Duvvuri Subbarao: Price stability, financial stability and sovereign debt sustainability policy challenges from the New Trilemma

Inaugural speech by Dr Duvvuri Subbarao, Governor of the Reserve Bank of India, at the Second International Research Conference of the Reserve Bank of India, Mumbai, 1 February 2012.

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I have great pleasure in welcoming you all to the Reserve Bank's Second International Research Conference (SIRC).

We held our first international conference two years ago, in February 2010, as a flagship event of our Platinum Jubilee celebrations. Many of you who had attended that conference complimented us for its quality and urged us to repeat it. As much as we were flattered by those compliments, I also suspect that the urging for a repeat was at least partly motivated by the prospect of escaping from the bitter cold of some of your home countries at this time of the year. So, here's welcoming all of you to warm and sunny Mumbai.

Conference theme

Let me start by explaining the motivation for the conference theme: "Price Stability, Financial Stability and Sovereign Debt Sustainability: Policy Challenges from the New Trilemma".

The global financial crisis followed by the euro zone debt crisis has changed the theology of central banking in a fundamental way. The orthodoxy of central banking before the 2008 crisis was: single objective – price stability; single instrument – short-term interest rate. Although most central banks deviated to different extents from this minimalist model, this came increasingly to be considered the holy grail.

The crisis came as a powerful rebuke to central banks for having neglected financial stability in their single-minded pursuit of price stability. By the time of our first conference two years ago, a consensus was developing around the view that financial stability has to be within the explicit policy calculus of central banks, although opinion was divided on the precise nature of institutional arrangements for maintaining financial stability.

Fast forward to 2011/12. Even as central banks are grappling with balancing the demands of price stability and financial stability, there is now yet another powerful assault on central bank orthodoxy arising from the big elephant in the room – the euro zone sovereign debt crisis. The European Central Bank (ECB) is being called upon to bend and stretch its mandate to bail out sovereigns who have forfeited the confidence of markets. Actually that is an understatement. In reality, the ECB is being challenged on why it is, to use an Indian word, being so *brahminical* about its mandate when the world around it is collapsing. The argument, in its essence, is that if a central bank is committed to financial stability, it cannot ignore the feedback loop between financial stability and sovereign debt sustainability, and by extension therefore, it has to be mindful of sovereign debt sustainability concerns.

What do these trends engendered by the crisis indicate? In particular, is it the case that the mandate of central banks is set to expand from the single objective of price stability to multiple objectives of price stability, financial stability and sovereign debt sustainability? Can central banks simultaneously support all these three objectives and do so efficiently? That in essence is the new trilemma.

The new trilemma triggers several questions. How do the three objectives underlying the trilemma reinforce each other, and in what ways do they conflict with each other? What is their impact on growth? Is the trilemma an exclusive phenomenon of crisis times, or does it manifest in normal times as well? What is the nature and extent of the responsibility of

central banks for each of these objectives? Are central banks equipped to handle these additional responsibilities? And finally, what does this expanded mandate mean for the effectiveness and autonomy of central banks?

That indeed is a long list of questions. The purpose of this conference is to think through these weighty questions centred around this new trilemma.

Is this indeed a trilemma?

We deliberated internally on whether this evolving challenge for central banks would indeed qualify as a trilemma. One view was that this is not strictly a trilemma as there is no theory which says that we cannot simultaneously obtain price stability, financial stability and sovereign debt sustainability. The opposing view was that what central banks have at hand is indeed a trilemma in as much as there can be clear tensions between the objectives underlying the new trilemma, and central banks may not be able to determine, with any degree of exactitude, what *inter se* priority must be accorded to each of the three objectives under different sets of circumstances. So, is this a trilemma or not? To compound the search for an answer, the word "trilemma" has not made it to all standard dictionaries yet. So, permit me a little indulgence into the world of trilemmas.

The world of trilemmas

Epicurus, the Greek Philosopher who lived around 300 BCE, was possibly the first to use the concept of a trilemma to reject the idea of an omnipotent God. The distinction of being the first to actually use the word "trilemma" goes perhaps to the 17th century English non-conformist clergyman, Philip Henry, who recorded in his diary, "*We are put hereby to a Trilemma, to turn flat Independents, or to strike in with the conformists, or to sit down in former silence*". Arthur C. Clarke, the British science fiction writer, cited a trilemma in trying to achieve production quickly and cheaply while also maintaining high quality, leading to the quip: "Quick, Cheap, Good: Pick two". In public choice theory, there is the trilemma of juggling three priorities – coverage, cost and choice – when offering a public service.

