

Monetary Policy Dilemmas at the Current Juncture

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Monetary policies in advanced economies and emerging markets face quite different challenges at the current juncture. In the advanced countries, current dilemmas derive from the normalisation of unconventional monetary policies. The short-term dilemma is to determine when to start exiting extraordinary policies and selecting appropriate tools, as conventional tools may not be very relevant during this phase. The medium- to long-term challenges relate to the sequencing, pace and mechanics of normalisation. Monetary policy in emerging markets needs to cope with the familiar dilemmas of fiscal dominance, the growth–inflation trade-off and the “impossible trinity.” With fiscal parameters in control, and food and commodity prices subdued, the chief dilemma currently confronting emerging markets involves a trade-off between targeting divergent domestic and external cycles. Although they are now better placed to absorb a sudden stop, the impact is likely to be differential, with those with weaker macroeconomic parameters suffering greater pain.

Monetary policy has for some time now occupied the pole position in macroeconomic management in advanced economies. This was not always so. The ascendancy of Keynesian economics in the wake of the Great Depression of the 1930s gave pride of place to fiscal policy. It took the hyperinflationary 1970s, itself the result of expansionary fiscal policy,¹ to relegate discretionary fiscal policy, with its political overtones, as the tool of last resort, largely limited to “automatic stabilisers” that had automatic entry and exit.

Paul Volcker’s spectacular use of monetary policy to tame hyperinflation, which saw United States (US) policy rates breach 20%, ushered in the golden age of monetary policy. “Independent” central bankers now came to be soon seen as the new masters of the macroeconomic firmament, the force behind the “Great Moderation” characterised by moderate inflation and low gross domestic product (GDP) volatility (Hakkio 2013). With the onset of the global financial crisis (GFC), central bankers looked set to enhance their rock star status. Pulling new policy tools out of the hat, they engineered a famous escape from what at first flush looked like a certain second Great Depression (Eichengreen and O’Rourke 2012).

Dilemmas of Monetary Policy

In retrospect, however, the GFC has blown away the halo surrounding central bankers. They have taken on too much of the burden of raising trend growth back to former levels, the impediments to which are structural rather than cyclical. The crisis has dented their image by calling into question the efficacy of extant monetary policy tools as well as rules, indeed of monetary policy itself (Petrou 2015).² They have been castigated for sticking resolutely to inflation-targeting in a rapidly changing and globalising world. The great stability in consumer price inflation, a critical input into the Taylor Rule, widely used by central bankers for adjusting policy rates, meant that it was ceasing to be a robust marker of domestic business cycles. They may have consequently misread the business cycle and fuelled asset bubbles such as the one that led to the GFC. While they may have staved off deflation by expanding the monetary base to counter the sharp decline in the money multiplier (Table 1, p 47), the failure to fix monetary policy rules, even as they pulled new tools out of the proverbial hat, has meant that the real economy has not responded as expected to protracted, aggressive and unconventional monetary policies.

The excessive liquidity has instead spilled over into asset markets, including emerging markets, and may well have laid the grounds for another financial crisis. That such a crisis could be triggered by a policy reversal, much in the way the

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sub-prime bubble was pricked, constitutes in essence the monetary policy dilemma confronting central banks all over the world, both developed and developing. Asset markets, rather than the real economy, now appear to be sensitive to monetary policy. Investment, consumption and animal spirits seem to march to the beat of a different drummer, as monetary policy seems to have fallen into a liquidity trap. What is this tune and where does monetary policy fit in? And what would be the response of central banks to another recession when the effectiveness of current policy tools seems doubtful, and their policy space exhausted, with benchmark policy rates still stuck close at the zero bound, and even negative (as in Japan), and several rounds of quantitative easing (QE) washed back to central banks as reserves?

Table 1: US Federal Reserve System

US \$ Trillion	M ₂	M ₀	MM M ₂ /M ₀	Reserves	Currency M ₀ -Reserves	Bal Sheet
3/1/2007	7.13	0.81	8.80	0.04	0.77	0.87
11/1/2007	7.42	0.83	8.94	0.04	0.79	0.89
3/1/2008	7.62	0.82	9.30	0.04	0.78	0.88
11/1/2008	7.99	1.43	5.59	0.06	1.37	2.08
3/1/2009	8.34	1.64	5.09	0.08	1.56	1.90
11/1/2009	8.47	2.01	4.22	1.14	0.87	2.17
3/1/2010	8.48	2.10	4.04	1.19	0.91	2.28
11/1/2010	8.75	1.97	4.44	1.04	0.93	2.30
3/1/2011	8.90	2.40	3.71	1.44	0.96	2.55
11/1/2011	9.60	2.60	3.69	1.59	1.01	2.82
3/1/2012	9.78	2.65	3.69	1.61	1.04	2.89
11/1/2012	10.29	2.64	3.90	1.55	1.10	2.83
3/1/2013	10.52	2.93	3.59	1.76	1.17	3.20
11/1/2013	10.92	3.68	2.97	2.46	1.22	3.85
3/1/2014	11.16	3.89	2.87	2.71	1.18	4.17
11/1/2014	11.57	3.83	3.02	2.58	1.26	4.49
3/1/2015	11.85	4.03	2.94	2.73	1.30	4.49
11/1/2015	12.20	4.06	3.01	2.72	1.33	4.51
Change 2007–15	5.07	3.25	-5.79	2.68	0.57	3.63

Source: Compiled from the US Federal Reserve data: <http://www.federalreserve.gov/econresdata/statisticsdata.htm>.

