Supply Shocks and the Conduct of Monetary Policy

Takatoshi Ito

As I see it, everybody else has considered this problem. The supply shock is a major challenge to an inflation targeter. It has been agreed that against demand shocks, the inflation targeting is a powerful framework. But probably we have not seen the serious challenge to the inflation targeting framework by supply shocks. Probably the oil price increase in the last year and a half posed some modest challenge to inflation targeters but since we started from very low inflation, it was not really a challenge. Just flipping through Governor Tetangco's slides, I am sure he will be very elaborate on details of the supply shocks and effects on monetary policy so I will not go into those details.

Let me talk about how I think the importance of establishing the inflation targeting framework before supply shock really comes. I still think that inflation targeting is a powerful framework, even against supply shock in addition to demand shocks. The power of inflation targeting framework is that it is to maintain inflation expectations of the public even if you are deviating from the targeted inflation rate. So we discussed about missing targets and so on in the morning session, but the powerful test about whether your inflation targeting framework is successful or credible is, when you deviate for good reasons from the target, does the inflation expectation stay constant? I think this is a good test of the credibility and the success good performance measure of the inflation targeting framework. When you have the negative supply shock, your output goes down and your inflation goes up – the situation known as stagflation. You do not want to be an inflation nutter, to the point that you would kill inflation and keep the inflation target at all costs. You want to accommodate and you want to smooth the output, but you know that you want to go back to the inflation rate target in the medium run. You want to deviate in the short run because the output loss will be tremendous if you are an inflation nutter. Being an inflation nutter means you always target inflation at π^* – *i.e.,* inflation remain at target all the time for any cost. You do not want to be an inflation nutter. You want to accommodate. You want to have a way to mitigate supply shock and to avoid huge output loss. On the other hand, it will be a disaster if the public changed their expectations as a result of policy accommodation, as inflation rate would be higher than the target. If the accommodation changed the public expectations, resulting in a wage increase and leading to the second round inflation, that would be disaster. The power of the inflation targeting framework is that the public trust you. The public believes that you will go back in the medium-run to the target inflation rate so that they regard this partial accommodation will be temporary so inflation expectation does not change, and you have time to adjust real economy side so your inflation rate will go down in the medium run. So I would not advocate the inflation targeter to be an inflation nutter. I will be more pragmatic; when the bad supply shock comes, you should allow inflation to go up slightly and moderate output loss. I would emphasize the framework credibility and partial accommodation against adverse supply shock.

Supply Shocks and the Conduct of Monetary Policy in the Philippines

Amando M. Tetangco, Jr.

I will divide my presentation into four parts. First, I will talk about the operational details of our own inflation targeting in the Philippines and then I will move on to some policy issues related to dealing with supply shocks. Then in the third part, I will talk about our experience in dealing with the supply shocks under an IT framework. And then I will give my concluding remarks after that.

Let me begin with how we came to adopt inflation targeting. The idea to adopt this framework in the Philippines was first considered by policy makers in the late 1990's. Much like our counterparts in other developing countries at that time, monetary authorities in the Philippines were trying to cope with the macroeconomic impact of financial liberalization which appeared to have weakened the relationship between money on the one hand and inflation and output on the other. The limitations of monetary targeting as a framework were highlighted by the country's experience in the 1990's. Monetary targeting relies on a precise relationship between money and inflation and in the 1990's, financial liberalization affected that relationship and we saw a weakening of that relationship. Money demand became more volatile in the short run, mainly because of rapid developments in financial intermediation which took place alongside recurrent macro economical cycles and financial crisis. Then, we had an IMF program at that time and we observed that sharp increases in money supply did not translate into higher inflation. For example, the sharp rise in liquidity in 1994 and 1995 due to a surge in capital flows was accompanied by a deceleration in inflation from about 9% to slightly over 8%, during those two years. The absence of a pick up in inflation in the presence of historically high rates in liquidity growth suggests a structural break in inflation dynamics. Moreover, under the IMF program at that time, there was an adjustment made in the performance criteria, such that an increase in liquidity arising from increase in capital inflow could be accommodated in the targets for as long as inflation did not go up by a certain percentage. So that was an adjustment that was introduced.

On the whole, the reduction of the information content of monetary aggregate was evident even the movement of prices and the movement of liquidity. This had limited their effectiveness both as a level of monetary policy as well as an indicator of the monetary stance. So against this backdrop, inflation targeting was seen as an effective way for the BSP to resolve policy dilemmas from multiple objectives, and also to establish credibility in committing to low inflation over the medium term.

