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## Central Banks in 2010 - The Cacophonous Sound of Exit Music

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Central banks across the world took largely synchronous measures to contain the financial panic which began in the summer of 2007. As we draw closer to the third anniversary of this event, central bankers are presented with different economic and market signals that demand divergent responses. Thus far those responses suggest that the uncertainty of the past three years has left central bankers skittish. Otherwise strong economies have been slow to normalize rates and those central banks following inflation targets have been more than willing to risk breaches rather than risk growth. Despite the guarded approach of central banks globally, the remainder of the year will ultimately be characterized by differing exit strategies and their intended and unintended consequences – some of which are already underway. As central bankers across much of the world begin tightening before the Fed and the ECB, there will be further implications on global capital flows and exchange-rates. The following presents our global monetary policy outlook for the remainder of the year, beginning with our Fed forecast.

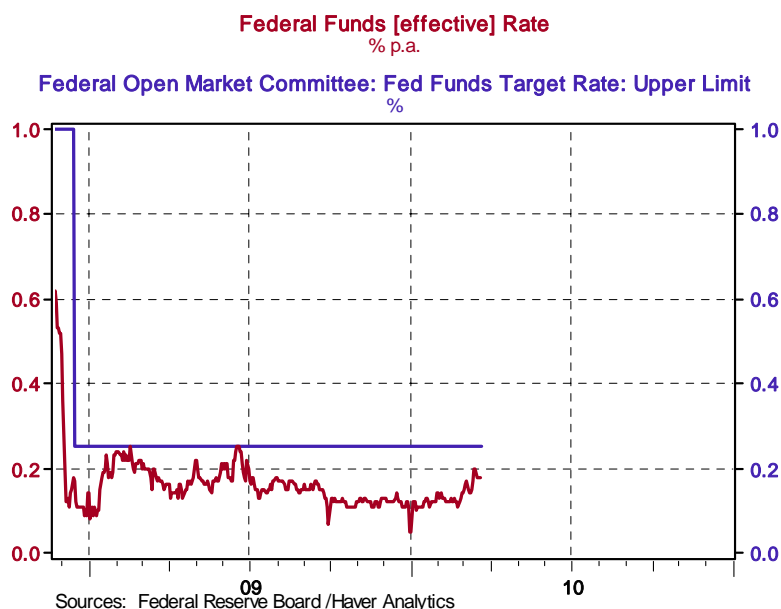
### *The Fed's Delicate Balancing Act*

The Fed's monetary policy approach has evolved in aggressive and innovative ways as it responded to the financial crisis. In addition to lowering the federal funds rate from 5.25% to 0% to 0.25%, the Fed fulfilled its traditional role as the "lender of last resort" by providing short-term liquidity to banks and financial institutions through various programs newly instituted to address the emergency situation. The Fed also adopted a new role by lending directly to borrowers and investors in key credit markets and expanding the types of securities it would purchase under open market operations. The primary virtue of the combined use of these instruments is that it enabled the Fed to push down interest rates and ease credit conditions in a range of markets even as the federal funds rate was cut to the zero mark. Several of these programs have expired or closed as the Fed successfully turned around financial markets. (List of programs is in appendix 1.) Facing calmer financial markets, the Fed in 2010 will direct monetary policy to promote economic growth and job creation, with inflation being of little concern at the present time.

The Fed will continue to withdraw emergency accommodation before it considers applying the monetary policy brakes. The Fed increased the discount rate to 0.75% on February 18, 2010, raising the spread vis-à-vis the target federal funds rate to 50 bps from 25 bps. This spread was 100 bps prior to the onset of the financial crisis. At the peak of crisis, roughly \$110 billion were extended through discount window, which has dwindled to approximately \$12 billion dollars as of the week ended March 17. Discount window borrowing was insignificant prior to August 2007. During the year, there is a high probability that the discount rate will be raised another 50 bps to 1.25% to bring the spread with respect to the upper limit of the target federal funds rate to the pre-crisis level. This action will mark the end of the emergency accommodation provided through the discount window.

As inter-bank market conditions have improved vastly, the Fed is gradually eliminating the subsidy it provided by maintaining an effective federal funds rate below the target for an extended period. The effective federal funds rate has hovered around 11 and 13 basis points in the October 2009-February 2010 period. In the first two weeks of March it moved up to 15 basis points and has averaged 18 basis points in the past seven business days. It appears that the effective federal funds rate is heading toward the upper limit of the target rate in the very near term (see chart 1).