If we turn to economics, we will see that trilemmas have indeed proliferated. Dani Rodrik (2007) argued that if a country wants more of globalization, it must either give up some democracy or some national sovereignty. Niall Ferguson (2009) highlighted the trilemma of a choice between commitment to globalization, to social order and to a small state (meaning limited state intervention). In one of his FT columns, Martin Wolf spoke about the US Republican Party's fiscal policy trilemma: the belief that large budget deficits are ruinous; a continued eagerness to cut taxes; and an utter lack of interest in spending cuts on a large enough scale. Then we have the Earth Trilemma (EEE), which posits that for economic development (E), we need increased energy expenditure (E), but this raises the environmental issue (E).

The trilemma more directly relevant to this conference theme is a financial stability trilemma put forward by Dirk Schoenmaker (2008), explaining the incompatibility within the euro zone of a stable financial system, an integrated financial system, and national financial stability policies. By far the most high profile current trilemma, as per some analysts, is the euro-zone trilemma: the seeming irreconcilability between its three wishes: a single currency, minimal fiscal contribution to bail outs, and the ECB's commitment to low inflation.

The old trilemma

Even as I have spoken about more recent trilemmas in economics, the prima donna of all of them is Mundell's "impossible trinity". This old trilemma asserts that a country cannot simultaneously maintain all three policy goals of free capital flows, a fixed exchange rate and

an independent monetary policy. The impossible trinity, as students of economics have learnt for over a half century, has a strong theoretical foundation in the Mundell-Fleming model developed in the 1960s.

Figure - 1

The choices the world made under the impossible trinity varied over time. Under the gold standard, exchange rates were fixed and capital could move around, but central banks were forced to adjust interest rates to ensure they did not run out of reserves. This could lead to pressure on the real economy, and a lot of booms and busts.

Under Bretton Woods, we had fixed exchange rates (with occasional adjustments) and independent monetary policy, but capital mobility was highly restricted; when I first went abroad over 30 years ago, Indians couldn't take out more than $20, no matter the purpose of the trip. The Bretton Woods system broke down under the weight of fixed exchange rates, and the world moved to largely floating exchange rates. Capital has flowed freely round the world.

In the post-Bretton Woods era, countries have made different choices. The most common case, typical across advanced economies, is to give up on a fixed exchange rate so as to run an open economy with an independent monetary policy. On the other hand, economies that adopt a hard peg give up on independence of monetary policy. Examples include the currency boards set up by Hong Kong and, for a time, Argentina. More recently, responding to a rapid appreciation of the Swiss Franc as a result of the safe haven effect, Switzerland declared its commitment to defend a pre-announced exchange rate.

History is replete also with examples of countries aiming to achieve all three goals at the same time, and failing to do so, often in a disorderly way. Thailand's decision to abandon the hard peg against the US dollar in July 1997 is a classic example.

Notwithstanding its real life validation, it is not as if Mundell's "Impossible Trinity" is inviolable. Many of the assumptions underlying this model do not often hold; indeed the new open economy macroeconomy models that build in price rigidities and monopolistic competition demonstrate policy dynamics quite different from those built in the Mundell-Fleming tradition. It is also not the case that countries are forced into corner solutions at the nodes of the impossible trinity triangle. As it happens, reflecting the forces of globalization and their asymmetric impact, many emerging economies have opted for middle solutions.

Impossible trinity to holy trinity

In the context of this conference, is the new trilemma – the simultaneous pursuit of price stability, financial stability and sovereign debt sustainability – a new impossible trinity?

Possibly not. There is no theory which says that these objectives are inconsistent with one another. It can even be argued that the three objectives reinforce each other, and that together they sustain growth, thereby constituting not an impossible trinity, but actually a holy trinity of objectives.

