental questions. For example, how open is this economy and are they gaining some advantage through their manipulation of the exchange rate?

But let me start with the trade picture. If you look at the first diagram, which shows how rapidly China's trade has been growing compared to global trade, China's trade performance really has been extraordinary. Now part of this, of course, is because China began from a very low base. However, even if you start in the year 2000, China was the seventh largest trading economy in the world. In 2001, it went ahead of Canada. Last year they went ahead of the U.K. to rank number five. This year it is going ahead of France and there is some possibility that China will actually go ahead of Japan to become the third largest trading economy on the globe. So their trade has grown extremely rapidly.

Now a lot of people focus only on how much China is exporting. This has become a problem of substantial concern in the United States because of our growing bilateral trade imbalance. What I want to focus on in the second diagram is how open the Chinese economy is. I think it is substantially more open than many other large economies, and certainly far more open than Japan, with which China is increasingly compared.

If you look at the standard indicator, imports to GDP, China's imports to GDP ratio has increased by about two-thirds over the last decade from about 15 percent up to about 25 percent. By that measure China is roughly three times more open than Japan, where the similar ratio is 8 percent. It is about twice the United States, at 12 percent and about the same as the U.K., which is a very, very open economy.

In addition to the cross-border sales, we also have to recognize the very large importance of foreign investment in China. Again, most people think all these foreign firms are going to China to use China as an export platform to produce all those goods that we see in major U.S. retail outlets, but in fact about 60 percent of all the goods produced in China by foreign affiliates are sold on the domestic market. Those goods are also adding competition, they are increasing the openness. I like to take the sum of what's being imported into China, plus what is being sold, that is what is being produced by foreign firms in the domestic market, and by that standard, the ratio of imports plus foreign affiliate sales is more than 40 percent of GDP. So, again, compare it with Japan where there are no foreign affiliate sales because there are no foreign affiliates and China is five times more open.

Yes, there are many specific complaints, and many of them warranted, about areas in which China has not fulfilled certain specific obligations in its WTO commitments. However, I think we sometimes lose sight of the larger picture, which is this economy has become, over the last decade in particular, extraordinarily open. Competition has increased dramatically, it is beginning to transform the domestic economy, and I think it is one of the reasons to be relatively optimistic about the medium and even the longer term. But that is not what I am going to talk about today.

I want to turn next to the other concern, and that is China's exchange rate. I want to address the issue of whether or not the RMB is undervalued and what the leadership should be doing differently. Essentially what I want to argue is that China's currency is

undervalued. I do not think they should float the currency at this point for obvious reasons that we might want to discuss later, but I do think they should increasingly consider revaluing their currency, and probably something on the order of somewhere between 15 and 25 percent.

Let me just sketch out the rationale. It is very straightforward. If you simply look at the current account and the capital account, China is running a surplus on both accounts. The current account is shown in the next diagram. The surplus has averaged about 2 percent of GDP since the currency was pegged in 1994. Although it is dropping this year because imports are growing more rapidly than exports, they still maintain a surplus.

On the current account this year, and in the years since the Asian financial crisis, China has also had a modest capital account surplus averaging about 1.5 percent of GDP. Now it's very unusual for a country to run a surplus on both a current account and the capital account. For many years this did not matter much because there were very large unrecorded capital outflows, but in recent years, and particularly beginning in 2001, there has been a very, very large buildup of foreign exchange reserves. In other words, to keep the currency pegged at 8.3 the government has had to step into the market and buy very substantial amounts of foreign exchange. In the years 2001 and 2002, reserves went up by \$120 billion and in the first half of this year they are up by \$60 billion. If you take the 18-month period from the beginning of 2002 through the middle of this year the government has actually sold, remember purchasing foreign exchange means the sale of the domestic currency, about 1 trillion RMB to buy up foreign exchange to prevent an appreciation of their currency. What I'm going to suggest, essentially, is that this buildup is causing increasing problems for their money supply, monetary policy and lending, which I will turn to in a minute.

If you look at the next diagram, you begin to see the problem that the Chinese government faces. For most of the 1990s there were unrecorded capital outflows; that is, there were companies moving money offshore and keeping it offshore illegally. Then last year there was a dramatic turnaround and there was an approximately \$8 billion inflow. If you look at what's happening on the current account and the capital account, there is no way you can explain the \$60 billion buildup in foreign exchange reserves in the first half of this year. I believe there has to have been a very dramatic increase in the inflows of essentially speculative money; probably something on the order of \$30 billion or perhaps as much as \$35 billion in the first half of this year.

I think China should revalue, and as I've already hinted, the reason they should revalue is not because of foreign pressure but because it would be in their self-interest. On that front I want to turn to the question of the growth of credit.

The next diagram shows what has been happening. China had similarities with the other Asian countries in the run-up to the Asian financial crisis of 1997 and 1998. The growth of lending was too rapid. In those years it approached 20 percent of GDP; that is, the increase in loans outstanding was equal to about a fifth of GDP. In the

aftermath of the Asian financial crisis, which the Chinese leadership studied intensively, they introduced a number of regulatory and other changes. The banks became more selective and the rate of credit expansion dropped down to about 15 percent of GDP.

In the first half of this year credit growth has exploded. The loans outstanding in the first half of 2003 increased by 1.9 trillion RMB while in the first half of 2002, the increase was 900 billion. So the absolute amount of additional lending going into the system was more than twice as much this year as it was last year. I fear that this means the economy is entering a period of speculative buildup. The rate of investment is too high. We are seeing the reemergence of inflation, which undoubtedly will increase. We have speculative property bubbles developing in several major cities. Therefore, the bad news is that the cyclical character of Chinese economic growth is apparently still with us and there will be major adverse consequences of what has been happening this year for the banking system. When the loans outstanding grow so rapidly the quality has to be going down quite significantly. I would argue that if properly measured, non-performing loans in the banking system, with all of their consequences, will increase over the next year or two as this loan boom works its way through the system.

The last two diagrams show how closely linked are the relatively rapid growth of foreign exchange reserves and the lending in RMB by domestic financial institutions. They both ramped up very substantially over the last four quarters. The growth of foreign exchange reserves is not the only reason lending has been growing fast, but it has certainly contributed and made it possible for the banks to lend at a much more rapid rate than they have in the past.