Chart 1

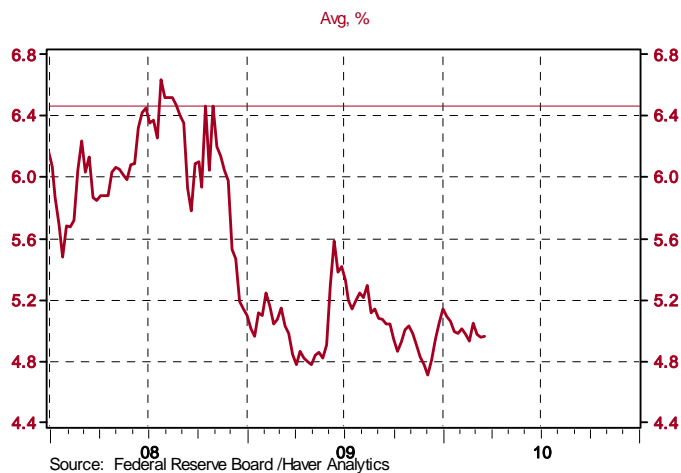


The behavior of mortgage rates in the near term is of utmost interest as the Fed has announced it will cease buying GSE securities and mortgage-backed securities by March 2010. By this time, the Fed's portfolio will include \$1.25 trillion of mortgage backed securities and \$175 billion of GSE securities. The impact of this extraordinary modification of its portfolio is visible in the downward trend of mortgage rates. The 30-year fixed rate mortgage registered a high of 6.46% on the eve of the Fed's participation in the mortgage market; it was quoted close to 5.0% as of this writing (see chart 2). If mortgage rates retrace their decline of the past year rapidly, the Fed will be pressed to intervene once again.

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Chart 2

Contract Rates on Commitments: Conventional 30-Yr Mortgages, FHLMC



The fundamentally fragile status of the economy makes a strong case for the Fed to stand pat throughout 2010. The worrisome unemployment statistics, ranging from the 9.7% unemployment rate to the persistent elevated level of unemployment claims, will continue to be at the forefront of policy discussions. The inoperative credit machine, which has translated into a stubborn contraction in private sector lending in the past year, is another aspect of the economy that will delay consideration of tightening monetary policy (see chart 3).

Chart 3

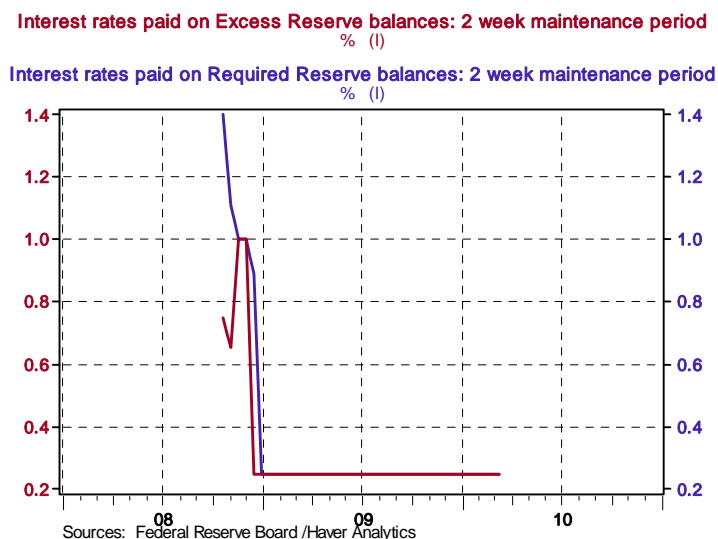
Loans & Leases in Bank Credit: All Commercial Banks



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The federal funds target and effective rates are likely to trade in close proximity before considerations of tighter monetary policy become part of Fed rhetoric. The FOMC is most likely to begin applying the monetary policy brakes only in early-2011. The Fed continues to maintain the view of an “extended period” of low interest rate in its policy rhetoric. Bernanke’s testimony of February 10, 2010 and subsequent Fed communications have indicated that the key indicator of the Fed’s policy stance will shift to the interest rate paid on excess reserves temporarily from the federal funds rate. Currently, the interest rate paid on reserves, both required and excess, is 0.25%, matching the upper limit of the target federal funds rate. The Fed may adopt a two-step procedure of paying excess and required reserves the same interest rate early in the tightening cycle and at a later stage the Fed could differentiate by paying a higher rate on excess reserves compared with required reserves.