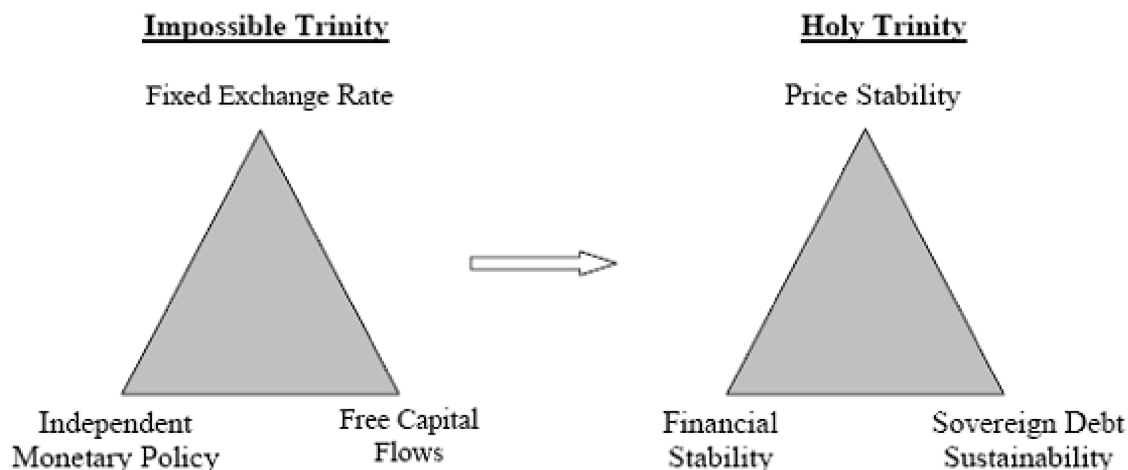

Figure - 2

That does not by any means imply that the holy trinity of objectives can always be achieved simultaneously, or once achieved, can be maintained as such indefinitely. There would be tensions and trade-offs, especially in the short-term. In particular, the tensions materialize with brutal force in a state of disequilibrium – when inflation is off target, the financial system is fragile and public debt is ballooning. To the extent we have to manage these tensions, the policy problem qualifies as a trilemma.

The many ways in which the new trilemma plays out

Policies in pursuit of the three objectives under the trilemma interact in complex, and often unintended ways. Sometimes they are supportive of each other; at other times, they may run counter to each other. More perplexingly, the tensions and trade-offs may be different in crisis times from normal times.

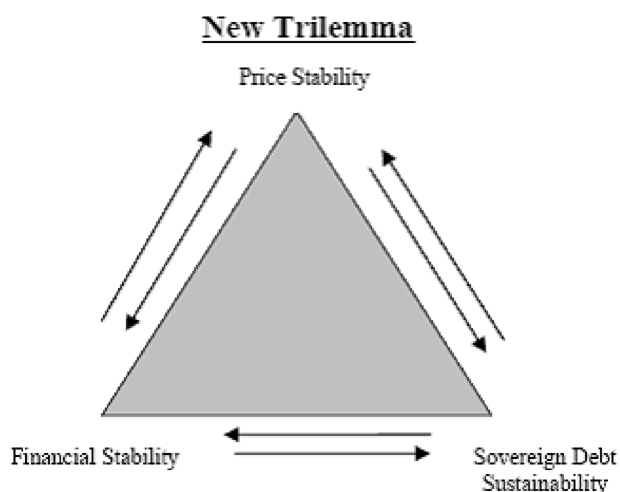

Figure - 3

Let me attempt to illustrate this by citing some examples from global experience, including recent experience. Given the three objectives underlying the new trilemma, and the two-way directions in which they can interact, we have a total of six "cause and impact" bilateral interactions. I will consider them one by one.

(i) Price Stability → Financial Stability

Before the global financial crisis, the stereotype view was that price stability and financial stability complement each other i.e. monetary policy and policies for financial stability are mutually reinforcing. The crisis has proved that wrong. Note that we saw the global financial sector come to the brink of collapse in the midst of a period of extraordinary price stability.

Indeed the experience of the crisis has prompted an even stronger assertion – that there is a trade-off between price stability and financial stability. In other words, the more successful a central bank is with price stability, the more likely it is to imperil financial stability. The argument goes as follows. The extended period of steady growth and low and stable inflation during the Great Moderation lulled central banks into complacency. Only with the benefit of hindsight is it now clear that the prolonged period of price stability blindsided policy makers to the cancer of financial instability growing in the underbelly.

