Notes for wrap-up panel discussion

Andrew Sheng[1]

I would like to thank Governor Prasarn and Jaime Caruana for hosting this wonderful conference in this beautiful setting. I thought I was coming here for a holiday. I think we have worked reasonably hard in the last two days on this complex topic despite the festive environment. I think Jaime said it right. Central bank balance sheets have been expanding, and are even larger in Asia than in advanced markets. They are crucial tools, and we really need to think about exit strategies.

Basically, I am going to be very blunt, because I want to make you think about the issues from a wider perspective. First of all, central bank balance sheets must be seen in the context of national balance sheets. If you don't think like that, you are not dealing with the problem. Secondly, you need to think of the context and the dynamic interaction between the central bank balance sheet and the rest of the economy. As you know, when you adjust the portfolio of the central bank, there are at least four accounting entries (debit and credit) in the rest of the market, with the interaction with the commercial banks and the interaction with the real economy. Thirdly, for international currencies, there are second-order impacts on the foreign exchange market and other economies, since foreigners now own a significant proportion of national debt, especially in the advanced countries.

In short, this is a systemic problem where central banks attempt to change market behaviour through adjustments in their own balance sheets.

Now, the fundamental problem is that we are dealing with an over-leveraged system, where the corporate sector appear to be reasonably stable, but in some economies the household, public sector and financial sector are clearly over-leveraged. Furthermore, the financial sector is serving its own interests very well, but not necessarily serving the real sector very well. So are we bailing out the financial sector, or are we going to bail them in so that they actually get back to helping the real sector?

We have very, very important lessons, both at the micro level and the macro level, that we need to think through. The point I really want to make is this: central bank balance sheet adjustments are only providing liquidity to an economy that is basically suffering from overconsumption through over-leveraging of finance. This is like giving liquidity to an athlete who appears to be suffering from dehydration – you rehydrate him but you haven't dealt with the fundamental problem which could be due to exhaustion or a weak heart.

So don't make the mistake of thinking that juggling the central bank balance sheet will solve the problem in the real economy.

The second real issue is that we are dealing with loss allocation. We are already in this mess – so who pays? Central bank adjustment of the balance sheet affects the real economy through three channels – through inflation, real sector deflation, or postponement of the problems. The burden-sharing is by whoever holds the domestic debt and will be hurt by inflation, and by foreigners who may lose through devaluation, or else the losses are postponed to the future by increasing debt. So the issue is: are we dealing with the structural problems in the real economy or simply buying time so that the politicians will gather the will to deal with the painful adjustments?

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[1] President, Fung Global Institute.

As you know, the Ingves Report on Central Bank Governance is very helpful to our debate. The recommendations are very clear on undertaking unconventional central bank balance sheet expansions – you need to be transparent to the market and you need to understand what you are trying to achieve. Alec Chrystal makes the point very well that I want to stress: If your national balance sheet is problematic and if the real interest rate rises to a certain level, the national balance sheet is insolvent. The additional liquidity provided only helps you to reduce that interest rate, provided there is no capital flight or restrictions on credit.

The Asian financial crisis experience was that if the net foreign liability to GDP ratio (of the crisis economies) was greater than 50% and the debt servicing ratio was above 10%, they're bust. The crisis economies could not deal with the capital flight because they could not print foreign exchange. But G4, the four reserve currency countries (US, Eurozone, UK and Japan), have one special advantage. They can print their money to get out of this. Emerging economies cannot print their own money to service their foreign debt, because foreigners will not accept them as stores of value.

I think Alec Chrystal's point is very relevant. Furthermore, Deputy Governor Herrera makes the point that central bank action is no substitute for sound macroeconomic policy. Are central bank actions essentially a pain killer or addressing the structural problems of a huge fiscal debt overhang, a net foreign debt overhang, and additionally the shadow banking/traditional banking nexus problem[2]? If we entrench the moral hazard in continually bailing out the shadow banking system, we're going to be in deep trouble. I think the Japanese experience is very relevant, but I don't have the time to go deeper into this issue here. In Table 1, I split the world into balance sheets from the G4 countries, the reserve currencies, and the rest of the world. The G4 countries account for 55% of the World's GDP and comprise 11-12% of the world's population, and owe the rest of the world ex-Japan 6.4 trillion dollars, or 20% of GDP. So far, because they're reserve currencies, there's no way the emerging markets can pull the plug. So it really is up to the G4 countries to make the adjustment to achieve external balance.