It is important to recognise what macroeconomic policy, including monetary policy, can do and what it cannot. It is most effective in dealing with cyclical problems, such as a downturn in the business cycle, or overheating. It is, however, not very potent in dealing with economic problems caused by structural forces, which need to be fixed through structural reforms done by governments. In such situations if it is called upon to do most of the heavy lifting, it is likely to become impotent or get mired in a liquidity trap that generates second-round problems of its own, which is what we presently see in advanced economies.

While monetary policy in both advanced economies and emerging markets is beset with the common dilemma of attempting to do too much, their dilemmas are mostly fundamentally different. In the former, monetary policy itself is at the crossroads in uncharted territory. After engineering the great escape from a possible second Great Depression, central banks seem to be hoisted with their own petard, unable to engineer an escape from unconventional policies. Emerging markets, on the other hand, face a familiar monetary trilemma,

and are uncertain as to how to use the same instrument to respond to divergent external and domestic cycles.

Advanced Economies

The magnitude of the problem of normalising monetary policy in advanced economies can be gauged from the fact that policy rates have been stuck near the zero bound for close to a decade. During this period, the assets of the us Federal Reserve (or Fed) and the Bank of England have increased five times, those of the Bank of Japan (BOJ) have trebled, and those of the European Central Bank have doubled (Giugliano et al 2015).

The Fed’s asset purchases, however, were only partly financed by newly created money. Much of it was financed through the excess reserves parked with the Fed by depositary institutions on account of risk aversion that increased the monetary base (Table 1).

Once banks start lending again, or if interest rates were to rise, they may however withdraw these discretionary reserves, which are more than twice the size of the currency in circulation. Most of the monetisation of the balance sheet could happen then; unless the Fed increases the mandatory reserve requirements, incentivises depositary institutions to hold on to their discretionary reserves by increasing the interest it pays on the excess reserves, or uses other sterilisation instruments such as the reverse repo. Alternatively, it could start aggressively shrinking its bloated balance sheet to sterilise this monetisation to prevent build-up of inflationary expectations. Given the sheer scale of reserves and the balance sheet, all these options entail large fiscal costs.

However, since the money multiplier kept falling, monetary policy appears to have fallen into some kind of a liquidity trap as the expected expansion in private credit did not take place. QE effectively financed the expansion of government borrowing, thereby conflating the divide between monetary and fiscal policy.

Current Dilemmas: Short Term

The monetary policy dilemmas confronting advanced economies are both short term and long term. The short-term dilemma is when to start exiting the zero-bound policy rate and shrinking bloated central bank balance sheets. The bigger medium- to long-term problem lies, first, in determining the pace of exit, and second, in normalising monetary policy. The latter would, among other things, entail a determination of whether potential GDP needs to be revised downwards, and the inflation target changed. Beyond this, a view needs to be taken as to whether the extant monetary framework itself, such as the widely used Taylor Rule, centred on inflation targeting, is still robust, as former assumptions regarding the linkages between inflation, growth and employment may no longer hold. Whether the normalisation would lead to the previously existing state

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of affairs, or an altogether different monetary framework, remains an open question. A hybrid normalisation could mean a return to Taylor-type rules modified to incorporate a new inflation target and/or asset price inflation.

With the taper completed, and having recently pivoted on interest rates for the first time in almost a decade, and having by and large recovered from the aftershocks of the GFC, the us, and to a great extent the United Kingdom (uk's rate is now the same as the federal funds rate), are already confronting medium-term dilemmas. Growth in both Japan and the euro area, on the other hand, are still below trend. Their monetary policy is still in easing mode. It is therefore very likely that there would be policy divergence amongst the major advanced economy central banks for some time.

A good way to begin a discussion on how far the current us policy rate is from where it would be under normal circumstances is to take the Taylor Rule for monetary policy as the starting point. The Taylor Rule equation³ encapsulates the history of us monetary policy episodes with benign macroeconomic outcomes. A straightforward application of the Taylor Rule to current us macroeconomic data (third quarter 2015 GDP growth of 2.1%, October 2015 core inflation of 2.4%, and a core inflation target of 2%) yields a policy rate of 4.7%, assuming a potential GDP growth of 2%, or 4.2% assuming a potential GDP of 3%. If the Fed had acted on the basis of the usual current macroeconomic aggregates, it should have "pivoted" on its zero-bound interest rate policy long ago.

If the macroeconomic parameters relevant for the Taylor Rule are more or less on target, why then is the us policy rate so far removed from the neutral rate of 4% (target inflation plus the constant)? Market expectations, and the Fed's own forward guidance, indicate that the rise in us policy rates would be modest and protracted, with the federal funds rate rising to around 1.75% by the end of 2016 from the current level of 0.25%–0.5%. This is far below all Taylor Rule-based simulations.

This is possibly because of a sense within the Fed, more implicit than explicit—articulated through concepts like "forward guidance" (Ben Bernanke, former Governor of the us Fed) and "optimal control" (Janet Yellen, current Governor)—that critical real economy parameters, such as unemployment and inflation, are not consistent with the macroeconomic parameters usually used for setting policy rates. Thus, while the current us unemployment rate (5% in November 2015) is within the long-term non-accelerating inflation rate of unemployment (NAIRU) range, the labour participation rate continues to decline, and is at a historic high. Real wage growth is stagnant. Much of the employment creation is low-paid and part-time. Likewise, while core inflation is at the targeted level, consumer price inflation itself was close to deflationary levels at 0.2% in October 2015. Neither personal consumption expenditure, which accounts for a major share of GDP growth in advanced economies, nor investment, have recovered to pre-crisis levels.⁴ The recovery is also at least partly based on the housing sector which is sensitive to interest rates.

