Conference Transcript

Currency Wars: Economic Realities, Institutional Responses, and the G-20 Agenda

Economics Panel

Moderator: C. Fred Bergsten (PIIE)

Presenters
Joseph E. Gagnon (PIIE)
Vera Thorstensen (Getúlio Vargas Foundation)
Luis Cetao (IMF)
Douglas Irwin (Dartmouth College)
Alberto Musalem (Tudor Investments)

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Unedited Rush Transcript

Adam Posen: Good morning everyone. It's good to see the early bird crowd for what will be an ahead of the curve day. I'm Adam Posen, President of the Peterson Institute, and it is my great pleasure to welcome all of you to a conference on—as my colleague Joe Gagnon puts it—the elephant hiding in the room. In this room the elephant's never been hiding. For a long time under Joe and particularly under Fred Bergsten, the Institute has been very concerned about the use and abuse of currency interventions. And we have been talking for many years about the right way to proceed.

The rise of China with its peg, the large scale interventions undertaken during the worst of the global financial crisis, when there was a shrinking pie, these all were things that motivated us to think that the exchange rate opportunism, for want of a better word, was a real danger to not only well-being of people in certain countries, including the US, but to the system as a whole.

At the same time, it's important to note some alternative concerns or some offsetting concerns and some of which were noted by staff members of the Peterson Institute, other than Fred, repeatedly, that trying to build up, in practical terms, responses to what's called currency manipulation, at least unilaterally, could be very dangerous. That there's a reason why the IMF, despite its best intentions from Kane’s onward, has never successfully sanctioned surplus countries, and there may be an inherent limit to what can be done in that regard. That perhaps the exchange rate is not as important as some people make it out to be; that real wage developments,
monetary policies and so on are really the dog and the exchange rate is just the tail. Perhaps most of all, who is the judge? What is the right criterion? What is the right setting of principles of practice, of measures that allows one to adjudicate, because that is in the end what one is doing? Who is behaving badly? Which counties are meriting a response?

I think, to repeat one point earlier, the lack of adjustment on the part of surplus countries during the global financial crisis, or during what we should at least call the North Atlantic Financial Crisis, has given new pressure to this issue. At the same time, there are those who will say that monetary ease in some of the major economies, in particular the US, is putting pressure on currency markets from a different direction, and maybe a different form of currency intervention. I personally don't agree with that, but I do personally understand the distress of what I call the mid-majors, the smaller open economies, ranging from Canada to Brazil to Switzerland, that are dealing with large capital inflows.

So this is a very thorny set of issues. It's one that we're proud the Peterson Institute has been at the forefront of this debating, and in particular, that Joe Gagnon and Fred Bergsten have been leading a provocative charge, but we are here today to really hash it out. What does this mean in terms of impact on trade and markets, where we'll be starting with our first panel. As well as what is practically to be done in legal terms in our second panel. Are there relationships with the WTO, for example, and the IMF, that can be put into international law? And then with our third luncheon panel, we have some superb high-level speakers to achieve what was my own personal goal of today's conference, to get the non-U.S. points of view spoken here in Washington. Not because the U.S. point of view is wrong, but because I think, with credit to Under Secretary Brainard, the U.S. point of view is embodied, at least in present, at the G20 agreement, on non-intervention. And so the question is, is that good enough? Is that sustainable? Where else should we be going?

So just to start off, those are some of the themes I'm hoping we will cover today and I know with our excellent, excellent speakers and program, we will do so. I just want to thank, in particular, a couple of people. I want to thank our colleague—oh God, I'm going to get the pronunciation wrong—Aluisio please tell me the right way to say your name. Thank you. From American University Law School, Aluisio de Lima-Campos, who came to Fred and Joe some months ago, and it's been my privilege to pick up the baton and make this event happen. I also, in particular, want to thank our colleague Joseph Gagnon who's not only been doing real intellectual spade work but reached out to many of you to make this conference happen. And we're grateful to various supporters who have—who allow us to say and explore things that are not necessarily PC.
Without any further comments, since we're running a whole five minutes late, I believe—no, only one minute late—I'm going to call Fred Bergsten to introduce the first panel. Thank you.

Fred Bergsten: Adam, thank you for keying things up and for hosting and organizing the conference. Thanks too to Joe. I add to Adams, thanks to him for doing the heavy lifting on this. I'll get the minute back by being very short in introducing this first panel. As Adam said, the idea of the first panel is to outline the economics of the issue. Joe Gagnon has done some very important new research on the topic. He's been in intense discussion with his colleagues at the IMF, former colleagues at the FED, and we hope to get that whole set of views on the table today about the importance of this currency intervention topic and its economic effects. I've had the great pleasure of co-authoring with Joe on this topic—a piece back in December just before I left for a bit of a sabbatical—and I think there are three really central issues that I'm going to challenge Joe to convince us on and challenge his discussants to address.

One, this issue is really big, it's got very big trade impact running into the hundreds of billions of dollars per year, with big effects on trade balances, output in different countries, job creation and the distribution thereof among different sets of countries. Two, the issue is widespread. It is not just China. It is a lot of countries that are involved and therefore has to be viewed in a broader systemic context, rather than just vis-à-vis China or certainly US China bilateral. And third—crucial analytical point—Joe argues that causality runs from the buildup of reserves and intervention by surplus countries, to the current account surpluses that they run, promoting their output and employment, rather than the other way around, which has tended to be more the conventional wisdom. I don't want to scoop Joe in any way. I'm sure I don't. It seems to me those are three big ones. I hope we can focus our discussion on them.

I will start by introducing Joe to talk about the elephant hiding in the room and bring it out into the room. Then I will introduce Vera Thorstensen from the Getúlio Vargas Foundation in Rio, who has done an enormous amount of work on this topic in Brazil. I want to particularly—as Adam did with Aluisio—the way I pronounce it, but either way I suppose—I want to particularly thank our Brazilian friends who not only took the initiative for this conference, but have taken the initiative internationally, they've taken the issue to the WTO. They've tried to get it on the international agenda. They have been courageous in trying to raise a very delicate, very sensitive issue in some highly politicized quarters around the world. Hats off to them. We're delighted to work with them here on that.
So those are the two papers, Joe and Vera. Then we will have Luis Catão from the fund, Doug Irwin from Dartmouth, the definitive historian of this issue from the 1930's and Alberto Musalem from Tudor to bring a private sector perspective to the whole discussion. So with no further ado, Joe, lead us off. Then, we'll turn to Vera. Then, we'll have the group come forward for the discussion and open it to the audience for the first portion of today's program. Joe.

Joe Gagnon:

Thanks Adam and thanks Fred for those wonderful introductions and thanks to all of you for coming so early in the morning. It's nice to see a full room here at 8.30. What I'm going to do is try to shine a spotlight and address at least the first two of Fred's three points, and the third might come in later in the day, but on the connection between currency intervention and trade imbalances. I don't want to argue that this is the entire story of trade imbalances. Of course there are other factors that work too. But in my research over the past two years on this, what has really shocked me, surprised me—I didn't expect to find this—is how tight the connection is there—it's quite tight—and big, as Fred said. It's a very big story, bigger than I would have expected.

And one thing that I've come to take from this, which I plan to develop further in the future, is it really calls into question in my mind how efficient are financial markets? Are financial markets really doing what we economists think they should be doing? And increasingly I'm saying, not as much as I thought. So—let's see if I can get this to go. Do I press this? Okay, so sometimes I call this the elephant in-- don't know if you can see it or not—but what I have here is aggregate data for the top 10% of reserve holders. If you take all countries and group their foreign exchange reserves and other government held foreign assets as a share of GDP, and rank them, the top 10%, this is it. It's by no means all the story.

It does not include the second biggest reserve holder in the world, Japan. It does not include some important sovereign well fund countries in the gulf which don't report their data. So it's not the whole problem by any means, but it's a big part of it. For these countries the solid line is their current account balance, which is the broadest measure of their trade balance, and the dash line is their net official flows, which again is the broad definition of their currency intervention. It includes all assets the governments buy abroad. These lines are just amazingly close together, I think it's clearly not a coincidence, and they're very large. These are hundreds of billions of dollars, okay.

Now one question is, China is important, and people have focused a lot on China, but even if you take China out, it's still pretty big. At the peak in 2007, 2008, China was about half of these 10%. And now however, we don't have complete data for the last two years, but based on incomplete
data, if I was to draw these lines out, the ones with China would be falling but the ones without China would be flat. Basically, only China is changing in this regard and other countries are not.

Again, there's a pretty strong connection. So what's going on? I would say that in some cases countries did decide that they wanted to buy foreign assets for various reasons and that this drove the current account. But that in other cases, what happened was the opposite—that the current account sort of drove the asset purchases. In that case, countries saw export booms and that put upward pressure on their currencies and to resist that upward pressure they bought foreign exchange and so the causality can go in either direction and it does for different countries. But that point is that there could have been alternative policies, if they either had chosen to let the exchange rate go, or if they had chosen to keep their exchange rate but through monetary policy instead of currency intervention, I believe a different outcome would have happened. Anyway, the bottom line is that at least for some countries, a sub-sample of the world, not all countries, really, currency intervention is the current account imbalance.