But if you really look at the total financial assets divided by GDP, which is effectively total liabilities divided by GDP, there is no question about the over-leverage problem in the G4 countries. The fundamental issue is that, looking at the near future, emerging markets are growing at 4-6% per annum while the G4 are growing at near zero rates of growth. Consequently, the capital flows are flowing from the G4 to the emerging markets in search of growth and profit opportunities.

If we believe in the Law of One Price and a frictionless global economy, then there will be so much capital flowing into emerging markets that they would have a massive revaluation, an asset bubble followed by massive crash, so that we would have balanced recession globally. The emerging markets are, of course, resisting this – through capital controls and other measures – so hopefully the emerging markets will grow while the G4 countries sort out their structural issues and you have an imbalance in growth leading out of that situation. In other words, the trade-off is between unbalanced growth and balanced recession.

So the bottom line is that central bank balance sheet adjustment is really about trying to rebalance at the national and global level. But the collateral damage is that the capital flows will continue to add volatility, and probably make macroeconomic management much more difficult. Let's not make a mistake about that. The bulk of financial capital flows are highly leveraged. According to recent McKinsey studies, 15% of the banks' profits are made from foreign exchange derivative products and proprietary trading of volatility in foreign exchange. This incentive created what the Zoltan/Singh IMF working paper calls the non-bank/bank

[2] Zoltan Pozsar and Manmohan Singh, *The Non-Bank-Bank Nexus and the Shadow Banking System*, IMF Working Paper WP11/289, December 2011.

nexus: the way primary brokers finance the asset managers, creating liquidity (and leverage) in the system that we have not measured in the past.

The best way to think about this is to understand that the traditional financial intermediation framework has now changed. This is because the asset managers are now the most important players in the wholesale banking game. What has happened is that the prime brokers take their assets and use them as collateral to repo with the asset managers in order to obtain funding that they can use to buy further assets as collateral for further credit. Thus, in using different types of collateral (including asset-backed securities) or borrowing them from the market to lend out, the prime brokers are creating dynamic credit that is not measured anywhere. If Goldman Sachs lends somebody money to do a dollar-yen foreign exchange trade, is this measured in the US monetary survey or the yen monetary survey or what? This isn't clear.

Furthermore, when there was a flight to quality from poor weak collateral like subprime derivatives to high-quality government paper, it was the central banks that began to replace the prime brokers in providing liquidity to the market.

However, since the same collateral, because it is all book entry transactions, can go from the hedge fund to broker dealer to broker dealer, with margin settlements, trade settlements and margin settlements taking place rapidly, including offshore, there is lack of transparency on where the risks are. That is what happened to MF Global. Where did all their purported collateral disappear to? Well, they took money from their clients, but when the music stops you suddenly find that the money has disappeared. The collateral is just not there.

So we now have a very complex shadow banking system right in between the traditional banks and the asset managers, and that leverage is something that we are not measuring very well.

What does it mean? It means that excess consumption is ultimately financed through complex leverage that we are not measuring and monitoring very well. At the structural level, in the international monetary system, we have a situation whereby, because of the Triffin dilemma, the reserve currency countries are continuing to run current account deficits and debt levels that cannot be sustained. If we don’t change this fundamental structure, the imbalance is embedded in the structural system.

We can temporarily replace the lost liquidity in the wholesale market through central bank intervention, but the central bank cannot replace the bank intermediation function forever.

The problem is, if the reserve currency countries don’t sort out their long-term over-consumption and over-leverage problem, emerging markets cannot deal with this on their own. That is my bottom line. If the emerging markets cannot deal with these leveraged capital flows – this bank/shadow bank nexus – then we have serious problems on our hands, because we are not looking at this (or measuring the risks) properly.

So what does all this tell us? You really need a systemic framework to think with on this. We have always looked at global problems using a national framework. But the global money supply is not a simple adding-up of national money supply, because there is global offshore banking credit and off balance sheet credit that nobody measures at the moment. I think this is an area that demands a lot more work. We really need to think about the global credit glut that has been the major driver that has financed global liquidity, and why we now have a situation of simultaneous excess global liquidity and yet periodic system illiquidity.