Let me finally turn to the question of what would a Chinese revaluation mean for the United States? I think at the end of the day China will revalue when it is in its interests. I think it will increasingly see it in its interests because of the problems in monetary policy that I have indicated. Basically, what the current situation entails is the exchange rate policy is working at cross-purposes with domestic monetary policy. The central bank wants to slow down the growth of credit. They have introduced a number of measures in an attempt to accomplish that. They have increased the reserve requirement for banks, which means they have to keep more funds on deposit at the central bank, which will inhibit their ability to lend. Additionally, They are putting some restrictions on certain types of real estate lending and they may take other steps over the next few months. But despite that, because of the huge buildup of foreign exchange reserves, which again means sale of domestic currency, domestic currency balances in the banking system continue to grow which allows the banks to finance ever larger loans. I think these factors will weigh increasingly and will increase the probability that China will revalue.

Let's say that they revalued by 15, 20, maybe as much as 25 percent. We will take 20 percent to make it easy. The last question I want to address is, what would that do to the bilateral trade flows between China and the United States? That brings me to the last diagram, which I think is extremely useful for those of us who tend to get a little bit focused on bilateral trade flows between China and the United States. The top line

shows China's growing surplus with the United States, over \$100 billion last year. The middle line shows China's global trade balance, which is positive approximately \$35 billion last year. The bottom line shows how rapidly China's trade balance with the rest of the world is deteriorating. In other words, they had a very, very large deficit last year of about \$75 billion with the rest of the world.

What would a 20 percent revaluation do? A 20 percent revaluation would probably move the current account by something on the order of about \$40 billion. Since the United States, on a total trade basis, accounts for something under a fourth of all of China's trade, a relatively large share on the export side and a somewhat smaller share on the import side, even a 20 percent revaluation is not likely to reduce the bilateral trade deficit by more than about \$10 billion. This is something very important to keep in mind as we listen to the debate in Washington about revaluation. Many people have the view that a revaluation is going to cause the deficit to be substantially reduced. The reality is, since these price effects work through over a period of several quarters, that the rate at which our deficit with China is increasing would slow down slightly for some period of time. However, it is quite unlikely that the absolute size of the deficit would diminish.

In summary, I think there is some probability the Chinese will revalue sometime over the next year out of their own domestic concerns, but that its effect on the bilateral trade relationship between China and the United States would be helpful. It would be welcomed, but it is not going to put a large dent in this very large and growing bilateral trade deficit that we have with China. I think that reflects very fundamental structural changes that have gone on in Asia and are continuing to go on, and that the exchange rate is not going to be a solution to our bilateral trade deficit with China.

Thank you.

MR. PEI: Thank you so much. Fifteen minutes. Now Tom.

THOMAS RAWSKI: Thank you very much. Let me try and make two presentations in the time that's allotted to me.

When I was originally invited to participate in this conference, I was told that the subject of this panel would be "Does China's new leadership squarely face the challenges of various economic issues?" Now I don't know much about China's new leadership, but it seems to me the answer is yes.

The quality of economic analysis in China has increased very dramatically in recent years. I used to read Chinese journals to get factual information. Now I read Chinese journals to learn much more than factual information. The Chinese have lots of economists and they have lots of smart economists. They understand what the policy problems are, and I think the government is genuinely determined to deal with these issues.

But the second question -- can they effectively deal with these issues -- I think varies from issue to issue. I think employment -- a subject that came up this morning -- is one issue where the efforts of the Chinese government to deal with growing unemployment have not been terribly effective, and I think there are a number of steps that they could take that are feasible that could ameliorate the situation. In other areas, I think the capabilities of the Chinese government, with all the will in the world, are quite limited.

And I must confess that at part of this morning's session, if Ken Lieberthal hadn't been sitting in the corner here. I would have thought I was looking at a meeting of the Democratic presidential candidates because people got up and said we've got to do inequality, we've got to do prescription drug benefits, we've got to do environment. (Laughter.) We have to think about the limited capabilities of the Chinese state to deal with these issues that come up in China. One of the scarcest resources in low- and middle-income countries is administrative capability -- people that can really get the job done. And before we start saying "they've got to do this, they need to do this, they must do this," we have to stop and reflect on capabilities.

Now my second presentation is the presentation of the topic as it turned out today. We're asked to talk about economic momentum in China and I am cast in the role of naysayer. But before I get too negative here, it's important to remember that China is a big, dynamic economy and if we're going to talk about possible obstacles to the forward progress of big, dynamic economies, the obstacles cannot be big. You cannot allow someone like me to come in here and read you a list. Well, do they have unemployment? Yes, they have unemployment. Do they have corruption? Yes, they have corruption. Do they have inequality? Yes. Do they have poverty? Yes, and real poverty -- not poverty in the sense that my income is less than your income, but real poverty in which people go to bed hungry. So if we're going to talk about obstacles to economic growth, we have to talk about large, systematic obstacles that get in the driving mechanism of the Chinese economy.

Remember -- if I can divert you with an American example -- we're in the information age. Information age depends on human capital. So surely it's impossible for the country with the worst school system to lead the global economy in the information age, right? Well, wrong. We're the ones with the worst school system and we're the ones that are the driving engine of the global economy. So we can't just make lists, we can't just think of hypothetical circumstances. We have to look at the mechanism of China's economy.

So, two points I'd like to make today. And now I have my list of charts if you just turn the page from Nick Lardy's final chart. The first point I'd like to make is that China's economy, although it's big and dynamic, is not as dynamic as the Chinese government tells us that it is. And here I have disagreements with the gentleman on my right, but I've cleverly arranged to speak after him, so he has to sit there and listen to my perspective. (Laughter.) Of course, if you ask him a question then he will have something to say as well. But if you just look at this chart, it is my opinion that the

Chinese government's presentation of economic growth looks pretty good through 1997. And beginning in 1998, things fall apart pretty rapidly. So the solid line is the official version. The dotted line shows my guesses. As you can see, in my opinion they were way off in '98 and '99; a gradual convergence in 2000 and 2001; 2002 was a very good year for the Chinese economy – I have no quibbles with the official figures. I'm afraid they've gotten off the rails again in the second quarter of 2003, exaggerating what the economy was able to do in the circumstances of the SARS crisis.

