

Transcript of the Event "Global Economic Prospects: Spring 2011"

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Michael Mussa: It's a pleasure to be here once again. Two years ago when we had this meeting we were at the depths, it turned out, of the great global recession. And the question was what Alice asked, down, down, down, when will it ever end? And then what will the recovery look like— an L or a V?

Well, the results are in. I would say that's a V. Looking forward to global economic prospects, this is the summary. We see the evidence of the other key feature of the global recovery—a rather sharp divergence between the powerful recovery and emerging market in developing countries and the anemic recovery in the advanced economies.

The recovery in developing and emerging market countries has been sufficiently strong that they are now not only above where they started before the great global recession, but nearly back to their potential output level in most cases. And the forecast is basically that they're going to grow about in line with what I estimate their potential to be.

For the advanced economies, we have not recovered our loss and output in the recession. The United States has just done it. Canada is a little ahead of us. Everyone else basically in the advanced economies, at least in Western Europe and so forth, is still not back to where they were. So there's still an important output gap to close, and I think we're going to begin closing it but at a pretty sluggish pace. So that's the basic economic forecast which yields an estimate of 4.3 percent year over year growth next year and 4.5 percent, a little bit stronger, the year later.

Now there are a lot of risks to this scenario: the turbulence that we have seen recently in the Middle East and the uncertainty about the movement in oil prices. The increase you have already seen is certainly a negative for growth in the near term, but it could go higher or could go lower. Other prices have been rising pretty rapidly for commodities, which have been eating into consumers' real incomes, and the general inflation rate has been picking up and occasioning considerable tightening of monetary policy already tight in many emerging market countries.

We also have the uncertainty about the sovereign debt situation in Europe, and we have problems of fiscal consolidation that need to be faced in most of the

advanced economies. And we face the issue of, at some point at least, moving monetary policy back from extraordinary ease to at least neutrality. So I'm going to spend a little time first on the emerging market and developing countries and then turn to the industrial countries.

Briefly here, the story is that a number of economies bounced back very strongly from the global recession, and the growth we had in 2010 is unlikely to be repeated at quite that pace in 2011 and 2012. That's true for China and for India and pretty much the rest of emerging Asia. In Central Europe and the Middle East, Turkey had a very strong year last year and they won't quite repeat that. Poland, which did reasonably well last year and avoided most of the effect of the recession, should do about the same.

The rest of Central and Eastern Europe, some of which have had pretty deep problems, should do a little better. So I expect them to be, all of them together, about the same, with Turkey falling back a little bit. In the Commonwealth of Independent States (CIS), well, oil prices are up and that's helped Russia and Kazakhstan and a number of the others, and they may do a little bit better this year than they did last year, but not much of a difference. Marc will talk about the Middle East and North Africa.

There I have tentatively cut the growth forecast this year to 1 percent. Egypt is one of the largest economies in the region, and it's clear the disruptions are going to have some important negative effect on GDP growth in the first half of this year. On the other hand, the major oil-exporting states are spending a lot of money to buy off social protests, and that may, if anything, provide a little bit of a boost to economic activity, certainly to imports.

So I still expect positive growth for the region as a whole, but the turbulence will cut into it considerably. I want to focus mainly on the advanced economies since my two colleagues are going to deal with the developing countries. When we look at the advanced economies, first, Japan: In Japan obviously the earthquake and the tsunami and the nuclear accident are taking their toll. GDP in March will undoubtedly drop, and April looks like we'll have a fair degree of disruption as well.

The first half of the year will be no better than zero GDP growth. But I expect that we'll get a fairly powerful recovery beginning in the spring and then gathering strength in the second half of the year and following. So while the growth will be strongly negatively affected this year, it will pick up again next year.

In Australia and New Zealand, the story is not quite so extreme but basically the same. The floods in Queensland, Australia, in January, the earthquake in Christchurch, New Zealand, are going to have a negative effect in the short term, which is going to pull GDP growth down this year, but the recovery will push it back up again next year. The Canadian economy has been doing fairly well and if we look at how we've done during the recession and the recovery, the Canadian economy is really the only country which has come back to a GDP level that is above where it was when we started the recession.

The United States is barely above it as of the end of the first quarter. All the rest of them are below it. There's still some slack in the cooler areas of the Canadian economy, that is to say not mining and oil. And so I think a reasonable forecast for GDP growth is a little above potential in the 3 percent range rather than 2.5.

That brings us then to Western Europe. As this chart reveals, the United Kingdom and the Euro area, Western Europe more generally, remain well below output levels before the recession started. Their recessions were fairly deep. They came a little later than ours, and the recoveries have been fairly tepid. Though I would have to note that the last year's recovery despite all the fears of the sovereign debt crisis actually turned out to be very close to my forecast of 2 percent positive growth thanks to Germany, which turned in 3.5 percent year over year growth last year. Well, I anticipate that the United Kingdom will have a relatively sluggish but still positive growth year at 1.5 percent or thereabouts.

My forecast is actually a little above the midpoint of the range. But the entire range of forecast for the United Kingdom this year—in the consensus forecast and in the blue chip in the Economist poll—everybody in the range is positive. I take note of that because the United Kingdom has a very substantial fiscal consolidation underway, and nevertheless, with the aid of depreciation of the pound sterling, forecasters generally think that growth will be positive.

So fiscal policy, fiscal contraction is having a negative effect on growth, but it's not overwhelming even for a fairly aggressive fiscal consolidation. And I think that's a message that's relevant to a number of other countries, including the United States. In Europe, there is a wide disparity of situations where Ireland and Greece and now Portugal are in deep trouble over their sovereign debt situation.

Their growth is going to be negative or not much above zero, but others should be doing a little bit better growing at potential or a little more strongly. That then brings us to the United States and we can ask what went wrong with my forecast of 4 percent growth last year and more generally, the recovery of 6 percent or better growth for the six quarters ending at the end of last year. This breaks down the forecast and the results, and we only got a \$571 billion gain in real GDP versus a forecast of \$838 billion.

So we fell well below my forecast for GDP growth. Part of the reason for that was consumption. But actually the forecast for consumption was it would grow by half as much as the increase in GDP as households raise their savings rate. We came very close to that half figure, a little above it. Net exports and government purchases also came very close to forecast. Government purchases were a little weaker.