The system illiquidity comes from the dynamic adjustment at the bank/shadow bank nexus. When I am afraid that MF Global will fail, I cut all credit lines, I seize my collateral where I can, and the whole system seizes up with real interest rates rising, which drives the self-fulfilling bankruptcy of major (over-leveraged) players. This is the crowded exit problem that we have now recognized. When you extend that analysis to the sovereign debt level, you find that the whole bank/shadow bank nexus, including the asset managers, through leverage, have enough firepower to destabilize whole national economies.

Consequently, we really need to look at the central bank balance sheet adjustments in the context of international financial system and monetary system reform. If, for example, one of four major reserve currencies undergoes major depreciation, what are the impacts and pressures on the other players and financial institutions? There is a risk that if we don't have a way to monitor the systemic risks in the international monetary system using perhaps global monetary data, we are exposing ourselves to systemic failures that we do not fully understand.

I think this conference has brought in many good ideas for us to do further research. We do need to look at global money now. We have moved beyond national balance sheets. We now need to look at the global balance sheet, the liquidity, and also how the financial sector must serve the real sector. In this area, the work of Professor Richard Werner is very useful. He says that credit is divided into two parts, the credit that is good for the economy, like good cholesterol, and the credit that is speculative, which is bad cholesterol. Using this analogy, there is a risk that central bank provision of liquidity has only bailed out bad cholesterol. If you look at what all the recent data have been showing, the credit to the real economy is still declining. So the equity, debt and derivative markets are still bubbly, and we have not dealt with the major problem. In one nutshell, central bank balance sheet is only part of the whole global balance sheet system, where there are still major vulnerabilities. Until we solve our understanding of the structural issues, we haven't solved any problems. I hope I've at least provoked your thinking in this area. Thank you very much.

Table 1

Reserve Country Positions vs. Rest of the World

% of Global total (2010)	G4 – USA, Eurozone, Japan, UK	Rest of the World
Global GDP	54.6%	45.4%
Global Population	11.7%	88.3%
Current Acct deficit (2008)	2.2%	
Ex-Japan	3.1%	
Net Foreign Liability	$3.9 trn. (11% of GDP)	
NFA (ex-Japan)	$6.4 trn. (20.8% of GDP)	
Total Reserves Minus Gold	16.1%	83.9%
Stock Market Capitalisation	56.7%	43.3%
Public Debt Securities	79.6%	20.4%
Private Debt Securities	81.1%	18.9%
Total Debt Securities	80.4%	19.6%
Bank Assets	65.4%	34.6%
Total Financial Assets (TFA)	69.2 %	30.8%
TFA/GDP (%)	503.2	270.1

Source: IMF Global Financial Stability Report, Statistical Appendix: Table 1 – Author Calculations

Wrap-up panel discussion

Athanasios Orphanides[1]

When I arrived in this beautiful setting, for which I want to thank the organizers, some people suggested that this must be a respite from thinking about the euro area. There was a point to that, perhaps. But it was then suggested to me that maybe we should talk a little more about the present difficulties in the euro area at this conference, so why don't I focus my comments on that.

With respect to the broader topic of the conference, it should be noted that in the euro area we have been pursuing balance sheet policies at the ECB which are not qualitatively different from those pursued by the Federal Reserve and the Bank of England. As elsewhere, these policies have succeeded in significantly lowering interest rates, as reflected, for instance, in government yields perceived to be nearly risk free.

But that is not the issue. The issue is that the major problem we are facing right now, and that is having an impact on the rest of the world, is that the euro area is not a single country and the government debt of a number of member states is no longer perceived to be nearly risk free. Following the creation of the ECB and the single monetary policy in 1999, the euro area did indeed behave as a common currency area where the single monetary policy was transmitted in pretty much the same way in all member states. As of 2009, however, this increasingly no longer works. This can be easily seen by plotting the two-year government yields for different countries in the euro area. By plotting the two-year yield, we can focus on a rate that is closely associated with the transmission of monetary policy in macro models.

The chart plots the yields of the six largest member states of the euro area, which make up almost 90% of the economy. What can be observed in the last couple of years is a divergence in yields suggesting increasing problems with the ability of the single monetary policy to function properly. Note that Greece, Portugal and Ireland are not included in this chart. That is, the chart does not include the countries that have experienced such severe difficulties that they have had to ask for assistance from the IMF and their European Union partners.