And I'd like to emphasize, ladies and gentlemen, I may be right about this. Dr. Lardy may be right about this. But beware of the international business community's commentary on the Chinese economy and beware of the international organizations' commentary on the Chinese economy. Remember all the problems we've had with business analysts who are forced to give good analysis because their employers do business with the people whom they're analyzing. This is a problem when the client is Enron. Think of what the problem is when the client is the People's Republic of China.

Going forward, the next picture I have shows figures for quarterly growth of nominal gross domestic product. These are Chinese official figures, and notice the enormous fluctuations. I've drawn two solid lines across this chart. If you put United States quarterly GDP figures going back about 125 years, everything would be contained within these two solid lines which I drew at plus or minus 10 percent. Growth, depression, panic, war, the United States GDP would not get outside these lines, but as you can see give me any three quarters – you pick them at random – and I'll show you one that goes outside these bounds -- enormous volatility, somewhat declining. Notice I've sketched in the fourth quarter peak and the first quarter trough, and I should add that anyone who studied the Soviet Union comparative economic systems in the bad old days before 1989 knows what these figures mean. These figures mean that we're not looking at a market economy; we're looking at some kind of socialist creature.

Now my Chinese friends will say, "Well, yes, we have fluctuations in GDP because we have Chinese New Year and you don't, and it gets cold in the north and perhaps it doesn't get cold in the United States," so I have a chart showing that the seasonal macroeconomic fluctuations in China, in Taiwan, in Hong Kong, and Korea. Well, Hong Kong and Taiwan have Chinese New Year and Korea has cold weather, but as you can see the chart shows boldface for any quarter in which China's fluctuation was not larger than all of the others and there's only one such quarter. I apologize for not updating this chart, but I don't think things have changed very much.

Going on to the next chart, the question is where is all this fluctuation coming from? And the answer is that it's coming from giant fluctuations in investment. Look at these figures for quarterly fluctuations in investment. The average quarterly fluctuation in investment in China is larger than the largest quarterly fluctuation in investment in these other economies. And the next page shows a graph, which demonstrates the same thing – that quarterly fluctuations in investment in China are off the dial as far as what goes on in market economies in the neighborhood.

And the reason for this, my Chinese colleagues have explained to me, is because of the plan. And I protested, "But there is no plan." Everybody knows that at least 95 percent of industrial output is through the market. And they said, "Oh yes, there's no plan for production," thinking "you fool," in parentheses, "it's the plan for credit and the plan for investment" -- that every year in March the National People's Congress approves these plans, then in April the government ministries divide up the responsibilities, and in May budgets for operating organizations -- sometimes in June, but in Beijing in May -- and also the credit quotas that are handed over to the banks come out. So nothing much can move in the first quarter because we don't know what our annual budget is.

And the day I learned this -- it was several years ago at the Academy of Social Sciences -- these people said, "Do you know where we were this morning before we came to see you?" I said, "No." They said, "We were at a meeting at which we received our annual budget for the current calendar year," and it was about May 10th. So this is an economy in which investment, which is a very large segment of the economy, roughly 40 percent, does not run on market principles.

The next table here, shows figures for construction and sales of commercial buildings -- notice that we build them but we don't sell very many of them. There are lots of empty buildings in China and again this is a hallmark of a system that is not operating on market principles. Everybody makes mistakes, but there are simply an awful lot of empty buildings in China. I must confess, these figures of the percentage sold have improved recently, so I really should clean up this diagram.

The clearest demonstration of what's going on is in the next table, which shows completed investment in fixed assets as a monthly share of the annual total. And notice the figures are exactly the same before the reform, during the reform, and after the reform. If you brought in a man from Mars and showed the man from Mars the annual data on monthly investment spending and said, "Okay, please show me where the reform began," the man from Mars would not be able to do anything because the reform has not begun. And indeed, no less an authority than Zhu Rongji said in his penultimate government work report, "We must as soon as possible formulate and implement plans for reforming the system of investment and the system of financing investment." That's exactly right. Premier Zhu is a straight shooter and I don't need to say any more. He said we must formulate plans. We don't have a plan yet. We need one. And I agree.

If you turn the page, I've been looking at some data on individual companies in major industries and I keep coming up with graphs like this one. You have the net value of assets on the horizontal axis and the rate of return on investment pre-taxes on the vertical axis. Now the big new factories should produce high returns. They have got the imported equipment. They've got the modern technology. They have the best workers. And I have not yet produced one of these diagrams in which this regression line does not slope downward. Here you see it in cement. All the high rate of return enterprises are in the upper left hand corner. They're among the smaller enterprises. All the big ones are below the line which shows the median rate of return.

Turn the page for steel. Same thing. Downward slope. This time there's one plant – look out in the lower right – I think that's Baogong in Shanghai, which actually managed to eke out a return just barely above the average. And again, the good plants that have high rates of return are all the pygmies. The big plants that are getting all the investment funds, all the government attention, all the directed bank loans, are clunkers. And I can do this for the textile industry, I can do – I've done this for a number of industries and I have yet to find one where this line slopes up.

So this is the problem. You have an economy that's systematically channeling huge amounts of investments into deadbeat projects. How are we going to reform this? This is dangerous. This is where the bad loans come from, because these dud projects that don't produce anything, these buildings that don't get sold, they can't pay back the loans. They don't create employment. This is why for every commodity in China there is excess supply according to Chinese officials. They forgot about electricity, but leaving that aside, this is a huge problem. Every year we channel valuable resources into a pile of deadbeat assets, and as this pile gets larger and larger the pressure on the productive assets to deliver higher output in order to push the whole economy forward at 6 or 7 or 8 percent or whatever we're looking for becomes greater and greater.

