Unedited Event Transcript

Explanations for Slowdown of Global Trade

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Adam Posen: Good afternoon, ladies and gentlemen and welcome back to the Peterson Institute for International Economics. I'm Adam Posen, the Institute's president and I'm delighted to have so many good friends of the Institute, friends of trade, friends of economic debate with us today for our discussion of exploring possible explanations for the slowdown in global trade.

A few just observations before we start. It is interesting how policy, I mean particular political debate often tends to look at the last war and we have a lot of political discussion going on right now in the US and elsewhere about the supposed, I think, real, but exaggerated disruption caused by Chinese imports and Chinese expansion a dozen years ago. And I think as Autor, Dorn and Hanson have documented that was real, but it was also unique and it said something more about the US labor market than it said about trade. And that's an issue which we, in the Institute, will be confronting repeatedly as we always have in coming months, but part of what's going on, sort of the dirty little secret that is more a puzzle necessarily than a problem is why after the rebound of global trade after the obvious quick sharp slowdown that occurred during the global financial crisis are we suddenly back to plateaued global trade?

Why as even the US and China, and Western Europe have recovered, admittedly not terribly strongly, but have recovered, have we not seen a resumption of growth in global trade volumes? And how much you think that matters and how much you think there are things to be done about it depends on what you think causes it. And so, we are delighted today to have with us a group of both, Institute and colleagues from outside the Institute to take different takes on this issue. I'm going to be even more brutal than usual in time keeping for my colleagues because there's five people and we want them to each get their say and then have room for discussion amongst them and with all of you, but they're a terrific group and I will introduce them in a moment.

I will just say two other things quickly. First, it feels good to be getting right back into analytics of trade just as we did without TPP assessments that came out recently and other work. Many of you know the Institute wears multiple hats. We are the macro shop, we are the financial crisis shop and of course, we are the trade and investment shop. Last week with the IMF folks in town was sort of macro mania. This week it's terrific trade tableau. And tomorrow we'll be holding another event on the kind of wearing our third hat which is regional studies talking about China's new initiative of the Belt Road, which of course is a foreign policy matter, a trade and investment matter, and a financial matter altogether. And Sean Miner and Simeon Djankov will speaking on that here tomorrow. Another good free lunch at the Institute for those of you how are invited, another good free video for everyone out there on the web.

I also just want to take this opportunity with so many of our friends in the trade community in the room to remind everyone that the Institute has proudly added a new senior fellow, Dr. Chad Bown. Chad, raise your extremely tall hand. Thank you. We've had our eye on Chad for a long time and thankfully he's had our eye on us. So, after a distinguished career at the World Bank and at the White House and in academia, he is now with us. And though he's not on today's panel he will be featured soon in Institute programming. So, we look forward to Chad and his work and contributions here.

Anyway, back to today's topic, which as I said, is obviously an intellectual topic, a policy topic and one where there's genuine room for debate in trying to understand. We're going to start off with Institute senior fellow Caroline Freund. Caroline has been a senior fellow at the Institute now for three years, just about. She, of course, if the author of the recent book Rich People, Poor Countries which has been well reviewed in a number of places, including the Economist and the FT. And I encourage you all to buy it for Mother's Day and give it to as many people as possible. Caroline was a chief economist for Middle East and North Africa at the World Bank and had a distinguished career in both the bank and at the Federal Reserve publishing academic studies and applied research on trade issues.

She'll be followed by Gary Clyde Huffbauer, who of course, is the Reginald Jones senior fellow here at the Institute. And a Fred Bergsten and I both always say, the most valuable person in the building because he does more than three other people ever do. Gary is at the leading edge of discussions of trade, of taxation, of investment and continues to adapt to the new world turning our blog posts rebutting nonsense about trade left and right. Delighted to have Gary speaking today.

Third speaker will be our colleague Aaditya Mattoo who is research manager for trade and integration at the World Bank. He specializes in trade policy analysis, international trade agreements. He's been at the bank now since 1999 and we've obviously benefited from his work and his collegiality on many occasions. Prior to joining the Bank, he was the economic counselor to World Trade Organization and previously taught economics at the University of Sussex and at Cambridge University in the UK.

After our three sort of more research based presentations we're going to transition our close colleague Susan Lund from the McKinsey Global who is the one of the leaders in McKinsey Global Institute, as well as our partner. McKinsey will give us insights that McKinsey Global Institute has developed recently on digital trade which has been making news, as so many of their publications do. And of course, so many of their publications have Susan as a co-author or as a leader. And we are very glad to be working with her and other colleagues from McKinsey Global Institute as they bridge the micro insights from business with some of the bigger macro type issues that we struggle with ourselves.

And then finally, we will have Ralph Carter, another good friend and someone I'm delighted has been willing to come on stage on this occasion. Ralph is a managing director of legal trade and international affairs for FedEx Express which is what it sounds like. He is responsible for FedEx's policies and global trade facilitation. He plays a huge role in the business community's thoughtful efforts to move forward trade in a responsible way throughout the world and in particularly on behalf of the US. Before he established FedEx's legal trade and international affairs office in Washington he was managing director of the legal department in FedEx headquarters in Europe, Middle East and Africa. And previously he worked at the United States Department of State, including a special assistant United States ambassador to European Union. And he will, I hope, give us additional business perspective because FedEx actually knows everything that's coming to your house and therefore is well prepared.

It's an all-star line-up. I've introduced everyone at once to make sure the will be flow of good thinking is uninterrupted. And so, let me turn first to my colleague Caroline Freund. Caroline.

Caroline Freund: Thanks, Adam. And I'll jump right in. So, as not to use up too much of my time with pleasantries. My view is that the slowdown in trade largely reflects an investment slump. And what I'm going to tie this to is secular stagnation, that actually it's very consistent with some of the arguments that Larry Summers has been making about the underinvestment, especially in advanced countries. There's some strong consistencies between the trade slowdown and secular stagnation. And weak trade is largely a symptom of this, but that doesn't mean we shouldn't be concerned about it because it's also a transmission mechanism around the world.

Let me just jump right in and show you what exactly is the concern. From 1990 to 2007 trade was growing at about twice the rate of world GDP. There was this sharp drop that kind of caught trade economists off guard, but perhaps even more surprising is this sudden change where trade has been growing roughly in line with GDP and you can see that sort of flat portion at the end especially after the crisis. And I think if trade had continued growing at twice the rate of GDP trade would be about 15% higher now than it actually is. It's a really big difference than what we were seeing previously.

But when people talk about this, they often start with 1990 because that's where you see this steep rise and then this stagnation. If you go back to 1960 you can see that actually the relationship between trade and GDP isn't so constant after all. There are periods when trade is very strong and periods when it isn't with respect to GDP. This isn't the first time we've seen this kind of slowdown and in fact, in 1990 there were papers saying, "Trade is now growing more slowly than GDP, what's going on?" And that was right before it took off. Just as a reminder, things do change over time.