Now let me just go quickly to a little background. As you know, current account, or trade balances are the difference between exports and imports, which are in turn determined by prices, spending, productive capacity and trade bearers at home and abroad, as well as the exchange rate, but prices, spending, the exchange rate and some parts of [inaudible 00:13.24] capacity are themselves affected by exports so there's a complicated inter-relationship here to causality. This is an area I've worked on long in my professional life before this. In the United States we have a relatively stable economic structure and a lot of data so we can make some progress in this complicated area, but when we want to go and look at imbalances around the world we have to deal with the fact that other countries have much more important economic structural changes that make it hard to analyze the data. They've got much shorter amounts of data available and then prices, the way prices are measured internationally, is hard to compare across countries, so it's really hard to make progress in this traditional structural way.

So about 10 years ago, my colleagues Mandy Chen and Eswar Prasad started a different agenda for looking at cross-country imbalances and they noted that the current account balance also is the difference between a country saving an investment, and so they thought—sought to explain current account balances by underlying relatively exogenous factors that drive saving, investment, and trade, and some of these are demographics, fiscal policy, wealth, stage of development. And so this launched a series of papers that I thought was quite successful.
Well, my contribution was to add one more relatively exogenous factor I hoped, which was government exchange rate policy. These papers didn't look at what governments were doing, specifically to affect their exchange rate, which of course would have something to do with their current account balances. It seemed to me an obvious omission from the literature. So one, I thought the best way to measure it would be, look let's just look at what governments are spending. And if we're going to have—current account balances are in dollars, you have a measure of what governments are doing to affect their exchange rate in dollars, or whatever currency you want to use and you can, and you can relate those. And what I'm looking at is what I call Net Official Flows, NOF, which is total government investment and foreign assets, minus government borrowing in foreign markets. And accumulation of foreign exchange reserves, which is the most commonly mentioned one, is the most important element of this but it's not the only one.

So what is this connection? Well for 40 of the most important advanced and emerging markets, you can see in this chart, each country is denoted by a little two letter symbol. What we're showing here is averages of current account balances and net official flows over the past 25 years, so for each country it's their average current account and their average net official flow over a long period of time. The vertical axis is the current account, the horizontal axis is the official flows. The positive relationship is clear but it's really dominated by this one country in the upper-right, that's—SG is for Singapore. If you zoom in to just the other 39 countries, however, you still see a positive relationship. But there's a lot of other stuff going on, so there's further scrutiny.

One question would be—this is obviously true or seems to have some reality across countries—but what about within countries? Within countries, is there a connection? Well, what we have for a number of countries, there's actually quite a strong connection. You can see that both the level of the current account, the solid line, and the level of intervention, the dash line, are very close to each other and move very closely with each other over time and so here we have Egypt, Korea, Norway, Pakistan—a very diverse group of countries—and there are others for which this works. You can look in the paper. But there are other countries where it is not quite so close.

So Brazil and India are two important countries. You can see some correlation in Brazil and India, but it's not as tight as for those first four. And then there's other countries, such as South Africa and Sweden where there really is—there's very little correlation. So I guess what we need to do is a bit more careful statistics to try to really disentangle—there's many factors at work here, many factors that could be explaining current
accounts, and we need to disentangle just the ones that we're concerned
about.

So for those of you who don't like equations, these are the only equations
that I'll be showing in the whole presentation, so bear with me. A trade
deficit has to be financed. It requires borrowing from abroad or if you
have a trade surplus, what that means is that you're lending abroad, so the
first equation shows that the current account balance must equal either the
flows of borrowing or lending, which must come either from the
government or from the private sector.

So the first flow of borrowing and lending is net official flows and the
second one is net private flows, NPF, and then there is a residual because
we don't measure things perfectly, but in fact, it turns out that the residual,
the error there is fairly small, and the paper talks about that. Okay the key
equation of the paper is the next equation. What we're looking at is, do net
private flows respond to official flows? Does the financial market offset
what governments do? And this is the key question that we'll be coming
back to again and again.

The efficient markets theory says that Lambda, there in the second
equation, should be minus one. So that when the government takes capital
and sends it somewhere else, the financial market will undo that. Why is
that? Well, we think of efficient markets as equating rates of return across
countries that should be equal, and if you send capital from one country to
another country you will raise the return on capital in the country where
you took it from and you will lower it in the country where you sent it
from, and if governments do this that will dis-equilibrate markets and
markets will re-establish equilibrium by sending capital back in the other
way. And so, this is economists believe that sterilized intervention doesn't
have much effect, because markets undo what governments do, okay.
That's the efficient markets’ view. If markets are not efficient, Lambda
will be greater than minus one. It might even be zero. And if it's zero,
markets really aren't doing anything here.

Okay, the other element of this equation is the C times X—X is a vector—
think of X as a bunch of variables, the exogenous variables, I mentioned—
demographics, fiscal policy, etc. And then the third equation here is just
really the sum of the first two. It just says that you can run this regression.
You can look at private flows and regress them on net official flows or
you can look at the current account and you can regress them on net
official flows, the coefficient will be different if you regress the current
account you get one plus Lambda. In that case if Lambda is minus one,
then one plus Lambda is zero, so that means that official flows have no
effect on the current account when markets are efficient because they're all
offset by private flows, okay.
So the problem with just going out and running these regressions is that—and I have done it—but it's only valid to do that if net official flows are exogenous to the private flows and to the current account. In other words, if governments have their own agenda for reserves that doesn't bear any relation to the exchange rate or to trade flows or capital flows, then you can run this regression, but the problem is that that's not true. And so, let's look at the case of Japan, okay.

So if you look at Japan, what I show here is the solid line is the net private flows, NPF that you just saw and the dash line is the net official flows of the currency intervention. So if you look at Japan, it looks like whenever private flows go up, intervention goes down; whenever intervention goes up, private flows go down—very strong negative correlation. So what's going on here? Well, there's two interpretations for Japan. One interpretation is that Japanese financial markets are highly efficient and whenever the Japanese government tries to muck about in the foreign exchange market, the private sector just says, “Ah we see through that. We're going to undo it,” and so their intervention has no effect, and that's the efficient markets results and you get a Lambda of minus one.

Well, that's one interpretation. A different interpretation is that Japanese financial markets are not efficient, that the proverbial Japanese investor, Mrs. Watanabe has alternating waves of euphoria and fear, in which she either sends money abroad and weakens the yen or gets panicked and brings it all back and pushes the yen up and that drives the sharp movements in the blue line. The Japanese government, seeing these waves of euphoria and panic says, “Well, when people are flooding back into Japan that pushes the yen up. We don't like that. It's going to hurt our exports, so we're going to try to off-set it.” and that explains the dash line moving up. That's the other interpretation. I actually think the other interpretation fits better with reporting of this issue, but obviously you can have your own opinion.

I would note that if the government were driving things, then you would expect to see at least a little bit of yen weakness whenever the red dash line goes up, but what you're actually seeing is the yen is strong when the red dash line goes up. So that implies that it really is the government responding to the private sector more than vice versa. But of course it could be some of both, so you can't rule that out. But as long as the Japanese government cares about the exchange rate, there's going to be some endogeneity and that says our regression, it complicates our life for a regression.

I would note by the way, in passing, that the red dash line is above zero every year since 1990. It never goes below zero for a whole year and what
that tells you is that really the Japanese government is on balance trying to perpetuate a current account surplus. If they didn't have that desire then their intervention would be more symmetric around zero. They could respond to the exchange rate still, but they should be responding in a more symmetric way around zero, okay. So to solve this problem we need instrumental variables and that's sort of the whole point of the working paper I've put out. We need to come up with something that captures the reason for the government to buy foreign assets that is independent of stabilizing the exchange rate, in the face of these shocks.

And so I have three main instruments in the paper. I've used different combinations of it. The results aren't too sensitive to this, but certainly there are more things that could be done and discussed, I don't have time to go into it too much. One instrument is, if you take the stock, the land stock of assets that you have, relative to some measure of reserve adequacies—so either months of imports or your short-term foreign debt or your GEP—this could get some metric for, do you have enough reserves, too much or too little? That could be relatively slow moving and exogenous in respect to these high frequency financial shocks.

Another one would be if you set up a sovereign wealth fund for your natural resource exports or you have a—as a country decided to save abroad and that's—for those specific countries you can put that in. And then if you have a history of a recent currency crisis in the past 5 or 10 years, basically I have a measure of if you've been repaying the IMF and IMF loan in the recent past, you might be more sensitive to wanting to build reserves and that might be a reason to build reserves sort of independent of other factors. So these are three instruments that we have tried to use, okay.

So the regression analysis proceeds. I use the same base line sample that the IMF did last year in its study of imbalances. It's 40 countries over the past 25 years. I split the 25 years up into 5-year periods, basically again to not have to worry about modeling dynamics in the data and look at more medium to long-run factors, but I've done it with annual data. I've done it with a much larger sample of 115 countries. We have different instruments we can look at, different ex variables. I'm going to not have time to go into all of the permutations. Basically, what I'm doing is I'm going to run a regression of both these equations at the bottom that are net private flows regressed on all these variables and current account regressed on these variables. And I'm going to talk about that Lambda, the Lambda that you see in there.

Ideally they should be the same in both equations but they don't have to be, so that's something we can look at. One difference is, you notice I put a little hat on the NOF. That's because now I'm using the value of official
flows that was predicted by those instruments. It’s sort of stripped of some of the endogeneity problem that I talked about earlier. Again it’s just—because I don't want to get into that too much, but for those of you who care, that's what we're doing.