Now where can reform come from? It seems to me there are two possibilities. One is that we rip the resources out of the channel that puts them into the state banks and sends them to the state enterprises and try and put resources into the private sector. This is not easy. First of all, there's limited absorptive capacity. The private sector in the recent past has got 1 percent of bank loans. Could they productively absorb 5 percent of bank loans? Probably. Ten percent? Maybe. Fifteen percent? I doubt it. Twenty-five percent? I don't think so.

And a lot of these private enterprises are shady operations. We see some of the results in the recent banking scandals. And furthermore a lot of people in policymaking positions don't want to channel resources outside the state sector because they fervently believe that in response to WTO entry China needs to build large businesses in shipbuilding and computers and petrochemicals and so on in order to compete with the global giants who are hotfooting it into China. These people look at the history of Japan, they look at the history of Korea. They say the Japanese did this, the Koreans did this with government-managed development and we're going to do this too. I think they're making a big mistake, but that's what they think.

So there's no great enthusiasm among the Chinese leadership for channeling huge quantities of resources outside the current investment system. And then the alternative is to reform the current system – reform the state banks, reform the state enterprises that absorb the bulk of investment resources, but these are the very elements of the Chinese system that have resisted reform for 25 years. They're the – these are the sectors that have caused Zhu Rongji to throw up his hands and say, "We must as quickly as possible formulate plans for reform," and so on. And so while many aspects of Chinese economy have experienced very substantial and very fruitful reform, this is a tough area so it's hard for me to see how we quickly break out of this impasse which finds large quantities of

investment resources essentially going down the drain and in particular no one is going to turn off the flow of investment resources even temporarily while we have 6 or 8 or 10 or 12 percent urban unemployment – the figures vary all over the lot.

So let me simply conclude by saying this is a very tough problem. I think it's a problem that could slow or even stall the growth of China's economy despite the clear evidence of dynamism that we see in many sectors, and I'm glad that I don't have the responsibility for trying to fix this up, because I suspect that the people who do have to worry about these things don't get a lot of sleep.

Thank you very much, ladies and gentlemen.

(Applause.)

MR. PEI: Thanks.

Now we have our last speaker. Adam.

ADAM SEGAL: If it's not going to be obviously immediately clear from the nature of my comments, the absence of any charts or tables will mark me as a political scientist and not as an economist. (Laughter.)

My talk is on technological change in China and we can think about it as a bridge between this panel and the next, when we look at foreign policy and security issues, in the sense that China's ability to develop an indigenous technological capability will have an enormous impact on China's economic growth domestically and its role in the world. Domestically, the question can be boiled down to, is China going to be a large economy or a modern economy? Is China going to continue relying on labor-intensive growth or is it going to move to a knowledge-intensive, capital-intensive economy?

China's neighbors, its trading partners, and its competitors are increasingly concerned about the changing nature and the composition of China's exports. All right, is China moving up the product cycle? What does that mean? What does that mean if you're Malaysian? What does it mean if you're Mexican? What does it mean if you're an American?

And finally, China's technological capability is increasingly relevant to questions of national security, especially the questions of will China be able to develop weapons systems and platforms and the skills to be able to fight what the Chinese call high-technology warfare.

So what I want to try to do today is give a very broad picture of where I think China is as a technological power. I'm going to try to identify five issue areas that I think will help shape China's technological trajectory for the next 10 to 15 years, and then end on what I think this all means for the U.S. in a shorter term – maybe three to five years.

Okay, so where do I think China is now? And I think, you know, like much we've heard today it's a very mixed picture. It's mixed at the regional level, at the firm level, and at the institutional level. There are a few sectors – and I stress few – there are a few sectors where there are truly innovative firms and truly innovative activity taking place. These tend to be concentrated in the East, especially in Beijing, Shanghai, and Guangzhou and Shenzhen. That said, the majority of Chinese firms have a very low level of technological capability. They tend to host foreign direct investment in manufacturing and services. Some of them have advanced production processes, and they are producing increasingly sophisticated goods, but the overall level of innovation is low and these firms are generally restricted to retrofitting imported technologies for local use for the export markets. All right, so these are generally using imported technologies and retrofitting them for local use.

Institutionally, China is also very mixed. It's clear that the Chinese want to change this. It's clear that the Chinese want to move up the technological ladder and it's a priority for them. We've heard much about China's large science and technology base – its large S&T base – that has a number of ambitious development plans like the 863, the torch program. After 10 years of stagnation it's increased its investment in research and development and basic science. These are all the positive things or all the positive movement forwards, but institutionally there are serious problems in how China both organizes research and development and how it organizes innovation. For one, most of these problems – programs tend to be top-down and targeted – and the targeting is not particularly efficient. S&T personnel, we hear all the large numbers of Chinese S&T personnel, but the quality of these personnel is very mixed. Traditionally, China has a technology strategy that's focused on acquisition to the detriment of absorbing and diffusing technology, so the Chinese will buy a product and then not spend the equivalent amount that's needed to actually diffuse it into the local economy.

Finally, there is an underdeveloped institutional structure, legal order, and business culture that support innovation. And this is especially true in the case of capital and building modern enterprise systems. All right, when we talk about the story of Silicon Valley in the '90s it was people starting their own firms and being rewarded for innovation, either through IPO or selling to another firm. That system does not exist in China yet. And so young scientists who have good ideas or new technologies do not have the capability of being rewarded for those innovations and moving forward.

This mixed picture is reinforced by a lot of the statistics we've been hearing recently. I'll address just the most popular one that has to do about high-tech imports from China to the U.S. You know, we hear that they've risen from in the year 2000 from about \$26 billion to \$35 billion in 2002. The IFC is reporting that China will increase its share of global electronics production from 8 to 14 percent in 2005. I would take these numbers with a grain of salt, especially because most of China's movement has been from the low to the medium sectors, all right. There's not a movement to what we would consider actual real high-technology where innovation is a defining term for the sector and the firms. And more importantly, China's information technology export sector is still predominantly made of export in processing and it is dominated by foreign-invested

firms. From anywhere between two-thirds and 80 percent of these exports come from foreign-invested firms and the number is rising. So from 1996 to 2001 in a range of sectors the number in fact is rising for foreign-invested firms.