Chart 4



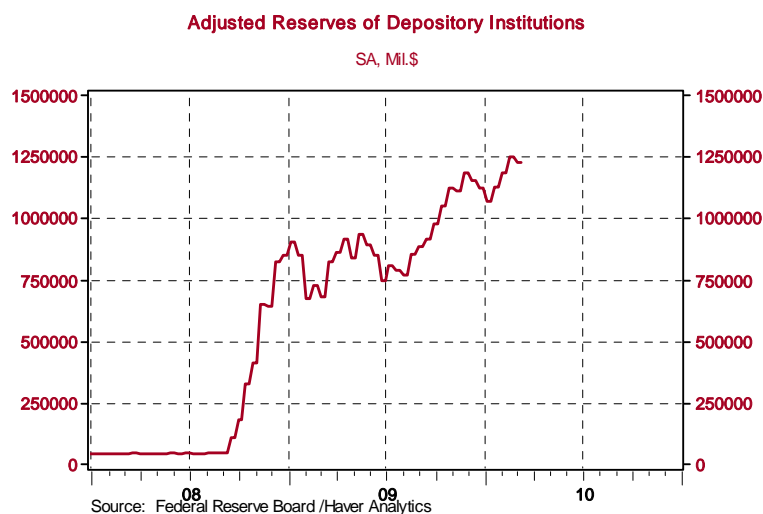
In addition to raising interest paid on reserves, the Fed has lined up “reverse repurchase agreements” and “term deposits” as two additional tools to drain reserves from the banking system. Reverse repurchase agreements involve the Fed selling securities with the agreement to buy them back later at a higher price. The Fed has tested the working of reverse repurchase agreements and stands ready to implement it when necessary. The details of the term deposit facility are not available as yet. The basic idea is that banks can hold term deposits at the Fed and earn interest. The main difference between reserves and term deposits is that funds are locked up for long period and they cannot be used to meet short-term liquidity requirement of banks and will not be counted as reserves. The Fed expects to test the working of the term deposit facility by May 2010.

Essentially, the Fed has at its disposal four instruments – interest rate paid on reserves, reverse repurchases, term deposits, and outright sales of securities in its portfolio – to drain or neutralize

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reserves, which have exploded to over \$1 trillion (see chart 5). In order to prevent destabilizing conditions in financial markets, the first three options are expected to be the preferred instruments before the Fed considers outright sales of a variety of securities in its portfolio. The actual timing and size of the draining of reserves and the interest paid on reserves will be tied to economic conditions. Chairman Bernanke noted in his February 10, 2010 testimony that one possible scenario would be to drain reserves on a limited scale before the Fed commences policy tightening to enable market participants to develop familiarity with the operations and raise the scale of operation gradually. The bottom line is that the Fed's delicate balancing act is quite complex in the months ahead and guiding the economy toward self-sustaining economic growth will be the main focus of monetary policy.