The baseline results, it turns out that the estimate of Lambda, which is in the top row is minus point two one and it's from both the net private flows as well as the current account regression, which doesn't have to be. It isn't always that way, but that's a nice feature. That implies that financial markets offset about 21 cents out of every dollar a country spends on interventions. So if Japan spends a dollar buying US assets, private markets take 21 cents of that and send it back to Japan. That means that Japan's current account balance out of necessity goes up by 79 cents of that dollar. So that’s a very big effect, much bigger than I would have expected.

If you don't use instruments you get a coefficient of minus point five, which says the financial markets offset about half and that means that current accounts move by the other half point five. But if you do use instruments you'll get a bigger effect.

So the other coefficients in this regression all have the right signs of plausible values. I'll quickly just note what these variables are. These are the X-variables that you saw in the earlier equation. And the fiscal policy, I've got a fiscal policy that's cyclically adjusted to sort of remove the endogenous part of fiscal policy. That has a positive effect, but not big, on current account balance. NPFA is net private foreign assets, so what the private sector holds on net within the rest of the world and that has a slightly positive effect because of earnings on those assets. YPPP is the per capita, GDP per capita relative to the U.S., so if you get to be a richer country relative to the U.S. you tend to have a current account surplus. Y4 is the forecast of growth over the next five years from the IMF's forecast, historical forecast. That has a big effect. If you're a fast growing country you tend to have a current account deficit. Then a very interesting coefficient is the health coefficient. The IMF picked this up last year and I've been finding it to be very robust.

Every dollar countries spend on health expenditures has almost a dollar, about 90 cents or so, of negative effect on their current account. That's truly amazing, but it seems to be quite a robust result. And all this advice about China to build out its social safety nets as a way to reduce its current account surplus, really is right. I mean it really is working. I'm surprised at how big that is, but it really seems to be a solid result. Very interesting. Energy is a more positive effect—not huge but as you might expect. Aging—if your population is expected to age over the next 20 years, you will save a lot. You'll be saving for retirement. In that case you have a big
positive effect on your current account balance because you're saving. That makes sense.

Finally, capital controls. This number for capital controls, the last variable, is a pretty big number. Capital controls range from zero for the open countries like the U.S., to a hundred for the very closed economies—I'm not sure which is the most closed economy. China was about an 87 or 88 until recently and it's now more like 70 I think. But what this says for an open country, there's no effect but for a closed economy, fully closed cap to capital inflows, they have surpluses of three to four percentage points from that reason.

I don't have time to go through the other regressions that I've mentioned but the range of Lambda's—typically the central tendency is about minus point four to zero, which implies a current account effect of 60 cents to a dollar for every dollar of intervention. You can actually get a bigger range and I think probably Luis from the IMF will talk about that more and then we can discuss that later. But I find that the reasons—I find reasons for that that I tend to not like those estimates and most of them do tend to cluster in this range, okay.

So maybe let me finish, but on pictures, because perhaps some of you don't like these dry statistics. They're just numbers, after all. What does that mean? So what I find convincing sometimes is what we really want here is a 'what if?' We know that a number of countries had big increases in their current account surpluses in the past decade and we know that they've piled up a hell of a lot of reserves. But what if they didn't? What if when their current accounts went up, they didn't make that decision? They didn't decide to pile up a lot of reserves? Would it have made any difference? I often hear, “Oh, they still would have had current account surpluses. It doesn't matter. They chose to buy those reserves because they had a surplus, but it was a matter of convenience, and if they didn't buy those reserves they would still have had a surplus. It would make no difference.”

So, let's look at a case, a case study. Let's take two countries in Asia that have roughly similar circumstances more or less, and I'll start with Singapore. Singapore going in from 2001 to 2003, Singapore—what I have here by the way, is the blue bars are the current account balance of Singapore. The pink bars are the net official flows to currency intervention, and they're both showing on the left scale as a percent of GEP. The line here is the real exchange rate between Singapore and the United States, okay. And so what was going on from 2001 to 2003 is that Singapore was stabilizing very tightly its nominal exchange rate with the dollar, but Singapore was undergoing massive deflation. And because of Singapore's deflation its real exchange rate was falling as it was pegging
its nominal exchange rate, and that's what happened there. In 2003, Singapore was hit by a big explosion of exports—the blue bars jump up—and to hang onto that exchange rate peg they massively increased their intervention—that's the pink bar—jumped way up, okay.

So that was Singapore's initial response. Then in 2004, 2005 Singapore gradually let go, let their currency appreciate against the dollar, and some of that real appreciation was recovered, but not all of it in fact, and they really held on tightly throughout the next four years, okay. So it's interesting to note that if you look at the first two years on average and then the next four years on average and compare the change of the current account, from the first two years to the second and four years, to the change in net official flows from the first two years to the second four years, that relationship is almost exactly the coefficient I just showed you from the regressions, 0.8. Basically their current account rose in the second four years by 80 percent of the increase in their intervention in the second four years, 80 percent, so. It also holds up the regression results, okay.

So this is what Singapore did and this is what happened in Singapore. This is a common story. We had big increase in current account surpluses. Countries chose to restrain appreciation and they got large increases in reserves. Let's look at a different country in the same region, Korea. Korea didn't have as much current account surplus as Singapore to start with—it's true. I've left the scales the same so you can see how to compare Singapore and Korea. Korea didn't have as big a current account surplus. It doesn't have the high saving rate of Singapore, so it didn't start quite in the same place, but in 2003, Korea was hit with the same roughly shock to its exports. Exports started to rise.

However, in Korea's case, Korea did not try to hold on to its exchange rate. You notice in Singapore the exchange rate was going down in 2003 and Korea it's going up, so already Korea has allowed its currency to rise by 2003, which is probably why its current account didn't go up as much as Singapore's. It probably was hit by a similar demand shock but it allowed more equilibrations. So it still had some increase in the current account, the blue bar, in 2003, but not as much because it was already letting the exchange rate go. But it was not completely letting the exchange rate go, as you can see the pink bar goes up in 2003 and 2004 by quite a bit. They did resist this appreciation somewhat. So they resisted it but they didn't resist it completely. Current account goes up, intervention goes up.

Then in 2005 Korea had a change. There was political debate in Korea. Why are we buying all these foreign exchange reserves? Does it make sense? And they decided to stop. They said, we're not going to do this, so
pink bars go down. Note that of course this lets the exchange rate appreciate even sharper. They let the exchange rate go; it goes up. Current account goes back down towards zero. They chose a different path. They got a different outcome. This I believe, to me, is quite convincing that if countries do choose different policies they will get different results and to me this is the real proof of the pudding that this does matter, it's not just a correlation that's a coincidence. It's actually a policy that matters. And I would note that if you—again in Korea look at from the first two years to the second two years, the ratio of the rise in the current account to the rise in net official flows, it's almost exactly—actually it's a little bit higher than what my regressions would imply.

And then if you look at the fall from the middle two years to the last two years, again those relations are exactly what the regression would imply. And Korea and Singapore, by global standards have very open capital markets, their developed capital markets, presumably efficient capital markets, and this still happens. I find it amazing. So in conclusion, currency intervention matters. My best guess is that about each dollar of intervention raises the current account about 80 cents. That's far higher than anyone thought, including myself. Just a year ago, I would have never predicted this. I have looked at whether capital controls change that coefficient and maybe a little bit, but it's really hard to be sure, and as I just showed you, for some countries that on global standards are pretty up on capital markets, there's big effects. This says that even in countries that don't have capital controls, financial markets really aren't that efficient. Financial markets really aren't doing a very good job. They are responding to fads perhaps and whims that we don't understand very well, but they don't seem to be related strongly to equating rates of return smoothly across markets.

One thing that's not on the slide is—I think the biggest impact is clearly on the United States because U.S. is the leading reserve currency, but countries are diversifying their reserves, so many countries are being affected now and even countries that aren't reserve currencies are being affected to some extent because capital markets do spillover somewhat. So it's a big impact. As Fred mentioned earlier, if you total up the amount spent on intervention around the world it's well over a trillion dollars a year—still going on even last year another trillion dollars. Even after the peak it was maybe a trillion and a half. That's a big number in anyone's book. And I think, given that this is a macro phenomenon, it seems to me the best answers would be—the best policy responses would be in the macro space but I think I'll leave that for later discussion. Thank you very much.

Vera Thornstensen: So, good morning to everybody, it's a pleasure to be here. Let's go directly to the history of this research. I spend—I can tell you 30 years of my life
in dealing with trade issues—I spent 15 or more in Geneva and then in 2010 I decided to go back to Brazil and start a center on international trade and I met—had the luck to meet Professor Emerson Marçal who's here with me and Professor Lucas Ferraz and we start dealing with exchange rate and trade. Why? Because I spent so many years in Geneva and every time I just raised the issue of exchange rates, I received instructions. Don't talk about exchange rate here because exchange rate [inaudible 00:38:06] IMF is not [inaudible 00:38:07]? So because I'm not really working in the government anymore, I decided to study and to see what's the impact of exchange rate on trade and on trade rules? So here's the thing that everybody knows, the Big Mac. Here we can see that you have an overvalued country and undervalued country. This is a real serious result.

This is the IMF, the result of the pilot external sector report, Mr Car tone is here and here's the serious work on measuring the misalignment of exchange rates. As you can see you have bands here and you can see that you have a lot of countries with undervalued currency on your left and here countries with over value on your right.