I want to just present some facts so when you think about trade and growth we should think about why these things even should be connected. And I think one important thing is there's no rule saying that trade has to grow faster than GDP. It doesn't come out of one of our models or anything. So there isn't a concern from that perspective. There are also some of the things you'll read about trade it really, really, really depends on whether you're looking at values or volumes because trade is mainly goods so when you have things like a commodity price shock you see trade really plummet in the double digits, trade values, but that doesn't mean trade volumes have fallen. You have a 50% cut in the price of oil, oil is about 20% of trade you're going to see a sharp drop in trade. So, that's one issue.

Another when we think about trade and GDP in the relationship, trade is largely goods, 80% goods actually, GDP is 70% services. This is another reason why we wouldn't necessarily expect trade to grow in a lock step with, or in a certain relationship with GDP because they're comprised of different components. And in fact, services, trade even since the crisis has continued growing at about 5% faster clearly than GDP growth on an annual rate.

And finally, there is an issue when we think about trade versus GDP because trade is a gross measure. We just sum up everything that's moving around and GDP is a value added measure. So, especially during of supply chain formation you have semi-conductors jumping around the world and we're counting those every time whereas we only count the value added with GDP. When you're forming those things you're going to have an abnormal boost in trade, part of it's real, there's more trade, but part of it is this double counting and that's part of what's happened in the 1990s. That was a kind of en exceptional period of trade growth.

The main point that I'd like to stress today is about trade and investment. World trade is especially sensitive to investment. One paper that's published in the American Economic Journal Macro Annual shows that during the trade collapse the slump in investment in different countries around the world was eight times as important as the consumption collapse. Investment contributed a third of the drop, that huge drop in trade consumption only 4%. And it makes sense if you look at the composition of trade.

Forty percent of merchandise trade is in machinery and transport equipment. This is trade that follows really big investment projects being done around the world. And year on year growth and private investment advanced countries was 2% in recent years as compared with over 3% prior to the crisis. This is going to have an effect on trade volumes. I think one reason to be concerned about the drop of trade is that it kind of is a transmission mechanism for the slowdown in growth or investment slump. The advanced countries slow down then exports from emerging market slow down investment opportunities there slow down. This can also serve as kind of a transmission mechanism. In the last year investment has dropped even more globally because of the sharp decline in energy extraction which you know, energy projects are about 10% of global investment.

For all these reasons it's not particularly surprising that we do see this trade slump and I think it goes a long way in explaining most of the reason trade has slowed down. One thing you sometimes hear, and I'm sorry to preempt a detail bit, but maybe this can be a point for discussion later, is that supply chains are shortening. There's reshoring. I just really don't see this in the data. So, I believe that the supply chain formation caused that boom we saw in trade during the 90s, but if we look using the basic economic classification, which allows me to separate parts and components into the two main categories, machinery and transport equipment what we see is that machinery and transport equipment overall trade fell a lot. That's the bars on the right, capital and transport equipment as a share of total non-fuel trade fell pretty remarkably from the pre-crisis to post-crisis period.

But the share of that trade that's parts and components of machinery and transport that's parts and components actually increased slightly. It seems to me that these production chains are largely intact. Finally, and this is my last slide, the trade slowdown is largely a symptom of the investment slump and this is consistent with secular stagnation and I have a blog kind of to correspond with this talk on the topic. There is a danger that trade is transmitting this problem. Looking forward, I would say liberalization is needed more than ever. Liberalization can get trade going again. It can also help to create new investment opportunities around the world. It's one of the reforms that can help get us out of this period of slower growth and slower trade.

Especially new liberalization in countries like Brazil and India which could set off a new way of supply chain formation. And also, new technology and deeper integration could finally bring us the services trade boom that we've been waiting for. And actually, I think Susan's going to talk about it, but I think there's a lot of indications that the technology boom is happening and could very well set off that services trade boom that will change things. And I'll stop there. Thank you.

Gary C. Huffbauer: I want to start by thanking my colleague Euijin Jung who did a lot of work with me on this. As often happens in human affairs, Shakespeare provides the clue. The fact dear Brutus, is in our stars, but in ourselves that we are underlings. The macro is the stars. We are the underlings. Because we aren't attending to our own faults.

The story that Caroline gave is basically summarized here. We had a very robust growth between 1945 and 2005 of about 6% annual growth in real terms. The global foreign direct investments stock was growing about 16% annually in nominal terms. Since the great recession, as Caroline pointed out, things are not doing well. This is the longest period of relative trade stagnation. I'll come short on that in a moment. And the world FDI stock is growing relative to world GDP, but the flows drop sharply.

Here is the relevant chart. You look at the previous times of slow growth in trade, goods and services relative to GDP and they are much shorter in time than what we are now experiencing. If you look at just the –I'm talking about volume, I'm not talking about values. When you look at the figure of growth in trillion of dollars, of course, it's growing, but it's relative to GDP that the slowdown is important. And that's also true in the investment stock, which is still growing, but relative, it is not so well.

Let's look at the foreign direct investment outflows. This has really come down quite sharply since the peak in the 2007 period. Now, let's come to the causes of this unfortunate happening. And there it is, right there. If you look at the history of our round. Just focus on the last column and look at the spacing in time. They're getting slower and slower as we well know from the Doha Round which is 21 years and is not making much progress.

You might say, "Well, there's a lot of things happening elsewhere." But the last two significant liberalizations were the Uruguay Round, quite a while ago, and China's accession to the WTO in 2001, which is now about 15 years ago. Doha Round is stalled because of the reticence of developing countries to liberalize either agriculture or non-agriculture. Bilateral US free trade agreements, yes, they're important, but they're not large in the world scale of things. The largest in recent times has been US Korea. And well, Euijin and I applaud that, it's just not that big in world affairs.

In addition, the 2008 financial crisis triggered a wave of micro-protectionism. Now, our macroeconomists, they can't find it in their data so it doesn't exist. I mean, the lamppost isn't there for them and so there's not much attention to micro-protectionism, but some of us dig around in the weeds and we find a lot of this stuff. In fact, the Global Trade Alert out of St. Gallen has found some 3500 of these micro-protectionist items. Hard to count, hard to identify the effect. We made a huge effort to just find the ones that are engaged in local content requirements of which the Buy America was the grandfather of all these. And we did try to add up the numbers and you can see we got a pretty big number, but that's just a fraction of the total of this micro-protectionism which is going on.

Now, the people who see it in our stars, which is to say the macroeconomy and investment stagnation and so forth what they don't pay attention to is the fact that over history. Since the Second World War it's always been the opening of new margins of liberalization that have created those remarkable statistics of 6% growth over this long period of time up to 2005, a good more than 50 years. And there are a lot of margins still there.

The barriers that we can measure are very high. Even on manufacture generally thinks that's free. It's not free. It's about 7% on average. The tariff equivalent barrier, as far as we can measure them, are agriculture stops at maybe 30% to 40% and that's where services start in terms of barriers. And that is the margin that we need liberalization today and we don't have it. The Trade Facilitation Agreement is very bright prospect. I'll come to maybe some statistics on that if time permits.