Chart 5



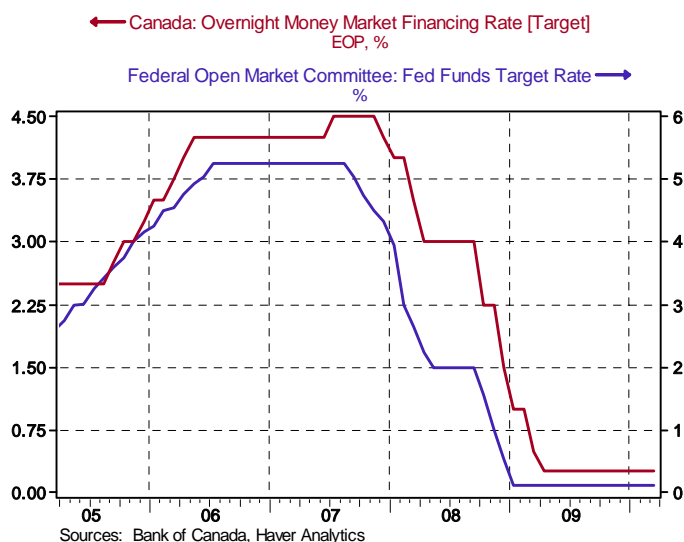
### **Q3 Hike Likely in Canada**

Three months after the Fed commenced its easing cycle in September 2007 the Bank of Canada (BOC) followed suit, with the key overnight rate ultimately reaching an unprecedented 0.25% in April 2009 (Chart 6). In the meantime, the Canadian economy has shown more strength than its US counterpart and expectations have risen that the BOC and the Fed will take divergent paths beginning in the second half of the year. The BOC has maintained that the current level of monetary laxity will remain at least until Q3 2010 and we expect that promise to be kept for two key reasons. First, while headline inflation reached 2.1% y-o-y in February, just past the midpoint of the Bank's inflation target range, the Bank has typically been more heavily influenced by the CPI excluding food and energy which clocked in at a less-threatening 1.6%. Second, we believe the BOC is willing to risk slightly higher near-term inflation rather than hike and put further upward pressure on the loonie. Canadian exports are key to a sustained recovery and an even stronger currency combined with slack US demand could significantly affect the economy going

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forward. We view the most likely outcome to be a 0.25% hike in July, though if inflation figures remain stable, the tightening may wait until Q4.

Chart 6



### Varied Challenges across Europe

The European Central Bank (ECB), responsible for monetary policy across the 16-member Eurozone, will be faced with similar challenges and is not likely to hike its main policy refi rate this year. Instead, it is focused on gradually withdrawing the extraordinary stimulus measures it put in place in the fall of 2008, without undermining the fledgling economic recovery or destabilizing the banking sectors in any of its members. In doing so, it is facing the perennial problem of monetary policy-making for 16 very different economies, with some clearly in recovery mode while Spain (the 4<sup>th</sup> largest) is still mired in recession and Greece is sliding downward. At its March meeting, the bank held its refi rate at 1.0% for the 11<sup>th</sup> consecutive month. With the annual rate of inflation still subdued across the 'zone – up 0.9% in February, with core CPI up just 0.8% – and with the bank's own forecast for inflation of 0.9% to 2.1% in 2011, there is no pressing need for rate hikes, perhaps not until next year.

Governor Trichet has also detailed the next stage of the withdrawal of stimulus. In Q2 the bank will shift back to offering three-month funds at a variable rate, but financial institutions will have all the liquidity they need through the third quarter, as the ECB pledged it will continue to provide unlimited shorter-dated money at a fixed rate until at least October. The ECB will try to ensure that its policy changes do not destabilize banks in the likes of Spain, Germany or, especially, Greece. To that end, it has also announced that the looser collateral rules that had been due to expire at the end of 2010 will now be extended into 2011 – a critical step for Greece, as it means

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that banks can continue to use Greek government debt for collateral for ECB funding even if Moody's joins S&P and Fitch in downgrading the Greek sovereign rating below A.

Which brings us to the other issue exercising Euro-zone policy makers – how best to deal with Greece's problem of refinancing its considerable debts without appearing to resort to an outright bailout. The idea of creating some form of IMF-style European Monetary Fund has been mooted. Trichet has warned that this would have to entail non-concessionary financial support with strong conditionality and most policymakers have concluded that it would be at most a long-term project and not a solution to Greece's immediate debt problems. On that front, Euro-zone finance ministers agreed in early March to help Greece should it ask for aid, but gave no details other than insisting the plan would not include loan guarantees. By the end of the month, Berlin and Athens were playing a game of financial chicken – the former insisting that Greece is on its own and shouldn't expect its more sober EU neighbors to pay for its past profligacy, and the latter warning it may have to turn to the IMF (which would boost the cost of funds for all Euro-zone members at a time when they are trying to issue hefty amounts of debt). At the time of writing, it appears that the members have come up with a compromise that tries to make everybody happy: the 'zone will take the lead in providing some form of balance of payments support "if necessary," with the IMF also providing funds and "expertise." On the surface, this appears to meet the concern that the Euro-zone be seen to support its own members without German voters feel they are footing most of the bill. It remains to be seen whether the markets will conclude that the EU has solved the first big challenge for the Euro-zone since the creation of the common currency.

Outside the Euro-zone, the picture is rather different in the UK, where the Bank of England (BoE) is not yet ready to follow the ECB in talking about withdrawing extraordinary measures. The BoE has kept its repo rate at 0.5% since March 2009, and is highly unlikely to tighten this year – particularly if fiscal austerity measures are in the offing. Although inflation jumped in January, the BoE expects prices to ease back later in the year. The bigger question is whether the bank is done with its quantitative easing program – in late February Governor King warned that growth risks remain to the downside and that further quantitative easing may be needed. In early March the FSA gave banks more time to adjust to new liquidity rules, saying it will not demand higher liquidity levels until the economy is recovering. Although there have been some better data recently, the overall outlook remains uncertain, with data on exports, retail sales, and home prices still very weak. There is uncertainty, too, on the political front, where opinion polls indicate the possibility of a hung parliament or a minority Labour government, weighing on sterling.