An even more recent example of a conflict between policies for financial stability and price stability is of the ECB reversing its crisis driven expansionary stance by raising interest rates twice during April–July 2011. The ECB justified this on the argument of stemming the underlying inflationary pressures, but many criticized this move as being premature and as clearly unhelpful to restoring financial stability. Of course, we all know that the ECB reversed these hikes during November–December 2011 in response to the euro zone slow down.

(ii) Financial Stability → Price Stability

Let us now see the interaction in the reverse direction. Whether policies aimed at financial stability can affect price stability is a debate that has stayed with us all through the period of management of the crisis. Many analysts have argued that the extraordinary monetary expansion, especially by the Fed, to bring interest rates to the Zero Lower Bound (ZLB) and following it up with two rounds of "Quantitative Easing" (QE), all aimed at restoring financial stability, may actually be sowing the seeds of inflation. The argument goes that since the inflationary impact of easy monetary policies is difficult to see real time, the Fed risks going overboard with monetary easing thereby jeopardizing future price stability.

We also have an illustration from emerging economies of policies for financial stability affecting price stability. During the crisis, EME central banks eased monetary policy to provide relief to the financial sector, but this also saw inflation quickly resurging when recovery started.

(iii) Financial Stability → Sovereign Debt Sustainability

The management of the crisis offered an important lesson on how policies aimed at restoring financial stability could impair sovereign debt sustainability. By far the most obvious illustration of this link is the cost of bail outs of failing financial institutions, accompanied by "fiscal stimulus", to prevent the financial sector problems from causing overall economic activity to collapse. The fiscal action was unquestionably necessary to restore financial stability. But the net impact need not always be benign. There are circumstances under which fiscal expansion in support of financial stability can threaten sovereign debt sustainability. That will happen if the sovereign is already highly indebted, and the recovery is not quick enough or robust enough. Governments will then see their revenues falling, will need to borrow to bridge the fiscal gap, and can potentially get trapped in a self-reinforcing adverse fiscal feedback loop eventually jeopardizing their sovereign debt sustainability.

(iv) Sovereign Debt Sustainability → Financial Stability

For transmission of shocks from the sovereign to the banking system, the evolving situation in the euro zone is clearly the most glaring example. Consider Greece, where banks are being asked to share the burden of bailing out the government, the so called private sector involvement – PSI, so that sovereign debt could be brought down to sustainable levels. But this will affect their collective viability and potentially threaten broader financial stability. There has been acrimony over whether the PSI is voluntary or involuntary. For the purpose of this issue, that debate is a technicality; it does not alter the basic contours of contagion from sovereign debt to financial stability.

The ECB's new term repo (LTRO) window offers another example of how sovereign debt sustainability concerns can affect financial stability. This new window offers banks three-year money at the repo rate to encourage them to use that money to lend to sovereigns, taking advantage of the arbitrage opportunity. But this financial engineering is a fragile and potentially problematic arrangement. Banks will need to post additional collateral with ECB if the bonds they offered fall in value or suffer a credit downgrade. For precisely the same reasons – fall in value and credit downgrade – banks will need to provide additional capital against monies they have lent to sovereigns. This could put banks on a collateral spiral and erode overall financial stability.

(v) Sovereign Debt Sustainability → Price Stability

The most obvious route for sovereign debt concerns impinging on price stability is through the monetization of government debt. Central banks do, of course, resort to open market operations (OMOs) – buying and selling government paper – for purposes of liquidity management. But if the motivation for the OMO is to help out a fiscally vulnerable sovereign or to reduce the cost of borrowing for the sovereign, central banks could end up holding price stability hostage to sovereign debt concerns.

Fiscal concerns can dominate monetary policy in other less dramatic ways. In the years before the crisis, an increasing number of governments were voluntarily adopting fiscal responsibility rules, thereby allowing room for autonomous monetary policy. These rule-based fiscal regimes unravelled during the crisis as both governments and central banks implemented expansionary policies in close coordination. While such coordination during the crisis was not questioned except by extreme purists, now in the recovery period, several fundamental concerns are resurfacing.