But that still has to be ratified. I just draw your attention to those things I pulled out from US statistics, which show the potential of trade growth, not that the world is going to become like the US internal economy, but it'll go a good ways in that direction. Domestic trade in the US has a much higher relation to value added than does international trade and we've got it in our paper. Business service is a good 20% of sales from the US. They're about 5%, but of course, the barriers keep the rest. Outward stocks of foreign direct investment, that's about a quarter of the S&P 500 value, about three quarters of the world economy is outside the US.

I mean, the scope is just enormous, but we are not drawing on the scope. Now, I think everybody in this room knows the reason we're not drawing on the potential and you know, policy liberalization has just come to a halt basically. The services frontier awaits. The potential is enormous, but the problems of negotiating services are much greater than negotiating goods and if you look at the TPP agreement, it is in terms of services liberalization by the United States, the actual liberalization is about zero. We did get liberalization from other countries, but we didn't do any ourselves.

Digital trade is a bright spot and I'm sure that Susan will talk about that. So, we have all this opposition here. We have no leadership amongst developing countries. Given this outlook, the prospects for resuming 6% trade growth and even two trillion dollars of foreign direct investment are slight, although the potential is there. And if we revive, if our macroeconomists actually do what they should do and revive the world economy, which they haven't, even if we keep this same absence of liberalization and growth of micro-protection my forecast is we will not get back to the golden era that we had for 50 years after the Second World War. Thank you.

Susan Lund: All right. Thank you, Adam for having me. And for everyone for attending. I'm going to talk about digital globalization, but first I'm going to answer the question posed by this lunch this afternoon: what has caused global trade to slow?

Caroline gave a very nice overview followed by Gary that there had been ups and downs in global trade, but we are in the last five years in a period in which there has been a marked stagnation in growth in the value of trade. And the volumes are growing more slowly as well. It's raised a question of what's happening and should we care? Our answer is it's partly cyclical, but it is partly structural. I've disaggregated the global trade statistics and goods into three components. The first one on your left is commodities and processed commodities. Not surprisingly, that's fallen the most, by 1,1 percentage points of GDP. And that reflects much lower commodity prices and it also reflects a slowdown in China and fewer imports of hard commodities.

It also reflects foreign stance, the US production of oil and natural gas. The US last year imported fewer barrels of oil into the US than any year since something like 1980 or 84. The production of unconventional oil sources in the US has taken another bite out of commodities. But then look at the two segments to the right. Here we've got trade and intermediate goods and then trade and finished products. Now, here my data actually conflicts with what Caroline was saying. So we'll have to compare notes afterwards, but when I measure trade and intermediate goods it's down slightly and it stagnated.

This is because shifts in global value chains and quite simply, the creation of these long complex global value chains in manufacturing has pretty much peaked and come to a halt, but the entry of China in particular, but other emerging Asian nations into global manufacturing led to this explosion of complex and long global supply chains. That has now peaked and in many industries seems to shrinking backwards. It's not really the argument about reshoring, it's more for instance, consider what's happening in China and the creation of the iPhone that many of you have sitting in front of you. It used to be that the semi-conductors were made in Taiwan, parts were made in different parts of Southeast Asia, it was all assembled in China.

Well, now all of that's being produced in China. The way we count international trade it's actually a reduction in trade volumes because more the parts are produced in one place. Then we get to what's happening in finished goods. And here you can see trade has shrunk as well. So, this is the production of finished goods. What's happening? Well, a part of that could be reshoring, it could be a little bit more manufacturing in the US and Europe, but even more importantly, it's more consumption where the goods are produced in the first place. Namely China, but to a lesser extent other emerging economies. So, when we look at the growth in global consumption versus the growth in global trade you see an interesting pattern.

Growth of consumption is shown on the horizontal axis and growth in trade value is on the vertical axis. And what you can see is for all the types of products in the blue area of this box below the 45 degree line you see that there's faster growth in global consumption of the goods than there is in trade. So, chemicals, transportation equipment, metals, mineral fuels and what this means is that these goods are being produced where they're consumed rather than in another country and traded.

There are other products for which the opposite is true. Apparel, labor intensive, textiles and other things are growing faster than global consumption. In those sectors of manufacturing you're still seeing the spread of production to more countries and shipments between countries. Part of the reason that global trade is growing faster than consumption in apparel is the growing south-south trade or trade between emerging economies. It used to be the case that the majority of that trade was produced in low income country and then shipped to a high-end income country. That's obviously still important, but increasingly what we see for instance, is Africa importing labor intensive goods from China. And so, that is one reason why that segment of goods still has faster trade than consumption.

Overall the shifts in value chains and the move of consumption to where the production is means that going forward we may not see global trade grow as fast as we had in the last 25 years. And that's okay. When we look forward, we can see new technologies on the horizon that could take another bite out of global goods trade. And this is simple 3D printing or additive manufacturing. With these technologies what we'll happen is you'll ship a design file around the world digitally and you'll use a 3D printer to print the good where it's consumed. Already we see this taking place across businesses. Here are a couple examples. We've got Maersk Tankers, who by the way, is very concerned about the slowdown in goods trade. But at the same time is 3D printing replacement parts on its tankers rather than storing them centrally in one location. You've got GE, you have the US Army and Navy starting to 3D print supplies out in the field. You have humanitarian and disaster relief organizations like Field Ready starting to print medical devices in the field where they're needed rather than shipping them around the world.

Now, 3D printing is still in its infancy. It's actually a technology that's been around for decades, but in the last few years there have been advances to make it lower cost and better quality. It's starting to take off across different sectors of the economy. Right now, I don't think that this explains virtually any of the slowdown in global trade, but 10 years out you can imagine that there could be a chunk of goods no longer shipped around the world. Think about what happened to books or movies, or video games, or software. Those things used to be physical goods that were mailed around, shipped across borders and now it's all a digital file.

There is a certain component of global manufacturing that could become a digital file with the actual physical good printed where it is. Now, does this matter, should we care? Caroline pointed out global trade doesn't need to grow faster than global GDP or even as fast as global GDP. The benefits from trade are multifold. One of which is it enables countries to do what they do best, produce what they should specialize in. It creates competition, it enables a good idea in one place to be used in another to be built upon, it enables companies to get the best talent, the best inputs, the best ideas from around the world and become more competitive.

This is where digital globalization comes in. We released a report, there's some copies outside, that argues increasingly the connective tissue of the global economy is no longer big shiploads of goods moving around, it is in fact those invisible cross border data flows. While global trade has stagnated this chart shows you cross border bandwidth between different regions of the world and this was just back in 2005. So, ten years ago the vast majority of cross border Internet flows were between the US and Europe and that's the picture today. It's flowing virtually around the world, the volume is 45 times as great. Cisco says in the next five years alone it'll increase another nine times.