Norway's central bank increased its key rate twice in Q4 2009, taking it to 1.75%, and remains in a hawkish mood, but may not move as fast as initially anticipated, given that (non-oil) Q4 GDP disappointed, up just 0.3% q-o-q. Having held on rates this month, Norges Bank looks set to hike maybe three more times this year, with the next move likely in May. Although Sweden's economy flipped back into recession in Q4 the Riksbank's Governor said earlier this month that the economic recovery remains on track and that the bank expects to begin raising its repo rate "with effect from the summer or the beginning of the autumn." The Swiss National Bank (SNB) is focused on the Swiss franc's exchange rate. The Swiss economy gathered speed in Q4 and growth broadened, with real GDP up 0.7% q-o-q (Q3 up 0.5%). Nevertheless, the SNB held its

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interest rates steady in March, and continues to warn that it will fight any excessive appreciation of the Swiss franc “decisively” to ensure that the economic recovery continues.

In central/eastern Europe, policy rate hikes are likely in Poland and the Czech Republic from Q3, and perhaps sooner in Turkey, but the situation is more nuanced in Hungary. Poland survived 2009 without suffering a recession and its central bank head warned recently that it is time to start thinking about rate hikes, although continued strengthening of the zloty against the euro could stay the bank’s hand. The Czech Republic’s economy came out of recession in Q4, and central bank Governor Tuma has said that rates are likely to start rising in the second half of this year. Hungary is in a somewhat different position, its central bank having cut the main policy rate by another 25bps in February, to a new record low 5.75%. The bank has signaled that its easing cycle is near its end, but one or two more small cuts are likely before it is done. With an economy that has been hit hard by the global recession and credit crunch, the pace of monetary tightening in Hungary is likely to lag that of its neighbors. In addition, a major source of uncertainty is looming in the form of a general election in April, with opinion polls point to a crushing defeat for the ruling Socialists. The main opposition party Fidesz is promising tax cuts and a faster economic recovery, but has been vague on how this would fit with the need to rein in the fiscal deficit and meet the terms of the IMF-led aid program. It has also suggested that it may try to rewrite the laws that govern the central bank’s operations, in an apparent bid to remove the current governor. Any such challenge to the central bank’s hard-won autonomy could seriously rattle the markets, and prompt the bank to tighten to protect the forint and its fund inflows – the opposite effect from that sought by the Fidesz leadership. Finally, the central bank of Turkey left its key borrowing rate at 6.5% this month, but for the first time in many months warned that it would not refrain from raising rates if price pressures worsened. The annual inflation rate jumped above 10% in February, far over the bank’s target for this year of 6.5%. The bank insists that prices will ease back over the coming months, but it may need to tighten sooner than it would like. In addition, as in Hungary, political developments could impact the central bank’s stance. Having jettisoned the idea of negotiating a new IMF Stand-by Agreement, Turkey is now on its own in convincing investors that it can continue to service its high levels of debt. Ankara has ridden out the global turmoil of the past year relatively unscathed, but domestic political tensions are ramping up again. The central bank may not want to make any policy shifts through the summer, but in the past it has been willing to hike rates sharply at a time of market panic in order to protect the lira and to attract funds.

### ***Recovery Apace in Asia-Pacific, But Responses Differ***

As a region Asia has weathered the worst of the global recession and is fast approaching pre-crisis growth levels. However, while a handful of countries are raising interest rates, most others have set aside monetary tightening for the near-term or are still pushing stimulus to support the domestic economy.