For all these reasons the current recovery is fragile and the most tepid compared to previous recessions. Minutes of recent meetings of the Fed indicate that its policy stance is now more

responsive to global spillovers than what it was in the past. The knock-down effect of higher us interest rates on an ailing global economy could boomerang on the us recovery. The Fed is understandably wary of derailing this fragile recovery. Every advanced country central bank, such as the Swedish Riksbank, which has tried pivoting since the GFC, has had to hastily retreat (Wigglesworth 2015). Would the us Fed's experience be any different?

On the other hand, it is unclear whether a protracted deviation from rule-bound monetary policy would succeed in returning growth to pre-crisis levels. The impediments in the way of higher growth are more structural than cyclical. Monetary policy is a poor substitute for the politically difficult structural reforms currently being attempted by the G-20 through its "Framework for Strong, Sustainable and Balanced Growth." Indeed, monetary policy has already borne most of the burden of raising growth, and this seems to have magnified some extant structural problems in advanced economies, such as high levels of leverage, asset booms, and low savings.

Current Dilemmas: Medium to Long Term

The chief conundrum facing monetary policy normalisation is whether the old monetary policy rules are still robust. The jury is still out on whether the taper and the interest rate pivot mark the "beginning of the end" or the "end of the beginning" of unconventional monetary policies in advanced economies. Not only does normalisation of monetary policy have a long way to go, by common consensus, it is likely to be protracted. There is also little clarity on what the end point would be: a return to the previously existing state of affairs, or a new normal for the monetary policy framework?

In retrospect, it is clear that the monetary framework was being undermined even prior to the crisis. Growth was at or above trend, while core consumer prices were stable. This may have deluded central bankers into setting interest rates too low, thereby inflating asset bubbles (Taylor 2007). This narrative seems to be repeating itself, arguably on a larger scale, in the post-crisis period. The Dow Jones has increased 4.6 times faster than nominal GDP in the low-growth post-crisis phase (2009–15), compared to 2.8% in the preceding economic boom (2003–07). Even during the long rally in stock prices between 1988 and 2000, the Dow Jones grew around three times faster than nominal GDP. With financial markets having become addicted to very low rates over an extended period, a rise in interest rates could once again destabilise financial markets by pricking the bubbles. This could destabilise the tepid recovery, just as it destabilised the economic boom preceding the GFC. Capital has already started to flow out of emerging markets, high yield ("junk") bonds have risen and the dollar has strengthened in anticipation of an imminent Fed policy pivot.

Even as short-term policy rates were set too low, the Fed was losing control over long-term interest rates on account of increasingly large and volatile cross-border capital flows (Bernanke 2005),⁵ described at the time as the "Greenspan Conundrum." This downward pressure on both short-term and long-term interest rates fuelled asset price bubbles, including the housing bubble. Since consumer prices were stable it was

evident that the excessive liquidity was spilling over into asset markets. But the Fed chose to do little about it, with Alan Greenspan observing that central banks could not call asset bubbles but only clean up afterwards.

Primary Target Dilemma

In the post-crisis period this has resulted in two kinds of debates. First, there has been a realisation that cleaning up after a financial crisis can be too costly, and that monetary policy should therefore return to its original mandate of financial stability as either an explicit additional target, or abandon inflation targeting altogether as the target of monetary policy.

Those subscribing to the former view are largely in favour of an additional tool for targeting financial stability. Since the interest rate is considered too blunt an instrument to deal with asset prices, out of fear of pricking the business cycle, there seems to be a consensus that macro-prudential policies should be used by central banks, or whichever authority is mandated to ensure financial stability, with the interest rate instrument continuing to target inflation. Another variant of this argument is to replace the inflation target by the level of nominal GDP (Frankel 2012).

There however remain lingering doubts, including within the Fed itself (Adrian et al 2015), whether macro-prudential tools, such as, among other things, leverage, net stable funding and loan-to-value ratios, counter-cyclical capital buffers, sectoral capital requirements, and stress testing, can respond nimbly enough to emerging risks to financial stability. Central banks may therefore willy-nilly be constrained to fall back on time-tested monetary policy tools.

Since using a single tool for achieving two separate objectives fall foul of the widely accepted Tinbergen Rule, this line of reasoning appears to strengthen the latter view that argues that inflation targeting has either failed, or the link between inflation and employment/growth is no longer linear, and in any case consumer price inflation is no longer a serious concern in the way financial stability now is. The implication is that central banks should stop fighting the last war and abandon inflation targeting as the focus of monetary policy altogether, and replace this with financial stability (Roach 2015).

Neutral Interest Rate Dilemma

The second debate is over the neutral interest rate, currently set at 2%, or the constant in the Taylor equation. Since the policy

rate hit the zero bound very early during the GFC, the argument for raising the inflation target, and consequently the neutral rate, arises from the need to expand the policy space for central banks in crises situations (Blanchard et al 2010; Krugman 2010; Porter 2015). There is however a contrarian viewpoint that makes a compelling case for lowering the neutral policy interest rate, or at least keeping it low for an extended period. This argument derives from recent research that the global neutral interest rate has been declining (Rachel and Smith 2015; Brainard 2015), and that advanced economies may have settled into a “new normal,” or an “old” long-term normal (Irwin 2015) of lower trend growth, or “secular stagnation” (Summers 2013). The policy implication of this dilemma is that policymakers may adopt a “new normal” for interest rates and we may never see the kind of tightening associated with previous cycles. Going forward, this raises the possibility that zero-bound interest rates and unconventional monetary policies are more likely to be used by central banks in advanced economies more frequently than in the past. The Japanese experience certainly supports this view.