Here is the marvelous work of Professor Kline and Williamson. I put a graph on it, I hope they like the green color. That is you have again, there's a different methodology, the IMF is using the, looking for the exchange rate that, that gives an equilibrium of the current account. Here is a different methodology, looking for a target equilibrium and here you have the result of our work in Brazil. That is trying to see, it's another methodology, not using the current account but using the net foreign asset methodology. There's a lot of economics behind this, Professor Lucas is here to explain to you and is a new discovery [inaudible 39.42] and all these very very sophisticated methodology in see the veracity of this. But just to give you a good idea, that here you have overvalued, and Brazil is there, United Kingdom is there, Singapore, Turkey and you have the other undervalued countries.

Here I put together—this is the same, just we use three methodology. This is the average of them. The main point is, you have countries with overvalued currency and you have countries with undervalued currencies. Then I compare the three, the three methodology and what you get different results and this is the challenge for you economists, can you help us to have just one methodology, say that a country's over valued or not, because if not, you are not going to move further. Here you can see that Brazil and China for some of this you have the same results and all the three methodology are pointing to the same direction, great. Why I need this, this is to explain more our methodology, as you can see Brazil is overvalued 20% now after the shock of last, six months ago, we moved to 15 percent but Brazil is still overvalued. Here is the U.S. come on, a little bit different results from the IMF. For me, Brazil is undervalued 5%.
This is for China, a lot of periods of under devaluation, right. Here is the Europe zone. You have inside countries overvalued, other countries devalued and so you have the poor pigs all overvalued. They cannot change exchange rates so they have to cut wages. It's a terrible thing. The question is, okay, you know about this—what you can do and we decide to do what I spent all my life doing—clarifying exchange rate misalignment. So what I did, I use the formula—not sophisticated one. Forget about the formula. What I did is to—I apply—I tarified the exchange rate misalignment. Because, come on, you have to pay it at the border so you have the tariff, the WTO tariff and you have the misalignment overvalued, undervalued.

And the point is that you have the consequences here. Look for the green line only. This is an example of China. Here the circle is the bound tariff of China. The green is applied tariff of China and you have here on the horizontal line the whole spectrum of industrialized goods. We start at zero one. Its animal life, zero, two animal death, meat, zero, three, preparation of meat and you have all textiles and all machinery, all the trunks to 9 to 7. And we are doing this for, 2 digits, 4 digits, 6 and 80 digits, so we are really working hard on this—this at average. What do you have? The green line is the real thing for WTO. The blue line is when you apply, you tarify your exchange rate. So what is the consequences of misalignment?

You completely change the tariff you bound at the WTO. And further than this, because the bound rate—the circles are so near the green line—you have no space to move, so in this example with this calculation, the misalignment of China for us is 17 percent negative. Brazil is overvalued 20. China is negative minus 17. So what's this here? So what's the consequence? Not only China is giving subsidies to its exports. More than this, China is violating Article 2. What's the Article 2 of that? That countries cannot have different tariff more, are bigger than the bound one. Here you have the consequences. When you try to put together the valuation of China and Brazil, China and Germany, China and U.S. and for us, United States is minus 5—undervalued—here you have the result.

The green light is the thing that China presented in WTO and you can see for all the other countries that when facing China they have a tariff that's bigger than the real one they have in the WTO. Here you have the example of United States. Again the bound rates, the circles, the applied rate, the green line, if you apply the minus 5 percent you have a tariff that's bigger than the tariff you consolidate in the WTO. And I love this graphic. Here if you combine China, US, United States and Spain, United States and Brazil, you have completely different tariff. Come on. You are destroying with exchange rate misalignment. You are destroying Article
one, the most favorite nation article, the most important article principle of WTO, that you are not applying different tariff for each country. So come on. Misalignment is destroying article one, article two of WTO, the basis of WTO.

Now I have for Brazil—poor Brazil. It's a completely different example. It's overvalued. Do you know what's the consequence of it? Again, the bound rate is the blue, applied rate the green. Look the red and the yellow, the applied rate is the yellow. Brazil is completely without protection at the border. Don't say that Brazil is protectionist, this is just a result that, of the overvaluation of Brazil is completely destroying a right that Brazil has to protect its tariff, its goods with tariff. It's completely destroyed. Here I have a lot of examples. Look the European Union and this I use the Euro, right. Here you have the green light, the applied rates, the circles, the bound rates. You can see that the different countries is supporting toward the community using completely different tariff. So again, Article 1 and 2 completely destroyed.

So the conclusion’s country overvalued exchange rates like Brazil have the negotiated tariff reduced and only five countries with undervalued exchange rates. U.S. and China, for example, grant subsidies to their export and their applied tariff surpassed the bound levels agreed in WTO. The point is that it's not only tariff that are being under minded. I was working with anti-dumping subsidies. Do you know the result in Brazil? The effect of a change rate is 5 times bigger than the dumping we impose on the product.

So what you are doing is that to show you that exchange rate is destroying tariff, anti-dumping, anti-subsidy and rules of [inaudible 00:46:42], based on value and even DSP retaliation. So the point is that WTO does not have adequate rules to address the issue. So what is the propose? You can go to math discussion and talk about manipulation. That is a very terrible word. That is Article 4, and in the WTO have another instrument, another concept. That's the concept of frustration. Frustration, what—the objectors of the GAT agreement.

Here you have the law. The frustration is here. Forget about this. This is for the lawyers. I love lawyers in this way. So in here you have a good example. In the 90's, in 1980, after the talk around there is an exchange rate group, a working group on exchange rate in WTO, and they approved a decision that is to allow countries, under developed countries after the explosion of the Baton system, to renegotiate the tariff. So you have jurisprudence in the WTO with the old GAT in the 80's.

Say that a country can renegotiate tariff if they have, in this case, the appreciated currency against the specific tariff. So I have an example. So I
tried to work with these—a lot of economics, a lot of studies in law—to see what would be a kind of answer to this. What is our challenge here? Is to discover first, how to measure misalignment? Can economists agree it is the IMF methodology better? It is the net foreign asset? It is the current account? It doesn't matter. The question is we need to go and discover one methodology that best measures the effects of trade. This is the challenge for us. What is the best methodology that measures the effects on trade?

If you have this, how we can solve it and here's my masterpiece, the master piece of my group. Here you have—well I decided that, come on, manipulation is a very complicated thing. Forget about manipulation. It's a thing for IMF, for the economist. In the WTO, like what I learned in Geneva is that you have to try to get consensus. And all the countries first, all the countries have the right to float its currency, right. They have to. They have the right to float currency. The point is how much that can float. That's the point. What I did here, we construct a currency of the world, base it in 25 countries, because 85% of the currency, and then we try to measure the misalignment of each country toward this basket of the trade currency. And I call the unionship can be a Lamys or Mr. Lamy, that is the director general of WTO.

Then we put this—you normalize this instead of deviation. You can think about minus 10 percent, minus 20 to have a reference. You can see that inside of band of 10 percent, minus one and plus one, you have a lot of currencies going up and down. With the band of minus 20, can be 20 percent, you have only few of them getting up. So our proposal is let every country fluctuate, but till a limit. After it, if the misalignment is persistent and substantial you are destroying the WTO rules. Let us go to the WTO and negotiate a way to neutralize the effect. So the point is, if you are doing misalignment with persistently over more than six months, it's more than one year.

Come on, you are destroying the whole building, the whole structure of WTO. The point here is the concept of time. How long a country can violate a WTO rule to get a panel being organized against it and a rule on this? In the economists we have a big seminar in Geneva and they spoke of the language IMF, no conclusions. The point is at the long run, everybody agrees that countries reach equilibrium. The point is the concept of time in economics is different from the concept of time in law, in international law.

So for how long you have to be manipulating our currency to have something made against you. The point is we doubt this concept, the difference of time of the violation of rules. You are killing the efficacy of all the trade, the trade law. Now this is a multilateral solution and this is the look for Brazil against bilateral misalignment and here is for the
United States’ marvelous work that Emerson is doing, you can do all this bilaterally, more than the, the multilateral one.

So the conclusion is substantial and persistence exchange rate misalignment affect the effectiveness of trade instruments negotiated in the WTO. Therefore they must be object to WTO regulation. Juridical [inaudible 00:52:03] is different from the economic concept, as I told you. And in summary, the WTO must address the effects of exchange rate with misalignment or misalignment—exchange rate will turn the WTO in the juridical and economic fiction. That is the challenge for us. That's it. Thank you very much.

Luis Catão: Well thanks. Thanks for the invitation. Thanks, Joe. Thanks to the Institute. It's a pleasure to be here. I would like up front to say that the views here are my own views and not necessarily those of the IMF, the board, and its management. So what I would like to do—can you hear, yes? What I'd like to do in this presentation is go through some of the points that—some specific points that Joe raised. I'll focus most of my comments on Joe's paper. I'll have a few things to say on Vera's as well. But in general, let me just say that I greatly enjoyed reading those papers, I think they are an important contribution to the literature. I learned a lot from.

What I'd like to do in my discussion is to focus, as I said, as the very specific, very specific technical points. Here the main issue at stake, especially with regard to Joe's contribution, as well as the coefficient that he talked about, the Lambda coefficient is either say 0.2 or 0.8. Once you correct for things that I'm going to talk about later, the set level of capital controls. So here it's a very important, sort of the measurements are very important. It's a very important issue because whether it’s 0.2 or 0.8 does make a lot of difference on how you interpret. And I'm going to go through also some technical issues of course.