A recovery in global demand brought most of Asia's export-based economies out of recession in 2009, and by the end of the year the region as a whole was again the fastest-growing economic bloc in the world. Domestic fiscal stimulus packages, which varied greatly in size and breadth,

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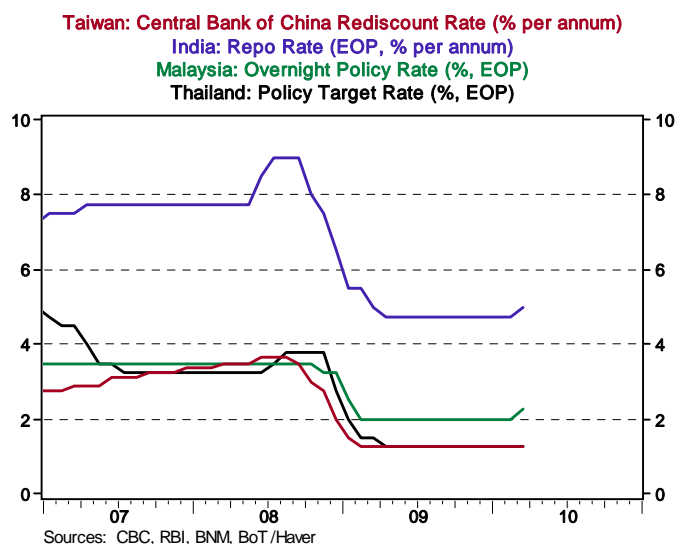
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helped support internal demand while exports were weak, and now the more balanced economies have successfully rekindled self-sustaining growth that complements the external sector. Other countries, however, continue to stumble and are obligated to issue more debt in an effort to kick-start the economy. Debt levels throughout Asia are largely manageable (save for Japan), and the stronger economies have ample public resources to utilize in case of emergency. While the region as a whole is again growing, countries are at different stages of the economic recovery cycle and approaching it with various blends of policy approaches.

In China, where massive fiscal stimulus, low interest rates and a currency pegged to the US\$ allowed growth to resume very quickly, concerns are now being raised about economic overheating. Rapid lending growth and speculative investment have sent asset prices soaring, and the government is now trying to cool the economy before becoming a victim of its own success. While inflation is relatively contained for now, real estate and equity gains have exceeded all expectations, suggesting price pressures abound. However, the People's Bank of China has not ticked up its main policy rates, officially claiming economic growth is strong but uneven and that it does not want to risk destabilizing the economy. The PBoC has raised reserve requirements throughout the financial system and ordered the major banks to cut back on lending, but these have proven to be blunt tools of monetary policy lacking the effectiveness of formal rate hikes. Beijing is also not letting the yuan move from its carefully maintained exchange rate of yuan6.83/US\$. This suggests that the government is particularly worried about the stability of the export sector and whether it has reclaimed enough strength to compete without indirect government support. Loose monetary policy and an undervalued exchange rate often contribute to asset bubbles, and the current environment suggests this is occurring in China's markets. The sooner China tightens its monetary, fiscal and forex policies, the easier it will be to deflate the buildup in prices, but policymakers at the PBoC suggest this will not occur until Q3 2010 at the earliest, which suggests possible economic instability leading into 2011.

Other countries such as Taiwan, Thailand and South Korea also managed to turn their economies around after experiencing sharp slowdowns in 2009, and are now on the verge of tightening interest rates to preempt a rise in inflation. Asset price bubbles are not yet evident and the governments did not pour the same amount of stimulus on the economy as did China, so the adjustments to tighter monetary policies are less likely to force a dramatic economic slowdown. However, as these countries are hesitant to raise rates too quickly and risk smothering recovery, this runs some risk of creating economic imbalances and inflationary pressures by 2011. Malaysia initiated the first in a series of gradual rates hikes in the first week of March, and India started raising its rates two weeks later, but regarding the latter consumer prices are already well above the Reserve Bank's preferred range, suggesting more aggressive action will be taken soon. Most other countries are approaching the point of normalizing their fiscal and monetary policies, and by the end of this year the region should be in a synchronized recovery (except for Japan).

Chart 7



In a move that took some off guard in October 2009, the Reserve Bank of Australia (RBA) began its tightening of the Official Cash Rate (OCR) after a spate of positive economic reports confirmed that the Australian economy was in fact in a position of relative strength. Now, three additional hikes later, the question is no longer if but how far the OCR will rise from its current level of 4.00%. With growth seemingly well in hand, the focus of the RBA will continue to be on latent inflationary pressure. However, the RBA has shown itself to be careful; unexpectedly pausing the cycle in February as sovereign debt fears dominated the news only to resume it the next month. Thus, a guarded tightening cycle is expected to continue throughout 2010, largely dependent on data flows and changing sentiment about the strength of the global recovery.