State and local governments were a little weaker, and the federal stimulus program is a little less than what I expected. But the main problem was with the forecast of investment. And in investment, while inventories were stronger, equipment and software were stronger, structures—nonrented structures—were basically bang on. The problem was that housing investment did not recover as I had anticipated and as has been the pattern in every business cycle prior to this one.

Housing starts to shrink before the recession for the economy as a whole starts. It then bounces back strongly with recovery of the overall economy. That just didn't happen this time. And when we look at the significance of what's been happening in residential investment, from the peak to the trough—peak of residential investment to the trough of the business cycle—we lost \$450 billion of residential investment. From the peak to today, we lost \$458 billion of residential investment.

In contrast, the entire decline in GDP during the recession peak to trough was \$554 billion. So much of the decline in GDP during the recession, 80 percent of it, can be attributed to the falloff in housing investment, which just has not come back at all from where we were at the recession peak. Now housing was only 6.3 percent of the economy at the peak of the housing boom. It's now 2.4 percent of the economy.

So that's where the problem of having a recovery that is less dynamic than we would normally expect primarily lies. Why is that? Well, I don't think it's uncertainty about the effects of Obama's healthcare program. That doesn't really work in the residential sector. Nor do I think it's regulation of the mortgage market; that may have some marginal effect. The main problem has been that in this residential boom, unlike any preceding boom, it affected not only investment, it also affected prices.

Real residential prices doubled between 2000 and 2006, and they've now fallen by a third, so they're about a third above where they were. And that drop in prices has enormously disrupted the entire residential market. Despite the actions of the Federal Reserve to cut interest rates, the takeover of Fannie and Freddie, continued funneling of credit to the housing market in efforts at some mortgage reform—this is a problem that is just going to take time to work itself out.

We built up a big problem, had a big party, and now we're experiencing the hangover, and it's going to take awhile to recover. Now my forecast for the US economy: The fourth quarter figures say we're going to have a fairly good year this year, 3.8 percent growth. I was considering pushing it up to 4.3, but recent events have caused me to cut back a little bit but falling next year.

The key reason why I expect slower growth next year is that I expect government purchases to shrink by about 2.5 percent over the [next] two years. That's actually the smaller part of the effect of fiscal consolidation. The 2 percent cut in the payroll taxes due to expire next year, the incentives for business investment through full expensing expires at the end of this year. Other tax cuts are also temporary.

Now I think some of those things will be partially extended, and the forecast assumes we don't get it all. But there will be additional tightening of fiscal policy at the state and local level and at the federal level as well. So, fiscal policy is going to be an important negative. What's offsetting it is, well, I assume that housing will begin to turn around a little bit this year and significantly next year. I also assume that with a highly competitive dollar and with strong growth in the rest of the world that US exports will continue to grow at about a 10 percent annual rate this year and next.

So the strength in exports and the beginnings of a powerful recovery in housing are going to offset much of the downward pressure from a tighter fiscal policy and keep growth in a respectable range. If we achieve those results, then I would expect the unemployment rate to fall further to about 7.5 percent by the end of next year.

Finally, what about monetary policy? I was not particularly a fan of quantitative easing 2 (QE2), but we've got it and I wouldn't stop it at this point. But I don't think we really need more of it either. The problems with the US economy and the recovery are something that even easier monetary policy is not really going to fix.

I think the key danger with it is not simply that at some point it will generate inflation, but the last time we did this in 2004 to 2005, we got the housing bubble at least as part of the consequence and now we're trying to unwind that mess. So I think there's a problem with having monetary policy too easy for too long. It's exceptionally easy now. I don't think we need more of it. And this forecast assumes that the Fed will stop at the end of June and that monetary policy will begin a gradual process of tightening late this year and in 2012.

Nicholas Lardy:

I'm delighted to participate in this event and want to start out by just quickly reviewing how China came through the global crisis in the first year of recovery. And I think its performance, quite frankly, as Fred already indicated is really stellar, whether you're looking at output growth, growth of trade, or growth of foreign direct investment (FDI). China is a big outlier. Its growth slowed down a bit in 2009 but not by very much, and reaccelerated last year.

Its trade growth fell in 2009, but not by nearly as much as global trade fell with biggest decline in 60 years. Last year, China's trade growth was very, very robust as you can see in the diagram, putting its trade in 2010 well above the previous peak whereas global trade in 2010 did not recover to the 2008 level. China had a slowdown obviously in foreign direct investment but nothing like the huge negative change globally. And then last year global FDI stagnated basically at the very low levels of 2009, whereas China recovered by around 25 percent.

So I don't think it matters what metric you use, China looks very, very strong. I think there are many factors one could point to, but I always emphasize three. First, China's financial institutions had de minimus exposure to the kinds of toxic financial assets that were generated by Western financial institutions. It began or went into the crisis again the opposite of many other developed countries with very low levels of debt in the corporate, household, and government sectors.

And they had a very, very strong stimulus program that was large early on and well designed. It got underway in the fourth quarter of 2008 and continued all the way through last year. So a pretty stellar performance. Nonetheless, as Fred indicated, there are a lot of critics out there who say that this growth was achieved in the short run, but the seeds for long-term problems have been sown, and that we should anticipate a fairly sharp slowdown in China's economic growth going forward.

And I'm just going to quickly run through some of these criticisms, seven of them in particular. The one that has gained a lot of attention recently, of course, is the threat of inflation and that the authorities will have to step on the brakes fairly sharply sooner rather than later. And that monetary tightening will lead to a sharp correction slow down in GDP growth.

This is a diagram that shows you monthly increments of new credit coming out of China's banking system.¹ And you can see there were some staggeringly large increases in the first half of 2009, but I would assert that monetary [policy] has actually been underway now for more than a year. And if you look at it in terms of annual growth rates, 2009 was spectacular. Credit expanded by more than 30 percent.

Last year we're down to 20 percent, and the first two months of this year we're down to a rate in the mid to high teens, something in the neighborhood of about 17 percent. I think as we continue through the year, we will see some further slight reductions, and we'll be back to a situation where we will have monetary growth. It's roughly consistent with GDP growth of 9 to 10 percent and inflation in the neighborhood of 3 to 4 percent. Year-over-year inflation last year was 3.3 percent.

So I don't see a dramatic slowdown in China's economic growth in response to substantial further tightening to bring inflation under control. I think they are converging towards a path of monetary growth that is consistent with price stability and that that convergence has been underway now for quite some time.