So my discussion will focus on pretty technical points. I will do a little bit of a historical detour as well. I used to talk quite a bit with my grandfather and I also used to have a supervisor who was an economic historian, so I'm going to draw a little bit on some historical parallels, just to make the point that some of the stuff that we see today is not so unusual from a broad historical perspective. And somewhat rather plainly, the main bottom line of what I want to say is that the measurement part, in sort of try to analyze, to try to measure, to get to this point, estimate of the impact of reserve accumulation on the current account, is tricky business. So clearly more work needs to be done, but in general I think we have to be extremely careful in terms of making a very strong statement on the basis of data.
But again, it's not disagreement on the direction of the fact. It's more a caution, a note on how we measure it and how careful we are in terms of coming up. So I'd like to start with some crystalized facts and then I'll focus certainly on the two first questions, is that is this historically normal, that should say this association between, for example, accumulation of the current account. Then I'll delve into issues of causality and how we can actually try to pin down that coefficient, that Lambda coefficient that Joe talked about. They say the fact of foreign exchange intervention on the current account in the real exchange rate.

And then time permitting, I'm going to be a little bit philosophical and say—well do actually the policies that seek to talk the currency down, are they good for welfare globally, nationally? Can we say something about this that's a little bit more in the realm of normative considerations based on what we get from the positive kind of empirical analysis and I'll conclude after that.

So let me start just with some shot at—similar to what Joe had—but this one actually picks all countries. As you see here, is the global official reserve holdings and here is not net official assets as Joe, but it's actually what the IMF deems as foreign exchange reserves. As you can see, a big trend towards reserve accumulations starts taking place in the early 90's, but it really picks up strongly after the Asian crisis.

After the inversion market crisis of the 1990's, the blue line has all countries, the red line excludes China, and the green line excludes all emerging Asia, including Singapore, Korea, and others. So we can see it's a pretty general trend across emerging markets, including some of the advanced countries, what we call today as advanced countries. This is associated with why they have growing bars is a pretty familiar shot. What I wanted to do as a second fact that I'd like to highlight is this historical comparison that I thought was quite interesting.

So I think Dobers is an economic historian, so maybe I'm taking up stuff that's not really my area of expertise, but there is one close of parallel in history which is the financial crisis of a century ago, which is quite well known. It started with the [inaudible 0:57:10] where several emerging markets in today's advanced countries defaulted at the time. Portugal defaulted. Greece defaulted. A bunch of countries defaulted. So it's a major massive crisis. And right after the crisis, so you'll see I highlight this in the shot—that's the peak of the crisis, which runs from about 1890 to all the way to '97. After the crisis, what you see is exactly parallel what you say in the post-Asian crisis, with a massive accumulation of foreign exchange reserves by emerging markets.
At that time the ball game was actually to actually join the gold standard, so a lot of these countries during the turmoil of the 1890's, they got off gold and after that, when they are faced with massive capital inflows, they actually run to join the gold standard, so that held the currencies down and implied that the current account in fact either improved, as it did in some countries on average in the first years of the first decade of the 20th century, but it certainly did not deteriorate as much as the big inflow in private capital.

So clearly there is a parallel between what we saw, what we've been seeing after the Asian crisis, or if we saw a century ago, which I thought was interesting. Just to make the point that it's not so unusual that emerging markets after a big, big financial crisis, they try to actually cover themselves up. There is a question of how much is too much, but I just wanted to make this point as a general consideration.

So I'll now go quickly, given the limits of time, over the econometric issues in these regressions. As Joe explained very nicely during his talk, Mark is someone who is thoroughly efficient, so the hypothesis stability between your official and private foreign assets and liabilities is one that's at stake here. It's quite plausible. The issue at stake is really how far policies can go in trying to influence relative prices and explore this so-called market inefficient and this can be done with capital controls in a kind of overt way, but can also be done even without capital controls provided assets stability is less than perfect. So endogeneity is a big issue here.

From the current account identity you can see it quite clearly if you actually forget about the—assume that foreign assets, the foreign asset, the financial account balance is close to zero, you see that the current account in accumulation of reserves marked onto each other one to one, so if you regress current account on the foreign exchange, on the foreign exchange reserve accumulation, you basically have a biased coefficient in principle. Joe has a nice appendix in his paper in which he actually studied a little bit. He analyzed how this bias can go. It's a critical question. If basically the conclusion of the analysis, that if basically financial shocks, the coefficient beta there in front of the foreign exchange reserve term is biased downwards so you tend to underestimate the effect of reserves on the current account. But if those shocks dominate, then B is biased, Beta is biased upwards. So the biased in a sense can go in either way. In the short run I would think that because financial shocks are quite important, the bias is clearly downwards more towards the medium to long run I would think that the upward bias would tend to dominate, but it can go either way.
My two colleagues, Tom Bayumi and Christian Zabarovsky, have run these regressions so they find a Beta of about 0.5 that should say for every dollar of intervention, the current account would improve by 50 cents. That's actually a coefficient that is similar to what some people deem to be the sort of, the required in offset in fiscal policy. That's to say if fiscal policy moves by one dollar, what would happen to the private flow to private savings? Now they find that coefficient is actually significant if only foreign exchange reserves interact with capital control. That's to say, if you have a country in which capital control is zero, basically has a completely open capital account, then basically our foreign exchange intervention would have no effect on the current account of the real exchange rate. It's a pretty strong result, I tend to sympathize with Joe that I mean there is more imperfection of sustainability and my personal opinion on that is, but the fact is that it's very hard to actually, in the regressions that Tom and Chris and Ron and I myself, my fair amount of this, that to actually find a coefficient which is high, if it's not interactive with capital control. But if you go for a 5-year average data, Joe does and do some changes in terms of the specification, then you can actually get some bands there.

Now, as I said, many potential issues with both results, both results being Tom increases results and so has Joe's. One I found in my own regressions, some sensitivity with instrumenting. The other issue is that this capital accounts indices are kind of faulty. I mean, first of all they are [inaudible 1:02:27] instead of de facto indices. And ideally you want actually to have de factor indices and this sometimes they disagree with each other in a major way.

Now the other thing that I find a little bit unsatisfactory, the state of these regressions is that there's no distinction between sterilized and not sterilized intervention. Basically, you have one coefficient that covers countries that do sterilize intervention but others that don't sterilize intervention, so we'd like ideally to separate between the two. This criticism doesn't quite apply to Joe's strict centers because the distinction between exchange rate regimes because it does take that into account as understanding his instrumenting and as I said the 5-year average data, also more likely to bias, be upwards.

So as I said, I mean depending on how you instrument it, depend on how you do the technicality of the work or you can actually get some different coefficients. Recently I've been getting myself a coefficient which is 0.6, but only when interacting with capital control. If you don't interact with capital controls you do get a positive coefficient, but it's a very imprecise estimate.
It looks to me that as Joe also mentioned in his presentation, there's a lot of heterogeneity a lot of counter-heterogeneity. So an analysis that takes into account the way that imperfect sustainability between the assets take place in different countries is probably a very welcome development going forward in terms of this analysis. So the bottom line here is that I think caution is the word here. We have to be extremely careful when you actually settle on a point estimate because they tend to vary quite a bit. But it's much more one of magnitude rather than one in terms of the direction of the fact.

Now, I'll be very brief in interest of time. One question that always kind of—I came back to since I was in graduate school, is to each extent policies actually—talking down the exchange rate is well for enhancing, right. I mean, one view that's out there that goes back to the 1950's development economy is that you basically—if you talk down the exchange rate, if you keep the exchange rate, prevent over evaluation, you boost tradable productions, there are economies of scales and of learning by doing manufacturing. So it's something that you may want to do it in some cases.

More recently, as I've been working on issues of monetary policy, largely due to my work with Roberto Shang, I was actually quite taken aback by the fact that in this literature, going back to the work of Pesenti and Corsetti, you want basically countries have a clear incentive to actually appreciate the real exchange rate. That's to say, you want to explore what's so-called the terms of trade [inaudible 01:00:05] and the argument is as follows. If you're facing perfect competition in the goods market for your goods, you basically want to impose a kind of a tariff. You want to raise your price because your goods are not easily substituted and get the foreign consumer to pay more for it, is the typical optimal tariff argument. So there is an incentive rather than depreciate the exchange rate, you actually appreciate the exchange rate. And that's very persuading, this literature, so it's kind of a little bit ironic that there are these two literatures, the more policy literature trying to actually go in the other direction, and theoretically literature on monetary policy that says that incentive is clearly to appreciate the real exchange rate.

Anyway, holding the currency down has obvious costs, and one thing I did actually in—as a background work for this, for my comments, is that let's see what happens to when you actually over the cycle, what happens to investment of the GDP. There's an investment ratio, where to which extent real exchange rate movements affect the investment ratio. And what I did was basically to run a simple regression in which you have the left-hand side investment ratio, the aggregate investment ratio. I'd like to do it from [inaudible 01:00:06] but data is hard to collect, so I did it for a great
investment. You find that typically in many emerging markets—actually overall majority of emerging markets is that periods of real exchange rate appreciation are exactly the periods where the investment ratio is the highest are actually the periods in which growth is the highest.

So there is clearly an effect, the thing going through like in the newer classical models of capital accumulation, that you know relative prices favoring, lowering the price of capital tend to actually boost investment. So the point here is that it’s not such a bad thing sometimes to actually face periods of appreciation. They have other impact. And a question more for Vera and Walters is whether these clarification measures take into account the effective protection effect that you have when you have currency appreciations and the lowering the relative price of capital and the effect that it has on manufacturing competitiveness.