Here are the operational details under our inflation targeting framework. Our mandate under the law clearly specifies price stability as the main objectives of policy and inflation target is a range target for headline inflation averaged over the calendar year with a width of 1%. I think, this morning, there were some observations that this is probably too tight and in fact we recently had the review of the operational procedures for our inflation targeting framework by a panel of international experts and indeed they made the same observation and we are now in the process of shifting from a range target to a point target with plus or minus 1%, effectively widening the range for our inflation target. The main policy instrument used for policy decision is the overnight repo rate, or reverse repo rate while policy decision on the monetary policy stance being made by the monetary board which meets once every 6 weeks. Now before this meeting, there is a meeting of the advisory committee which submits its recommendations to the monetary board. This advisory committee is composed of senior officials of the BSP together with the Governor as the chair of that committee. Our transparency mechanisms consist mainly of quarterly inflation report, press releases on monetary policy, and the minutes of the main monetary board meeting which are released after a period of four weeks. In terms of the accountability mechanism, we have to provide an open letter to the President in case the target is breached whether it is on the downside or the upside and this letter is usually published in January soon after the full year inflation rate for the preceding year has been made available by the statistical authorities. There is another body in the Government that produces the inflation data, the CPI, and we rely on that for the actual numbers on price movements. We also make use of escape clauses, or what we refer to as exemption clauses, just like other inflation targeters, but we would rather use exemption because of the somewhat negative connotations of escape clause! So we introduced that little change earlier in the game. And as you can see, exemption process relates mainly to supply shocks involving food and energy prices as well as changes in the tax regime. In considering the monetary policy stance, the Monetary Board looks at a wide array of economic data, but the most important factor is the assessment of the likely evolution of inflation risks over the policy horizon of two years. This is an inflation outlook as embodied in our own forecasts of inflation. In addition, we also look at the evidence of demand side inflation pressures and adverse shifts in inflation expectations. Dr. Ito made reference about inflation expectation and we will take this up a little bit later in the presentation. We likewise monitor development in the credit conditions in order to avoid a potential build up in credit activity. The monetary assessment process relies on a number of quantitative tools for forecasting, estimating the risk of a currency crisis or exchange market pressure and gauging public inflation expectations via survey based data such as our quarterly business expectation survey and consumer expectation survey. The business expectation survey was started about two years ago and the consumer expectation survey about a year ago. So the data available from these surveys is still quite limited but I think as we move along, we can build up additional data that would make these even more useful down the road. Now, our early warning system consists of models for analyzing the risk of exchange market pressure. This consists of indicator models that utilize the signaling approach developed by Kaminsky and Reinhart. Meanwhile, the environmental scanning exercises allow us to consider other important issues that may not necessarily be included in the regular monetary assessment process such as risks to political stability, for instance.

Let me now turn to the question of dealing with supply shocks. To my mind, there are a handful of issues that face policy makers in this area. These issues are linked to the various questions confronting us; namely one, whether or not to respond to the shock, the identification problem. Two, when to respond to the shock to address the second round effects. And Three, how to respond to shocks with regards to the output and inflation trade-off.

Let me briefly take this up one by one. The identification problem concerns the uncertainty for policy makers of the true cause of the shock, whether it is the demand side shock or supply side shock or a mixture of both. The uncertainty arises from the fact that often the only observable variable is the increase in prices. Over the past few decades sophisticated econometric tools have been developed to isolate different types of shocks from macroeconomic data. However, different identification methods also tend to produce different conclusions. The problem is compounded by the structural change in the economy which implies that additional macroeconomic relationships may suffer a break. Jean-Claude Trichet remarked some time ago. He said "Real time identification remains the central bank's Holy Grail". In inflation targeting regime, policy makers attempt to cope with the identification problem through the use of quantitative tools and through reliance on a wide array of economic variables and information that serve as inputs to the policy assessment process. This is the reason that inflation targeting is often described or called an information-intensive policy framework. Conventional wisdom holds that a negative supply shock, that is higher oil prices, causes inflation to rise. Central banks can afford to tolerate the uptrend on the premise that authorities should ignore changes in the price of things that they cannot control. I think this is a point made by Dr. Ito as well. However, the ultimate effects of supply shocks on inflation and output dynamics crucially depend on the reaction of economic agents in product and labour markets. Thus, if the public begins to expect prices to continue rising and there is a feed-through impact on price and wage settings, then the central bank may need to respond to these second round effects. I think it is really important to try to manage public inflation expectations. Unlike in our demand shock case, prices and output are negatively correlated in a supply shock. This means that the required policy response is not as straightforward. A negative supply shock involving oil prices, for example, would tend to raise inflation and depress output. Thus policy makers will need to make a choice between bringing down inflation and raising output growth. Fortunately, the inflation targeting framework makes clear that the inflation always takes precedence over output considerations. This principle is borne out of the practical experience of central banks. The emphasis on inflation is also the product of monetary thinking over the past decade. The economic literature suggests that the optimal monetary policy strategy for an open economy is consistent with one that prioritizes inflation over output. I think it was important to note that the central bank should indeed focus just on inflation and can sleep well at night. If they succeed in stabilizing inflation, they will automatically generate the optimum level of activities.