Now, another critique is [focuses on] this huge increase in credit—this argument is in some ways the opposite of the first. The huge increase in credit [is] going mostly to state-owned companies because it's going to produce a lot of excess capacity. It will put downward pressure on prices, and then profits will fall, and we'll have a substantial increase in nonperforming loans, and there will be a fiscal cost for further bank recapitalization. My take on that is to look carefully at what's happening to medium- and long-term loans. These account for about 60 percent of the loans coming out of the financial system.

These are the loans used to finance fixed investment and, as you can see from this diagram, certainly in 2009 half of all these loans went for infrastructure projects. The manufacturing sector only got about 10 percent of all of the loans extended of medium- and long-term tenor. And that hasn't changed very much in the first three quarters of last year. Manufacturing is up a tiny little bit.

Infrastructure is down. But this does not look like a banking system that's pouring lots and lots of money into traditional state-owned industries, particularly in the manufacturing sector. And when you drill down a little bit, for example, and look at the steel sector, which is considered to be the kind of best example of an industry that has tended towards excess capacity in recent years, you look at overall investment in China in 2009, it rose by 30 percent.

¹ See presentation "[The Economic Outlook for China](#)," [pdf] presented at the Global Economic Prospects event held April 4, 2011, for this and other figures mentioned in the transcript.

Investment in steel went up 3 percent. In 2010, overall investment went up 25 percent. Investment in steel went up 6 percent. So I don't see much evidence of the creation of excess capacity that's going to come back and lead to falling profits and an increase in nonperforming loans and have fiscal implications for the government.

The third criticism focuses on the so-called property bubble, and this is their official index of prices in 70 cities, and the shaded areas show time periods in which the government instituted special macroprudential measures to control or to mitigate the increase in housing prices. I think the general argument that I would make is that the monetary authority for a period of more than four years has been relatively successful in considering asset prices in the conduct of its macroprudential policy.

The periods that are shaded in very light pink are the periods in which they have imposed these measures, and they're basically of three types. First, they have increased the down payment requirement if you're taking out a mortgage for a property that you're not going to live in. It's not going to be your principal residence. The normal down payment is 20 percent. And the period when these measures have been in effect originally in the first shaded period, it was 40 percent.

It started out 40 percent in the second shaded period. Then it went up to 50 percent. And as of January this year, if you want to buy a property that you're not going to have as a principal residence, you have to come up with a down payment of 60 percent. The second penalty for investors or speculators or whatever you want to call them, is that the interest rate you will pay on a mortgage for a property that's not your principal residence is much higher than a mortgage for a principal residence.

The premium in terms of the interest rate has varied over time in these periods when these asset-targeting measures have been in effect, but it has never been less than 30 percent and some periods it's more, it's 60 percent. The third instrument that they use is—China has not yet implemented on a widespread basis a property tax, but they do have a property transactions tax which is 5.5 percent. In normal times, if you hold a property for more than two years, you're exempt from paying the tax.

To discourage speculators or investors, whatever you want to call them, in the periods when asset targeting measures are in effect, you have to hold the property for five years in order to avoid the tax. So these measures are very specifically focused not just on housing but on buyers of multiple properties. There's nothing in these measures that discourages first-time buyers. Well, you can see the results within a quarter of the time these measures are instituted, prices began to moderate.

This is on a year-over-year basis. Prices, yes, are still going up. But they go up at a slower and slower rate. And you can see then in the first period, they actually went into negative territory in the closing months of 2008. The measures were taken off at the time of the Lehman crisis as China saw that its export engine was

weakening. They wanted to ramp up the domestic property market, and they took the measures off by the closing months of 2009. Early 2010 prices were heading up towards the double-digit range again, and they reinstated these measures again. With a one-quarter lag, prices started to moderate and then we had eight consecutive months of price decline. So I don't think we're heading for a property bubble in China. And I think the regime has not gotten sufficient recognition quite frankly for the fact that it's ahead of the United States and most other advanced industrial countries in managing the role of the property sector and avoiding property busts.

Remember, in the first instance we had, the air went out of the bubble. It was not a bust. We had several months where prices declined in absolute terms, but the cumulative price correction was in the neighborhood of 5 to 10 percent. The other factors I would mention, of course, are that leverage in the household sector is still relatively low.

It's picked up a bit in the last couple of years, but total household debt as a share of disposable income is currently around 50 percent. And pre-crisis in the United States the figure was more like 150 percent and I think in the United Kingdom something in the neighborhood of 175 percent. So I don't think they're going to have a property bubble that has major systemic consequences for the financial system.

The fourth criticism that is frequently mentioned is that all this burst of lending was just pumping up investment, and since China's long-term goal for several years has been to try to get on a more consumption-oriented growth path, that this was a big setback towards that long-term objective. And here I would say first of all, the stimulus program had quite a bit in it.

It didn't hit all the headlines but had quite a bit, in that it was designed to stimulate consumption. They increased transfer payments. They increased payments to pensioners quite substantially. They had price incentives in the rural areas for purchase of consumer durables. In other words, tax expenditure, if you will, cutting the tax rates on some of these products. Household borrowing as a consequence went up substantially.

If you abstract from mortgage borrowing, the increase in household borrowing in 2009 and 2010 was equal to 1 percent and almost 4 percent of GDP. Some of that borrowing went to finance consumer durables, vehicles, and so forth. And the result was that for the first time in nine years, the consumption share of GDP as measured by the Chinese did not decline. In other words, in 2009 it flattened out.

We don't have the 2010 data yet so I can't answer the question of whether or not we're coming off the bottom or whether it was just a pause in a long-term decline, but there was a substantial portion of government policy that was pro consumption. And, in part, it was possible because the initial level of household debt as I indicated at the outset was relatively low. So China's growth in part has been a releveraging story with households taking on more debt to support higher levels of consumption.

I guess I'm up to number five which looks at the question of the debt of the government. And, of course, the headline figures for Chinese government debt are very favorable debt-to-GDP ratio of about 20 percent. But a lot of the lending that was—also, I didn't mention this—the structure of GDP also changed a bit. Services share of GDP rose more rapidly in 2009 than in any period in any year in the previous decade. I'll mention also the external imbalance.

A lot of people were saying, “Yeah, China's external imbalance came down, but as soon as the global economy begins to recover, it will go back up.” This is looking at goods and services, and you can see, yes, the decline was fairly dramatic in 2009. But even when the global economy began to recover last year, the V-shape recovery that Mike talked about, China's net exports of goods and services rose very slightly in absolute terms but as a percentage of GDP continued to fall, reaching about 3.9 percent of GDP last year compared to the peak of about 8.8 percent in the year 2007.