Increasingly the way the world is connected is through cross border data flows, not flows of physical goods. Now, what are these cross border date flows? It is everything. It is email, it is Skype, it's people checking Facebook, it's social media, it's communication within companies that have branches around world, it's VOIP phone calls, it's Google searches, it includes the public Internet, private networks, as well as the so-called dark web that's not publicly searchable.

Now, I wish very much that we could disaggregate this. And Adam's giving me the three minute warning. We unfortunately can't. It's hard to know exactly what component is individual person to person versus business related. But digital flows are transforming how business is done. Already today we calculate that 12% of global goods trade is done digitally. This is simply ecommerce. Half of global services trade is already digitally delivered and when you look at phone calls, Skype alone accounts for 46% of the international call volume.

Digital is transforming trade in three ways. First is creation of digital platforms, and this is your Facebook, Coursera. It enables eBay, it enables ecommerce to be done across borders, connecting buyers and sellers or two individuals seamlessly, costlessly and instantaneously. There's also the creation of digital goods that I talked about. Some goods that used to be physical are now purely digital and that makes them able to be distributed instantaneously and costlessly, creating global markets.

And then finally, we have a concept called digital wrapper. The easiest example to understand this concept is the radio frequency tags that now accompany every shipment of good around the world. This enables more goods to be shipped, it dramatically reduces the value of goods lost in transit by 30% to 50% and it enables companies to ship more valuable goods because now they can keep an eye on where it is. All of this together is creating new ways that digital is transforming how we even think about trade. And I'll leave you with one slide which is this chart shows you global cross border business to consumer ecommerce. By 2020 it's projected there's going to be one billion people online shopping and buying stuff directly from other countries and that's going to be worth a trillion dollars. Right now global goods trade, including commodities and fuel is about 17 trillion.

That is a sizable number and I'll leave you with this here because we do a terrible job at measuring this stuff. This comes from the ecommerce industry, but national statistics, when they're looking at trade were designed in an area where trade meant big container shipped loads of goods coming into a port and unloaded. Well, increasingly you can go on to Amazon, as I did actually last Halloween, and unbeknownst to me the costume that I ordered for one of my daughters was coming directly from China.

Now, as it happens, even on prime it didn't not come in two days, it took three weeks. But I wondered how is this $45 package being delivered directly from China to my house captured in trade statistics. It's under the de minimis for which it needs to be declared through customs, but if in a few years we've got a trillion dollars of commerce being shipped around by FedEx, we'll hear from, good news for FedEx, very bad news for economists who like to use national data to study these things. So increasingly I think digital is going to make it, if nothing else, very difficult to even measure how many goods and services are crossing borders.

Aaditya Mattoo: I've been asked to kill one minute while they sort of— but I'm going to use that and I feel a little bit embarrassed coming after you, it's like you've been watching Interstellar and now I'm taking you back to the Planet of the Apes. But I'll use this one minute which I'll beg for a little extra time because it's not my doing.

Just to say quickly a few things in rebuttal of these excellent presentations that I've heard from Caroline and Gary. First point is that if the 2000s are a period when the trade growth slowed down and also a period when investments was the fastest growing component of GDP. So the explanation that it has to do with investment may have something, and it has almost certainly something to do with the post-recession phenomenon, but can't explain the trade slowdown before the recession.

Second, as Caroline herself has pointed out, in order for global value chains and developments in global value chains to matter it's not that they should be reshoring, it's enough that they stop growing. Third, even now today one of the striking facts, and I'll show you in a second, no more preemption now. I'm going to ask four quick questions. One, what is happening to global trade, why does it matter and was 2015 different and what does it portend?

And my main points are in substance very similar to what you have heard, but there are subtle differences so you have to listen carefully. First, the trade slowdown is explained in part by maturing value chains. It matters because it may hurt growth both for what we call Keynesian demand side reasons and Adam Smith-ian supply side reasons. And the third is that the important changes in China I don't want to disentangle the structural from the cyclical, but they are going to create new opportunities and I agree that services trade may be the silver lining.

First, if you look at his picture, which is very similar to the picture that Caroline has shown, you will notice that most attention is focused on the debt during the great recession and the sluggishness post-recession. But what is interesting is that both in the United States and China the flatness set in earlier. And then you take a long view and what is striking and it's one of the most robust statistical findings that I've ever found is that the period that stands out if you look over the last four decades are what we call the long 90s.

That's as Caroline said, the period when trade was really growing twice as fast as GDP. Why? First it wasn't services as Caroline said, services are being remarkably resilient. It was goods. And within goods it wasn't commodities appropriately deflated, it was manufacturing. And then there is an interesting rigorous finding. Supposing we were to rate the manufacturing sectors according to the degree of vertical specialization. The sectors which are more amenable to fragmentation like radio communication equipment and so on up towards the right and those which are less like furniture to the left. You see that the 90s were the period when these sectors showed the fastest growth.

But precisely the reason Caroline said, that what was once one car crossing borders was now carburetors, clutches, tires going back and forth so that measured trade raced ahead of GDP. And interestingly, in the 2000s it's these precise sectors which saw not a reversal, but a slowing down of fragmentation. And that is sufficient to demonstrate that there was in fact an important change in the way the value chains were developing.

And the final exhibit is quite striking. China in the 90s was specializing in assembly. You look at the share of parts and components in China's exports, total exports and you see a dramatic growth in the 90s and then it moved up the value chain, started producing domestically things that it was previously importing and you see a significant decline in the share of parts and components. And much more careful work by my colleague [inaudible 00:46:27] looking at firm level data has demonstrated convincingly that it wasn't about changes in industrial composition or even in changes in the composition of firms within industries, but individual Chinese firms were producing and buying locally. And that doesn't mean China's turning its back on globalization, a lot of this production came thanks to foreign direct investment.

That's point one. Why do we care? Now, there are people like Paul Krugman who have said it doesn't matter. The world is more open than it has ever been, many countries are far from the global sort of technology frontier so the scope for openness to diffuse knowledge and enhance productivity remains significant. I think, in part, that's true, but there are two ways in which we can look at why it might matter. One is as I said, a Keynesian view. That because world imports are sluggish any growth in world incomes today translates into a lower increase in import and therefore, for any one country a smaller increase in its export.

We've done some empirical work on this, but I think the more interesting question is what I call the Adam Smith concern that the slow pace of GVC expansion diminishes the scope of productivity growth through a more finer and finer division of labor and also, limits the kind of knowledge diffusion that goes with it.

One more picture which is quite interesting. Again, an array of different industrial sectors according to the degree of vertical fragmentation. On the vertical axis is productivity growth and the blue line shows the 90s picture. And sure enough, in the 90s the sectors which saw greater fragmentation are precisely the sectors which saw faster productivity growth. And the great flattening is that this relationship tended to disappear in the 2000s.

Was 2015 different? And what are the implications? So, our new work which is released as a trade -- what I should have said all this work is joint work with Michaele Ruta and Cristina [inaudible 00:48:50], what we have shown is that the two mutually reinforcing factors, one was China's transition and the other was the decline in commodity prices. Each hurt the other. China stopped buying more commodities and the commodities producers stopped buying from China or bought less.