This table illustrates how supply shocks differ from demand shocks. A positive demand shock, holding other variables constant, (e.g., a boom in consumption, investment or fiscal spending) raises output but also eventually pushes inflation above the target. The correct response would be to tighten monetary policy. The same reasoning applies to the opposite case with a negative demand shock. There is no conflict of output inflation objectives. On the other hand, supply shocks, holding the other variables constant, pose an altogether different problem. For example, a negative shock to agriculture output as a result of in a drought or typhoon when all other things are constant, tend to shift output downward and inflation upward, thus posing a dilemma for policy makers. Should policy be tightened or loosened? Inflation-targeting central banks recognize this supply shock difficulty as well. Supply shocks are likely to be especially acute in small open economies where terms of trade shock will be more prevalent and economy is undergoing structural change. Thus dealing with supply shocks remains an issue of considerable importance to inflation targeters particularly those in emerging economies. Shocks to the supply side typically mean that policy makers are confronted by things that are largely outside their control such as oil prices and the damage to agricultural crops from bad weather. In such cases, a real sector supply side response may be more appropriate in addressing the pressure on prices. This means that the central bank would do well to encourage the central government to more directly act on price pressures from the supply side. In the case of the Philippines, such effort might take the form of importation of basic goods such as rice to alleviate supply bottlenecks and the national government in the Philippines also initiated the efforts to promote energy conservation and the development of alternative sources of energy.

Given these issues, living with supply shocks is no easy task, for inflation targeting central banks, perhaps more so in an emerging economy, where supply shocks tend to be more prevalent. Monetary policy needs to find the right balance between fighting inflation and fostering growth. Let me briefly account for our experience in addressing supply shocks in the Philippines. Supply shocks played a considerable role in the inflationary process during the beginning years of inflation targeting framework. Shocks to food and energy prices contributed to breaches of both the bottom and upper ends of the inflation targets. Generally speaking, it would be premature and too early to make any claims concerning the BSP's record of inflation busting under the inflation targeting regime. We started in January 2002, so we have got about four years into inflation targeting. The most that may be said at this point on our experience with inflation targeting is that it has an encouraging start despite the various episodes of supply shocks.

We can say this because the initial record of below-target inflation helped condition the public to the possibility of low and stable inflation. While the subsequent uptrend served to highlight more clearly the BSP's role of fighting inflation, we are really coming from near double-digit inflation in the 1990's. When we started to use inflation targeting in 2002-2003, the actual inflation was lower than the target and while this was amazing, it was considered to be rather positive, given that inflation was lower. And this had a positive effect on the public's perception about inflation, that we can achieve low and stable inflation in the Philippines after a relatively long period of double-digit inflation rates. We were also fortunate that the exogenous shocks to the economy in these early years were clearly identifiable ones; food and oil prices, which made the task of explaining inflation uptrend and subsequently managing inflation expectations somewhat easier for the BSP. So this was really, I think, an important contribution of the shift to inflation targeting. I mean the framework and the procedures that were followed make policy making in the Philippines more transparent.

There were certain rules that were followed which made it clear to the public how the monetary authorities are going to respond given the behavior of prices, particularly in the future as projected by the BSP. Actually, inflation in the first two years of inflation targeting undershot the government's targets. Although 2002 was officially considered a transition year, the transmission lags of monetary policy gives the authorities little room to influence inflation during that year. The undershooting or breaches at the bottom of the target were traced to supple side factors, notably following food prices due to favorable agricultural output performance and subdued demand side pressures which followed the Asian crisis and a global downturn in economic activity. The undershooting of the targets was viewed as positive as I mentioned earlier, and it helped the public to accustom itself to low inflation rate and set the conditions for a gradual decline in inflation over the medium term towards the 0 - 3% range in line with the targets used in other inflation targeting countries. Inflation subsequently exceeded targets for 2004 and 2005, and at this moment is most likely to settle above the 2006 target. This is due mainly to the oil shock which pushed up the transport costs, power rates and other prices, while a spate of typhoons and domestic supply constraints have pushed up food prices. There were also price increases associated with changes in the tax regime involving the value added tax in November 2005 and February 2006.

This is a chart of the price of Dubai crude oil that has clearly affected inflation in the Philippines. Recently, the prices started to come down in the first week of November.