So if you're worried about a currency war or increasing protectionism or whatever you want to call it, stifling China's economic growth, it may be that the possibility that this is going to happen is lower than we had thought. Maybe rebalancing in terms of the external imbalance has moved further along than many people anticipated. I guess I don't have a slide on the fiscal sustainability, but the question here is the debt of local governments.

A lot of the borrowing that was done in 2009 and to a lesser extent in 2010 was undertaken by local government agencies sometimes called platform companies or conduits local investment companies. And by the end of 2009, the debt of these local investment companies was actually larger than the outstanding central government debt that we always talk about. And many people have argued that local governments invested in a lot of white elephants, the projects will never pay off, and there will be a big cost to the financial system.

Well, most of the money in fact has been used for infrastructure projects, metro systems, water systems, and so forth. And my view is that the economic returns to these projects are likely to be fairly high. China is undergoing a fairly rapid pace of urbanization. The demand for the services provided by this kind of infrastructure investment is quite substantial. The problem is not the economic return, it's the financial return.

A lot of services in China are underpriced. Every water company in China has lost money continuously since the mid-1990s. Water is underpriced. Subway systems all lose money in China just like they do in every other jurisdiction around the globe. So the solution has to be some combination of increased prices for services or that local governments are going to have to repay a lot of this debt from general tax revenue that I think will be the incremental tax revenue that will be generated by the higher growth that the infrastructure makes possible. So I don't think this is going to come back to lead to widespread defaults on bank debt with problems for the financial system.

I guess my last critique to look at is the argument that the reform really reflected or had led to the rise of the state a roll back of market reform. The Chinese have

a phrase for this [Chinese phrase], that is, the state is advancing and the private sector is retreating.

And so we have moved from a market-oriented reform process that we have seen in China for several decades to a much more state-driven one. I will tell you I am skeptical. When I look at the evidence, I don't see that this is a very strong case. And I start out by looking at who's able to borrow money, particularly during the last two years. And we don't have good data on lending by ownership, but we have some very good proxy data. Small firms are almost entirely private.

Medium and large firms tend to be mostly state companies. And as you can see here, the growth of lending to small firms, the private companies, actually in both 2009 and 2010 was substantially greater in percentage terms than the growth of lending to medium-size or large-size firms. And small firms are not so important that the absolute amount of credit that they borrowed in 2010, shown in the very top bar, exceeded the amount of money borrowed by the largest state-owned companies.

Even more outstanding is the growth of credit to household businesses. I mentioned that households borrowed a lot of money in addition to mortgages. Well, a lot of it went for small business loans, this is what I refer to in China as the self-employed. These are not small firms. These are little household businesses that have fewer than eight employees. And you can see they had an absolutely explosive growth of borrowing in 2009 and 2010.

I didn't put it on the diagram. But if I had shown you the number for 2008, the growth of their borrowing of these self-employed individuals in 2008, the year before the crisis, was about 10 percent. They borrowed a little less than 200 billion renminbi. So [there was a] very, very substantial change in the structure of lending going on during the stimulus program, with a great deal more money going to self-employed individuals and to private firms and much less money going to big state companies.

So the popular idea that bank lending by state-owned companies, by state-owned banks is going mostly to state-owned enterprises and are starving the private sector for credit I think is simply not true. And this, of course, is also borne out. Where is the growth coming from, particularly in the manufacturing sector, which accounts for about two-fifths of China's economy?

Again, you see in both 2009 and in 2010, the growth of the private sector, and here we do have—this is by ownership; these top two bars are the true private firms. Then we have some intermediate firms of ownership, and then we come to the state ownership. And private firms grew much more rapidly than anybody else in both periods.

So in addition, I would say that this idea that this stimulus program resulted in the ascendancy of state capitalism over market capitalism: I'd say there's really not much systematic evidence to support this. In the last couple of years, private firms have become the drivers both of industrial growth and of exports. China's private firms have roughly doubled their share of total exports over the last few years. They've exported almost \$500 billion in product in 2010. Well, let me

quickly say a couple of words about the 12th five-year plan. The 12th five-year plan does have a strong agenda for rebalancing China's economic growth.

I won't go into any of the details, but the critics say, of course, we've heard this all before, the Chinese have been talking about this for years: a number of policies in various domains that would lead to more rapid growth of consumption and the scaling back of the dependence on investment and net exports. Will this time be different? Well, we'll have to wait and see, but there are at least two reasons for thinking that it might be.

First of all, I think the global environment has changed substantially. Yes, we've had a V-shape recovery, but I still think that we have relatively slow growth in the United States and Europe over the next few years compared to the years leading up to the crisis. So external demand cannot be the same driver of economic growth as it was in the period, particularly say, in 2005, 2006 and 2007. And secondly, domestic investment I think must moderate, and I say that for two reasons.

I do think the infrastructure investment does have high returns, but China cannot sustain the pace of infrastructure investment that we saw in 2009 because to some extent they were building ahead of demand. So that can't go on indefinitely. And I still think property investment is too high. Mike mentioned residential property in the United States peaked at 6 percent before the crisis on an annual basis. Well, China's residential property investment last year was 10 percent.

So they need to moderate investment further if the external environment is going to be relatively weak as I've suggested. I think the alternative to rebalancing—that is, to relying more on consumption—is going to be slower growth. And although Chinese leaders may stand up at their National People's Congress and say the growth target should be 7 percent instead of the previous target of 8 percent, we all know they want a very substantial growth rate.

And I think there's a recognition they're going to have to rebalance in order to achieve it. So in conclusion, I don't see a substantial slowdown in China's economic growth as a result of the flaws in the stimulus program. I think China's growth is more strongly than ever now driven by private market-oriented activity rather than by nonmarket oriented economic activity organized by the state.

And I think they have made some progress in rebalancing the sources of growth; consumption looks stronger over the past couple of years compared to the earlier years. The external surplus has declined dramatically compared to the peak levels back in 2007 and 2008. And we'll just have to wait and see if they actually carry out a lot of the policies that have been advertised before and carry them out with enough strength, so that the rebalancing is achieved and the growth is sustained at very robust levels. Thank you.