Fiscal Dominance Dilemma

Rule-bound monetary policy came to shoulder the major burden of macroeconomic management out of recognition of the overtly political nature of fiscal policy. Research nevertheless indicated that in a financial crisis, fiscal policy needed to shoulder the major burden because monetary policy transmission channels got clogged. Fiscal multipliers were higher than usual in such circumstances. As a result, discretionary fiscal policy was used widely to supplement monetary policy not only to bail out the financial system but also as a macroeconomic policy tool to stimulate the economy during the GFC.

A steep rise in public debt is the usual aftermath of financial crises, especially since recovery from such crises takes longer than usual. Fiscal parameters improved gradually over time as economies grew their way back to fiscal health. This is what happened in the wake of the Great Depression of the 1930s, where the original problem was compounded by the compulsions of financing a war economy.

There is however a realisation that this time around things may be different. The ageing of advanced economies has been accompanied by a lowering of trend growth, which fell from an annual average of 3.4% during 1981–90, to 2.9% during

Table 2: Deficits and Debt

% of GDP	2006		2007		2008		2009		2010		2011		2012		2013		2014		2015	
	Bal	Debt	Bal	Debt	Bal	Debt	Bal	Debt	Bal	Debt	Bal	Debt	Bal	Debt	Bal	Debt	Bal	Debt	Bal	Debt
Advanced	-2.1	79.6	-1.9	77.4	-4.2	85.2	-9.6	99.5	-8.3	106.2	-7.0	110.5	-6.1	114.5	-4.3	113.0	-3.8	112.4	-3.4	111.7
US	-2.0	63.6	-2.9	64.0	-6.7	72.8	-13.1	86.0	-10.9	94.7	-9.6	99.0	-7.9	102.5	-4.7	104.8	-4.1	104.8	-3.8	104.9
UK	-2.9	42.5	-3.0	43.6	-5.1	51.8	-10.8	65.8	-9.7	76.4	-7.6	81.8	-7.8	85.8	-5.7	87.3	-5.7	89.4	-4.2	88.9
Germany	-1.5	66.6	0.3	63.8	0.0	65.2	-3.0	72.7	-4.1	80.6	-0.9	77.9	0.1	79.3	0.1	77.0	0.3	74.6	0.5	70.7
France	-2.3	64.2	-2.5	64.2	-3.2	67.9	-7.2	78.8	-6.8	81.5	-5.1	85.0	-4.8	89.4	-4.1	92.3	-4.0	95.6	-3.8	97.1
Japan	-3.7	186.0	-2.1	183.0	-4.1	191.8	-10.4	210.2	-9.3	215.8	-9.8	229.7	-8.8	236.6	-8.5	242.6	-7.3	246.2	-5.9	245.9
Emerging	0.3	41.2	0.1	40.0	0.5	37.6	-3.9	41.5	-2.6	40.2	-0.8	39.0	-1.1	39.2	-2.0	40.3	-2.7	42.5	-4.0	45.1
China	-1.2	32.2	0.1	34.6	0.0	31.6	-1.8	36.1	-1.2	36.0	0.5	35.6	0.0	37.1	-1.1	39.4	-1.2	41.1	-1.9	43.2
India	-6.2	77.1	-4.4	74.0	-10.0	74.5	-9.8	72.5	-8.4	67.5	-8.1	68.1	-7.4	67.5	-7.6	65.8	-7.0	66.1	-7.2	65.3
Brazil	-3.6	65.8	-2.7	63.8	-1.5	61.9	-3.2	65.0	-2.7	63.0	-2.5	61.2	-2.6	63.5	-3.1	62.2	-6.2	65.2	-7.7	69.9
Indonesia	0.4	35.8	-0.9	32.3	0.1	30.3	-1.6	26.5	-1.2	24.5	-0.6	23.1	-1.6	23.0	-2.0	24.9	-2.1	25.0	-2.3	26.5
Russia	8.4	10.5	6.0	8.6	4.9	8.0	-6.3	10.6	-3.4	11.3	1.5	11.6	0.4	12.7	-1.3	14.0	-1.2	17.8	-5.7	20.4

Source: Fiscal Monitor, October 2015, International Monetary Fund.

1991–2000, and further to 2.3% during 2001–07. In the post-crisis period between 2011 and 2015, they have averaged just 1.6% (according to International Monetary Fund (IMF) data). With nominal GDP growth declining precipitously, a protracted crisis with large fiscal deficits has led to a dramatic worsening in fiscal parameters within a few years (Table 2, p 49).

us public debt has increased substantially since the GFC, and now exceeds 100% of GDP, a level that has adversely affected economic growth in the past (Cecchetti et al 2011). With lower trend growth, current Congressional Budget Office (CBO) projections do not see it stabilising in the foreseeable future, even as far ahead as 2025 (CBO 2015).⁶ A rise in interest rates would worsen debt dynamics, because of a rise in interest payments on fresh debt to refinance maturing securities. The fiscal problem could be compounded by the need to increase the interest paid on excess reserves, and vastly expand its reverse repo operations, in tandem with policy rate increases, to forestall large pools of liquidity destabilising financial markets. Any rollback of the balance sheet in a rising interest rate environment could also result in huge losses for the Fed, which would ultimately have to be borne by the taxpayer. This unpleasant fiscal arithmetic has shifted the entire burden of macroeconomic management onto the shoulder of central banks.⁷ It could also constrain central banks to keep interest rates low for an extended period. Were this to happen, the resultant financial repression would in effect be a default on public debt to bring it down to sustainable levels (Reinhart and Sbrancia 2011).