I don't know how much of this we should call structural, how much are long cycles, but these are the two things that happened. And what's interesting is this is again, a sort of blurred picture which is reflection on how sure I am of what is happening. But you see that the countries which are more exposed to China are precisely the ones which saw a one percentile exposure in terms of China sharing your exports meant a third of a percent's slow growth rate in exports.

But there's an interesting reversal of fortune. Here now on the left you see intermediates and those countries which have been celebrating in the 90s because there was a huge increase in demand for their exports like Brazil and even countries like India and Australia 90% of who's exports to China are raw materials saw as much of a 25% decline in their exports. That's the left picture. But at the same time consumer goods exporters, the UK and Vietnam had one thing in common, about a third of their exports to China are consumer goods. They have seen a significant growth. So the rebalancing is altering the shape of China's demand for the rest of the world.

And one other beneficiary is the services sector. We keep hearing about Chinese tourists going abroad, but you know, China's imports of services, the index for goods has hovered around 100 for the last five years. The index for services has increased from 100 to 170 over the same period and the share of services in China's imports have gone up by five percentage points.

One quick puzzle I'll leave the macroeconomists in this room with, if we see commodity importers like Russia contracting their imports dramatically by as much as 40% why is it that commodity -- sorry, the commodity exporters are contracting, why don't we see the real income boost for commodity importers translating into greater imports? In this case they are. That's a picture of Turkey, an increase in exports by 40%, but where are these real incomes going? I think it's an interesting question which I know that you would be [inaudible 00:51:32] thinking about it.

But let me just return quickly the last 30 seconds to services. As Caroline said, services trade was remarkably resilient. It didn't fall as much as goods trade during the crisis and it has been growing much faster after the crisis. While as Gary very nicely demonstrated, the scope for liberalization in goods is also flattening it out. You can't go much below zero tariffs. The scope for further reform in services is huge, especially in sectors like transport and that could have a huge double benefit. There is scope for much finer divisions, not just within services, but even inter industry trade, intra-industry trade -- all of which happened in goods after the Second World War is just beginning to happen in services.

And thanks to demographic changes which are creating mismatches between demand and supply and the digitalization that Susan spoke about which is making trade feasible we are bound to see faster and faster growth. And at the same time, parts of the world like South America, South Asia and Africa, if they were to reform their services sectors the trade costs might decline and their opportunities to become part of new value chains may grow. But I cannot resist ending with one line that the TPP is not the silver bullet which is transforming services sectors, but that's a subject for the next presentation. Thank you.

Ralph Carter: Thanks. Well, it's great to be back at the Peterson Institute. I think it's the best discussion in town, it's also the best food in town. So I thank Adam for the invitation.

It's always intimidating for me to speak after economists. I'm not an economist so I don't have any graphs for you. I'm here to give you a kind of an anecdotal view of what we see as FedEx kind of operating in the trade space around the world. It's also the second time in two consecutive days that I've followed people that talked about how 3D printing is going to put out business in the future. You didn't mention drones, that's the other issue that we frequently look at.

But in fact, we just announced our earnings, third quarter earnings not long ago and they were quite good. And in fact, as was mentioned, ecommerce is a huge opportunity for us and it's driving big volumes, especially here in the United States, but around the world as well. You mentioned the one trillion dollar cross border figure in 2020. I'll give you another one that'll open your eyes. Last November China celebrated what Alibaba created as a holiday for single people. It's their own Valentine's Day. And the idea is you buy yourself a present online and in one 24 hour period, the Chinese bought 14 billion dollars' worth of goods.

And if you compare that to, if you add the US Black Friday and Cyber Monday sales, online sales together, ours were about three. So that gives you the scale of what's going on in China and it's growing at least 20% a year. That figure from 2015 was 60% more than they did on the previous year on 2014. So we think it's a bright future. If we get the policy environment right, and I'll talk about that in a minute. But we do, in our global business we do see the softening of the trade since the financial crisis.

Sort of what we see –I think the comments are on the shortening of the supply chain is interesting, we still carry a lot of parts around the world, but we do see is a couple of things. One, because of the greater visibility into the supply chain made possible by RFID and other technologies that allow companies to have greater visibility online and real time visibility into their supply chains allows them to control them much better, to have more reliability, more predictability.

The second factor is interest rates have been so low for so long that that changes the economics around holding inventory. And sometimes they can hold inventory closer to their customers rather than having us moving around for them. And so we do see that and so we are shifting. We're seeing demand for slower services, more deferred services at lower piece points. Because they're able to manage their inventory differently the production chain is still set up, but they managing the flow of those goods through those chains slightly differently than they were in the past and we are reacting to that and producing and coming up with more deferred services around the world to help take advantage of that trend.

I'm not going to get into the other causes that were mentioned by the folks who spoke before me. What I will talk about is, in our experience, I can just confirm what Gary said about micro-protectionism. We work in virtually every country as you can as a US company, about 220 countries around the world, and Gary talked about micro-protectionism, maybe what we see is atomic or even subatomic level protectionism. We see what happens at the border when you're having to get goods across the border. And what we're seeing is an increase in, since the financial crisis, very small bore barriers that are being put up just to slightly and subtly slow and add cost to trade. It may be an additional signature, an additional stamp, an additional document. Some small little thing that just again, when you add them all up it makes the process more expensive and time consuming for companies like us who are having to go through and get those goods cleared across the borders.

And so ecommerce is also a big target of this because a lot of countries, the finance departments let's say, the customs departments view ecommerce as a threat rather than an opportunity. They're not seeing it as an offensive opportunity for their small businesses to start selling around the world, they're seeing it as a revenue threat. And this is creating a negative self-fulfilling prophecy where since the crisis trade volumes have gone down, customs administration, finance administration, especially in countries that rely to a large extent on customs revenue for part of their government budgets are feeling the pinch.

And what they're doing is they're trying to tighten up their controls at the border and try to squeeze out as much money as they can from their imports, but what that really does is slow down trade. And so it's a self-fulfilling prophecy by trying to get more money out if it they're actually making it harder and slowing it down.

Our chairman on the call, he likened this to barnacles on a boat. They're small, but if you get enough of them over time it's going to slow that boat down and he says that's what happening. We're getting barnacles on the ship of trade and it's slowing us down. We see it around the world. Latin America is a particular concern. We're also seeing it in Asia.

Gary mentioned the importance of the WTO trade facilitation agreement, we couldn't agree more. This is an agreement that'll have kind of binding standards for a 160 countries around the world to raise their customs performance. We think once we get this we got 74 ratifications, we need a 108. We got to get ratified and we've got to get it implemented and I think once we do we can help start to shave off some of those barnacles and speed the flow of goods again and increase trade.