Marcus Noland:

Well, thank you very much. I'm delighted to be here. In Fred's introduction, he likened me to a derivative product that could—and I'm quoting here—well, you could have “bought it cheap and made a lot of money.” Where's Fred? Maybe I should ask for a salary increase? We have this on videotape, and I have 200

witnesses. I was originally advertised to speak on the Middle East and as Fred indicated, events intervened, and so I'm also going to address the situation in Japan.

So let me start there. On March 11, northern Japan was hit by a 9.0 magnitude earthquake. It's one of the five largest earthquakes recorded since the advent of modern seismology a hundred years ago. The official death count at this point is over 12,000 people, with another 15,000 missing. It's a truly horrific experience. Sadly, Japan has long experience with earthquakes. On September 1, 1923, the Tokyo metropolitan area was hit by a 7.9 magnitude earthquake. An estimated 140,000 people were killed.

Three million people were left homeless. This is a photo of the posh Ginza neighborhood in Tokyo taken in the days following that earthquake.² While the Japanese have a sad experience with earthquakes, they also have considerable experience with rebuilding. That's the same neighborhood two years later. In January of 1995, the port city of Kobe was hit by a magnitude 6.9 earthquake; 6,437 people were killed. Damage was estimated to be at least 2.5 percent of GDP.

And I don't have the same before and after pictures of Kobe that I do of the Ginza, and for those I should thank Arthur Alexander who's sitting here today. I can tell you from personal experience that if you visited Kobe before the quake and then you visited it a couple years later, you would have seen a city absolutely transformed. Indeed, economic activity in Kobe reached its pre-earthquake level within 18 months.

One certainly hopes that the response to this latest disaster will follow the pattern of those earlier experiences in a very rapid recovery. There are three sources of uncertainty however. The first of these, and thankfully it's dissipating with each passing day, is that an aftershock could further destabilize the nuclear facility at Fukushima or hit more populous areas of Japan further to the south. Second, while the operators appear to be making progress, the situation at Fukushima remains unresolved.

And finally, while natural disasters are normally confined to a geographically limited region and in this case, the region of Japan hit by the earthquake and the tsunami account for about 4 percent of GDP. Considerable electrical power generation capacity has been either temporarily or permanently destroyed. And the impact of that effect is being propagated through the electrical grid to the rest of Japan, including the Tokyo area.

About 7 percent of electrical capacity has been either permanently or temporarily taken offline. However, Japan doesn't actually have a genuine national grid. It has two grids that operate on different cycles. This limits the possibility of load shifting across the country and has the effect of insulating western Japan, which includes the industrial cities of Nagoya and Osaka while concentrating the

² See presentation "[Global Economic Prospects: Japan and the Middle East](#)," [pdf] presented at the Global Economic Prospects event held April 4, 2011, for this and other figures mentioned in the transcript.

disruptions in eastern Japan, including the immediately affected region and Tokyo.

So in terms of recovery, an important issue is how rapidly consistent electrical power generation can be restored in that red grid. Part of that can be done by bringing back online capacity that has been temporarily taken offline. Partly that can be done by installing additional transformer stations to permit additional load shifting from western to eastern Japan. Partly it can be done by conservation of nonessential uses. But that remains a major uncertainty.

Estimates of the damage recovery costs vary widely, but most including the government's official estimate cluster around 25 trillion yen or a bit more than \$300 billion, or somewhere between 5 and 6 percent of GDP. Despite the government's weak fiscal position going into this crisis, that appears to be financeable. Recovery can be financed partly by expenditure switching. One of the reasons that Japan is in the fiscal mess it's in is decades of extraordinarily wasteful spending on public investment.

White elephant projects were driven by the wildly disproportionate influence that lightly populated rural districts had on national decision making. So part of the financing of rebuilding of Sendai and the Tohoku region can be generated simply by stopping, at least temporarily, some of the existing or planned wasteful public investment projects. But the Japanese political system has moved quickly beyond that. They're actually talking about cutting off the flow of expenditures within the budget.

Now this isn't a complete kumbaya moment. There's still politics involved. So the incumbent party, which tends to represent urban interests, is talking about agricultural reform, and the opposition party is talking about cutting childcare subsidies. So there is a range of issues on the table. But nevertheless, reductions in current expenditures and possibly tax increases or foregoing anticipated tax cuts is another way of generating funds to rebuild northern Japan.

And, of course, the government can issue more debt. And for reasons that have been well rehearsed here at the Peterson Institute, the fiscal position of the Japanese government is better than the frequently headlined 200 percent of GDP accumulated debt figure would lead one to believe. Net debt is roughly half as large. That is mostly held by the Japanese public. And so in terms of issuing more debt, the government has more room to maneuver than many other governments would have under similar circumstances.

A lot of interest has been expressed about the impact on the world economy via supply chains. And as Mike argues in his piece, this is unlikely to be macroeconomically significant, though obviously it affects individual firms and their supply chains. And indeed these disruptions have spread internationally including to the United States. But the bottom line is, in short, this time it will be no different. Japan will recover. Japan will rebuild.

Which brings me to the Middle East, where this time it really may be different. Across the region, countries face a similar set of difficult long-run challenges relating to employment, globalization, and political stability, which have come to

the fore in the last few months. In the interest of time, I am going to paint with a very broad brush. Of course, it should be said that there is a lot of diversity across the Middle East.

And so how things play out in individual countries will vary from country to country, at least one hopes so given the example of Libya. The fundamental challenge that the region faces is the demographic imperative to create jobs, particularly for politically volatile urban educated youth. The region has the world's lowest employment rate; youth unemployment is roughly twice the world average. On the back of the commodity boom of the last several years, the situation has been improving.

Measured unemployment has come down across the region. Some of this is real. Some of this is a bit of an illusion, where the numbers disguise underlying labor market problems, particularly in North Africa where much of the official job growth numbers are accounted for by public works employment and agriculture, and where productivity is actually declining and [there is] a liberal classification of informal homework and cottage industry activity as formal employment.

With some exceptions, employment has not been growing in industries where productivity is increasing, suggesting that it does not appear to represent an expansion of rising dynamic sectors. Estimated unemployment for young people aged 15–24 is more than 25 percent, roughly double the world average. And it is positively correlated with educational attainment.

In Egypt, for example, the likelihood of being unemployed for a young college graduate is nearly ten times that of someone with an elementary school education. And while Egypt is the extreme case, it is not alone. This positive correlation between educational attainment and unemployment holds for every country for which the data exists.