Normalising Monetary Policy

With the taper completed, and the policy rate having pivoted, the us Fed can now turn to the task of normalising monetary policy, whatever that might entail. On the policy rate front this would mean raising the policy rate to some rule-bound rate, possibly a modified Taylor Rule. On the balance sheet front, it would first need to taper reinvestment of maturing bonds to start shrinking the balance sheet, a process which could be accelerated by selling bonds in the market. The sequencing, pace and what instruments would dominate at different stages of the normalisation process, are far from clear at this stage. Advanced economy central banks, and in particular the Fed, would probably learn through doing and testing the waters in the market.

The Fed is of course not the first central bank to have initiated unconventional monetary policies such as zero-bound interest rates and QE. The pioneer in this regard was the BOJ in the wake of the banking crisis of the 1990s. The BOJ was able to roll back its balance sheet fairly quickly, but it is still stuck at the zero bound.

The Japanese experience however may hold little relevance and guidance for the Fed for two important reasons. First, the us economy has largely recovered from the financial crisis, while Japan’s has still to do so; secondly, there are critical differences between the QE done by the two central banks,⁸ and therefore between the current Fed balance sheet and that of the BOJ. As a result, the sequencing between unwinding the balance sheet and the lower zero bound is likely to be reversed.

The BOJ had issued three-month bills which could be unwound automatically and fairly quickly. QE Mark-II by central banks during the recent financial crisis however involved purchase of long-term bonds, especially following “operation twist” in the us. Their balance sheets may therefore take much longer to unwind, and could well be completed only after policy rates have normalised.

There is also less compulsion for the Fed to unwind its balance sheet quickly. While the Fed’s bloated balance sheet of around 25% of nominal GDP in 2015 is comparable to BOJ’s in 2005 (NIA nd), unlike the BOJ, the us Fed also has a substantial chunk of mortgage-based securities (MBS) in its portfolio in addition to treasuries.⁹ A rapid unwinding of its MBS portfolio could adversely impact the housing market, especially as these are of questionable quality. With all the financial repression on account of unusually low interest rates for an extended period, the demand for us treasury bonds has also shrunk, with pension funds in particular offloading large amounts. Emerging markets and developing countries were a major source of demand for us treasury bonds in recent years, and they still hold some 43.4% of all us treasury bonds. Their demand for us Treasuries has however shrunk since the crisis, with their cumulative current account balance declining sharply from 3.8% of GDP in 2007 on account of demand compression in advanced economies. Current IMF projections are that they would slip into a cumulative current account deficit from 2015 (IMF 2015). Table 3 shows that since 2008, the demand for us treasuries either stagnated or has fallen for all major groups, with the Fed sharply expanding its share. In these circumstances a rollback of the balance sheet can lead to a sharp fall in treasury bond prices and consequential rise in yields at the long end of the yield curve critical for investment and growth.

Table 3: US Treasury Bond Holdings

Year	US Treasury Bonds in \$ Billion					
	Total	% US Fed	% Foreign	% Pension	% Banks	% Rest
1996	43,16,468	9.1	26.0	21.2	4.7	39.1
1997	43,79,966	9.8	28.5	22.0	4.6	35.1
1998	43,66,585	10.4	28.7	22.7	3.9	34.5
1999	43,36,716	11.0	26.6	23.9	2.6	35.9
2000	40,62,699	12.6	27.5	25.3	2.6	32.0
2001	41,18,460	13.4	29.1	25.9	2.1	29.4
2002	44,00,053	14.3	31.9	25.1	2.3	26.4
2003	48,23,169	13.8	32.1	23.6	3.3	27.3
2004	52,26,622	13.7	35.2	22.6	1.0	27.5
2005	55,60,940	13.4	36.2	22.0	0.4	28.0
2006	57,80,414	13.5	37.2	22.3	0.4	26.7
2007	60,51,176	12.2	39.8	21.9	0.2	25.9
2008	73,53,471	6.5	44.7	19.1	3.5	26.2
2009	88,59,150	8.8	42.1	17.3	3.0	28.9
2010	1,05,04,401	9.7	43.0	15.7	3.4	28.2
2011	1,16,41,982	14.3	43.5	15.4	3.5	23.4
2012	1,28,22,949	13.0	44.0	15.0	4.0	23.9
2013	1,36,80,640	16.1	42.8	14.9	2.9	23.3
2014	1,44,16,680	17.1	43.1	14.8	3.6	21.5
Q1 2015	1,44,34,858	17.0	43.2	13.9	3.6	22.3
Q2 2015	1,43,53,401	17.1	43.4	13.1	3.5	22.8

Source: <http://www.sifma.org/>.

On the other hand, bank reserves as a percentage of the Fed's balance sheet, at 55%, is much higher than what it was for the BOJ at 20%. Indeed, these reserves are so large that they exceed the currency in circulation. The need to keep this large potential source of liquidity locked in is likely to make the interest paid on excess reserves (for depositary institutions) and the reverse repo (accessible by non-depositary institutions) more important than the Federal fund rate for some time. Given the large amount involved, the scale of intervention that may be required could make the Fed the prime mover in us money markets, changing their current market-driven complexion (Burnes 2015).

Because of these crucial differences, it is almost certain that in the case of the us, at least, interest rates are likely to rise much before the balance sheet is substantially unwound. Indeed, it is quite possible that the us Fed could hold the assets to maturity. Their share of the GDP would gradually diminish with the expansion of nominal GDP.

Emerging Markets

Monetary policy dilemmas confronting emerging markets are altogether different. The sharp demand compression in advanced economies and slowing growth in China has left a lasting impact in the form of stalled growth. The decline has still not bottomed out. After the smart recovery to 7.5% in 2010, average annualised growth in emerging markets and developing economies declined in each successive year to touch a post-crisis low of 4% in 2015.