I will say that the US is an important exception in this area because just last month you may have seen that the US had new customs implementation bill that raised the US de minimis level from $200 to $800. Previously if you flew into United States on a vacation you could bring it up to $800 duty free, but if you shipped that same good with FedEx anything over $200 was duti-able. Now those are equal. We think this is going to be a huge boom to ecommerce in the United States and that's why we promote this and we urge the US Governor to promote this around the world as the single most effective regulatory tool you can do to spur more cross border ecommerce.

I'll finish with another anecdote about a trip I took to Geneva last week with the US Chamber of Commerce. We met with 16 or 18 Geneva delegations and lots of discussion obviously about where the WTO goes from here, what to do with the old Doha agenda items and what new items the WTO should be taking on. A lot of discussion, not a lot of consensus on the way forward, but one comment that I heard several times that I thought was notable and distressing was that there seems to be no appetite for new liberalization. Nobody's pushing for liberalizing of goods or services. The only thing that we were talking about is kind of the legacy issues of AG subsidies and stockholdings of agricultural products.

And so it was a kind of distressing picture to hear that nobody's really pushing for liberalization. And that's why I think it's so important that the US continued to exert leadership and to push this agenda, very ambitious agenda that we have online with the TPP and the TTIP and services and the IGA and the EGA. We need to keep those wheels spinning so that we can continue to knock down barriers and keep the trade flows going.

So I think I'll end with that. Thank you very much.

Adam Posen: Thank you Ralph and thank you to all of the speakers. If I could ask you to come up and sit in the order in which you spoke. Thanks particularly to Susan and Aaditya for rolling with the flow as we had a micro-protection on our PowerPoint flow. This has been, I think, even by our usual high standards an exceptionally rich in the best sense. Disagreements, constructive reinforcement, interesting analysis of data all in a form that's both relative and accessible. I really want to commend the speakers.

I want to give our distinguished audience, we've extended the lunch longer than we usually do to give our audience a chance for on the record discussion with the speakers and all of their PowerPoints will be available online along with the video and the transcript of this event and links to their various related work later today, early tomorrow.

But first, I just want to ask whether Caroline or Gary, since you didn't have the benefit of following the other speakers, if you had any quick responses? It doesn't have to be debate response. It could be Gary saying to Ralph thanks very much. But anyway, some quick responses to the people who spoke after you.

Caroline Freund: Thank you. I would take one which is just on this shortening of supply chains. I think it' s really important how you look at it and actually I found Susan's data to be in line with mine because yes, intermediates fell, but they fell less than finished goods. So they're still being used to the same extent in the finished goods there's just less demand out there for those finished goods. It's not about a shortening of a supply chain, it's just about lower demand and especially of the investment goods, but, I think, our data was very consistent.

Adam Posen: Very good. Gary?

Gary C. Huffbauer: Well, the note of optimism is certainly on digital. And so I just want to throw in just a caution on that. There are virtually no rules agreed today on the digital trade apart from the draft in the TPP. And what this means is that it's a green field for the kind of things that Ralph Carter talked about to erect barriers. One of the great achievements of our negotiators going forward, if in fact they do any work is to put in rules that keep digital as open in 10 years as it is now.

Adam Posen: Great. Thank you all very much. Let me now open it up to the floor to our usual rules. There's a traveling mic up front, which Jessica has, there's a standing mic in the back. If you're close to the standing mic go stand there. When I recognize you please identify yourself and try to ask a question rather than make a speech. The gentleman there, please.

Will Mauldin: Thanks so much for having us. Will Mauldin with the Wall Street Journal, reporter, news side. I just wanted to ask, I guess, whether it's the lack of investment that's leading to the slowdown of trade or is it something to do with the global value chains that may also, as Mr. Mattoo pointed out, be connected to lack of investment. Where are we seeing that lack of, I assume it's the FTI cross border investment, who is not providing the investment, who's not getting it or what is causing the secular stagnation?

Obviously, there may be lots of things working, but if there are couple of culprits, if anybody on the panel has identified one that would be helpful for writing about this trend. Thanks.

Adam Posen: Great. So Susan and Gary, Aaditya.

Susan Lund: Well, one of the big components of slowdown in investment globally is Europe. So when you look at Europe's really stagnant performance since the great recession it's having to do mainly with the slowdown in investment of all types. So business investment, construction, capital spending, CAP X by businesses. And this reflects a fact that you've got a Euro crisis, you've got perhaps an EU crisis and there's a real uncertainty and lack of aggregate demand. In the US, business investment has actually held up and it's been more on the construction, real-estate side that's dragged down the aggregate figures, although residential is now starting to pick up as well.

Adam Posen: Thank you. Gary.

Gary C. Huffbauer: Contrary to what one might hear on the campaign trail, most overseas investment is not in manufacturing, it's less than a fifth. Most of it is in services. Most of it takes place by MNA and the resistance to MNA in many countries is extremely strong. You just cannot buy some of these service firms in China for example if you're an European or US firm. And that's a big part of the slowdown.

Adam Posen: Thank you. Aaditya.

Aaditya Mattoo: I think –and I agree with Gary. Twice as much FTI today stocks are in services as in manufacturing, but I think there's an interesting distinction between investment per se as a share of aggregate demand. And I think what links the two arguments about changing investment shares, especially within China to value chains is that it's investment which typically is associated with these non-value chains and these capital goods. But surprisingly, we don't yet see a contraction for example in capital goods imports of a kind that you would have expected if there had really been a serious shift from investment to consumption in China.

Adam Posen: Thank you. And then Caroline raised her hand as well.

Caroline Freund: Well, investment as I mentioned is a very important intensive. It's not just FDI, it's the overall investment, I think, that is contributing to the slowdown and initially it was in the advanced countries whether it's the lack of infrastructure, spending in the US and overall slowdown in Europe. And in recent years it's spread to the emerging markets and most recently in the energy sector. And just a quick note on the supply chain aspect. The growing supply chains really contributed to the boom in trade in the 90s, but I really don't think they're falling apart, they just aren't continuing to develop at the rate they were developing in the 90s. And I think that's something the speakers all kind of broadly agree on.

Adam Posen: Great. Yes, thank you for the question. Who would like to be next? Please. Oh, common. Yes, please. Could you go to the back mic?

Speaker: Hi. [Inaudible 01:09:30] from Japanese embassy. I wonder if you, anybody could comment on possible other elements of slowing down of trade? I can think such as security issues or flow of money such as trade create these things, but if you can think of any other things that would be great.

Adam Posen: I think our colleagues all will have an opinion on this. I'll just say on the security issue side that should be a pretty –unless we think there's been a generalized reduction in security of shipping that the US Navy has ceased to make the world a better place that should be very heavily biased to particular trade relationships. I'm not saying it isn't true, but I'm saying there should be a test or a way to figure that out. But anyway, that's just stalling for time. Aaditya.