Regarding Japan, the economy has so far failed to respond to fiscal stimulus and is only making sporadic economic gains, mostly from the export sector. As the domestic economy languishes, the government is building debt at a terrifying pace. Public debt closed out last year at \$9.7 trillion, or a staggering 183.8% of GDP, and is on pace to break the 200% level during the 2010-11 (April-March) fiscal year. To make matters worse, Japan's demographic time bomb is fast approaching midnight, as fewer adults enter the labor force while the aging population places greater demands on public funds. With interest rates at an ultra-low 0.10%, deflation winnowing away asset prices, the Nikkei below its 2008 high (and a full 72.4% below its all-time high), and a strong yen hobbling export-led growth, Japan's outlook appears more bearish than ever. Its only salvation for the near-term is if the rest of the region recovers and buys plenty of Japanese goods. In the longer-term, Japan is in desperate need of deep structural reform and is running out of time to change the situation.

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## ***Latin American Central Banks on Precipice of Divergence***

Mexico finds itself in a somewhat uncomfortable position. While growth has returned after a massive real GDP contraction of 6.6% in 2009, it is far from entrenched. At the same time, inflation is picking up and is well outside of Banxico's target band of 2-4%, boosted by a one percentage point hike to the VAT. Given the weakness of the Mexican recovery and the ineffectiveness of monetary policy transmission, owing to its shallow banking sector, Banxico will likely err on the side of aiding growth until at least the fall of 2010. Further, while little is known of new Governor Agustin Carstens, his pledge in January to increase cooperation between Banxico and the federal government affirms the likelihood of a dovish bias.

In South America, more divergence is expected. After acting to reduce liquidity by increasing bank reserve requirements, Brazil's Central Bank Monetary Policy Committee (Copom) kept rates on hold at its March meeting in a split-decision. Many had expected a 50 bps hike of the Selic rate from 8.75% to 9.25% and now most market participants are expecting the tightening cycle to begin in April. With credit growth increasing and asset markets still booming, it is unlikely that Copom will delay the hike much longer – though it, like Banxico, seems to be willing to err on the side of inflation rather than on choking off growth. All in all, the Selic rate could reach as high as 11.25% by the end of 2010. Elsewhere on the continent, the Chilean overnight rate, which fell from 8.25% to 0.50% in just seven months, is likely to remain at that low level for some time given the need to stimulate the post-earthquake economy. In Colombia, the easing cycle was only completed in December 2009 and thus the Banco de la República is likely to wait until the effects of the cuts are felt before it moves to the exit.

## ***South Africa to Maintain Growth Focus***

South Africa's central bank took advantage of tamer-than-expected inflation to cut an additional 50 bps off the repo rate, to 6.50%, in March. The move follows two consecutive CPI readings that fell within the Reserve Bank's target range of 3-6% (after the range was breached in 22 of 24 previous readings). In light of growing political pressure to either abandon inflation targeting altogether or raise the ceiling, it should be expected that rates will remain on hold for sometime as further data comes in, the Monetary Policy Committee members will be likely to continue to err on the side of inflation.

## Global Economic Data

	Real GDP		CPI		Unemployment Rate		
	NSA, yoy %		NSA, yoy%		%	year-ago	
United States	0.1	Q4-09	2.1	Feb-10	9.7	Feb-10	8.2
Euro-Area	-2.1	Q3-09	0.9	Jan-10	9.9	Jan-10	8.5
Japan	-1.4	Q3-09	-1.1	Jan-10	4.9	Jan-10	4.2
UK	-3.3	Q3-09	3.0	Jan-10	4.9	Feb-10	4.3
Australia	2.7	Q3-09	2.1	Q3-09	5.3	Feb-10	5.3
Brazil	-1.5	Q3-09	4.2	Nov-09	--	--	--
Canada	-1.2	Q3-09	1.6	Jan-10	8.2	Feb-10	8
China	10.7	Q4-09	2.7	Jan-10	4.3	Q3-09	4.0
India	6.0	Q3-09	16.2	Jan-10	--	--	--
Mexico	-6.3	Q3-09	3.9	Nov-09	6.2	Q3-09	4.2
New Zealand	0.9	Q3-09	2.0	Q3-09	7.3	Q4-09	4.7
Norway	-1.2	Q4-09	3.0	Jan-10	3.3	Q4-09	2.8
Singapore	4.0	Q3-09	1.0	Jan-10	2.1	Q4-09	2.5
South Korea	6.1	Q3-09	2.7	Feb-10	4.4	Feb-10	3.5
Sweden	-1.5	Q3-09	1.2	Jan-10	8.8	Feb-10	6.9
Switzerland	0.0	Q3-09	0.9	Jan-10	4.1	Feb-10	3.1
Taiwan	9.6	Q3-09	0.0	Feb-10	5.7	Feb-10	5.7
Thailand	6.0	Q3-09	3.7	Feb-10	1.3	Jan-10	1.7