Let me briefly provide you with my take on the problem and the steps towards a solution. Let's start with some fundamentals. For a currency union to function properly, some minimal fiscal policy coordination is necessary. This can occur with a fiscal union, which in the European Union, we decided not to have. The European Union treaty prohibits member states from assuming the debts of other member states, and prohibits monetary financing by central banks in all member states.

The alternative approach that was adopted is to try to have strict limits on debts and deficits. This was the idea behind the Stability and Growth Pact. The idea was to have such a tight control of fiscal policy in each individual member state that no member state would run into trouble. Indeed, in order to avoid any moral hazard issues, no crisis management mechanism was set up at the beginning. It was assumed that the strict fiscal rules and the absence of any crisis management mechanism would be sufficient to prevent any country from getting into trouble.

[1] Governor, Central Bank of Cyprus.

Unfortunately, the fiscal framework was not properly enforced. In addition, the market discipline that might have worked to help limit large deficits in countries with a large debt did not work, because prior to the crisis every member state was able to finance its deficit at virtually the same rate—there was no differentiation. During the crisis in 2009, it became clear that some member states—Greece is the most important example—had been running deficits that were too large, and were not limiting the size of their debt. So the question was: once this was observed in 2009, how could the problem be solved?

It was no longer feasible to say we could not have a crisis mechanism in place—one now had to be created in a hurry. Then two things happened in the spring of 2010. First, a makeshift mechanism to help Greece by providing it with loans was set up. The second was to create the EFSF as the temporary crisis management mechanism. But the problem was how to provide help in a way that would avoid moral hazard in the future.

Here I want to focus on two options. The first option would have been to focus on strengthening prevention and credible enforcement—specifically, by introducing even stricter fiscal rules or constitutional amendments for balanced budgets, and to consider limiting the sovereignty of member states that misbehave, to ensure compliance. The second option would have been to raise the cost a country would face during a crisis. The first approach was not chosen in 2010 because some of the decision-making countries did not want to tighten the rules and did not want to limit their own sovereignty. So the second approach was chosen—to significantly raise the costs of handling a crisis, including the present one.

This was a very critical decision. Throughout 2010, and since then, there have been discussions about whether one way to enforce better discipline would be to introduce the concept of private sector involvement (PSI) in euro area debt. The concept was that an investor buying euro area sovereign debt would have to worry that if the country misbehaved, a haircut on the debt would be implied, even if there was no issue regarding the sustainability of the debt. Following its adoption in October 2010, this approach proved quite effective in raising the cost of financing of any country that was perceived as facing a potential difficulty. Unfortunately, it was quite damaging and was probably a key factor behind the difficulties faced by Ireland and Portugal in the few months after its introduction.

Surely, the idea of introducing PSI in euro area sovereign debt markets was meant to raise the cost of a crisis for the country involved and serve as a deterrent, helping countries avoid getting into trouble. However, it wasn't such a good idea to introduce PSI during the current crisis. Even worse were two decisions taken this year, the first on 21 July and the second on 26 October, to impose haircuts on Greek debt. I will not dwell on whether Greek debt was sustainable or not. As discussed in an earlier presentation, this assessment is sensitive to underlying assumptions and is subject to great uncertainty. What is certain is that creating the precedent that a member of the euro area would be forced to impose a haircut on the holders of its debt reinforced to investors how the PSI concept would be applied in the euro area. This is very costly. As can be seen in the chart, the spreads of Spain and Italy rose following the first decision on 21 July. Following the second decision on 26 October, which increased the size of the Greek haircut, the spreads of Belgium and France rose.

The chart shows clearly the resulting problem. Once the political decision was taken to impose haircuts on one country, international investors had to allow for the possibility that sometime in the future haircuts would be imposed on other countries. As a result, a large number of the euro area member states are now considered much less trustworthy than before the PSI decisions and face higher financing costs.