Now lurking beneath the surface in all this is politics. And while the region's contemporary economic performance may not be distinctive, its enduring authoritarianism is. What the last three months have shown is that the region's apparent stability may be just that, apparent. And may in fact mask brittleness, something that Howard Pack and I argued in our book [*The Arab Economies in a Changing World*](#) that Fred mentioned in his introduction.

The Middle East region really is unique. On the left hand panel is data from the Polity Four project. This is a project that's run out of the University of Maryland in which political systems around the world are rated on a scale of minus ten to positive ten. I don't know why our scale goes all up to 12. I guess we're into the supernatural.

Minus ten is absolute despotism. Positive ten is democratic nirvana. And what you can see is of these broadly grouped regions of the world, the Middle East North Africa region is the only one that is below zero, that tends more towards authoritarianism. Moreover, if you look at the right hand panel, that's the number of regime changes over a period of 45 years. And regime change in this context has a particular definitional meaning. It doesn't mean regime change the way the Bush Administration was practicing it.

But the point is, is the Middle East and North Africa (MENA) region is the world's most stable other than the big industrial democracies of the OECD. So it really is unique combining of authoritarianism with apparent stability. Now that situation is ironic in certain respects. Over the last two generations, the region has experienced truly impressive improvement on a wide variety of social indicators, such as life expectancy, infant mortality, literacy, educational attainment, narrowing of gender differences.

Spectacularly so in some cases. And neither absolute poverty nor inequality outside the oil producers is high by global standards. But despite that, polling data suggests that these in general are not very happy populaces. Response patterns indicate that the discontent is related principally to concerns over employment and lack of a political voice. So those are the two themes: It's employment and political voice.

Now in the short run, as my colleagues Mohsin Khan and Svetlana Milbert have documented, many of the region's governments are busily handing out bonuses hoping to forestall opposition as I think Mike mentioned in his presentation. All the countries experiencing political instability, particularly those without energy resources could face financial crisis, capital flight, and contraction, and a need for external balance and payment support either from the International Monetary Fund (IMF) or some other source, such as Saudi Arabia either directly or routed through some intermediary or perhaps even China, which might be interested in seeking enhanced diplomatic influence and access to critical energy supplies.

In the medium to long run, however, the underlying structural issues are going to come back to the fore. And there are two broad possibilities about how these regimes may respond. In the optimistic scenario, enhanced political legitimacy as the previous authoritarian regimes are displaced could create a political space for reform.

In the countries lacking a super abundance of natural resources like Syria, for example, a new government could begin dismantling the rent-creating economic distortions that have been used to create and hold together political machines that have contributed to inefficiency and corruption. And in countries with supernatural abundance of resources like Libya, for example, resource-derived rents could be redirected away from vanity projects and into a more constructive direction.

Political liberalization could unleash entrepreneurship and dynamism, reversing the brain drain that has very much afflicted some of these countries and drawing in new technology and investment. A more negative outcome is also possible however. The newly responsive political systems could actually impede or reverse reforms already underway across the region over the past decade, worsening the long-run prognosis.

It is increasingly evident that rightly or wrongly, these reforms that have been undertaken with varying degrees of enthusiasm across the region are widely regarded by the region's publics as having contributed to inequality, corruption, and in the context of rising food prices, impoverishment. So which way might the

new political forces go? If you listen to what the region's publics say, they do not appear to be particularly antimarket, but they do appear to be skeptical of neoliberal reforms and globalization.

For example, in a Pew poll only about a third of Egyptian respondents indicated support for closing large inefficient factories even if such closures brought greater prosperity in the long run. In the national capitals, a prime source of extra electoral instability could be unemployed urban youth. And whoever ends up heading these new politically less secure regimes will be sensitive to their needs regardless of ideology. One obvious response would be populace policies.

Despite the lack of a populace tradition, it would be hard to imagine that no politician would not advance a platform based on catering to public employees, the unions, and consumption subsidies for everyone. The problem is that a key constituency to be mollified is urban educated youth, as I showed in the previous slide, many of whom have majored in subjects that do not map easily to the demands of private employers.

And while a Keynesian program of public investment might be understandable and self-limiting, the natural temptation under these circumstances will be to permanently expand public employment and the size of government. And while macroeconomic management in the region has generally been pretty good, countries without the resources to fund such binges could face macroeconomic crises, collapse of the exchange rate, bringing the IMF back into play and revive concerns about globalization, neo-imperialism, and so on.

The wild card in all of this for both the region and for the world itself, as Mike mentioned in his presentation, is the path of commodity prices. Depending on how the instability spreads or doesn't spread among the energy suppliers, one could imagine a wide variety of price paths. For example, if oil production in Libya is disrupted for a significant amount of time, the price of oil will rise as we've seen it already has. That will hurt the oil importers within the region, but it will actually benefit the oil exporters who will have greater revenues to buy off local opposition, or in the case of Saudi Arabia, actually help out its neighbors as it is attempting to do in Bahrain and will presumably try to do in Yemen as well.

Then you have a bunch of second-order general equilibrium effects through the world economy on remittances and so on that are going to have varying impacts across the region depending on the linkages of specific national economies of the outside world. Rising food costs have contributed importantly to discontent, but the region's governments have little control over those costs at the world level. Now they can insulate their publics through subsidy schemes, which some of them do. But they have little control over that, and further increases could aggravate the situation either directly by contributing to rising domestic food prices or putting a greater squeeze on the government budget. Or likewise, if world food prices come down, it could be a political windfall either by generating lower prices to the public or by freeing up other resources in the state budget.

So, in short, the region faces real economic challenges. It's possible that political honeymoons associated with the relaxation of authoritarianism could generate greater leeway for governments to pursue reform. But it's equally likely that the

political disruptions could set internal and external dynamics in motion that would make addressing the underlying economic issues much more difficult and contribute to an environment of political instability for a sustained period of time.

For the rest of the world, as my colleague Mohsin Kahn has pointed out, the immediate narrow impact of these events in the Middle East has not been great in the economic sense, at least for those not directly affected. The global economic issue is potential political contagion to the gulf countries, which together supply about 15 million barrels of oil a day or about 17 percent of world production.

Egyptian or Tunisian or Libyan—hope not—style political unrest obviously has the potential to create supply disruptions in Saudi Arabia, Kuwait, and the United Arab Emirates (UAE). And major oil price increases as we saw a couple years ago in 2008 certainly can't be ruled out, and as Mike has indicated, would be very harmful for world recovery. However, the possibility of those sorts of major supply disruptions with significant amounts of oil being taken off the market would seem to be rather small in the near term at least.