Now, in terms of output and inflation, the higher oil prices have not had the same impact as in previous oil shocks. For example, during the period 2004 - Q1 to 2006 - Q2, the average growth of quarterly GDP remained relatively strong at 5.6%. Meanwhile, headline inflation rose during the same period but remained at single digits, averaging 6.8% for the same period. Monetary policy has played an important role for this benign impact of recent episodes of oil price shocks. Inflation targeting has allowed the BSP to respond flexibly to the oil price shock and help anchor inflation expectations. This limits the ability of exogenous shocks like oil price volatility propagating their impact across the economy

It is also important to point out, that during this time in the aftermath of the Asian crisis, demand side price pressures were mostly subdued. Demand side pressures on consumer prices were tempered, in large part, by moderately high unemployment, spare manufacturing capacity and subdued activity in lending and investments. Liquidity growth also remained moderate and was in line with the overall pace of economic activity. In dealing with both positive and negative supply shocks, the overall policy stance of the BSP generally emphasizes caution on the part of the authorities. In the case of the undershooting of the inflation targets in 2002 and 2003, the authorities benefited from lower food prices and subdued demand conditions. As a result, the overall stance was characterized as essentially cautious but also supportive of growth. Policy interest rates were reduced in 2002 and 2003 where the liquidity reserve requirement on bank deposits was also reduced in 2002. Meanwhile, breaches of the upper end of the target induced by the food and energy shocks were not met with a monetary response. The monetary board noted that demand-driven inflation pressures remained limited, given fairly high unemployment, the modest growth in credit and indications of spare capacity in the manufacturing cycle. However, close attention continued to be paid to inflation expectations. Policy rates were increased three times in 2005 due to concerns that the cost push pressures were already beginning to feed into inflation expectations so we wanted to demonstrate that BSP will not allow inflation to get out of hand. The financial situation remained quite liquid in 2005, due mainly to foreign exchange inflows and due to the deposit-generating activities of banks. More recently, the easing of international oil prices and the strengthening of the peso against the dollar has provided flexibility to monetary policy.

Inflation has started to ease this year as the impact of the El Nino dry spell on food prices dissipated, world oil prices eased and the peso strengthened. As the chart shows, BSP did not respond aggressively to the recent oil driven supply shock. The policy interest rate was raised by a total of only 75 basis points since 2004 and recently we have moved to ease monetary policy effectively. The muted response was grounded in the monetary board's belief that the inflation uptrend was largely temporary. Our forecast showed that inflation would peak during the middle of 2006 and subsequently slow down as the short lived impact of oil price increases and the revised value added tax receded. In addition, available evidences suggested that inflation expectations were, for the most part, well anchored throughout the period. This was in large part due to the constant efforts of the BSP to explain the nature of the oil price shock to the public and the fact that supply side shocks can be better addressed directly through non monetary means. It is always included in our communication to the public. We also try to explain what was behind the acceleration in inflation in 2005 and the early part of 2006. I think it is an important part in the inflation targeting framework. The policy statements of the BSP during the period, thus, emphasized the Bank's support for the national government's real sectors measures to address supply side risks to food and energy prices.

Now, the latest figure shows that inflation has fallen to 5.4% as of October and our base line outlook for inflation indicates that we will be within the target range of 4 - 5% in 2007. So the deceleration is expected to continue.

Now let me cite a few lessons learned from our experience in the Philippines. The first is that emerging economies may be more susceptible to supply side shocks because of structural or institutional factors. This is related to the broader idea that the operating environment for emerging economies central banks may be different, indeed more challenging compared to advanced economies. However, unlike monetary regimes that target nominal anchors such as monetary aggregates, inflation targeting regime, in our view, is forward looking and flexible and this helps maintain the viability and the credibility of the approach in the face of disruptive shocks. Inflation targeting focuses on future long-term inflation rather than short-term fluctuations, which are usually caused by supply shocks. Inflation targeting is also built on a high degree of transparency, flexibility and accountability, so the public can form inflation expectations knowing that deviations caused by supply shocks are temporary and generally acceptable. Short term price fluctuations caused by supply shocks can thus be tolerated without feeding expectations and increasing long run inflation. The prevalence of supply shocks in emerging markets also implies that monetary actions may be usefully complemented with real sector measures. Our experience suggests that national government efforts to ensure the timely importation of key basic commodities to address food shortages and promote energy conservation have also helped to ease supply side pressures on consumer prices. The Philippines experience with supply shocks also highlighted the importance of communicating to the public both the source of inflation pressures and the evolving outlook of inflation and this is quite useful as a communication tool. Since the beginning of the oil shock, the evolution of the BSP assessment of future inflation has constantly been communicated to the public along with the resulting monetary policy stance. Policy pronouncements and media releases highlighted the role of supply shocks and price movements and the temporary nature of the supply shocks. Such communication efforts have helped to keep inflation expectations well anchored.

Supply Shocks and the Conduct of Monetary Policy

Adam Posen

Thanks again to the Bank of Thailand to include me in this discussion. Once every 2 years or so, I have the privilege of being on a panel with Dr. Ito and letter 'I' comes before 'P' in the English alphabet and so usually I speak after Dr. Ito and usually I have very little to say because he and I agree and he says it so well and in this case again I fear I am a bit trapped.