So my take-home story for China is that it's a follower. It's still a technology taker, not a maker, but it's a fast follower. There are some pockets of excellence and it is making some space up, but it's still a pretty good space. When I think about the future there are sort of five key issues that I think about. The first one is the role of the government. What role does government play in technology policy? And there was a very significant change in 1999 when the state really shifted from what we can broadly call technology policy to innovation strategy. And that was on one hand a greater focus on small and medium enterprises; also what Susan Lawrence was talking about earlier, an embracing of private enterprises and a move away from a top-down plans to thinking about this problem of innovation. I mean, how do you encourage a young scientist to leave their cushy job at a state research and development institution, take the risk of starting a firm, and how do you reward that person?

That said, this is still a very uneven process and the state hasn't pulled itself out nearly enough. The telecom sector is probably the best example of it where decision-making is completely opaque. The state acts as both regulator and as an active player. But even in the nonstate sector we haven't seen as much movement as one could expect. For example, government funds make up over 80 percent of venture capital funds, all right, so these are not funds that are being distributed by the needs of capital.

The second area is the balance between software and hardware, and the Chinese market is overly focused on hardware. And here, you know, a comparison with India is extremely useful. In 2001, India produced \$8.4 billion in software while China only produced \$6.8 billion for a significantly larger economy, so there has been in China a beginning of thinking about services and software and how to get out of just focusing on hardware concerns. Closely related to this is a concern with standards and Chinese trying to develop Chinese standards -- the creation of the VCD as opposed to the DVD, or TDSCDMA or the use of Linux, right; the creation of Chinese standards that they hope will then one day become global standards.

The third issue is the issue of digital divide within China, and that is the eastern provinces and the coastal cities have much higher rates of internet access and telephony penetration and it's just going to get worse. S&T expenditures are much higher in the coastal areas. For example, in 2002, 12 billion went to Beijing and Shanghai. By comparison, Mongolia, Jiangxi, Qinghai got -- Tibet and Xinjiang got less than 1 billion RMB. So 12 billion versus 1 billion. The government has a plan for a universal service fund. What that actually is going to look like, how it's going to be rolled out, no one knows.

The fourth area is what we would call the tension between informatization -- what the Chinese call informatization, which is basically the application of IT techniques throughout the economy, throughout the entire sectors, and questions of political control.

All right, so too much – too little, excuse me, too little informatization and the country reduces its competitive edge, right? How do these small firms compete if they don't have access to the web, if they don't have access to the information that they need? And a lot of the plans for China's leap into the knowledge-intensive economy will suffer. On the other hand, you know, too much informatization – too little control from the Party's point of view – means that it loses increasing authority and it, you know, perhaps more threatening is that opponents of the regime can now organize and speak to each other while they're undermining the legitimacy and authority of the regime.

The fifth and final area is the question of globalization. How does China increasingly fit into a global structure of both manufacturing and research and development. And it's clear that there has been a shift in gravity. China is now increasingly a player in all of these areas. In manufacturing, traditionally foreign manufacturers went to China, they traded technology to gain access to the domestic market. Now some manufacturers are at least saying that they're doing this because they need to use China as a platform for global markets. All right, so it may not be true, but the rhetoric has changed, that they're now focusing both on the domestic market and using China as a platform to go out to the international markets. The same thing is happening with R&D – in research and development. If we look at Kate Walsh's recent book on moving R&D centers to China, again nobody really knows how much is being done there, but the rhetoric has certainly changed. It's not necessarily just about localization, it's also about moving out into global markets and China's role as a platform there.

This raises real issues for China. On one hand there could be increasing benefits to having the manufacturing located in China: greater diffusion of these technologies. With questions with international R&D: can Chinese firms lure these people away from R&D centers? Do they go from Motorola to Huawei and bring the skills that they have?

On the other hand, it's just not clear where China's going to fit into these production cycles. Is it going to always be one or two generations behind? And I'll conclude the section with just one statistic, and that is that firms in the OECD often spend upward of 10 percent of sales on R&D, so 10 percent of sales on R&D. In China, the firms that are considered the most innovative, these private enterprise firms, the average is 2.6 percent. All right. So we're talking about much less spending on research and development.

So what does all of this mean? You know, again, I think the big picture is that China is a fast follower and still a follower and it is gaining some space, but right now it is not the technological juggernaut that you might get from reading some of the popular press. You know, what this means for the United States is that there are going to be real costs to adjusting to China's rise. If China does develop real technological capabilities there are going to be some serious costs, and there are going to be serious issues about which technologies are worth controlling and which ones are not. But I think at this point it's clear that the United States benefits, if not more, then as much as China does from openness and that U.S. technological lead is still very determined by its participation in

global markets, and we have to think about China as being the center of those global markets increasingly in the future. And I'll stop there.

MR. PEI: Thank you. We've heard three excellent presentations.

(Applause.)

Now I also want to thank all of them for keeping the time. We have now about 25 minutes for Q&A.

The lady over there.

Q: Julia Chang Bloch, from the University of Maryland. I'm curious that none of the panelists raised an issue that is becoming a hot topic among the Democratic presidential hopefuls, and maybe that's the difference between experts and politicians, but the question is, is China maintaining its economic momentum on the back of the American manufacturing industry and American factory workers?

MR. RAWSKI: No.

(Laughter.)

MR. PEI: Tom, would you elaborate?

MR. RAWSKI: What is there to discuss? This picture of manufacturing employment fleeing to China is very interesting, except that manufacturing employment in China isn't growing. The – if you look at the employment figures, in 1990 the components add up to the total. During the 1990s, you add up the components, you get a figure that's progressively less than the total. I think that the gap is somewhere in the neighborhood of 30, 40, 50, 60 million workers. Now some of my Chinese colleagues who know about these things say that the statistics bureau was trying to fill a gap by – the statistical categories don't make much sense anymore – by doing surveys. But given my general skepticism about Chinese statistics in recent years, I am not – even though I have great respect for my Chinese colleagues – I'm not ready to say that these tens of millions of positions that are in between the lines in the yearbook genuinely exist.