Thank you very much for your attention, and I look forward to our discussion in our remaining time. And I look forward to my next annual review with Fred.

Question and Answer Session

Fred Bergsten: Leaving aside Marc's latest comment, I simply note that he refrained from noting that a true Keynesian expansionary policy in the Middle East could literally comprise building pyramids. Okay, the floor is open for questions on any of the presentations that were made. Please identify yourself and fire away.

Brooks Colburn: I'm Brooks Colburn. I'd like to hear from any of you: What do you think about the probability of any nation actually defaulting on its sovereign debt?

Michael Mussa: Well, of course, we've seen sovereign defaults before. They have not been that infrequent, and I am sure that we'll see them again. Now one needs to be careful about what the definition of a default is. Technically, Paul Volcker and Jacques de Larosière assure me that in the debt crisis of the 1980s no Latin American country, in fact, defaulted and that's literally true. There was not a legal default, but I think we had much the same result.

There was effectively a restructuring of the debt. I think in Europe that's the most likely course by far. There's going to be a backdoor restructuring of the Greek debt. The amount of official financing will expand. Banks will be persuaded to roll over the debt. The European Central Bank will support this operation. Legally, a sovereign default is an extraordinarily messy business, and I think that there will be a great incentive to avoid that degree of clarity. Or as I comment in my paper, "Muddling through is a particular European accomplishment" and I expect they're going to continue to muddle. We muddle a lot here too. It's the way business is done. When you get a default, by that I mean explicitly you have a collapse of the entire regime, and that's not what we're seeing in these countries. So Sudan did indeed default, but it ceased to exist as a country, and there are a number of others in that category.

David Wessel: David Wessel from the Wall Street Journal. Nick Lardy, what are the risks that something could go wrong in China? What things worry you the most?

Nicholas Lardy: Well, implicitly, I think I already answered that. Implicitly, my greatest worry is that they are for political economy reasons not able to follow through on the kinds of programs that are outlined in their 12th five-year plan, that they cannot get consumption growth growing more rapidly to become a significant driver of the overall GDP growth, and that the economy slows down substantially. I think that's probably the biggest single risk. There are a lot of forces that don't want to rebalance the economy.

All the provincial people on the coast are in favor of continuing to have an undervalued exchange rate and growth based on exports. There are other people who don't want to undertake the kind of financial reforms—the liberalization of interest rates and so forth—that would be necessary to contribute more to the growth of household income. I mean financial repression is a huge problem for China because it involves a very high implicit tax on consumers. That has to be ended, but it will be messy.

David Wessel: Nick, following up on that and broadening the question, any significant risk do you think of political instability in the Chinese authoritarian system? There've been some stories that maybe what's going on in the Middle East will have some spillover even to China. We know there have been some anxieties expressed on the part of the Chinese leadership. Do you see anything of that type as possibly rocking the economic boat?

Nicholas Lardy: Well, I always think as an economist I shouldn't comment on a question like that, but forced to do so, my answer is I think the risks of political instability in China are low, although you do have to raise the question, given the reaction of the Chinese government imprisoning all kinds of dissidents and human rights lawyers and others over the past couple of months, you wonder if they know something that we don't know. And that perhaps maybe the system is more fragile than it appears from the outside. So my short answer is: Seems like a low probability but I think there are a lot of unknowns.

Erin Johnson: Erin Johnson. This question is for Mike. I was a bit startled to see your emphasizing a recovery in housing, residential construction, partly because I think we all agree that maybe we overdid it before. And we really don't want the housing sector to go back to the size it was. We don't want it to be 6 percent of GDP again, plus we have a sense that, over some medium term, there's going to be pressures on the size of government and maybe some need to shift resources between the private sector and the public sector on those grounds.

So is there a need for structural adjustment in the US economy that is somehow not yet happening? Is it part of the reason the US recovery is tepid at the very least? And are there short-term implications of this? Are you embedding some of that in your forecast, or is that a risk to your forecast? Where do you put these structural issues?

Michael Mussa:

I think there's no doubt that significant restructuring of the US economy is needed and is ongoing. So what we've seen is that residential investment, which was 6.3 percent of GDP, has dropped to 2.4 percent. Well, I don't think it's going back to 6.3 percent, but I think it's headed back to 5, 5.5 percent, and I'll talk a little bit more about that in a moment. The other thing that happened was people were using the equity in their homes to finance a higher level of consumption, lower level of saving.

Well, now the saving rate has gone back up at least to 6 percent, so that's restructuring of the economy away from consumption and from residential investment. Meanwhile, at least if you believe the trade figures, the US real trade deficit has shrunk from 6 percent or a little bit more of GDP at the peak to a little less than 3 percent at the trough and is now a little bigger than that.

So we've restructured in the direction of lower domestic spending on consumption and residential investment, and a higher real net exports, which is I think the direction in which we should be moving. Now, what about the recovery in residential investment? Normally with population growth about 1.2 million new households are added each year, and about 500,000 units disappear from the housing stock. So in normal times you think you need about 1.7 million new housing units.

Part of what's happened is a disruption of the housing market so even people who can pay their mortgages—they don't have the gain in equity or even the positive equity to upgrade their house by moving to another one. We sort of choked that off. The other thing that's clearly happened in the recession is that the level of separate maintenance—that is to say kids moving away from living with their parents—have been reversed and the number of independent households has gone down as a response to the economic hard times.

I think as economic conditions improve and unemployment comes down, the demand for separate maintenance will probably rise back again. So the demand for individual separate housing units—which has taken a considerable knock—I mean if 2 percent of independent households recombine, that's 2.5 million units reduction in the stock demand for housing units. I think that's about what we've seen from that phenomenon. And I think over the course of time that will not entirely perhaps but will significantly reverse. So I'm talking about another roughly \$400 billion of investment of real residential investment, which would take us back not to the 784 but to about 650 on that. So back to 5 or 5.5 percent of GDP or a little less because GDP is growing, which I think is a reasonable prospect if we're thinking about a four- or five-year recovery.

So I see the recovery of housing investment being capable of driving an important part of the recovery not just in 2012 but spread out over a four- or five-year period. To get us back to say 5 percent, something like that, not 6.3 percent of GDP. Similarly, on the consumption side, I see perhaps if anything a little bit more of an increase in the saving rate. So we're going to be a less consumption, less residential investment-oriented economy in terms of our structure and more export oriented, and I think that that's a good thing and a necessary thing.