Emerging markets have taken recourse to both monetary and fiscal policies to stabilise growth, just like advanced economies. Monetary policy however was neither constrained by the zero bound, nor impaired by the liquidity trap that afflicted advanced economies. Indeed, they never felt the need to deviate sharply from Taylor Rule¹⁰ type measures. India's current monetary policy stance is illustrative. Its present policy (repo) rate of 6.75% is consistent with its macroeconomic parameters of (November 2015) Consumer Price Index (CPI) inflation of 5.4% (against an interim glide path target of 5%), and an output gap of about 1.5%.¹¹

Unlike advanced economies, therefore, monetary policy dilemmas in emerging markets derive from their traditional sources, namely fiscal dominance, supply-side constraints that lead to stagflationary situations from time to time, and respond to the spillovers of monetary policy in advanced economies. Of these, the third is the most relevant in the current juncture. But, as in the case of advanced economies, monetary policy in emerging markets is in danger of being asked to bear a disproportionate burden for restoring former levels of high trend growth, the impediments to which are structural rather than simply cyclical.

Fiscal Dominance

Financial repression has long been a structural feature of emerging markets as they often mobilise private savings for developmental needs that call for large public outlays on physical and social infrastructure. In recent years, however, emerging

markets have tended to move away from monetising deficits, while rising trend growth¹² has ensured that fiscal dominance does not threaten monetary independence to the extent it does in advanced economies. Indeed, there is an astonishing role reversal in this regard, with QE having virtually obliterated the distinction between monetary and fiscal policy in advanced economies.

There is, however, little cause for complacency. As already pointed out, declining growth and international trade flows have shrunk the current account surpluses of emerging markets and developing economies (EMDES), resulting in a sharp decline in reserve accretion,¹³ and therefore in their demand for treasury bonds of advanced economies. However, the sharp fall in the cost of capital in advanced economies as a result of easy monetary policies over an extended period led to a rush of capital into emerging markets in search of higher yields. This has led to the ballooning of private dollar debt in emerging markets, as corporations rushed to borrow at low rates in an environment of great exchange rate stability. The share of emerging market borrowers in us dollar credit outside the us, which had fallen from around half to about a third on the eve of the GFC, has recovered to over half since 2009 (McCauley et al 2015). The growth has been particularly rapid in China, Brazil and India. Strained corporate balance sheets have also strained bank balance sheets because of the greater reliance of corporations on banking channels compared to advanced economies.

This could well have remained a self-correcting cyclical phenomenon, but for the turning of the external financial cycle that has sharply inflated the local currency equivalence (in which most of the corporate earnings are denominated) of the dollar debt. The first alarm bells were sounded during the "taper tantrums" in mid-2013, when it became clear that the tide of us monetary easing was turning. The bells tolled louder as the Fed pivot on interest rates became imminent. Capital started flowing out of emerging markets. Net capital inflows into emerging markets fell to just \$32 billion in 2014 from a few hundred in preceding years. The International Institute of Finance projects a net outflow of over half a trillion dollars in 2015. This would be the first net outflow from emerging markets since 1988 (Wheatley and Fleming 2015). Further tightening by the us Fed could lead to large-scale corporate debt default and banking stress. Since much of the financial sector in emerging markets is government owned, private default could spillover onto sovereign balance sheets. This could lead to the re-emergence of an age-old monetary policy dilemma for emerging markets.

Supply-side Constraints and Inflation Targeting

The sanctity of inflation targeting in emerging markets has always been contested because the source of inflation is usually different from that in mature advanced economies. In the latter it is mostly driven by cyclical shifts in demand. While fast-growing emerging markets in the throes of major structural transformation have a structural demand-side problem on account of low median incomes, their major cyclical constraints are mostly on the

supply-side. Their consumption basket contains a much greater proportion of food and fuel items whose prices are inherently volatile. Food items comprise almost half of India's CPI. They also tend to be heavily dependent on commodities, either as exporters or importers, making their current accounts inherently unstable that can fuel inflationary pressures from time to time.

Such supply-side constraints frequently result in stagflationary outcomes, putting the central bank in the unenviable position of making trade-offs between targeting inflation and targeting growth. While monetary policy can do little about fixing supply-side constraints, and is therefore considered a blunt tool in such circumstances, it nevertheless has a role to play to ensure that interest rates do not turn negative, as this could compound the problem by worsening the current account and reducing financial savings, thereby worsening macroeconomic parameters and puncturing growth.

Growth is presently subdued in emerging markets on account of protracted demand compression in their major markets. Global food and commodity prices are also depressed. This has to a great extent abated inflationary tendencies, especially amongst commodity importers, at the current juncture, leaving monetary policy free to target slowing growth. Indeed, declining commodity prices have had the effect of loosening monetary policy, just as it has had the opposite effect on commodity exporters. Overall macroeconomic conditions vary however, with central banks in Brazil, Turkey and Colombia having recently raised policy rates to rein in inflation. Although monetary policy in India has recently turned accommodative, against the backdrop of stalling growth and falling inflation, its central bank continues to be on inflation watch. Its recent switchover to an explicit targeting regime would be put to the test if and when supply-side constraints resurface. On the other hand, policy rates are low and in stimulative mode in countries such as China, Malaysia and Mexico.

Global Spillovers and the Impossible Trinity

For emerging markets, the us dollar has, over the years, effectively become the global reserve currency for external transactions. As a result, us monetary policy has a determining influence on the direction of global capital flows, with the Fed playing the role of some kind of global central bank. Shifts in us monetary policy are now a major determinant of global financial cycles that are not always aligned to domestic business cycles (Rey 2013). Indeed, external shocks—both positive and negative—are major drivers of business cycles in emerging markets, especially those with open trade and capital markets (Solmaz and Sanjani 2015).¹⁴ This was the experience of Latin America in the early 1980s, East Asia in the late 1990s, and across a broad swathe of emerging markets at present. It is not coincidental that the capital-stop in each case followed a pivot in us monetary policy, leading to sudden stops, sharp currency depreciation, and external payments crises. It is this threat of an external payments crisis that compels developing countries to frequently use monetary policy for managing external imbalances, in addition to managing the domestic business cycle.