In summary, as was then demonstrated in great detail by the Governor of Bank of the Philippines, is that inflation targeting, when it works, is actually about providing you with more flexibility to respond to shocks in the short run. And what makes it work is you're anchoring long term expectations on inflation and inflation nutters are nuts. So we agree on all that and everyone in the room agrees on all that. So now comes the question "How do we get the inflation expectations anchored", or more accurately, "How do we do this flexible response at a central bank in the short term without unanchoring the expectations." I think it is a fair way to put it. Because as we all know, we have been living through relatively non-inflationary times and many of the countries we are talking about today and tomorrow have already achieved relatively low and stable rates of inflation. So the question is, going forward, how do you keep them anchored? This is a truly difficult question and it is not just one for emerging markets. We're about to have a discussion (I'm looking forward to Bob's paper) on core versus headline but that is a very real debate among the G3 central banks right now with the ECB on the one side and the Fed on the other, and there is no trivial answer to this. But I would like to feature four or five elements of how you keep those expectations anchored. The first thing is to notice that what this gets us to is the discussion of inflation persistence. In econometric terms, what you are looking at is you have some kind of shock or variation and it does not persist in the inflation series and this gets into some of the empirical work Scott was referring to and summarizing what Ken Kuttner and I did in a paper a long while back when we were first looking at this question of inflation persistence. Andrew Levin and some co-authors in the Federal Reserve did another paper on that. And I think we are reaching the point where the data starts to show us that inflation targeting with full-fledged communication framework does have less persistence of inflation aftershocks which is just another way of saying okay "it works, when it works."

What to me has always seemed the ideal example of how it works and on which I have written about too many times, is the Bundesbank in 1980. Back in 1980, we had the second of the major oil shocks of that period and the Bundesbank was, of course, the toughest kid on the block when it came to inflation. Maybe the Swiss competed with them but basically the Bundesbank was there and you have this inflation shock, and in very short order, the Bundesbank announces that they were raising their inflation target for the following years. Now, all of you are going to say, "Wasn't the Bundesbank a monetary targeter?" Well yes, but every year, if you go through monetary history, the Bundesbank in January would announce what was it's projected rate or desired rate of inflation and then put up the MV = PQ monetary equation and then back out of that, given the inflation rate, what monetary aggregate growth they wanted. The point was, here's the big tough Bundesbank, long before any of us academics had formalized this thing about inflation targeting, and they are sitting there and they have a supply shock and they want to accommodate it partially and gradually the way Dr. Ito was talking about and they announced that in 1981 through 1982 or 1983, the target inflation rate will be (I think they went up to as high as) 4% which for the Bundesbank was a very big deal. Now in practice of course, they overshot that. They had the inflation rate was about 8% in 1981 and slowly came down to the target, the point that we already talked about. But they set this idea and it took them until 1986 for them to announce "we are now back to where we want to be and so going forward, the inflation target, the desirable rate of price increase, (if you translate it literally) is back to 2%. Why am I belaboring this? Well, first it is always cute to see the practice was already there before the theory. But the second point is, what is interesting is, the Bundesbank did this without any fancy core versus headline distinctions, without any exemption clauses or escape clauses, without a great deal of hand wringing over the measurement issue, they just did it. So, what can we learn about from this? Well the first point is I want to talk about identification. I think the identification problem may be a little bit easier as well as a little harder than people think and this is sort of spirit of the way people backed off from the preconditions of the inflation targeting regime that we talked about before. So the fact is, and many of you who are policy makers in emerging markets know this all too well, you don't normally only have one shock at a time. If anything, part of what made Greenspan look so good, was that he went through a period of single shocks. Now that is not to take anything away from him, but the fact is we are now looking at a case, for example in the Fed, you are facing arguably four shocks at once. The entire list of that was in the governor's box of demand and supply shocks. You have a negative demand shock from the housing market, you have a positive demand shock from consumption, you have a negative supply shock from oil prices and you arguably are having the last pieces of positive supply shock from the inflation targeting and immigration benefits. The US, had for the last several years, these all going on at once. It is not unheard of to have multiple shocks at once, so I think we set ourselves too high a bar if we sit there and, we say okay, we will look for that isolated shock that is clearly in this quadrant or that quadrant, when you are dividing it up between demand supply, output up down (inflation up down), instead what you have to do is focus on what is the source of the shock and just think about it very sensibly. If the shocks come in through wages, it is probably not a supply shock; if the shocks come in through something that only affects a small portion of your CPI basket, it probably is a supply shock.