\* UK - Claimant Count Unemployment Rate

\* Thailand - GDP Non-Seasonally Adjusted

\* EA-13, UK, Sweden - Harmonized Unemployment

### Main Policy Rate of Central Banks (EOP, %)

	%		year-ago	2008	2009	2010f	2011f
United States	0.13	Mar-10	0.13	0.13	0.13	0.25	3.50
Euro-Area	1.00	Mar-10	1.50	2.50	1.00	1.00	1.75
Japan	0.10	Mar-10	0.10	0.10	0.10	0.10	0.50
UK	0.50	Mar-10	0.50	2.00	0.50	0.50	1.50
Australia	4.00	Mar-10	3.25	4.25	3.75		
Brazil	8.75	Mar-10	11.25	13.75	8.75	11.25	12.25
Canada	0.25	Mar-10	0.50	1.50	0.25	0.50	1.50
China	0.36	Feb-10	0.36	0.36	0.36	0.63	1.17
Czech Rep.	1.00	Mar-10	1.75	2.25	1.00	1.50	2.50
India	3.50	Mar-10	3.50	5.00	3.25	4.25	5.00
Mexico	4.50	Mar-10	6.75	8.25	4.50	4.50	5.25
Norway	1.75	Mar-10	2.00	3.00	1.75	2.50	3.25
Poland	3.50	Feb-10	4.00	5.00	3.50	4.00	5.00
Singapore	0.28	Feb-10	0.30	0.44	0.31	0.60	1.25
South Africa	6.50	Mar-10	9.50	11.50	7.00	6.50	6.50
South Korea	2.00	Mar-10	2.00	3.00	2.00	3.00	3.50
Sweden	0.25	Feb-10	1.00	2.00	0.25	0.75	1.75
Switzerland	0.25	Feb-10	0.50	0.66	0.25	0.50	1.75
Taiwan	1.25	Mar-10	1.25	2.00	1.25	1.75	2.50
Thailand	1.25	Mar-10	1.50	2.75	1.25	2.25	3.25

f -forecast

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## **Appendix 1: US Federal Reserve Bank Actions to Contain the Financial Crisis**

Key policy interest rate – Federal funds rate lowered to 0% to 0.25% as of December 2008 from 5.25% in August 2007.

The Federal Reserve's three sets of tools

### **I. Short-term accommodation extended:**

- Discount loan window, August 2007
- Term Auction Facility (TAF), December 2007
- Primary Dealer Credit Facility (PDCF), March 2008
- The Term Securities Lending Facility (TSLF), March 2008
- Temporary liquidity swap arrangements between the Federal Reserve and 14 central banks, December 2007

Of these programs, PDCF and TSLF were closed on February 1, 2010, the last TAF auction was held on March 8, 2010, and the bilateral swap arrangements also ended on February 1, 2010.

### **II. Provision of liquidity directly to borrowers and investors in key credit markets through these programs:**

- Money Market Investor Funding Facility (MMIFFF), October 2008
- Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF), September 2008
- Commercial Paper Funding Facility (CPFF), October 2008
- Term Asset-Backed Securities Loan Facility (TALF), November 2008

The MMIFFF expired on October 30, 2010. AMLF and CPFF stopped operating as of February 1, 2010. The Term Asset-Backed Securities Loan Facility will cease making loans collateralized by newly issued CMBS on June 30, 2010, and loans collateralized by all other types of TALF-eligible newly issued and legacy ABS on March 31, 2010.

### **III. Supporting the functioning of credit markets by purchasing of longer-term securities for the Fed's portfolio such as:**

- Longer-term Treasury securities, March 2009
- Government sponsored enterprise (GSE) debt, November 2008
- Mortgage backed securities, November 2008

The Fed completed the full purchase of longer-term Treasury securities as of October 2009. Purchase of GSE debt and mortgage-backed securities are scheduled to end as of end-March 2010

Details pertaining to each of these programs are available at <http://www.federalreserve.gov/monetarypolicy/bst.htm>

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