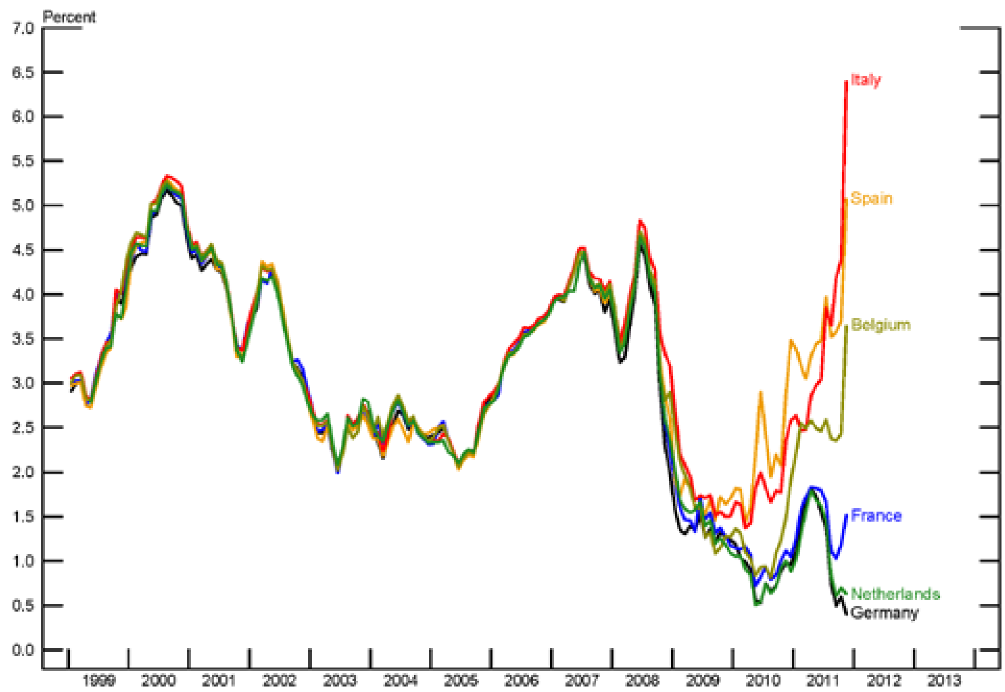
So where do we go from here? First, a positive note. The damage created by the PSI decisions seems to have been understood. A major U-turn was observed in last week's meeting of the European heads of state. The notion that private sector involvement should be expected with higher frequency for those who purchased euro area debt is now recognized as damaging, and there is an effort to remove it from the framework that is being built for the future. There is essentially an effort to go back to the alternative choice I mentioned earlier, which was not made in 2010.

Instead of raising the costs of solving a liquidity crisis when that occurs, this backpedaling is taking us to the other alternative, that of prevention and credible enforcement. A very important step that was agreed last week is the agreement that, going forward, all euro area governments will impose stricter rules on themselves by adopting balanced budget amendments in their constitutions. And there is discussion on limiting sovereignty as an enforcement device. We are going to see in the coming weeks how this will be implemented.

With this in place, if this indeed develops as projected in the coming weeks, then the second element could be discussed, perhaps by the next meeting of the heads of state. And that element would consist of finding more reasonable ways to provide liquidity, helping a country that is under market threat. This is something that we haven't touched upon yet. Here I want to note that although the EFSF was created last year, and a permanent stabilization fund is planned, in limiting the amount of resources that can be made available during a crisis we have failed to convince the markets that sufficient resources would be available in case countries such as Italy or Spain face difficulties. Now that decisions improving the governance framework and protecting against moral hazard have been taken, we need to improve the crisis management framework so that potentially unlimited backing is available from governments to other governments if needed.

I leave you with a question. A lot of analysts around the world are looking at the EFSF and saying to the ECB, isn't that your job? And the answer is no, the ECB is the lender of last resort to the banking system; it cannot serve as a lender of last resort to governments. What we have here is a fiscal governance issue that our governments need to solve. Once the political solutions are provided, once we have the appropriate framework at the political level, then and only then can we solve this problem convincingly.

Yields on 2-year government bonds



Wrap-up panel discussion

Randall Kroszner[1]

I am delighted to be able to take part in this final panel. Jaime introduced four issues for us to consider: in a nutshell, what are the policy risks associated with the expansion of central bank balance sheets with respect to (i) inflation, (ii) financial stability, (iii) financial market distortions, and (iv) debt management.

I don't want to try to address all four but would like to focus on two overarching themes. First, where is the line between monetary policy and fiscal policy? This touches on the financial stability and market distortion issues, some of which we had a taste of in Governor Orphanides' discussion. The second theme I'd like to address came up particularly in the last session and was also raised in the initial session of this conference: what is the role of central banks in foreign exchange markets, and what are the implications of their growing foreign exchange exposures? This second theme brings up some sovereign debt issues – which you will see are very closely related to the inflation risks.