Now, let's say you get the identification problem right, will having just a broad inflation target definition be enough and as I said I am looking forward to Bob's paper in the ensuing discussion on 'Core versus Headline inflation targeting in Thailand'. I think it is interesting that the Philippines has moved to having exemption clauses rather than escape clauses. This is an issue on which there is very genuine debate and I must admit that, as opposed to my usual tendency, to put things in very stark terms, in this case I am not really sure what the right answer is but I've been increasingly leaning towards (much to my surprise) the European point of view. I have been increasingly getting convinced that there isn't that much point in narrowing the target definition. Why do I say that? I think there are two reasons. First it's very difficult to work these exemptions and escape clauses in a way that doesn't become a communications problem. Obviously this worked quite well in the Philippines if you look at the record. The inflation plot that the governor gave us but I must admit that when I see that list, I think you had four bullet points of what were the various exemptions and some of those bullet points went on for three lines. I am reminded of when we were doing our book on inflation targeting about 8 or 10 years ago. We looked at the New Zealand case and New Zealand was very busy building on all kinds of exemptions and putting in a great deal of judgment and it seemed like invoking this was going to erode credibility and even if you do it in a rule-based way, in the sense that you are not doing it through judgment, you pre-specify what your list of things are, I think it interferes with the communications. So I am getting more and more suspicious that it's a question of getting the target designed right is going to solve this problem for you. I think you have to allow for the fact that ultimately (and all the people on the panel said) it's about the communication with the public. It's not as if you are going to design the problem out of existence. Another piece of it is the time horizon. Dr. Ito in the best tradition, if you go to the formal inflation targeting literature, like

Lars Svensson, the whole game is about how gradually you respond to shocks. That's how you accommodate and I think it's very interesting again that the time horizon can play either way. I visited the ECB last month. They are very proud of the fact that they are so committed to their two year ahead forecast that they are not even bothering to respond to recent oil price shocks or the coming tax rise in Germany because they have the following circular argument. "It's a shock so we didn't know about it ahead of time. If we have credibility it is not going to make it into the second round. Therefore, it will have resolved itself before our forecast kicks in and it's all gone away". They basically defined themselves out of the supply shock business and again I'm not sure, I think that's another instance of being too clever. I think the ECB is going to be making a mistake by not having had some more accommodative responses. So the next point is, can you then substitute communication for toughness or for a record of toughness? Another thing that might come up when I invoke Bundesbank example is that it's easy for the Bundesbank to be flexible because circa 1980 everybody knew that they were tough on inflation. If you're a central bank that's got a new regime, if you are an emerging market with little control over your fate, how do people know? I don't want to go through all the data now, but just let me state openly I think the data is pretty clear that the markets are surprisingly forgiving or if not forgiving, they tend to have very short memories. If anything, and this goes to Claudio's presentation, most of us worry more about the markets putting in too much capital or being too excited too quickly after the last boom than worrying about them punishing for original sins , or whatever. So I think the Philippines experience demonstrates this very well. Ex-ante, one would not have expected the Philippines to establish credibility as quickly as they did, given all the shocks that really face this small open economy and they clearly did and you can come up with any number of other examples. So I think people need to believe that the markets are actually going to give them the benefit of the doubt.

Second to last point, as I mentioned earlier, a key part of this is concentrating on where the inflation comes from and is it a partial component of CPI or not. And that helps you and I offhandedly threw out the line, if it is wages it is demand. You want to flip this around, and we are facing this very much in the US situation right now, which is there is a distributional aspect which is going to be even more true in the emerging markets that you have a negative supply shock. It is an erosion of real purchasing power. Do you then really want to ethically or politically, let alone economically, try to put people out of work or put more pressure on the very people who are losing purchasing power? If you somehow had a less blunt instrument than interest rates or aggregate controls or credit controls or whatever, that might be reasonable. But there is some real question as to whether one should be stamping even on the very first part of second round effects, if there is this issue of distribution.

I think what that comes down to is and this goes back to the Governor of Bank of Thailand's observation this morning, on the first part that may be an argument for keeping the inflation target higher than we currently think they are. Now if as I think was implicit, and I don't want to read too much into Scott's remarks this morning, if you believe you have a relatively rapidly responding real economy if you are in the tail and rule kind of world then yes. Whatever your ◎* is, whatever your target inflation rate shouldn't matter much, it should all come out in the wash. I tend to be more of the view that rigidities for a good 3-5 years could put you off base and so it may be worth it to have high inflation rates. We know that again if you can keep inflation expectations anchored, there is no particular sense in having 2% inflation rate versus 4%.

Final point and this will be a bridge since tomorrow I am supposed to give a talk in "Dealing with Limitations of Inflation Targeting in Emerging Markets." One thing which our chair of this session mentioned is that there are differences between permanent and transitory stocks and the way I think about that is, there are some things which are underlying trends, ongoing real shifts in relative prices, and sorts of things which are short term in nature. And one of the things I am going to try and address tomorrow is a proposal dealing with the trends because I think that is actually where the action is going to be for the next few years.

Claudio Borio: I would like to pose two questions to all the panelists. I am sorry if some of this is straying into territory that we are likely to tread in the future but I think that it is somewhat inevitable.