I shouldn't say this because here we have a room full of foreign policy specialists, and I'm not one, but my thought from the provinces here is that every four years we have a presidential election in which the outs accuse the ins of coddling China in various ways and then whoever gets elected they do the same thing. So I think what's going on is the Democrats are preparing to attack Mr. Bush for implementing Mr. Clinton's China policy. (Laughter.) And the Bush administration is trying to inoculate itself against such accusations. And I promised that I wouldn't say that on the way down here, but there it is. (Laughter.)

MR. PEI: Nick, do you want to –

MR. LARDY: Well, look at the last diagram in my series. For those who believe that China is a major, major factor in the loss of U.S. manufacturing jobs, you must explain why this was not an important factor in the mid-90s when China's trade surplus with the United States was growing dramatically. Now all of a sudden it has become the major factor. It strains credulity to think that everything that happened from 2000 on in terms of bilateral deficit explains what is happening in terms of employment in the United States in the manufacturing sector today. It would imply some enormous discontinuity in the basic underlying economic processes, which I don't think is credible.

MR. RAWSKI: Let's be very serious here. Clearly there are industries and sectors in the United States that are getting hammered by Chinese exports. This is what happens when we have interregional or international competition and firms and sectors in different parts of the country or different parts of the globe ramp up their technological capability and move up to produce higher quality products than they were producing before, so they bump off people in other economies, including ours. And in a dynamic economy, if we want to defend our high-wage system, we have to figure out how to produce a better product. I mean if people who work for low wages can produce the same product that our lot sitting here can produce for high wages, it's not going to work in a market system because most consumers in the United States and elsewhere in the end don't care what flag is pasted onto the product. They want a good product at a good price, and for the same reason that Americans are willing to buy Korean electronics or Japanese cars, they will buy Chinese products. And so we face an endless sequence of adjustments if we're going to live in an open economy.

So I'm – I don't mean to say that there are not real adjustments that are being inflicted on the American economy and people – I don't mean to say that people are not being tossed out of work and companies losing their sales lists because of competition that they didn't know about. I mean Joseph Schumpeter wrote about this 50 years ago and he said the competition that we need to worry about is not the one that chisels the price or chisels the quantity, it's the competition that comes out of nowhere and blows away the rationale for our entire business. And we're seeing some of this coming from particularly the Southeast Coastal provinces of China and we will see more, but it's certainly a mistake to say that Chinese prosperity when we're looking at an economy populated by 1.2 billion people is coming about because of whatever fraction of 2 million jobs that are said to have gone away during the current administration can be attributed to trade with China. So this really does deserve a one-word answer. (Laughter.)

MR. PEI: Fareed.

Q: I just wanted to ask a very simple question. Professor Lardy, what did you think of Professor Rawski's presentation? (Laughter.)

MR. LARDY: I agree with his most fundamental point, which is that there is an enormous waste of resources in this economy. I think we still have a disagreement on what the growth rates have been, how much it is overstated or understated in various

periods, but I do think we share the common view that the mechanism for allocating investment needs further and very substantial transformation.

The way I would put it is to say that in China we have a very, very strong market for goods. –It is very competitive, there is not much monopoly power, and almost all processes are determined in the market. Increasingly, we have a relatively robust market for labor. We have seen a breakdown of most of the traditional barriers that existed in the pre-reform period, but in the market for capital, we have not made enough progress. The banking system is not commercialized. The capital markets are, to put it charitably, in their infancy, and there is a lot of misallocation of resources. It shows up, as we both mentioned, in the accumulation of non-performing loans in the banking system. It is reflected in this peculiar seasonal pattern of investment where you have these huge fluctuations from quarter to quarter generated mostly by fluctuations in investment. I think the biggest remaining challenge in the reform of the system is in the financial sector and I have felt that for some time. We might have a slight disagreement about whether they are one step on the way or two steps, but there is no doubt we both share the view that this is the remaining biggest problem.

MR. RAWSKI: I would emphasize that the disagreement about the growth rate is essentially limited to four years, so if this doesn't continue into the future it's not a big deal -- even though I'm right and he's wrong. (Laughter.)

MR. PEI: The gentleman in the back.

Q: Hi. My name is Austin Turner, I'm with Georgetown University Security Studies program. I guess this question is directed to Mr. Segal. You made several comments about China indigenizing and nurturing technologies that they brought from abroad, but you really have not talked about any innovation. And are there – is there any information on innovation rates? Is there any way to measure innovation in China right now? And how does this relate to the national security issues?

MR. SEGAL: I think that's a central problem right now in analyzing Chinese technological growth. I don't think we have a way of measuring innovation. You know, we don't really have a way – Chinese firms don't really tell you what their profit is much less, you know, how much they are investing in R&D and all these other questions. I know they are – right now a number of people at the NSF are trying to come up with indicators to think of ways, well how do we actually measure this innovation and, you know, what does it mean in the Chinese economy?

You know, for national security it doesn't necessarily mean a lot in the sense that the Chinese don't have to do a lot of innovation, considering what they can buy on the open market, and so then the question is, you know, what can they buy and how can they integrate it? And integration skills could be tied to innovation, but they could also be developed in other ways. They could be purchased or they could be developed, you know, through other measures. So, you know, I think for national security reasons the things that we would be most worried about are not necessarily linked to innovation.

MR. RAWSKI: If I could supplement that: Gary Jefferson at Brandeis University, has – with various collaborators – has written a number of papers, some of which are in print and others of which are floating around, in which he uses enterprise level data on research and development expenditures and makes productivity calculations to try and answer such questions as what is the effect of R&D expenditures on new product development, what is the effect of government contributions to R&D activity on new product development, what's the effect of R&D expenditures and new product development on profitability, and so on. So this research doesn't focus on the nature of the technologies or the nature of the products; it is applying what I think would be called standard methods of studying the impact of research at the enterprise level to Chinese data. So you might pursue those materials.

Q: David Epstein, Department of Defense. Mr. Lardy and Mr. Rawski agree there is a misallocation of investment, but I wonder if you could both speak about how you see the prospects for improvement. In particular, are the state enterprises shrinking in a way that will reduce the drain they impose on investment resources, and does the enormous growth in loans that Mr. Lardy showed on his chart suggest that the problem is getting worse? And if you look out five or 10 years, is this problem going to solve itself or get worse?