Let me first talk about the fiscal versus monetary issues. These are very difficult ones. What should and shouldn't be on the central banks' balance sheets? One example that came up in the United States when I was at the Federal Reserve was the case of AIG. Here was a large non-bank entity that had enormous exposures in the credit default swap market. In fact, they were a major counterparty for all the other major institutions. If AIG had failed, there would have been no one to step in and replace those contracts. Suddenly, everyone's net exposures might have turned into their gross exposures, and there would not have been enough capital to deal with these exposures.

Is this a case where the Treasury or the central bank should have intervened? At the Fed, we considered this question. While we had some difference of views in the discussion, we unanimously decided to have the central bank intervene (partially) because there was no alternative fiscal element available at the time. Crisis management and resolution inevitably require some fiscal elements, regardless of whether the failure is in individual financial institutions or government institutions.

Of course, central bank resources are ultimately taxpayers' money. If a central bank's balance sheet sustains losses, the central bank would return less seigniorage revenue to the fiscal authority, and hence the fiscal authority's balance sheet would reflect that. So in the end, there is a connection between the two balance sheets.

In Europe, for example, it is clear that the central bank is being increasingly called upon to deal with severe fiscal problems in many individual countries. In principle, the central bank *could* act. It could continue to buy, or go much further in buying, government debt. However, this, as we know from past Latin American experiences, can be a recipe for disaster. If the central bank simply becomes the off-balance sheet fiscal arm of the State, and provides the financing for the government, then the situation ends in tears – it can result in high inflation and the destruction of the currency.

This actually happened in the United States during the 18th century. A number of people here have mentioned the blog I posted on the Freakonomics website a few weeks ago.[2]

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[1] Norman R Bobins Professor of Economics, University of Chicago Booth School of Business.

[2] This blog can be found at http://www.freakonomics.com/2011/11/30/circling-the-drain-can-the-euro-be-saved-or-is-it-doomed-to-die-a-freakonomics-quorum/.

There I argued that Europe is struggling with exactly the same challenges that the United States did after the War of Independence. The United States initially was a very loose confederation of states, based on the Articles of Confederation. But this arrangement did not work very well, in terms of both security and economics. The central government did not have the power to tax, but it did have a central bank. The central bank wound up issuing lots of so-called "Continentals" to pay the army. You may have heard the phrase "not worth a Continental" – well, that comes from the central authority issuing lots and lots of Continentals because they had no ability to tax or to force the states to share tax revenue with them. As it happens, the states in the confederation were very independent – maybe too independent – and eventually this system melted down. The economic result was very high inflation in the United States. Clearly, this approach was seen as not the right way to go – the United States recognised the need for a much more solid fiscal union and, in the end, a new US Constitution was penned in the late 1780s. In the end, the United States had to endure almost a decade of struggling with the problems of a loose confederation of states before resolving them.

Are there lessons for policymakers today? European officials appear to be taking their time in addressing the underlying issues of their union, perhaps thinking Europe has the luxury of a decade or so to work out the problems. I think if the policymakers try to use a decade-long timetable to deal with this, there is a distinct possibility that the euro area, as we know it today, won't be there by the end of that decade. Europe has to move much more swiftly. So far, it has taken two years, during which European policymakers have only slowly started to grope with exactly the core issue, that is, the need for a stronger fiscal union.

In the case of Europe, it is clear that one important part of any resolution is the need for effective fiscal monitoring across the EU. In a sense, that is what the United States achieved by the end of the 18th century. These are challenging issues, both economically and politically.

I now turn to my second theme, related to foreign exchange and foreign exchange exposures. Andy Filardo and James Yetman earlier presented interesting charts that showed that the expansions in central bank balance sheets in Asia are due primarily to increases in foreign exchange assets. This is very different from what happened in the United States. The Federal Reserve had a very large increase in its balance sheet; but it was not in foreign assets but in domestic assets. My guess is that most of those foreign assets on Asian central banks' balance sheets are US dollar-denominated assets. So it's been very interesting to see that this expansion of central bank balance sheets has largely been a dollar phenomenon worldwide, and I don't think that's gotten enough attention.