The first question has to do with the nature of the shock. We tend to think of increases in oil prices as supply side shocks. However, a number of observers have argued that the key difference between the shock we are experiencing now and the one that was experienced in the 70's is that the present one was largely due to an increase aggregate demand. That is, at the global level, this was a positive aggregate demand shock as opposed to a negative aggregate supply shock. So, the question that arises from this observation is whether there might not be a kind of fallacy of composition, so that the overall response to the aggregate demand, as opposed to supply, shock, results in monetary policy being too loose. A number of people have been arguing precisely that. This may be so especially if one also takes into account the fact that, as Adam mentioned, we have witnessed a string of such shocks in the same direction. There is a question of whether the response is appropriate and whether one might not wish to resist more, so that the risk of the second round effects is also reduced. We know that there are different views across central banks on this.

The second question goes to what the Governor mentioned, which is the idea that if you compare monetary frameworks inflation targeting is the most forward looking. I agree that there is a sense in which it is explicitly "forward looking," but of course there are some who argue, particularly the ECB, that focusing on inflation over one-to-two years without using monetary aggregates to give a sense of the longer-term prospects in the inflation process – which is actually the way in which some of the inflation targeting regimes have been implemented these days – means that they are less, not more, forward looking than some of the frameworks we had in the past. I know that this is, again, quite controversial, but I would like to hear the views of the panelists.

Hans Genberg: This is a question provoked by something Adam said, but it is directed to all countries represented here. In many emerging markets, as I understand it, food and related agricultural products make up a large part of the CPI, sometimes in excess of 50%. Agricultural and food price movements are often treated as resulting from supply shocks, and one should perhaps react to them as if they were. On the other hand, often these prices are also the most flexible in the economy, they are not subject to regulations, and they are determined on spot markets. Therefore you might say they react most rapidly to demand pressures and hence we should treat them as an indicator of demand in the economy. How do we deal with that type of situations in countries where food and agricultural products are so important?

Bandid Nijathaworn: Just to comment on the Philippines experience. I think from listening to Governor Tetangco, there could be difficulty, first in deciding on the nature of the shock, whether it is going to be permanent or not permanent. Then there is also the difficulty in identifying whether the public expectations on inflation have changed which leads to reaction about policies. So comparing the experience in the last few years, given the oil shock that hit the regional economies, I feel that there are two different approaches. One is to wait until inflation begins to change public expectation and then we begin to react. In the second case, which is applicable to Thailand case, it is when policy action reacted much earlier.

Given these two different approaches, looking the results, I think both were correct. We were able to achieve lower inflation, but what came out as the differences is more in terms of growth and inflation tradeoff between the two approaches. In the case that you wait - inflation could be higher, but the growth momentum could be stronger. In the case that you reacted much earlier, you could have a lower rate of inflation, but growth would be a little bit softer. I guess that there is no right or wrong in the way you approach this, but the choice will have to be made against the initial starting point of where you are when the shock hits. How rapid is your growth rate and how high is your initial starting point in terms of inflation? I just want to make this remark to follow up on the Philippines experience.

Khor Hoe Ee: I have a question for both speakers. The economy also could get hit by fiscal shocks and all kinds of other things which you have not mentioned such as political shocks. I assume one advantage of an inflation targeting regime is that it allows you to stay the course and not have to respond to some of these idiosyncratic shocks. I am rather curious to see that in the case of the Philippines, the target timeframe is rather short. It seems to me that you set your target over a one year period and adjust it from year to year. The question is "How do you go about selling the target at that level?" I would have thought that one of the advantages of an inflation targeting regime is that over time, you are able to guide the target inflation down to a low level (whatever that means) unless of course, you are saying that you are comfortable with inflation targets of 4 -5%, which is what I see in the chart here. Wouldn't one of the benefits of inflation targeting be that you start off at a relatively high level of inflation and your aim is to bring it down over time to a low level? I just want to see what your thoughts are on this.