MR. RAWSKI: Maybe I can say something about state enterprises and leave the banks to the gentleman here. I'm afraid that this is not a problem that's going to solve itself. The share of state enterprises in investment funds has not gone down, and the last five years – the period over which we are arguing – it's actually crept back up a little bit; I think because the government is trying to pump funding into the economy to buoy up the growth rate and it does this in the familiar channels, which is to say the state sector. So you have this great contrast between the share of the state sector in output, which is declining rapidly, and the share of the state sector in investment, which has hardly changed. And just from that you can see that the ratio of incremental investment to incremental output is enormously different and much worse in the state sector than elsewhere in the economy.

MR. LARDY: Well, on the banking side, as I indicated perhaps too cryptically, I think in the aftermath of the Asian financial crisis the Chinese did make, over a period of three or four years, some very substantial progress on reforming the banking and financial system more generally. They created asset management companies. They got a lot of bad loans off the books of the banks. Asset management companies have been selling these into the market with the assistance, in some cases, of major international investment banks. The central bank has increased its regulatory oversight of the financial system and imposed a lot of new prudential requirements. They have improved the accounting. It's much more transparent. The transparency has increased enormously, so there have been a number of important indicators of progress.

However, in the last three or four quarters it has been almost completely eroded by this explosion of credit, and I think one of the unanswered questions remains why it is

occurring at the present time. Obviously the buildup of foreign exchange reserves has contributed, but it cannot be the only explanation. Even the new governor of the central bank, Zhao Xiaochuan, is quoted in a couple of recent speeches as saying we are going to have an investigation and find out why lending has grown so rapidly. Additionally, a number of investigation teams are being sent out. So it remains not well understood. I do not think we are yet able to say whether this is really a huge, fundamental setback or whether it's just a temporary lapse on a smoother trajectory towards developing a more effective system of intermediation.

MR. PEI: Pete?

Q: Pieter Bottellier of SAIS. If I may come back to the exchange rate question, Nick, in particular directed at you; I agree with your bottom line that the Renminbi is probably overvalued at the present time, but I differ with you on several points.

One is the extent of the overvaluation. I think 15 to 25 percent seems to me excessive. Why? Particularly because the Chinese current account, which is typically the standard by which we measure whether a currency is overvalued or not, is changing very rapidly. It doesn't show in your graph, but if you look – if you include 2003, you probably will see a very, very sharp decline in the current account surplus. Most Chinese economists now predict a deficit for 2004 simply because the imports are growing much more rapidly than the exports at the present time. So the extent of the overvaluation, I think, is not as much as you would like to suggest.

Secondly, China should not revalue because there is a high volume of speculative capital inflow. That's the wrong reason of – the wrong way of responding to that. I think the best way, if you look at that aspect of it, is for China to make absolutely sure that nobody believes they will revalue, because then the speculative inflow will stop. So you should not respond the new exchange rate policy to speculative inflows or outflows. I think that's potentially very dangerous. You should respond to an overall current account surplus or deficit, and that is clearly coming down significantly.

With regard to the American – the very large bilateral surplus that China has with the U.S., if you look at the – China clearly cannot do exchange rate policy simply on the basis of its balance with one other trading partner. Its balances with the rest of the world, as your graph shows, are much more balanced. In fact they are in deficit with a large part of the world, in particular the rest of Asia and Taiwan.

Finally, and this is a point you did not raise, I believe that China is not ready to float the currency. You haven't suggested that, but I'd like to have you comment on that. For a variety of reasons it would be very dangerous for China to move to a free-floating currency as some people in this country have suggested.

Well, I have some other points, but I believe – I see Minxin looking at his clock, so let's leave it at that.

MR. LARDY: Well, let me respond to those points briefly. The basic model that Morris Goldstein and I have used to come up with the 15 to 25 percent is set up to identify the revaluation that would bring their current account to roughly offset their capital account. We take the 1.5 percent capital account inflow as the target we are looking for in order to get the Chinese current account from its current position to slightly negative, so that the overall balance of payments would be roughly in equilibrium.

And my diagram in the current account does go through the first half and it certainly does reflect the fact that the current account has come down very dramatically because of the rapid growth of imports so far this year. It was 3 percent last year; we are down to 1.5 percent for the first half, and we will probably be somewhere between 1 and 1.5 percent on the current account for the year.

There are a couple of other things that need to be taken into account. Imports, I believe, at least to some extent, are artificially high because we are in an unprecedented investment boom. Secondly, the RMB has ridden the dollar down against dollar depreciation over the last year or so. Not all of that has fed through the system, so our view is that the underlying current account is somewhat stronger than the 1.5 percent that we're looking at in the first half. Our view is that we need to move the current account by roughly, depending on what assumptions you make, something on the order of 3.5 or maybe 4 percent of GDP.

The reason it takes in the range of 15 to 25 percent to get that much of a move in the current account is the very large importance of export processing. More than half of all of the Chinese exports today are so-called processed, which means they are simply assembled from imported parts and components. If you revalue the currency, the price of exports will not go up by anywhere near the percentage of the revaluation because, for those processors, the imports or the imported components become cheaper. If you did not have that as a factor I think we would be guessing something more on the order of 10, maybe 10-12, percent. But because there is not very much price feed through for a very large component of total exports, you need a bigger percentage revaluation to get the swing in the current account.

Basically our model is, and I can talk about it in more detail for those that are interested later, that we need to move on the current account by about 4 percent, and you need something on the order of 15 to 25 percent to get that.

I hope I did not say I thought they should revalue because of hot money inflows, our goal is to get them in an overall balance of payments equilibrium. I think that would be very important to cutting off speculative inflows. The incentive for speculative inflows is very high when it's quite clear that the underlying capital and current accounts are both in surplus indicating eventually there would have to be a revaluation. I think the underlying objective, again, is overall balance of payments equilibrium. The needed exchange rate change would be relatively large, and as a byproduct it would need to be large enough to cut off, or certainly very dramatically diminish, speculative capital inflows.