At the heart of these concerns is whether monetary policy is once again becoming hostage to fiscal compulsions. The specifics of the debate vary but the basic issues are similar. In the US, the debate is over the trade-off between short-term fiscal stimulus and long-term fiscal consolidation. In the euro area, the question is about the shared benefits of a monetary union without the shared responsibilities of a fiscal union. In India, the question has been whether the OMOs conducted by the Reserve Bank to manage systemic liquidity are acting as a disincentive for fiscal discipline. The questions all around are: are central banks being forced beyond their comfort zone to subordinate their monetary policy stance to the government's fiscal stance? Aren't the so called unconventional measures, in reality, quasi-fiscal measures? Are central banks, in the process, compromising their basic commitment to price stability?

(vi) Price Stability → Sovereign Debt Sustainability

There are several ways in which policies aimed at price stability can influence sovereign debt sustainability. Higher interest rates, necessitated to combat inflation, raise the costs of debt to the government. Also, if the government has large subsidies on its budget, as do many emerging and developing economies, inflation could raise the cost of subsidies thereby raising the borrowing need of the government. On the other hand, governments with large

debts may not actually mind a bit of inflation as it affords them an opportunity to inflate away some of the debt.

I have spoken about the tensions and trade-offs between the three objectives underlying the new trilemma. The examples that I have given are by no means exhaustive but are intended to illustrate the complex policy challenges they pose to central banks.

Four questions underlying the new trilemma

Now let me turn to some important questions that central banks will confront in managing the new trilemma. In particular, I will raise four questions.

Question 1: are we seeing a return of fiscal dominance of monetary policy?

This question has surfaced with vigour in the context of the euro zone crisis. The ECB claims that its bond purchase programme is aimed at restoring liquidity and improving monetary transmission. But many analysts believe that this is a thinly veiled attempt to shore up sovereign borrowing and that the ECB is actually acquiescing in fiscal dominance.

Although this tension between the central bank mandate and sovereign debt sustainability is presently being played out in Europe, it is not new; nor is it unique to Europe. The seventy odd years since the Great Depression saw a famous rivalry between fiscal and monetary policies for influence. Historically central banks suffered from fiscal dominance since they had to acquiesce in governments "borrowing as much as required at as low a cost as possible".

This state of affairs started changing in the 1980s, with a wave of support for central bank independence arising largely in response to the damage inflicted by the stagflation of the 1970s and the clear lesson that high inflation is detrimental to sustainable growth. So, fiscal dominance gradually yielded to independent central banks, free of short-term compulsions, targetting largely, and in some cases exclusively, price stability. Now it seems we are seeing a reversal of that trend with central banks being called upon to mind sovereign debt sustainability concerns.

Fiscal dominance manifests through the central bank acquiescing in the fiscal stance of the government. This usually happens through monetization of debt through the central bank's bond buying programme. Central banks typically conduct OMOs more as reverse transactions (repos) for liquidity management purposes in line with their monetary policy stance and intermediate targets. In that case, they should be seen as pure monetary policy operations. But at times, OMOs could be motivated by the objective of providing liquidity to support government borrowing or of reducing the yield on treasury bonds to enhance debt sustainability. It then becomes a case of acquiescence in fiscal dominance. There is often only a thin line, and the interpretation of the motivation for outright OMOs could vary depending on the circumstances.

In the presence of large sovereign borrowing that makes the government's fiscal stance unsustainable, central banks typically have little choice. If they do not conduct OMOs to bring systemic liquidity within reasonable limits, they risk losing control over financial stability. If they do conduct OMOs, they risk losing control over price stability. What this really says is that fiscal responsibility is much more than a question of whether monetary policy is independent or not. It is a question of sustaining macroeconomic stability.

Question 2: will the management of the new trilemma erode the autonomy and accountability of Central Banks?

The much prized autonomy of central banks has come under assault post-crisis with an influential view gaining ground that one of the principal causes of the crisis was the unbridled

autonomy of central banks. The standard argument for central bank autonomy is that autonomy enhances the credibility of the central bank's inflation management credentials. Monetary policy typically acts with a lag, and price stability therefore has to be viewed in a medium term perspective. Having autonomy frees the central bank from the pressure of responding to short-term developments, deviating from its inflation target and thereby compromising its medium term inflation goals.