There are many other reasons to actually hold the reserves. My recent work with Gian Maria Milesi-Ferretti, we find that actually if you hold a lot of reserves you can actually reduce quite considerably on country risk and the risk of major external prices. So again, the bottom-line here is that how much is too much and I think we are very much in the realm of judgment here when it comes to that question. There are important costs and some benefit, but basically you know this.

What I'd like to conclude is that I think these two papers are important contributions to the debate for a positive, very positive perspective. The measurement of these effects is quite tricky and need, I think, further work taking into account heterogeneity across countries need to be more developed and from my welfare perspective, this static welfare perspective, the net benefits of undergoing, the policy of talking down the currency are often unclear, even from a purely national mass perspective. Thanks.

**Doug Irwin:** Whenever I'm asked to speak about exchange rates I'm always reminded of the quip attributed to Burl Sprinkle—that you should worry about your exchange rate and we'll worry about ours. He didn't intend that to be funny, but of course we're now in a world where we have to worry about everyone's exchange rate because there's spillover effects in other countries. My remarks are not going to be so much specific comments on the two papers, but my reactions to them and try to—I'll try to set things in a broader context.

In particular, I want to draw the distinction between the two Ms—manipulation versus misalignment—because these are two very different things and I think we have to sharply distinguish between them. Manipulation is deliberate government intervention to change the exchange rate, and there's a smoking gun, reserve accumulation.
Misalignment is very different. Misalignment can be market driven. After all, exchange rates are asset prices. There can be overshooting or undershooting of the long run equilibrium. Short term capital flows are very fickle, foreign exchange volume is running about 4 trillion dollars a day, the value of world trade every year's about 12 trillion, so three days of trading we finance world trade. There's a lot of short-term capital flows that are moving and sloshing back and forth between countries and exchange rates can be misaligned for all these reasons.

Now to say that there's misalignment suggests that we need government policies to offset that misalignment if we think it's being a problem. But remember there's a big difference between the two. Mis— manipulation is government intervention; misalignment may call for government intervention or some sort of government policy to address the side effects. Now I very much agree with Joe and Fred that manipulation is a big problem. The international community, I think, will have much greater success addressing manipulation as opposed to misalignment. And that's because manipulation is measureable and two, all the international agreements we have are agreements between governments.

Governments are the parties to those agreements. They deal with government policies and manipulation is a government policy. As I suggested, misalignment need not have a government policy basis. Now there are two types of manipulation actually. We only tend to focus on one today, but I do want to draw your attention to two types of manipulation. Both I think are damaging to the international system. The one of course that we're all familiar with is when governments seek to undervalue their currencies. They're seeking to deliberately or artificially keep the value of their currency lower for competitive advantage. That's problematic because it leads to foreign protectionism. And we see that in the United States, vis a vis China today.

Now there's another type of manipulation which is equally damaging I think. That's when countries artificially seek to prop up their currencies, when they're losing reserves, when they're trying to forestall an adjustment that leads to domestic protectionism, because countries are trying to forestall their reserve losses. That's exactly what we've seen in Argentina, where there's been an absolute proliferation of trade barriers because they're trying to keep their currency up. And so I think we should think about those, that latter one as well. But in any case, both types of manipulation create negative spillovers for trading partners and, and there should be a serious discussion about whether and under what circumstances those manipulations should be actionable under the IMF, the WTO or what international form we may think about.
Now I'm much more skeptical about whether misalignments can be or should be actionable at the WTO or some other form. Two reasons for that—one is, as Vera's presentation showed, we don't know and I don't think we can reach agreement on what the fundamental equilibrium exchange rate is. We don't have very good exchange rate models for that. There's going to a divergence of methodologies. Always beware when someone says, “I've used a sophisticated methodology to reach this conclusion” because that's going to mean it's going to very complicated and there's going to be huge disagreements on the underlying approach taken, so just because it's sophisticated doesn't mean we're going to get the correct answer.

And also, I think that that leads to problems in terms of the clarification exercise that Vera was going through. I'm not sure that's going to be a constructive approach to try to say that Article 1 is undermined because we have all these different effective tariff rates, it doesn't take into account, say inflation in China. Yes, they've fixed the nominal exchange rate or are restricting an appreciation of the effective exchange rate, but they also have an inflation problem that goes hand in hand with that. It's not so clear the governments can, in the long run, peg their real exchange rates. But the second reason why I'm a bit more worried about bringing in misalignments into the discussion, to the trade policy discussions, is that particularly this time in the world economy, we don't want to create a situation in which governments are reluctant to use monetary policy to address economic downturns and recessions because out of fear that there might be a foreign reaction if their currency depreciates.

So for example, to take a concrete example, let's say Japan alters its inflation target from 0 percent to 2 percent, I think that's eminently justifiable, obviously the president of the institute here believes that's eminently justifiable as well. If they do so, the yen will depreciate. The yen may even under shoot, but that's not currency manipulation. They're not doing that to achieve an exchange rate objective. That is an outcome of their domestic monetary policy choice, rather than a deliberate attempt to achieve a competitive advantage in world markets at the expense of their trading rivals. That's an economic stimulus package which I think will raise domestic demand in Japan, and with it more imports into Japan.

So it's not obviously a beggar thy neighbor policy. And here of course is where there's an important lesson in history, in the 1930's, and this is something that Barry Eichengreen has taught us about the currency depreciations of the 1930's, as countries were peeling off the gold standard. These devaluations in the early 1930's were not competitive depreciations. They're not competitive devaluations, even though they had been so labeled in a lot of the post-war discussions of the 1930's.
Everyone was reluctant to leave the gold standard in the 1930's. They wanted to postpone that as long as possible. They weren't deliberately trying to outrun each other in pushing down the value of their currency. They wanted to resist that as long as possible. Countries were losing reserves and they undertook, when they were forced to, during an exchange rate crisis as Britain experienced in September 1931, they were basically forced to devalue their currencies and leave the gold standard. This was not a beggar thy neighbor policy. This was a reflationary policy. It got the world economy out of the great depression and it led to much better trade policies and it was the resistance to leaving golds that actually lead to a lot of the trade policy difficulties of the time.

So the bottom line, I think, is that I'm a little bit worried about labeling misalignments as an actual policy because I don't want, under any circumstance, the handicap independent national monetary policies, particularly in times when there's unemployment and other problems in the economy that might usefully be addressed by such actions. Thank you.

Alberto Musalem: Good morning. Thank you very much for inviting me to comment on these two interesting papers. I have to begin with a disclaimer. everything I'm going to say is my personal view. It doesn't reflect the views or investment strategies of Tudor Investment Corporation. And lastly, I have no PowerPoint, and as the joke goes, I hope I'm not pointless and powerless. I'll do two things. I'm going to comment on both papers briefly, then I'm going to jump to three questions which I think are important. So I'll begin with Joe's paper. I think it's a valiant and great attempt to deal with the relating capital flows to current account balances and two types of capital flows, which are official and private sector flows. I think the results are striking, the size of the coefficient as far as the one dollar of intervention deal, leading to 60 cents to 100 cents of current account surplus persistence over time, is a quite striking result.

I'm going to defer to him and to Luis Catão on the econometrics of the issue, I trust the endogeneities are well addressed. I have to say that one surprising thing about the paper, which I'm not sure is correct, Joe, with all due respect, is that capital controls aren't what drives the only partial response of private flows to official flows. To me it's very clear, being in the market, that it is capital controls that are driving the less than a one to one response of private sector flows to official flows. So I think the IMF calculations do show that, as Luis pointed out. I was surprised to see the paper didn't arrive at that same result, although as you mentioned, for some countries it does; for others, it doesn't. On average, it doesn't, and I thought the chart you put up for Japan shows clearly that for a country with an open capital account, the adjustment of private flows to official
flows is almost one to one, although there was a level effect that you mentioned.

So let me offer also a reason why capital controls might be important. Let me take an example of a—let's say China. China has capital control surely, right. It engaged in intervention over a number of years. The last year it hasn't accumulated much external surpluses and there's also over invoicing of exports, right. We know that's a way to bring capital into the country. So that's kind of a perverse result, right. If you have over invoicing back and forth then you will see, not only our private sector flows not responding to official flows, but furthermore, their current account balances are going to look artificially high because of over invoicing of exports. So it's—I think it's an important point to think about.

A natural question is, well if capital controls are an important part of the reason for the less than one to one responsive, private flows to official flows, the question then becomes when and how are capital controls warranted? And there's a whole discussion at the IMF on when that—when it's warranted and I think it's sensible. I'll come to that in a second. So, that's Joe's paper, which again, I thought it was an excellent research agenda and I'm very happy to see it.

On Vera's paper, it basically goes along the lines of, can we do more? Can we impart an enforcement mechanism in the link between the monetary system and the trade system to try and give us some teeth, which we don't currently have? And I thought that was an excellent line to explore. I—basically the paper is, the IMF has the right to call a country manipulator but hasn't done that. The WTO has the right to call a country a frustrator, in terms of frustrating the WTO rule. I think she said that. I'm just repeating what she said earlier. Neither of those two instruments have been really used. The question is how to bring them together, and Vera very astutely tries to map exchange rate misalignments and tariff equivalents, right, which is a tarification, which I thought was a very astute way of bringing the two things together. The one question I would ask or maybe problem the paper has, and with all due respect, is that in adding the exchange rate misalignment over the WTO tariffs bounds, there's an implicit assumption there that the WTO tariff bounds were already calculated at fair value exchange rates, right. And I'm not sure that was the case. So we need to be careful in doing that mapping, that tarification calculation.