I agree with you in your comment on the bilateral.

And on the float, I did say I do not think a float is appropriate at this point. Their domestic banking system is far too weak to eliminate the current capital controls that you would have to do in order to have a real float. I do not think there is much doubt if they floated today that the currency would depreciate, and perhaps dramatically. So, from the point of view of U.S. policy we are making a mistake to say that they should float. It could easily cause a domestic banking crisis, and from our point of view that would not be helpful in terms of doing anything. It would make the trade imbalance worse.

Q: Ken Lieberthal, University of Michigan. Two things. One, I have heard from some people in the banking system in China an explanation of the current loan surge that essentially says that the bankers are under a lot of pressure to reduce the percentage of NPLs in their loan portfolios, and since there has recently been a huge opening of the mortgage market and car loan market, they're just pouring money out the door like crazy. There are new loans, none of which are bad yet. (Laughter.) And they – no, but I'm really serious. And the demand is there and this is now slated to grow to something like 40 percent of overall loan portfolios in a relatively short period of time.

So I wonder whether you have heard similar things. That's number one. Number two, and more importantly, Nick, in one of your charts you say – I just want to be sure whether I understand this – you say that imports as a percentage – as a share of GDP are now at just under 25 percent, but imports and foreign affiliates' domestic shares combined boost that to what looks like about 41 to 42 percent. Are you saying that the domestic sales of foreign affiliates in China equal about 16 percent of Chinese GDP now? Is that accurate? Because it's just much larger than I would have anticipated.

MR. LARDY: Let me take the last one first. The answer is yes. I think many of us, as I said in my remarks, focus on companies using China as an export platform. But there are many other companies that do not sell anything that they produce in China on the external market. The auto sector would be the best example. In recent years the share of sales on the domestic market by foreign affiliates is about 60 percent. It adds enormously to this broader ratio of how open the economy is and I think it's very important if you are looking at this from the point of view of the competitive effects on the economy. This is one of the reasons I am relatively optimistic despite all the problems on the financial side. I do think the competition has increased enormously.

If you are a domestic company, it does not matter whether the competition is coming from the import or the goods produced by a foreign company in the next city or down the road or wherever it might be. I think it is a better indicator of how open they are, and yes, it does add on. It's a big, big chunk. And keep in mind the reason is foreign affiliates are now producing almost 30 percent of manufactured goods. So you put 30 percent of manufactured goods produced by these companies, 60 percent of which is sold on the domestic market, and it adds a lot.

Now your first question or comment was on why the banks are lending so much? Yes, there is a view that since they are under pressure to reduce their NPLs that they are inflating the denominator and not worrying about the long-term consequences of what is going to happen to the numerator. I find it very hard to believe that they would actually do that. They have been under pressure to reduce NPLs for years, this is not something new, so I do not know why in the fourth quarter of 2002, all of a sudden, the loan growth would expand so dramatically.

It is true that individual mortgage lending and lending for automobiles has increased, but actually in the first half of this year, the share of lending, for those two items, did not increase. In other words, they have participated in this huge growth, but they are not the driver of the huge growth. So, there is something else going on that at least I do not yet fully understand.

MR. PEI: Tom, do you want to add?

MR. RAWSKI: No.

MR. PEI: Okay. We have time for one more. Let me just call on in the back. Yes.

Q: I'm Alan Tonelson with the U.S. Business and Industry Council. I had one question for Professor Lardy about these – about the foreign affiliate sales in China and even Chinese imports. Your claim that they – that they indicate much greater openness in the Chinese economy than is widely recognized seems to assume something that comparable U.S. government figures on multinational foreign affiliates in foreign countries don't let us actually show, and that is that what the foreign affiliates sell inside China stays inside China, that these goods make only one trip, and that they're not exported.

I would suggest that a substantial percentage, and perhaps you've got the data that shows that I'm wrong, but I would suggest that a substantial percentage of the so-called domestic Chinese sales of foreign affiliates are actually reexported or go into the export sector in some form. And I would also submit that that is the case for many Chinese imports. They are imported specifically to get reexported or to build up the export sector. So that doesn't sound very open to me -- certainly not open to imports as they are commonly understood; that is to say, goods that are consumed in the importing country.

MR. LARDY: Well, let me take your two comments. My measure of imports, you are absolutely right, does include imported parts and components that go into goods that are then reexported. So that part of your critique is correct. I do that because when you compare import to GDP ratios across countries, that is what everybody does. Therefore, if you want to make comparative judgments about how open the economy is, I think that is the right way to do it, but it is debatable.

On the reexports of goods that are first sold from a foreign affiliate to a domestic company and then reexported, we could talk after the session or at some other point about the details of this, but this basically is taking the value of what is produced minus the value of foreign goods that are exported. In other words, I take the Chinese figures on what is exported that is attributed to foreign companies and I subtract that from the officially reported figures on what is produced. So conceivably, the system does not measure everything perfectly. However, take Dell for example, which is now sourcing most of its notebooks in China. They are buying them from Taiwanese companies. They do not go through any intervening Chinese-owned entity when they are sold. All those Taiwan companies are 100 percent Taiwan-owned, so there would be no doubt that all of those sales would be reported as exports. There may be some modest volume that goes through Chinese companies that are doing the export, but in theory at least, even if that is the case, it should be covered in the customs data on foreign-fronted enterprise exports.

MR. RAWSKI: And just on the more general point, I think it's hard to make the argument that imports come across China's border into the country and they don't stick. Think of some of the large categories of imports: crude oil for example, or machinery and equipment. I don't think that China's importing large amounts of machinery and equipment in order to turn them around and send them somewhere else, so although –

Q: No, to be placed into export-oriented factories.

MR. RAWSKI: Well, certainly some of the equipment is being placed in export-oriented factories, but at the – in danger of sounding crude, so what?

MR. PEI: Okay. (Laughter.)

Well, I've got to reassert my authoritarian instinct. (Laughter.) We're going to reconvene here in 15 minutes, but let's have – before we adjourn for a well deserved coffee break, I hope all of you will join me in thanking these three panelists.

(Applause.)

(End of panel.)