Now that the importance of central bank autonomy in monetary policy has come to be largely accepted, the question is: will additional responsibilities underlying the new trilemma affect that autonomy? And how will this new situation also affect the accountability structures of the central banks? It may be useful to take stock of the apprehensions in this regard.

For overseeing systemic stability, new governance structures have emerged after the global crisis. These include the Financial Services Oversight Council (FSOC) in the US, the Financial Policy Committee (FPC) in the UK and the European Systemic Risk Board (ESRB) in the EU. Here in India, we have the Financial Stability and Development Council (FSDC). The precise institutional arrangements vary, but across all of them, central banks have a lead responsibility.

With these new institutional arrangements for financial stability in place, the autonomy question has acquired an additional dimension. Note that central bank autonomy has worked because they could keep at arms length from the governments. But once a coordination mechanism is in place, these barriers may melt away. Also, even if that is what the book says, it may be difficult to straitjacket the discussion at the coordination forum to financial stability. As we have seen, there are no "pure" financial stability issues; they are all inter-connected. A discussion on financial stability could very well lead to a discussion on monetary policy. What then of the autonomy of the central bank? This apprehension, as all of you will appreciate, is non-trivial.

If we now add responsibility for sovereign debt sustainability to this already complex situation, the reason for apprehension about the threat to the autonomy of central banks becomes more obvious. Sovereign debt is a quintessentially political subject, and as we noted earlier, the very foundation of central bank autonomy is justified on the need to free monetary policy from fiscal dominance. By requiring central banks to be mindful of sovereign debt sustainability concerns as part of the "new trilemma", is the hard won gain of freedom from fiscal compulsions being compromised? But look at it also from the opposite perspective. Given that investor trust in public debt is part of the foundation of a nation-state, is it realistic for a central bank to remain indifferent to sovereign debt sustainability?

The new trilemma also poses questions for central banks on the accountability front. With a single objective of price stability, the deliverable could be precisely defined, the outcome accurately measured, and accountability clearly extracted. Multiple objectives, and as we have seen, with tensions and trade-offs between them, can diffuse and erode this accountability mechanism. The central bank can always explain away any failure on one front as a result of policies to defend another front.

There are no easy answers to these apprehensions about the impact of the new trilemma on central bank autonomy and accountability. Governments and central banks in each jurisdiction will have to define the nature and extent of the latter's responsibility for financial stability and sovereign debt sustainability. I can only lay down certain tenets that must inform this process. First, the fundamental responsibility of central banks for price stability should not be compromised. Second, central banks should have a lead, but not exclusive, responsibility, for financial stability. Third, the boundaries of central bank responsibility for sovereign debt sustainability should be clearly defined. Fourth, in the matter of ensuring financial stability, the government must normally leave the responsibility to the regulators, assuming an activist role only in times of crisis.

Question 3: does the pursuit of the new trilemma militate against growth?

My short answer to this question is "no". Let me elaborate. It is possible that in the short-term, policies aimed at price stability, financial stability and sovereign debt sustainability could, at times, run counter to policies required for promoting growth. But growth achieved at the cost of the objectives of the new trilemma cannot be sustained. What can be sustained is only growth that is consistent with these objectives. So, some sacrifice ratio may be operative in the short-term, but in the medium term, there is no trade off between sustainable growth and maintaining the objectives of the new trilemma.

Let me illustrate this with reference to the debate that played out quite actively in India all of last year around the growth-inflation trade-off. We had inflation ruling all through the year in the range of 9–10 per cent. To combat this, the Reserve Bank has had to tighten monetary policy – raising rates, as all our critics are fond of saying repeatedly – a record total of 13 times. While inflation did not show any downward trend till late in the calendar year 2011, growth has certainly moderated. The Reserve Bank's latest projection for growth for FY12 is 7 per cent, down from 8.4 per cent last year. The criticism has been that we could not bring inflation down but only ended up hurting growth. This is not the occasion to enter a defence of our position. But in the context of this conference, the criticism throws up an important issue on the growth-inflation trade-off.