So the solution proposed, I think, goes in the right direction, which is if a country is perceived to be misaligned, the question's open as to how to define misaligned. We don't have good models for that, but I think reasonable people can agree over a number. What is it? I think you proposed six months, which I think is a short period of time, but you know
it's a start. And the bounds were 10 percent to 15 percent and that should trigger some sort of WTO consultations. That's the way of giving it teeth. I thought that was a nice way of integrating the IMF and the WTO purviews. I would just say that we've got to be careful not to go down the road of protectionism, right, because you could very quickly—it's a slippery slope, and could go down that way. So those are the comments on the two papers, which I thought were excellent.

I think a question that wasn't really asked and I guess the previous speaker did kind of touch on it is, are we in a currency war, right? I think there's a presumption that we are, but I kind of disagree with that and I think there are tensions in the trade system and tensions in the, in the monetary system, but I don't think there's a currency war. I don't see deliberate attempts to devalue and beggar thy neighbor policies. What I see is the core countries facing very deep, very large output gaps and the thread of this inflation trying to make the pie larger for everyone by pursuing aggressive nonstandard monetary policies for the purpose of generating growth and precluding deflation or disinflation. So the question is, if we weren't at the zero lower bound and if we were using a standard monetary policy and if the US were easing policy aggressively by lowering interest rates and that was causing some pressure on the dollar, would we be talking about currency wars?

And the answer is, probably not, right, because it's just standard monetary policy. So we're doing it a little differently this time. We're using nonstandard policy, which is by purchasing long-term assets, the goal of which is to target the long-term interest rate instead of the overnight interest rate, so we're targeting interest rates. We're just not targeting the overnight interest rates. And if you think of it in those terms, you know we're trying to get the 10-year rate down or the term premium down to generate employment growth and less disinflationary pressures. Then perhaps the term currency war can be understood as being understood as an overstatement.

There's nice work, by the way, by the Federal Reserve Bank of New York. A recent paper was published I think this month, which tries to understand the effect of US monetary policy in normal times on capital flows to the rest of the world, and US monetary policy in current times, nonstandard policy in terms of capital flows to the rest of the world, and perhaps not surprisingly they've given us from New York, they find that it's about the same, that the US is not necessarily generating capital flows which are that much larger to emerging market countries than would have been the case under standard monetary policy easing. So again, on the topic of currency wars, are we in a currency war? Definitely there's extra analysis or trade tensions on the trade side. Definitely there's extra analysis in terms of
capital flows which are large and could be volatile and large in terms of the recipient countries.

But I think there's one other externality which hasn't been mentioned, which is the combination of interest rates of the zero lower-bound, nonstandard monetary policy and reserve accumulation on, by other countries, the combination of those three things. And once you take them altogether and draw equilibrium it's causing—and this is the market perspective I think you were hoping that I brought to the table—it's causing the currency volatility and fixed income volatility to be too low, right, re-price volatility. So one has to wonder what that is doing for the future, right, when you see two asset classes, currencies, and fixed income—arguably two very large asset classes which are not really finding their equilibrium price levels, right. So that's something that is worth mentioning and talking about.

The question of controls—Joe's paper and the comments by Luis touched on controls. When are controls appropriate, if controls are culpable for not allowing the one to one response of private flows to official flows? The IMF has come out with guidelines on when controls are important and basically what the guidelines say—I hope I don't get it wrong—is that controls are okay only after everything else has been tried, right; all macro policies have been tried. Only after your fiscal policy has adjusted, only after you have lowered your interest rate to an appropriate level, only after you've accumulated enough reserves for precautionary purposes, only if you're overheating, then capital controls are appropriate. I think that kind of makes sense.

The question then is those are just guidelines and what if some country is still using controls before all those other conditions are met? Let's say it's running a very loose fiscal policy. Its current account balance is in deficit. The currency's undervalued and—sorry, overvalued—and it's using controls. What's the enforcement mechanism there to get rid of those controls, or let the currency adjust and it isn’t clear.

And lastly, let me go to the issue of, I guess, what this conference is about is the issue of coordination. I guess we jumped right into it. How can the IMF and the WTO systems be homogenized to make coordination or enforcement, more likely? I would say that even before that, the initiatives, multi-lateral initiatives or surveillance of the fund go in the right direction. The fact that we have these spillover reports, that we have these external balance assessments, the fact that we have the maps, I think all go in the right direction in terms of shedding light on the issue and transparently winning over the hearts and minds. It's not going to get the job done, but I think they go in the right direction and I do agree that—I guess the conclusion of this panel in terms of putting teeth on the problem
that the WTO and IMF coordination be a little tighter. So thank you very much.

Adam Posen: As moderator, I have an acute dilemma. We only have 15 minutes remaining in this session. I'd love to go to the audience for questions but we've got a terrific panel and a lot of questions have been raised about the initial papers. So what I'd like to do is start with Joe and Vera. Well, the panels have had their say about Joe and Vera, so let's ask Joe and Vera and in a while, another round with the panel, and if we have any time we'll go to the audience. So Joe, go ahead.

Joe Gagnon: Let me, yes, sure. Thanks to the discussions. Let me just make three points I didn't go into. Luis, the IMF has done a bunch of work on this too and I didn't go into that and the differences between us—and I don't really have time—at this point the paper discusses this. There isn't actually—it's—you can't just point to one silver bullet that explains why I get different conclusions than the IMF. It's actually a combination of several things which I think people will have to think about. I make a case in the paper of what I do. I think the issue about what's really going on here is that this is an important issue for some countries, but not for all countries and so if you do exclude those countries or don't treat them correctly you will get a different answer. It's important to look at those countries and beyond just the discussion of instruments and the regression results, just looking at the pictures and talking about the case studies I did, I think is sort of ways I think are bolstering what I'm finding.

With respect to Alberto, actually I think you've made two very good points and I would say I don't disagree with you that much in capital controls. I think I tried to see whether capital controls can explain my coefficient in some sense, whether—if that coefficient varies by capital controls. And I don't get what the IMF found for various reasons that are complicated, but I think mostly our measures of capital controls aren't very good. I believe that you are right, that it must matter, and my sort of heart of heart says, well for a really open and efficient country, maybe the coefficient is more like 0.5, but it rises towards 1 in a country that is really, really closed. Perhaps that would be the answer, but I just can't—have a hard time—I'm still having some ideas for future work on that. And finally, an excellent point about over invoicing of exports and whether that might spuriously drive some of my results—I think that could be true in China and some other countries. I don't believe it can really be driving the bulk of my results and in particular, in earlier work I limited myself just to industrial countries, where this is probably not an important issue and I still get pretty large effects.

Adam Posen: Okay, Vera, to you. And let me ask one specific question for you to elaborate. You talked about a period before 1980 where you said that
IMF/GATT collaboration, actually worked in this area. Could you describe that a little more and did you really mean the agreement was only to deal with under valuations? In other words, not the Brazil problem, not over value. Tell us a little more about how that worked and is it a model that we could now think back to today.

Vera Thorstensen: Well, quickly. You're not discussing about manipulation and misalignment. What you are discussing here is manipulation against frustration. That is the misalignments that frustrate the objective of WTO. That's the point. Misalignment is the real thing. We have to see how far is the misalignment and how big that this undermines the rules. The second point, what we are trying to do here is that, looking for the missing link between the WTO and IMF. I remember very well, Professor Backstone in the seminar months ago, saying the big flaw of the [inaudible 01.30.08] system was that you don't have rules to put it together, trade and finance, the financial world. So this is the issue that you are looking for.

If you go to this discussion and you go to examine what happened in the Doha Round. Come on, the Doha Round is completely in impasse and why, one of the reasons is because market asset is not enough what—from what you get in the negotiations. If you introduce the misalignment to the discussion of exchange rate inside, you're going to see that all the offers in the tariff cuts is completely, again, without a little bit sense.

I fully agree with our friend from the financial world, that you have to take care about protectionist. We are completely against this and the point is again, that how you are going to solve the issue on the other round? That is, how this misalignment can really to be transformed in an incentive to export? This is forbidden. So, as to Professor Backstone history, after the Tokyo Round—the issue of exchange rate in the whole Tokyo Round was there but there is no agreement to introduce any rule to solve the issue of misalignment inside the WTO rules. And a working group was created and the result was published and accepted by the contracting party in February of 1980 and this is clear that you, the WTO, asks the GATT, ask for the help of government to calculate the issue.

So, and they establish a basket of currency, 85 percent of, the world trade. They established the period that I can agree you can discuss. Six months is too small and they use it for what? Remember that the talk around finished and you have the blow of the whole of Baton System in the 70's. So we discussed the talk around with the countries to find a way out of the big problem of the—this exposure of the Baton System. And that specific guidelines were related to a specific tariff, only for a specific tariff, for this something related to dollars or any currency and for undervalued countries only. So, but, and only the—11 countries use these guidelines to renegotiate exchange rate, so this guideline was, focused on undervalued
countries to renegotiate a specific tariff, right. That's it. So, but you have an example that 11 countries use it to renegotiate a tariff.