Amando M. Tetangco Jr.: On the question of monetary targeting versus inflation targeting. I think what I would mention here is that when we moved to inflation targeting that does not necessarily mean that we disregard movements of monetary aggregates. I mentioned in the presentation, this is an information intensive framework and monetary aggregates are an important input to the formation and assessment of future inflation and how the monetary authorities should respond to this. Now on the public expectations and when do they start to shift. I think it is important that we have a way of trying to gauge how inflation expectations are moving. In our case we decided to tighten monetary policy in the second quarter of 2005, despite the fact that most of the inflation was really coming from the supply side because we have noticed that inflation expectations were beginning to shift upwards. The information is basically derived from the result of the surveys that we have, the poll of a number of economists both in Manila as well in other parts of the region. So prior to that, it appeared to us that inflation had been more or less stable but because of the duration of the supply shock, I mean oil prices kept on increasing over an extended period of time, to levels that had not been seen before then the inflation expectations started to be effected. We decided to tighten policy at that point basically to give the message that we are watching this and that we don't want inflation expectations to get out of hand. Now on the exchange rate from a purist point of view, if you are inflation targeters, you should ignore whatever the exchange rate is. Just accept it. In reality, I think what most central banks would look at is when the movement in the exchange rate begins to effect adversely the inflation outlook. Like if you have a depreciation of the local currency, you wouldn't necessarily tighten policy if in your view this is not affecting the outlook for inflation. But as soon as there is a risk that the inflation outlook would start to be influenced or adversely affected by the depreciation of the local currency, then that would be an indication that monetary policy should probably do something about that. As for the inflation target of 4-5%, whichHoe Ee mentioned. This is really a target that came down from 5-6 % and over the medium term you'd want to target an even lower inflation rate just like what I showed in the presentation. When we started inflation targeting, the public sort of started to understand that we would like to get our inflation rate that was more or less in line with the average for the region which was at the time substantially lower than what we had in the Philippines. It's an inflation target that will go down over time. We have a two year horizon. Right now we have announced the inflation target for 2007 and before the end of the year, we are going to announce the inflation rate for 2008. So it's 2 year rolling. On agricultural prices, this is a significant component of the consumer basket in many of the countries. In our case, it continues to be significant although it has come down a little bit from what we used to have. That's why in my presentation I stated that it's important that when the price pressures are coming from the supply side, any monetary action that may be taken to try and manage inflation expectations and avoid second round effects should be complemented by measures from the supply side. Because this is a fact of life, if you are targeting headline inflation, a significant portion of that is affected by movements in agriculture prices, and oil prices, for example.

Adam Posen: I think it is very interesting that Claudio raised a fallacy of composition and does that mean we should be tougher? My intuition runs the other way. In two senses: one is that if it is something that is truly exogenous, hitting a bunch of countries at once, it seems to be something less likely to be a demand shock in any one country. This goes back to our difference of opinion over global balances and bubbles. I do not tend to put much faith in the global cycles as a major factor. Maybe I am wrong. Secondly, I am not quite sure how a bunch of reinforcing shocks somehow gets us to easing too much. If each central bank is easing the amount which is less than fully offsetting the supply shock, which is what I think Dr. Ito or I or most people would say, even if they get some other feedbacks that other central banks around the world are easing at the same time, it seems to be a pretty special case that, on net, you would end up being too expansionary. So again I must be missing your point or my instincts are wrong.

I think Hans also raised a really interesting question. This idea of flexibility and that is not something, which I have heard in this context before, but whether we should perhaps be looking at what the elasticity in the sense of demand or the price elasticity of some of these variables and their ability to be reversed and that may be why the food is very different from the oil. I think that is worth thinking about.

Takatoshi Ito: On the point of the agricultural goods, yes, the emerging markets or middle-income countries have more food items in the CPI. But at the same time, some of them are food producers. So it is not only a supply shock, but also a demand shock. You can export more. So I think it is country-by-country consideration. You have to examine whether it is a demand or supply shock. The inflation targeting as (answering Claudio), it is a forward-looking framework as all of us know, which means that you look at all the variables at hand to forecast the inflation rate in the future. So of course if the monetary aggregate is an important reliable variable to forecast future inflation because that should be in it, then central banks should look at it. Exchange rates should be in the vector of variables that we use in forecasting the future inflation rates. I think the interesting part of this aggregate monetary targeting is of course money demand function, the stability has broken down and that is why many countries are not using it. But I recall a conversation with a very powerful ECB board member (who shall be anonymous), who advocated monetary aggregate to be very important. I had a conversation with him on the roles of asset price in targeting inflation and whether central banks should target the asset price. One view is that asset price itself is not the target variable, but it is important because asset price may go "bubble" process and burst then you have deflation like Japan in the 1990's. So you want to nip the bud of the bubble in the beginning. How can you tell asset price increase is bubble or not? Well if it is fed by the credit creation of the central bank, probably there is more bubble component in it and this goes to a supervision paper that Claudio did too. So this person in ECB was arguing that the monetary aggregate has a role more than just a quantity equation that it predicts the asset prices and bubble so, there are several views of the use of the monetary aggregate and I think the Bank of Japan even may have some sympathy to that kind of view.

Now one more thing, I also echo Adams point on the width of the target versus the escape clause or exemption clause and I share his view that the width may not be too narrow. The option is a narrow band with escape clause and emphasis on the medium term averaging over many years, over the cycle like Australia, or the wide range like Thailand and without too many escape clause points and I think it is reasonable to have the wide range especially for emerging markets and without too many escape clause points. I think I share Adam's points of view. If you build up central bank creditability, and if your economy matures then probably you can narrow it down later. Starting out with a wide band may be a wise idea for emerging markets when they first introduced.