Evidence from empirical research suggests that the relationship between growth and inflation is non-linear. At low inflation and stable inflation expectations, there is a trade-off between growth and inflation. But above a certain threshold level of inflation, the trade-off disappears, this relationship reverses, and high inflation actually starts taking a toll on growth. Estimates by the Reserve Bank using different methodologies put the threshold level of inflation in the range of 4%–6%. With WPI inflation ruling above 9 per cent till recently, we were way past this threshold. At this high level, inflation is unambiguously inimical to growth; it saps investor confidence and erodes medium term growth prospects. The Reserve Bank's monetary tightening all through last year was accordingly geared towards safeguarding medium term growth even if it meant some sacrifice in near-term growth.

The debate on the trade-off between financial stability and growth runs along roughly similar lines. Post-crisis, regulation of financial institutions is being tightened. In particular, under the Basel III package, banks will be required to hold higher capital, better quality capital and also build up capital and liquidity buffers. What does this mean for growth?

A BIS study, undertaken by a group led by Stephen Cecchetti, estimates that a one percentage point increase in the target ratio of tangible common equity (TCE) to risk-weighted assets (RWA) phased in over a nine year period reduces output by close to 0.2 per cent. The study argues though that as the financial system makes the required adjustment, these costs will dissipate and then reverse after the adjustment period, and the growth path will return to its original trajectory. A Basel Committee study estimates that there will be net positive benefits from Basel III because of the reduced probability of a crisis and reduced volatility in output in response to a shock. An IIF study, however, estimates a higher sacrifice ratio – that the G3 (US, Euro Area and Japan) will lose 0.3 percentage points from their annual growth rates over the full ten-year period 2011–2020.

What are the implications of these numbers relating to growth sacrifice for emerging market economies (EMEs)? Let me take the example of India. Admittedly, the capital to risk weighted asset ratio (CRAR) of our banks, at the aggregate level, is above the Basel III requirement although a few individual banks may fall short and may have to raise capital. But capital adequacy today does not necessarily mean capital adequacy going forward. As the economy grows, so too will the credit demand, requiring banks to expand their balance sheets, and in order to be able to do so, they will have to augment their capital.

In a structurally transforming economy with rapid upward mobility like India, credit demand will expand faster than GDP for several reasons. First, India will shift increasingly from services to manufactures whose credit intensity is higher per unit of GDP. Second, we need

to at least double our investment in infrastructure which will place enormous demands on credit. Finally, financial inclusion, which both the Government and the Reserve Bank are driving, will bring millions of low income households into the formal financial system with almost all of them needing credit. What all this means is that we are going to have to impose higher capital requirements on banks as per Basel III at a time when the economy's credit demand is going to expand rapidly. How best can we resolve this tension between the demands of growth and the demands of financial stability is a question that we in India and several other EMEs will have to address.

I have gone at some length on this not to argue that the costs of financial stability outweigh the benefits, but to argue that the cost-benefit calculus will vary from country to country, and will vary for a given country over time. So, the challenge for every country, advanced, emerging and developing, is to tailor its financial stability policies to maximize the benefit cost ratio on a dynamic scale.

Now let me come to the third leg of the equation – the link between growth and sovereign debt sustainability. Like with the other two legs of the new trilemma, even in the case of sovereign debt, there is an inflexion point beyond which fiscal deficits militate against growth. Government borrowing is not bad *per se*, but excessive borrowing is. There is therefore a need to cap total public debt as a proportion of GDP.

What is equally important in respect of fiscal management is the quality of public expenditure. If the government borrows and squanders that money away on unproductive current expenditure, both fiscal sustainability and growth would be jeopardized. Governments need to spend on merit goods and public goods, in particular on improving human and social capital and on physical infrastructure.

So, after all this discussion, what is the answer to the question: does the pursuit of the new trilemma militate against growth? No. It does not. But there could be some trade-offs and governments will have to tailor their policies to ensure that the benefit – cost calculus is always maximised.

Question 4: what are the limits to unconventional policy measures?

As the crisis exploded with brutal intensity and depth, central banks around the world acted with an unusual show of policy force, ferociously cutting policy rates to near zero or even zero. Realizing soon that this was not sufficient to restore calm and confidence to the markets, they had to follow up the conventional measures with a slew of unconventional measures variously described as quantitative and credit easing.