Adam Posen: Okay. Do any of the discussants have anything they want to say now or shall we turn to the audience? All right, let's go to the audience. Questions from the floor? Yes Maurice, please introduce yourself and fire away.

Maurice Goldstein: I'm Maurice Goldstein from Peterson. I had a question for Doug Irwin. I agree with him that misalignment and manipulation are different and that you don't want to charge countries with outcomes that they didn't create. We're going to have market failure as well as policy failure. But where I think I disagree is saying, “Well, misalignment is a problem because it's very difficult to define the equilibrium exchange rate and manipulation avoids that.” I think not.

A sensible definition of manipulation is efforts by governments to drive the actual real exchange rate away from the equilibrium or to prevent it from returning to the equilibrium. Not all intervention is bad. I mean, if we have a G7 coordinated operation and lose exchange rates closer to the equilibrium, well we don't necessarily think of that as manipulation, or if there's short-term disorderly markets. So I don't think you can really avoid that when you're trying to identify manipulation you still have to make a judgment about the equilibrium exchange rate and hence, you need the models. So they're different, but I don't think you avoid the problem that he was—the uncertainty problem.

Adam Posen: Yeah Doug, you want to respond to that?

Doug Irwin: I still think even when you have a coordinated intervention in something like that, I would say it's a judgment call, but that would be—I would say if it's coordinated it's going to be agreed upon by member governments. There's going to be—well you could talk about limits to reserve accumulation. But as long as the consultation process goes forward, I still think there's a very important sharp distinction between the two and we shouldn't just say any exchange rate movement is potentially driven by deliberate government policies to, undervalue or overvalue or what have you.

So I guess I'd just push back a little bit. Yes, there is some fuzzy overlap a bit, but I think those could be contained, whereas there's really a fundamental sync between the two and I guess my worst fear is that a government like Japan would say, you know what? We really can't ease monetary policy because our currency will depreciate and other countries will retaliate against us in the trade sphere. That I think would be unacceptable.
Adam Posen: Yeah, but just to be clear, there are two distinctions. The one is the one you just made, domestic monetary policy versus direct intervention and currency market. The other is the one Maurice made, which Joe and I have termed offensive intervention. That's to move away from equilibrium level to competitively undervalue, versus defensive intervention when you're starting at a point away from equilibrium and trying to move yourself toward that point, which, as Maurice said, requires some determination of what the equilibrium levels are. Okay, floor is open. Yes? Bill, go to the mic.

Bill: I just want to point out that Joe's approach to this problem, I would say that Brazil should be slapped on the wrist for intervening because it's one of those countries that's piling up reserves and your plan's coefficient, that means exporting unemployment and United States losing jobs. Vera says that Brazil is overvalued, so its intervention is justified. I think that inevitably that points you to something like this. If you could have a meaningful agreement, it's got to be a two trigger. You've got to both have an excessive current account surplus. I mean, they said and G20 was talking about 4 percent at one point, walked away from it, and you have to have an intervention that is significant and going in the wrong direction. Second point I'd make.

The Irwin point and the Barry Eichengreen point, that so-called competitive devaluation was a way we got out of the global depression, not the way we got into the global depression. I think it's something we need to think carefully about because that frames the entire effort to make the international system perfect. We got to do what we failed to do in Bretton Woods. Well if it turns out that the stereotype, what was the failure has a wrong sign, then we need to think carefully about whether this predicate is warranted.

Adam Posen: Anyone want to respond to that, Joe?

Joe Gagnon: I actually don't disagree with you Bill. I mean, I think they're not inconsistent. When Brazil intervenes, of course it has effects on the United States, but it—I totally agree that Brazil has a current account deficit so it's a different matter. It's defensive as Fred said, which—it just highlights the fact that we need rules here and so they're not inconsistent points.

Adam Posen: Like Bill, I was struck by Doug's rejection of the traditional characterization of the 30's as a period of competitive devaluation. And I understand what he means. He says the countries really resisted moving off gold and his book stresses the gold standard mentality as being the deterrent to getting constructive adjustment. But Doug, I think it is still true. When the countries move, the UK in ‘31, the US a bit later, when they did move, they then did put tremendous pressure on the other
countries who had not moved, who among other things then put on more trade controls, as you showed. Capital controls had continued weakness of their own economies. So the impact of some countries moving but others not moving was a la traditional understanding and even if the term may not be quite right, I think the dynamic is still very much in the traditional mode of what we were all worried about and try to prevent with a more effective monetary system today. John or Doug, you want to come back to that?

Doug Irwin: Yeah, I just want to say you're absolutely right. It's the way things unravel that was very destructive and if they had reached an agreement earlier that they should all do it, they could have kept the exchange rates aligned; just agree to a coordinated extension monetary policy, they could have avoided a lot of the difficulties of the period. But because it was staggered, it led to a lot of different problems.

Adam Posen: So let me push you and ask you—so, and I think this is true for having read your book again—do you concur that the current problem, whatever we label it today—manipulation, prolonged misalignments—runs the risk of replicating what happened in the earlier period, and once again systemic flaws and gaps really exacerbate that risk?

Doug Irwin: I think that’s a discussion we’re going to have, so I’ve got—I’ll have comments on that later. I don’t think it’s as bad as the 30’s because I think policies pushing in the right direction, I guess that the counter to the 1930’s is the dangers. I fear the countries would be less tempted to use monetary policy precisely because they fear, and other countries would be fearful of other countries using monetary policy, even though they don’t realize that the domestic demand effects will swamp any exchange rate effects in terms of the demand for their exports. So there wont a beggar thy neighbor nearly as much as people suspect.

Adam Posen: Right. John?

John Kitchen: Hi, John Kitchen, U.S. Treasury, and nothing I say is part of an institutional view. In a sense, the—one of the questions I have is that the title of the conference here is Currency Wars and in a sense there’s this implicit notion that there’s a waiting for some multi-lateral approach to deal with what has occurred and I’m wondering to what extent—we haven’t really seen wars yet—but in a sense almost more one-sided, the one-sided problems that have been created and yet no more response yet to some of those one-sided aggravations. And I know, Joe that you have talked at times about ways in which say the United States could respond to a Chinese abnormal relationship in their currencies and the trade problems.
So the question I guess I’m coming to, is to what extent do we expect to see bi-lateral efforts or what are some of the bi-lateral efforts that could occur when multi-lateral efforts are not occurring and we haven’t really gotten to the currency war yet and in a sense we’re just seeing some of the opening shots that haven’t been responded to, but have been occurring for quite some period of time? That’s kind of, sort of an open ended question, but I think one of the challenges that a conference like this has to face and deal with.

Adam Posen: That nicely tees up the discussion that we’re going to have I think in the lunch panel, but let me just ask if any of the panels want to respond, and then we’ll call this one to a halt.

Vera Thorstensen: Love to respond, but the point is I agree with you. The question is we have to wait for the IMF to do something and to [inaudible 01.41:00] to work harder, take some kind of remedy for this or can we think about bilaterally accepting that. Come on. If each two countries are reaching a point that the rules of the trade are completely undermined, can we think about a mechanism to solve this? It’ll be tariff, again wow. This can be an anti-dumping. Can you use to adjust the anti-dumping rules to incorporate the exchange, the exchange misalignment? Can be an inter-subsidy? So what kind of instrument inside the WTO you can work, not to go solve the currency war, but a little bit to solve the problem of distortions because exchange rate is really introducing a huge distortion inside the trade system.

The point is can we solve this. So—or we have to go to really drastic solutions of the IMF, claiming a country, and being a manipulator. I hate the discussion of manipulator that give to ones. I am a person of WTO system. I’m looking for—come on, you are just frustrating my objectives, the objects of this agreement. Can we solve this in the kind of WTO mechanism instead of this kind of a huge pressure against the country? That’s the point. We need a drastic solution or a negotiated solution.

Adam Posen: I’m going to give Joe the last word.

Joe Gagnon: Just a—Vera, your answer reflects your experience at the WTO, but as a Brazilian I’m a little surprised that you didn’t mention also the macro options. Brazil is intervening to somewhat offset these effects. Brazil has put capital control to somewhat offset these effects. As a macro economist I think that I like that better.

Adam Posen: Well, this has been an extraordinarily rich discussion. I say that often, but it clearly was well justified here. Vera and Joe gave us an attempt, and I think a more than attempt, a largely successful step forward in trying to substantively engage with these issues that are so emotional and often
become so tactical, but trying to blink them back to the fundamental economics. I want to thank them, but I also particularly want to thank Luis and his colleagues at the IMF who have been engaging very deeply with Joe, as I think was reflected in the discussion in the honest spirit of debate and the honest spirit of trying to do the right thing, which is what both—I think this institution and the IMF are about.

And Doug and Alberto both gave us perspectives that I think are very important genuinely, the historical and the monetary. I will just say apropos of Maurice’s exchange that this has been an ongoing sort of debate within the institute and it’s good to have it out in the open of how much, whatever response you make to this frustration that Vera terms it is based on behavioral questions versus targets. How much is it a question of misalignment and how much is it a question of active intervention? And obviously, I don’t think we’re quite there yet, that we can say you have to have both. There are some people who would argue, all you need is the behavioral, which in a sense is what the G20 is about. I’m not saying that’s right, but this is a live issue and it is a very good jumping off point. We’re only about three minutes late, which isn’t bad. So I’ll ask you all to take a break, enjoy our hospitality, and we’ll see you back here at 10:30 for the next panel.