Aaditya Mattoo: I think one interesting aspect is when you think of security, not just sort of in the purely law and order sense, but in broader sense whether it's financial insecurity, whether it is data and security, whether it is whole agency security. I think each of these dimensions of security have a profound effect on the services market. When you think of the EU concerns about data privacy and how they threaten to cut off data flows. I think the privacy shield and its early incarnation the safe harbor are examples. I think it's one example where the TPP actually did something remarkable by not just insisting on free data flows, but also imposing obligations on exporting countries to watch out for the interest of the consumers in the areas of fraud or privacy. And I think there it was truly a sort of pioneering. I have to say this because in other respects I think there is more hype than substance.

Adam Posen: Ralph.

Ralph Carter: The only thing I was going to mention, which I didn't notice in the presentations was, and this is a question really, is whether access to finance, trade finance has an impact since the financial crisis.

Adam Posen: I think –I mean, Gary and Caroline, Susan, somebody commented on that, but my understanding is we saw a huge natural experiment when the French and some other European banks got out of finance at the start of the crisis. And it did have an immediate, immense effect, but that there has been a lot of substitution of new forms of finance pretty rapidly. But that's my surface understanding. Gary then Susan then Caroline.

Gary C. Huffbauer: Jeff and I. Jeff Schott and I heard the other day from informed person at the World Trade Organization that there's a quite a move to bolster trade finance for developing and emerging countries where the trade finance is quite absent because banks don't want to go into that field. That would be one area of credit, which possibly makes quite a difference.

Adam Posen: Great, Susan.

Susan Lund: Yes. I would echo what you said Adam that I think there was a big contraction as banks were starting to rethink their business lines under new regulations, but that there have been new sources of trade finance and aggregate. Now, I have no doubt that there are specific emerging markets who may be constrained in this regard. And there was an earlier question about where is the foreign direct investment not going? It is the lowest income countries that are seeing the biggest drop. Africa, South Asia, et cetera that are suddenly being cut off the flow of foreign investment.

Adam Posen: I mean, this is something which we might think about coming off your question, is exploiting a little bit the cross sectional variations, some of the very good scatter plots and other shards that we had about is it, is Sub-Saharan Africa, is it the commodity exporters, is it low income and to teasing some of this out. Caroline, did you want to add something?

Caroline Freund: Yes. I just wanted to add something about export credit agencies.

Adam Posen: Turn on your mic, please.

Caroline Freund: There's been an explosion in export credit agency financing around the world. To that extent, I think, trade is very well financed except in one country and that's of course, the US where the export credit agency, [inaudible 01:13:57] bank remains constrained.

Adam Posen: Well done. At the back mic, please. Could the people in back line up by the back mic and then we'll be able to recognize you. Yes.

Sherry Stevenson: Thanks very much, Adam. Sherry Stevenson, ICTSD, Geneva. The panel was really interesting and excellent presentations. Congratulations. This is obviously a subject that's such a conundrum in many ways and yet, so important for the world economy. I'm just wondering, a couple of things came to mind. One is more technical. Caroline mentioned that in terms of trade you said that only about 20%, 25% is services and the rest is in fact manufacturers, but actually that's not really true. If we look at it in value added terms we are in value added terms, we know now from the new value added database that the [inaudible 01:14:44] and OECD have put out that services are in fact 50% of world trade and growing in importance. And so you say that we measure trade differently than GDP because GDP is measured as valued added basis and trade on gross basis.

Wonder if we started measuring them both on a value added basis if that would change any of our perspective? That's one question to the panel. Or to Caroline or the panel. And the other is that it's true that the investment flows have dropped off the most in the countries that seem to be exactly those parts of the world that do not participate heavily in value chains. It means that basically even though the value chains are slowing, nonetheless the participation rates are still skewed toward those countries that have become attached to the hubs of the value chain centers and that is obviously a worrying fact for the world economy.

Adam Posen: Any reactions? Yes, Caroline.

Caroline Freund: Just to say –so the question is about value added in goods. So basically goods themselves involve services and I couldn't agree more and actually I looked at that data to see if we could look at the value added trade, elasticity to income, but unfortunately that data doesn't go through recent years. So maybe a few years late from now we can answer your question. But I think it is the right way to go if we assume that data is well calculated.

And then I think the other question was about participation and I think it's -- supply chains could still grow a lot if a lot of the countries that aren't in them were to liberalize and join them. So that's the Indias, the Brazils, countries in the middle East and North Africa. So I think there's a lot of room for advancement, we just haven't seen that liberalization yet. So to that effect, and I think again, the panel's pretty much in line on this that further liberalization could ignite another boom in trade.

Adam Posen: Thank you. Aaditya and Susan.

Aaditya Mattoo: Quick observation that we have actually looked at the value added trade data for the period that we have and it is as expected and as Caroline anticipated, shows a much more stable elasticity which sort of confirms the idea that a lot of this is a consequence of the way the back and forth [inaudible 01:17:13] fragmentation. I just want to say one thing about FTI and Africa. You know, again even in Africa FTI in services is more than twice as much as FTI in manufacturing.

Adam Posen: Susan.

Susan Lund: I was just going to add on what does all this mean for low income countries. I mean, I know of two minds. On one hand there's clearly still an opportunity for the poorest countries in the world to get involved in global value chains. Not because I think they're lengthening, I don't, but I do think they're shifting. So for instance, if you take labor intensive manufacturing of textiles, toys, shoes, furniture a lot of that is starting to move out of China into Bangladesh, into Ethiopia. And so there are opportunities for low income countries to join in global value chains and have prosperity, but I think that that's a closing window. I don't think that will be open forever and I think that on top of the imperative of what it takes to get involved in that, which is good physical logistics infrastructure you now have a digital infrastructure that they need to take advantage of.

Ralph mentioned that look, global platforms in ecommerce means that I can buy a good from China, but it also means that small companies anywhere in the world can be exporters. But in order to do that, you need affordable Internet access and really broadband access. And right now although, a large share of world's population has a 2G mobile phone, 3G is much less common and high speed Internet access to really truly participate is even more limited still. So now the poorest countries that are still trying to build their ports, their airports, their roads also need to build their digital infrastructure to participate in the global economy. So I do worry about the fact that those left behind may be even further left behind.

Adam Posen: Thank you. Gary, did you want to? Okay. Lady at the back mic, please.

Sho Chandra: Hi. Sho Chandra with Bloomberg News. I wanted to find out what each of the panel speakers think about the impact on employment from the slowdown in global trade? Especially in the context of some of the things that were mentioned such as shifting global supply chains, the digital cross border flows that are forecast to raise. Where will the trade related jobs of the future be developed versus developing countries? And what will they look like? Thank you.

Adam Posen: Anyone? I nominate Gary then Susan.

Susan Lund: Okay. What does it mean for employment? Well, I think that it depends on whose employment you're talking about. I think in the US there has been very good work shown that there was in fact this exodus of five million manufacturing jobs over the last 15 years and that was basically labor intensive, textiles and furniture production moving to China by and large in other low-income countries. But that is a structural transition that we're now through. That's gone. Nobody's talking about that being reshored.