The first wave of unconventional measures was aimed at providing liquidity to the system either by way of collateralized loans through the repo window or outright purchase of bonds. Liquidity management is of course standard monetary policy procedure. What made this unconventional were mainly two things. The first was the quantum of operations. The volumes were large, and were aimed at flooding the market with liquidity, much beyond what is expected in normal times.

The second characteristic that made liquidity infusion unconventional was the relaxation of standards regarding the type of bonds bought under the OMOs. In this regard, different central banks relaxed regulations to different extents. While the Bank of England stuck to treasuries, the Fed bought federally backed mortgage bonds in addition to treasuries. The Bank of Japan went further buying also corporate bonds, commercial paper, exchange traded funds and real estate investment trusts.

The second wave of unconventional measures went beyond repo operations and OMOs. The Bank of Japan extended targeted loans to banks to spur long term investment. The Fed supplemented two rounds of QE with "operation twist" – of purchasing longer term treasuries against sale of short-term treasuries in an effort to depress the entire yield curve rather than

just its short end. Last week, it also began publishing the expected interest rate path for the coming years. The ECB, as noted earlier, is providing three-year loans to banks.

What of emerging economy central banks? They too had resorted to unconventional measures although their policy rates did not hit the zero lower bound. In the Reserve Bank, for example, at the height of the crisis, we operated a term repo window to enable banks to meet the liquidity requirement of mutual funds and non-bank finance companies (NBFCs). We relaxed the statutory liquidity ratio (SLR) prescription for banks by up to 1.5 percentage points of their net demand and time liabilities (NDTL) for this purpose. The risk weight on banks' exposure to NBFCs, which was raised earlier, was rolled back. The restriction on commercial banks in buying back the CDs held by mutual funds was lifted. We also instituted a foreign currency swap facility for banks.

Unconventional measures have been contentious. Central banks have largely maintained that the unconventional measures they deployed are a part of the monetary policy arsenal, and that the intent behind them is to improve monetary transmission. Their critics have argued that central banks have actually stepped beyond their mandates to accommodate extraneous compulsions.

All in all, the global financial crisis and the ongoing Eurozone crisis have raised important questions about the unconventional measures that central banks can resort to – their range, intent and the way the intent should be communicated to the markets. I am sure this conference will visit this debate in much greater detail over the next two days.

Conclusion

Let me now conclude by summarizing what I have said. I explained the rationale for the conference theme: "*Price Stability, Financial Stability and Sovereign Debt Sustainability: Policy Challenges from the New Trilemma*". I then illustrated how the three legs under the new trilemma interact with one another. Thereafter I raised the following four questions that central banks need to address in the context of the new trilemma:

(i) Are we seeing a return of fiscal dominance of monetary policy?

(ii) Will the management of the new trilemma erode the autonomy and accountability of central banks?

(iii) Does the pursuit of the new trilemma militate against growth?

(iv) What are the limits to unconventional policy measures?

To what extent are the old and new trilemmas similar? Under the old trilemma – the impossible trinity – countries had to sacrifice one of the three objectives – fixed exchange rate, independent monetary policy and free capital flows. Under the new trilemma – the holy trinity – no country can afford to sacrifice any of the objectives as the feedback loops can quickly shift the economy from an equilibrium to a disequilibrium. The issue really is of managing the *inter se* prioritization among the objectives and of determining the role of the central bank in this management.

So, how best can we manage the new trilemma? The crisis has given us valuable lessons from practice. We also have assorted bits of theory. The task ahead is to put them together into a coherent, workable theory of the new trilemma. I hope this conference will take us closer to that.

A final thought, which is actually an extension of what I said at our last conference. In his best-selling book, "The Ascent of Money", Niall Ferguson says that sometimes the most important historical events are the non-events: the things that did not happen. From that perspective, that the Great Recession did not turn into the second Great Depression, as we had feared, will count as a major non-event, notwithstanding the depth and duration of this recession. If the euro survives the sovereign debt crisis, as we hope, it will be another

spectacular non-event. Non-events they may be, but they have changed our thinking on central bank mandates in a powerful way. How influential that thinking will be on the way forward will depend on how firmly central banks embrace the new trilemma.

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