The resultant loss of monetary independence can destabilise the business cycle as monetary policy is not free to respond to the domestic business cycle. According to the widely accepted “Tinbergen Rule,” a policy instrument can be effective only if it has a single objective. Despite this, emerging market economy (EME) central banks have been using a single policy instrument, namely, the short-term interest rate, to sometimes target domestic imbalances (the inflation–growth matrix) and sometimes external imbalances (the exchange rate–current account balance matrix), supplemented by market intervention, depending on which balance appears more pressing at the moment. This risks distorting and emasculating rule-bound monetary policy such as the Taylor Rule (Taylor 2014), making it inconsistent, and magnifying rather than attenuating both domestic and external imbalances. Thus the currency crisis following the taper tantrums in 2013 constrained Brazil, Turkey and Indonesia to tighten policy rates amidst collapsing growth. Emerging markets today stand on the cusp of the same trilemma as the us monetary cycle pivots.

Even as the extant debate on monetary policy in advanced economies is centred on whether it should target financial stability in addition to, or in lieu of, the domestic business cycle; the counterpart debate in EMES centres on the “Impossible Trinity” of the Mundell–Fleming framework (Sheel 2014). According to this, a country can have only two of the following three: fixed exchange rate, monetary independence, and free capital flows.

In the past, external payments crises pushed EMDES to seek “conditional” bailouts from the IMF, the international lender of last resort, and more recently—during the GFC—the us Fed. Emerging markets however now sit on large foreign exchange reserves. The chief dilemma facing central banks in emerging markets at the current juncture is determining whether this self-insurance, combined with macro-prudential measures,¹⁵ are adequate to see them through any sudden stop. Only this confidence would give them the nerve to keep their powder dry through short-term market perturbations. A sharp depreciation sustained over an extended period is however likely to feed inflationary expectation, pressuring them into a policy response. They may therefore willy-nilly lose their monetary independence to manage the divergent spillovers from advanced economies through the trading and financial channels, and/or approach the IMF or the us Fed. While trade spillovers have already compressed external demand, which calls for easing of monetary policy, the turning of the external financial cycle¹⁶ with the Fed interest rate pivot, and the resultant threat of capital outflows, and the sudden stops may call for higher interest rates.¹⁷

The impact of spillovers on EMES would depend, first, on the speed of unwinding of unconventional monetary policies, and second, on country-specific circumstances. Current indications are that the unwinding is likely to be staggered. A synchronised exit is also improbable, with the European Central Bank and BOJ still in expansionary mode even as the us Fed and Bank of England start to exit in a measured manner.

While past experience indicates that all EMES would suffer, the extent of pain would depend on country-specific circumstances that can vary greatly from time to time. Some countries, such as India, which received large capital inflows and saw their real effective exchange rate appreciate despite running current account deficits, might consider some degree of depreciation as benign as this could help them restore external balance and competitiveness, especially for those emerging market currencies adversely affected by the recent depreciation of the Renminbi.¹⁸

A comparison of the impact of external shocks in 2008 (post Lehman Brothers) and 2013 (taper tantrums) reveals that EMES with relatively greater structural macroeconomic vulnerabilities, such as high current account deficits, low reserves, inflationary pressures, and low growth are likely to be more affected during a systemic capital-stop (Table 4).

Table 4: External Deficits and Capital Stops in 2008 and 2013 (%)

Country	Depreciation 7/8/2008–10/8/2008	CAB/GDP 2008	Depreciation 22/7/2013–30/8/2013	CAB/GDP 2013
Australia	45.5	-4.5	9.2	-3.7
Brazil	50.0	-1.7	15.6	-2.3
China	3.0	9.3	-0.3	2.6
India	19.0	-2.4	19.8	-5.1
Indonesia	28.7	0.1	11.9	-2.8
Mexico	35.0	-1.7	8.4	-0.8
South Africa	58.1	-7.2	3.7	-6.3

CAB=current account balance; GDP=gross domestic product.

The current account deficits of Brazil, Indonesia and India, which saw the sharpest depreciation in 2013, had deteriorated sharply relative to 2008. Mexico, South Africa and Australia, who reduced their current account deficits in 2013, fared better relative to other countries. China, which runs big current account surpluses, and sits on a formidable pile of foreign currency reserves, hardly saw its currency move. The sheer size of its foreign exchange reserves makes its monetary policy presently immune to being overly influenced by the turning of the external financial cycle, leaving it free to concentrate on the domestic business cycle. India's macroeconomic parameters are now much better relative to May 2013, with its current account deficit below 2% of GDP, its fiscal deficit and inflation much lower, and foreign currency reserves at a record high.

India is also the fastest growing major economy in the world. It is therefore likely to be much less affected compared to other emerging markets in the event of a sudden stop.

Conclusions

Having occupied the pole position in recent times in macroeconomic management of the economy, central bankers at first looked to enhance their rock star status with the onset of the recent GFC. In retrospect, however, despite successfully forestalling deflation, the crisis has damaged their reputation. They have attempted to do too much on one hand, and have been found wanting in responding to emerging challenges on the other. They seem to be still fighting the last war rather than adjusting monetary policy rules. As a result, the real economy has not responded as expected to unprecedented and aggressive actions. They may have also laid the grounds for another crisis through new asset booms.