Kevin Hall: Kevin Hall of McClatchy. We've talked so much about housing I thought we stumbled on the Mortgage Bankers Association Conference. I've been to a lot of these over the years, and this is the first time I think there's been almost no discussion of international trade. Can you talk a little bit about the Doha Round, deader than a door knob. In the absence of that bilateral is Brazil, India, and the United States, anything you see happening there?

Fred Bergsten: Well, I was told never speak ill of the dead. If your question, Kevin, relates to global growth, I think Mike put it right. But beyond that, our studies show that even a "successful Doha Round," if that meant adoption of the package currently on offer, would have indistinguishable effects on the world economy. That may shock people because you hear some big numbers thrown around as to what the Doha Round could do for world trade and world growth.

My response is partly because it would be phased in over a very long period of time, at best ten years or so, but also because of the detailed studies we've done, Gary Hufbauer and Jeff Schott show that the impact on individual countries is almost indistinguishable from zero and that explains the lack of enthusiasm for completing the Round.

What their studies showed was that if the current package now on the table for agriculture and nonagricultural trade and services, which is virtually zero, if that current package was adopted it would expand US exports by all of \$7 billion. In short, so small that it wouldn't even show up in a rounding error. Now you could then as they propose, expand the package by bringing in a meaningful services agreement, by achieving some sectoral deals, by bringing some trade facilitation measures onto the table, and you could make it into something meaningful.

But at least at the moment, the economic effects of what has been agreed over these laborious ten years of talks really is quite puny. And in turn, I think that does basically explain the lack of enthusiasm, certainly in this country but elsewhere as well. Some of you were here; we had Congressman Levin here last week. He's no great enthusiast of Doha, but he doesn't really oppose it very much. And I asked him privately on the way out why he referred to it so little. He said because he never has any visitors who raise the Doha Round with him. Zero; far fewer than the Panama FTA, for example.

So in terms of economic impact, I'm afraid that's the reality. Again, you could make it into something, particularly if you brought services significantly into the equation. But at the moment I don't think it's going to affect the outlook that any of my colleagues have indicated. Colin?

Colin Bradford: Thank you, Fred. Colin Bradford from Brookings and CIGI [Centre for International Governance Innovation] in Waterloo, Canada. My question, Nick, for you: The G-20 in Korea last year ... got into a big wrangle about the framework for strong sustainable and balanced growth. What you seem to be suggesting, and this is the question, is that natural forces, market forces, are underway with fiscal consolidation in the United States and rising savings in the private sector.

And the Chinese consumption growth and external balance coming back a bit, that without much [inaudible] behavior from the G-20 in France this year, maybe this thing will correct itself without any international cooperation so to speak, that market forces are underway. Is that a correct interpretation or not?

Nicholas Lardy: You're putting it more strongly than I would. I said something to the effect that maybe the prospects for a protectionist backlash are diminishing. I didn't say they were eliminated. And quite frankly, I'm a little bit puzzled by the data that we see. The trade surplus has come down so dramatically from a relatively modest increase in the value of the renminbi over a fairly long period of time.

Obviously part of that was due to the global downturn. But now the global economy is recovering, and we see the trade surplus well under half of the peak. And in the first two months of this year, they're running a deficit and the first two months of last year, they ran a \$22 billion surplus. So I'm hedging basically because I feel less confident that we can fully explain what's happening.

Jim Kolbe: Jim Kolbe, German Marshall Fund. Michael, to what extent will the failure of Congress and the President to reach any kind of meaningful agreement on how to balance the budget or to make significant changes in the budget, the spending and revenue picture, how will that affect your projections, particularly if we're looking at trillion plus deficits stretching at least through the rest of this decade? What impact is that going to have on interest rates?

Michael Mussa: Well, I think eventually it's going to push interest rates up. I think there's a limit to how big the debt-to-GDP ratio can become for the United States, which is different from Japan in important respects. That is to say we're not financing it with domestic savings, and so we need to be careful. So we're headed up, it looks now close to 100 percent of GDP, even with some reasonable effort to limit the deficit and bring it down below the trillion-dollar level.

I am, however, a little more optimistic about what deficit reduction will ultimately deliver. We can be assured that the process will not be pretty and that this is going to be sausage making at the extreme as we get through the process. But I think we will see over the course of the next two years already significant reduction in the deficit. The stimulus package is largely expiring.

Some of the temporary measures to boost the economy adopted in the tax package will also be eliminated, and I think there will be some action on entitlements as well as on discretionary spending. There's going to be a lot of noise and hubbub in the meantime, but I think the question is: In the end, will the political system deliver a result when the public is beginning to become a little nervous about the extent of our borrowing and debt and wants these people to do something even if they don't give a particularly clear message about exactly what?

Fred Bergsten: Jim, I would elaborate on that slightly. Our newest senior fellow here at the Institute is Carmen Reinhart who has studied these issues in great depth. And if she were here on the platform, I think she would make two points. One is that coming out of a financial crisis of the type we have seen, history suggests that afflicted countries will suffer a doubling of their debt-to-GDP ratios. And so far

that forecast looks right on because the United States went into the crisis at about 40. It looks for sure that we'll hit 80 and maybe even more.

Her second historical finding is that when a country's debt-to-GDP ratio exceeds 90 percent—that turns out to be the magic threshold [according to] Reinhart-Rogoff [studies]—that you subsequently experience growth rates 1 to 1 1/2 percentage points lower than your traditional norms. Therefore, you better bring those ratios back down if you want to get on a more sustainable growth path. Now that's aggregating a lot of different countries over a long period of time, in fact, several centuries of history.

You can make arguments why the United States will escape some of that. Although you can also argue why the United States might be harder hit, namely—and she would emphasize as a third point—our heavy dependence on foreign lenders, which sometimes could make your situation more precarious and turn the international use of the dollar into a vice rather than a virtue. Only to say, that her readings of the historical record suggest that this could be quite serious.

Not that it would necessarily trigger a crisis, though it might. And she also notes the prevalence of crises coming out of such periods, that it does tend to depress growth through higher interest rates, variety of other factors. Financial repression tends to be a response by authorities to try to limit the impact of the big debt servicing costs that result from a debt buildup of that magnitude. And so it is at your peril that you let yourself in for that kind of experience.

Okay, we're at our witching hour, I regret to say. I want to thank Mike, Nick, and Marcus in particular. Thank all of you for coming.