The renaissance in manufacturing in the US is in much higher value added goods. In other countries, as we talked about, there is opportunity to employing more people in production for global markets and manufacturing. India has realized belatedly that it missed out on the first wave of that and is trying to get into global manufacturing. So I think for low income countries there is an opportunity. But at the same time that we talk about trade and jobs I have to bring up automation because I think as important to the future of employment as trade is in creating jobs or destroying jobs you have to keep in mind that technology is moving ahead very rapidly and automating many routine type of jobs.

Increasingly in manufacturing a shrinking pool of global manufacturing is actually heavily dependent on labor to begin with. Manufacturing is high productivity, lots of value added, but fewer and fewer jobs. And the categories of goods that, in fact, are sensitive to wage and employ a lot of people is getting smaller and smaller as automation advances.

Adam Posen: And of course, our colleagues Robert, Lawrence and Arvind Subramanian each in their own ways have written about these trends, the premature, in a sense, deindustrialization or skipped industrialization in India by Arvind and the long-term downward trends in manufacturing employment even as trade grows by Robert. Gary and then Caroline and Aaditya.

Gary C. Huffbauer: Well, the big point on trade and employment is that freer trade, trade agreements made very little difference to aggregate employment, hardly measurable. Aggregate employment is determined by macro factors and not by trade agreements. What trade agreements or freer trade does is to shift jobs, not to change either on an upward direction or downward direction the number of jobs, even if we take the Autor, Dorn and Hanson findings of two and a half million more unemployment in the affected metropolitan statistical areas over a 10 year period. If you divide that into ten years, roughly it's about half a million or 250,000 a year.

US aggregate employment is a 150 million now. Aggregate job churn per year is 30 million. So even that headline statistic which has gotten a lot of attention, perhaps rightfully so almost disappears in the decimal points in the overall employment churn picture and certainly in the overall employment picture.

Adam Posen:. Caroline.

Caroline Freund: I was actually going to make the same point as Gary just to emphasize that while manufacturing employment has gone down, manufacturing value added has actually gone up. So kind of to ride on the previous comment. Automation is a big part of this technology.

Adam Posen; Aaditya.

Aaditya Mattoo: Just two quick points. One on manufacturing itself. You know, on the one hand we've been celebrating value chains, but, I think, the nature of intercompatibility required in value chains itself dictates capital intensive technology because parts sort of fit together. And that is a pattern which actually is inimical to the generation of employment. That's one point. One service I think that it has been in services trade especially a kind of employment pessimism which people like Diane [inaudible 01:23:54] and others have also argued about it somehow.

The services that are tradable are precisely those which are skill intensive. There's some new work we have done with the value in the direct and indirect employment database shows it's very surprising that Indian service exports, a thousand dollars of Indian service exports creates more unskilled employment than a thousand dollars of Indian manufacturing exports. When you look at not just the direct employment, but all the indirect employment that goes in when Infosys creates grand new buildings for themselves are canteens and all the linked in direct services. And that proportion, in fact, comparable with the proportion of unskilled employment created not by the distorted Indian manufacturing sector, but the Chinese manufacturing sector.

Adam Posen: That's fascinating. At the back mic.

Speaker: Thank you very much. My name is [inaudible 01:24:48]. I'm from the Egyptian embassy. My question actually is to the panel in regard to the TPP and TTIP. Some concerns actually saying that the United States and the other economy like the European Union are taking the global trade issue from the WTO, out of the WTO. So how much do you agree with this? And the second part of my question is can we see any like concrete relations between the struggling of the WTO and weakening mechanism regarding the liberalization of trade since the Doha ministry meeting and the slowdown of the global trade we can see and experience nowadays? Thank you.

Adam Posen: Thank you. I'd like to ask Ralph because he was making that linkage to some degree in his opening remarks if you wanted to give us some comments?

Ralph Carter: Sure. As everybody has seen, it's become incredibly difficult to move any multilateral initiative forward in the WTO. And I wouldn't characterize it as taking an initiative from the WTO, it's simply a manifestation of the manifest failure of the organization to be able to come together on liberalization over the last 13 years. And the desire to keep liberalizing and to find other countries that share that view and to move forward.

And I think the approach that we'll probably see more of is this critical mass, like-minded countries coming together and saying anyone's welcome to participate if you're willing to make the kinds of ambitious commitments that we want to make. And from a business, perspective we've always said, we would always rather have a multilateral set of rule or multilateral solution. But if that's not possible let's go with the second best alternative and try to capture as much global percentage of the particular trade or commodity or service sector that you're trying to do and get strong commitments for that.

If it means there're free riders, probably that's okay as long as you've got the bulk of the trade covered and then that continues to move the liberalization agenda forward and sets high standards and hopefully other countries will see the benefits of those agreements and move in that same direction.

Adam Posen: Thank you Ralph. We're coming to the end of our, even extended time. So this will be the last question please.

Ryan Monarch: Thank you. My name is Ryan Monarch from Federal Reserve Board. Aaditya you showed in your talk that China has been moving up the value chain, sort of we've seen decline in imports or in exports of parts and components, but China was also a reason why 2015 might be different. China's transitioned to the new normal growth. And so, taking these together I was wondering how far along is China towards where it's eventual place in the global chain is? Are we at the beginning still of the transition of China's exports away from intermediate inputs and that could tell us something about where growth and trade will go in the future. So I was wondering if you had an idea of how far along China's transition of exports is or how much longer trade will be slowing down? Thank you.

Aaditya Mattoo: I think that's really thoughtful question and then one of the flaws in my presentation was that I didn't really integrate these two views and I think the way you're posing the issue. I think given that time is short, let me just say two things right now. One, I don't think people realize that China's exports already more services than India. China has also a big stake in its interior. I think while we are spending a lot of political and emotional energy on agreements like the Trans Pacific Partnership and TTIP which are really not changing the situation on the ground a lot, I think this talk that you're going to have tomorrow, which I'd love to attend, is really the more fundamental infrastructural connectivity.

When I read Guns, Germs and Steel, I learned to see things along the lines of latitude and duration. I think that's what's happening in China that the scope for relocating production within China hasn't really been exhausted. But there are certain fundamentals like the demographic change which is going to change the workforce, but we have done some new work which looks at differences and patterns of consumption across age groups and it's striking how that is also going to alter the structure of consumption towards services. So I think the question you're asking is wonderful question, but I can only give you these two --

Adam Posen: Thank you, Aaditya. It's wonderful when one of our guests does the advertising for me just as Ralph did in his remarks. I'm very grateful to all of five of our panelists. I'll just reiterate from Aaditya. We're going to have another exciting event here tomorrow, not only with Simeon Djankov and Sean Miner, but with several leading economists of the China Development Research Foundation to talk about these issues. And those of you who were invited today are in no doubt invited for that tomorrow. Or tune in online.

I would also just say that this obviously a discussion that again, I just want to thank the speakers, all five of them that I thought made really substantive, tight, despite even with my timing threats coherent presentations and responses and it's just terrific to have this discussion. And as has been indicated, there's a lot more room for future research in this area. So thank you very much.