While monetary policy in both advanced economies and emerging markets risk attempting too much, they face quite different challenges at the current juncture. In the former it is in uncharted territory. Current dilemmas derive from the normalisation of unconventional monetary policies. The dilemmas are both short term and long term. The short-term dilemma is to determine when to start exiting extraordinary policies and selecting appropriate tools, as conventional tools may not be very relevant during this phase. The medium- to long-term challenges relate to sequencing, pace and mechanics of normalisation. It is still far from clear what the "normal" monetary policy of the future would look like, as the choice of target and rules are beset with their own dilemmas. Monetary policy in emerging markets needs to cope with the familiar dilemmas of fiscal dominance, the growth-inflation trade-off and the "impossible trinity." With fiscal parameters in control, and food and commodity prices subdued, the chief dilemma currently confronting emerging markets involves a trade-off between targeting divergent domestic and external cycles. Although they are now better placed to absorb a sudden stop, the impact is likely to be differential, with those with weaker macroeconomic parameters suffering greater pain.

NOTES

- 1 While monetary policy worked in tandem with fiscal policy, this was largely to accommodate fiscal expansion (Meltzer 2005).
- 2 The migration of systemically important financial activity, including credit creation, to outside the regulated system may well have blunted monetary policy as a macroeconomic policy tool. Widely blamed as the major villain of the piece in the GFC, it has scrambled to strengthen its position in the post-crisis period, with its share of GDP in 26 major jurisdictions rising from around 57% (\$35 trillion) in 2010 to almost 60% (\$40 trillion) in 2014 (Financial Stability Board 2015: 10).
- 3 While there are a number of variations of this equation, the following is a fair representation: Policy Rate = Current Core Inflation Rate + (0.5*(Current GDP-Potential GDP)) + (0.5*(Current Core Inflation Rate-Target Core Inflation Rate)) + 2.

- 4 While US real personal consumption expenditure growth in 2014 at 2.7% was a sharp improvement over the last few years, it is still significantly below the pre-crisis level of around 3.5%. US gross domestic private investment has risen from the low of 12.4% in quarter three of 2009 to 16.8% in quarter three of 2015. But this is still considerably below the quarter one of 2006, pre-crisis high of 19.8%, and also much lower than the levels prevailing over the last 20 years.
- 5 In retrospect, credit creation in the rapidly growing shadow-banking system appears to be another important reason for this.
- 6 The Bank of International Settlements' long-term projections are much more alarming (Cecchetti et al 2010).
- 7 The argument is sometimes made that governments could try and stimulate growth through structural reforms. The G20 Framework for Strong, Sustainable and Balanced Growth is

nudging the major economies to do just this. The outcome is unsurprisingly disappointing so far, as most of these reforms entail a great deal of pain and are therefore politically difficult to implement without fiscal support when the economy is not doing well (Sheel 2015a).

- 8 "The Federal Reserve's approach to supporting credit markets is conceptually distinct from quantitative easing (QE), the policy approach used by the Bank of Japan from 2001 to 2006. Our approach—which could be described as 'credit easing'—resembles quantitative easing in one respect: It involves an expansion of the central bank's balance sheet. However, in a pure QE regime, the focus of policy is the quantity of bank reserves, which are liabilities of the central bank; the composition of loans and securities on the asset side of the central bank's balance sheet is incidental. Indeed, although the Bank of Japan's policy approach during the QE period was quite multifaceted,

the overall stance of its policy was gauged primarily in terms of its target for bank reserves. In contrast, the Federal Reserve's credit easing approach focuses on the mix of loans and securities that it holds and on how this composition of assets affects credit conditions for households and businesses" (Bernanke 2009).

- 9 As of 9 December 2015, mortgage-based securities comprised about one-third of the Fed's balance sheet of \$ 4.2 trillion (<http://www.federalreserve.gov/releases/h41/20151210/>).
- 10 The author of the rule, John B Taylor of Stanford University, is of the view that it is relevant for developing country central banks also. Many developing countries have indeed started using Taylor Rule type measures in some form or the other (Taylor 2000).
- 11 For a more detailed discussion on Indian monetary policy and the Taylor Rule, see Sheel (2015b).
- 12 Average annualised real growth in EMDEs rose from 3.5% during 1981–90, to 3.9% during 1991–2007, to 6.6% during 2001–07 (IMF data).
- 13 Reserve accretion of emerging markets and developing countries fell from a high of \$1,219 billion in 2007 to \$702 billion in 2008, and further to \$525 billion in 2009. Following the sharp recovery in 2010 that saw their reserves rise by \$836 billion, only to decline by \$751 billion in 2011, \$439 billion in 2012, a temporary increase to \$526 billion in 2013, before falling sharply by \$114 billion in 2014. 2015 is projected to see a decline in reserves of almost half a trillion dollars (IMF 2015).
- 14 The resultant sharp exchange rate fluctuation against the dollar leads to sharp price fluctuations since much of international trade is invoiced in that currency (Gopinath 2015).
- 15 The IMF, which had earlier advocated moving to full convertibility on the capital account has now come around to the view that temporary capital controls may be necessary to counteract large and volatile capital flows (IMF 2012).
- 16 India, one of the biggest recipients of capital flows over the last several years, has seen a net foreign institutional investment (FII) outflow in 2015–16, the first time since the height of the GFC in 2008–09.
- 17 John B Taylor, author of the eponymous Taylor Rule, is of the view that interest rates should respond only to the domestic economic cycle, and that macro-prudential tools should be used to respond to the external cycle (Taylor 2014). Such tools however are more effective during capital surges, as they can exacerbate capital flight and stops.
- 18 This recently led the Mexican finance minister to stoke fresh fears of "currency wars" (Webber 2016).

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