In the previous session, we had presentations on Korea and Thailand that underscored the important challenges going forward. A lot of what's happening in Asia, as well as in other emerging markets, cannot be separated from the fact that the United States has continued to maintain a very accommodative monetary policy stance. This has raised concerns about exchange rate appreciation in a lot of emerging market countries. In particular, many emerging market central banks, rather than tightening as rapidly as they might otherwise have done, have faced a lot of pressure from export-related interests, especially in economies where exports are a much higher percentage of total activity than in the United States. I think this has helped to explain why emerging market central banks have tried to avoid raising interest rates and have taken action to alleviate exchange rate appreciation pressures under the rubric of "macroprudential policies". In the old days, we called many of these measures capital controls; now we call them macroprudential policies, even though they are often targeted to offset pressures on the exchange rate. So, being less aggressive on interest rate increases resulted in adopting a variety of policies that slowed the rise of the exchange rate.

One question that needs to be asked in this respect is: do these measures actually help to reduce exchange rate volatility? These measures are usually undertaken in the name of that purpose. However, if you were providing markets with a guarantee, or something close to a guarantee, that the exchange rate movement is a one-way bet, the appearance of short-term stability can be misleading. That is because the market pressures that appear to be contained are continuing to build under the surface, leading to sharp currency movements when the pressures can no longer be contained. History shows that it is very difficult for central bank foreign exchange rate intervention to succeed in the long run – whether it's going back to George Soros breaking the Bank of England, or many other currency crises in the past. In other words, central banks may be able to postpone the inevitable but that can come at a large cost in the intermediate to longer run.

Of course, central bank interventions can actually generate more hot money inflows by undertaking what seem to be reasonable macroprudential policies to try to offset those initial capital inflows. This helps to explain in part why some emerging markets' central bank balance sheets have been growing so large; central banks are trying to fight strong market forces, manifesting themselves in the very large expansion of foreign assets on central bank balance sheets. In some cases, the willingness to use their balance sheets in this way, creating market expectations of "one way currency bets", may be driving more flows into some of these countries.

Now, I have some sympathy with the concern that it is very difficult to deal with very volatile exchange rates for exporters. And if exports dominate a country's economic activity, it's foolhardy to ignore that. One possible way to frame the issue is to ask, why doesn't the private sector just hedge? This is an important question because exporters, of course, want to reduce volatility and may be wary of undertaking long-term investments when they see strong secular exchange rate appreciation pressures. However, hedging markets are still fairly limited in most emerging market economies. While private hedging markets often operate fairly well in the short term, it's much harder to go out for a few years, which is the horizon relevant for longer-term investment.

In this situation, it seems reasonable to ask, why shouldn't the central bank be doing this for the private sector? By heavily managing the exchange rate, central banks in the region have been able to stabilise the exchange rate in recent years. However, there are risks. One good reason not to do this is that over-reliance on central bank "hedging" can end in tears. Obviously, this was something that happened in Thailand and much of Asia in the late 1990s, when a lot of the currencies collapsed and the central banks were effectively, but ultimately unsuccessfully, providing the hedge for the private sector. In the end, the private sector was able to borrow at lower rates than was sustainable. This history raises important questions. Are we currently seeing a replay of history? Will this end in disorderly changes in exchange rates? Will this end in tears?

Hopefully we've learned some lessons from the past on this front, but I am worried about growing fragilities in emerging market financial markets. I should note that this worrisome dynamic is not unique to Asian markets. We also have related concerns in the United States – the concerns about contagion from US dollar financing in Europe to the United States. For example, we have a lot of branches of foreign banks in the United States that are financing themselves in US dollars but do not have any stable sources of US dollar funding; they don't rely on retail deposits. And, we just heard about the example of Korea, which is facing a similar challenge, given the strong demand for US dollars. Foreign branches are operating in these markets but are not generating US dollar deposits. Instead, they're using short-term external financing vehicles, including commercial paper, repos etc. Managing these currency mismatches and foreign exchange exposures of central banks will continue to be important challenges going forward.

In sum, I think Jaime focused on the right questions in terms of the range of policy risks. And, when we start considering these questions, we see a wide range of vulnerabilities policymakers need to focus on. On the inflation side, are we trying to force the European central banks to finance the fiscal deficits, which ultimately could lead to high inflation? On the financial stability side, are macroprudential policies having unintended consequences in generating financial market distortions that could lead to more fragility down the line, especially when we consider the cross-border US dollar flows and currency mismatches? And lastly, sovereign debt management is a very important issue at the forefront of the policy agenda in Europe. Obviously, this is an issue the United States will also have to deal with down the line. Given the US dollar exposures of central banks in Asia and throughout the world, this is going to be an issue we will all have to deal with over the next few years.

Thank you.