ECONOMIC & MARKET ANALYSIS

December 3, 2008

Prospects for Financial Markets

Lewis Alexander and Colleagues

Economic & Market Analysis

Global

Global Recession and Response

Market Implications for 2009 and Beyond

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Global Recession and Response

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Investment Summary

- The global economy is in the midst of a significant recession. Industrial countries are likely to contract well into 2009. Emerging markets are experiencing the most significant slowdown since 2001. Inflation is collapsing. Global growth is expected to remain below trend in 2010.
- Policy is responding aggressively. Monetary policy is expected to ease further in many countries, with a number of key central banks, including the Federal Reserve, implementing "unconventional" policies. Significant fiscal stimulus is also expected. Aggressive government intervention has stabilized major financial institutions, but the core of the global financial system remains under severe stress. A range of financial intermediaries faces ongoing pressure to shed assets.
- In the face of rapidly decelerating economic activity and financial sector deleveraging, prices for a range of financial assets — government bonds, equities, and credit instruments — reflect very adverse expectations for fundamentals.
- In the near term, investment returns are likely to be driven by the ongoing trends of economic contraction, policy easing, and deleveraging. Long-term interest rates are likely to fall further, while equities and credit products are likely to remain volatile. At some point next year, however, when downside economic risks dissipate and deleveraging pressures ease, current extreme valuations should provide attractive opportunities.
- Yield curves should steepen as prospects for economic recovery become more certain. But the likelihood of a tepid recovery and a rebound in household savings should moderate the rise in long-term interest rates. With credit markets extremely dislocated, a moderation of downside pressures, both economic and financial, should be sufficient to prompt a rally in many credit products in 2009.
- Valuations in equity markets now reflect a lot of bad news, but they are not typically as extreme as credit markets. When prospects for an eventual economic recovery become more certain, supported by a credit rally, equity markets should rebound.
- We still think market participants are too sanguine about the euro-area economy. Consequently we expect further weakening of the EUR against the USD. We expect the yen to continue to appreciate against the USD in the face of ongoing economic and financial uncertainty. Most emerging market currencies should remain under pressure until the outlook for global risk appetite.

Figure 1. Currency and Interest Rate Forecasts (End of Period, Unless Specified), as of Dec 3, 2008

	Dec 3, 2008	1Q 08 Forecast	2Q 08 Forecast	3Q 08 Forecast	4Q 08 Forecast
U.S.: Federal Funds	1.00%	0.00%	0.00%	0.00%	0.00%
10-Yr. Treasuries (Period Average)	2.67	2.50	2.60	2.75	3.00
Euro Area: US$/€	1.27	1.20	1.17	1.15	1.15
Euro Repo Rate	3.25	1.50	1.00	1.00	1.00
10-Yr. Bunds (Period Average)	3.04	3.00	2.90	3.00	3.20
Japan: Yen/US$	93	93	92	90	88
Call Money	0.50	0.10	0.10	0.10	0.10
10-Yr. JGB (Period Average)	1.39	1.25	1.30	1.35	1.40

Source: Citi forecasts as of Dec 3, 2008.

Figure 2. Short Rates (End of Period), as of Dec 3, 2008

	Current	4Q 08	1Q 09	2Q 09	3Q 09	4Q 09
United States	**1.00 %**	**0.50 %**	**0.00 %**	**0.00 %**	**0.00 %**	**0.00 %**
Japan	**0.50**	**0.30**	**0.10**	**0.10**	**0.10**	**0.10**
Euro Area	**3.25**	**2.25**	**1.50**	**1.00**	**1.00**	**1.00**
Canada	2.25 %	1.75 %	1.25 %	1.00 %	1.00 %	1.00 %
Australia	4.25	4.25	3.50	3.50	3.50	3.50
New Zealand	5.00	5.00	4.00	4.00	4.00	4.00
Denmark	5.00 %	3.50 %	2.50 %	1.75 %	1.50 %	1.25 %
Norway	4.75	4.25	4.00	3.75	3.50	3.25
Sweden	3.75	3.00	2.50	2.25	2.00	2.00
Switzerland	1.00	1.00	1.00	1.00	1.00	1.00
United Kingdom	3.00	2.00	1.50	1.50	1.50	1.50
China	5.04 %	5.04 %	4.23 %	3.96 %	3.96 %	3.96 %

Note: The rates shown are overnight rates, except for Denmark, where it is the central bank's seven-day repo rate, Switzerland, where it is the Swiss-Franc's three-month LIBOR, and China, where it is the one-year commercial bank lending rate. Source: Citi.

Figure 3. Foreign Exchange Forecasts (End of Period), as of Dec 3, 2008

	vs USD						vs EUR					
	Current	Dec-08	Mar-09	Jun-09	Sep-09	Dec-09	Current	Dec-08	Mar-09	Jun-09	Sep-09	Dec-09
United States	NA	NA	NA	NA	NA	NA	1.27	1.25	1.20	1.17	1.15	1.15
Japan	93	95	93	92	90	88	118	119	112	108	104	101
Euro Area	1.27	1.25	1.20	1.17	1.15	1.15	NA	NA	NA	NA	NA	NA
Canada	1.26	1.22	1.25	1.27	1.29	1.30	1.60	1.53	1.50	1.49	1.48	1.50
Australia	0.64	0.60	0.65	0.68	0.70	0.70	1.97	2.08	1.85	1.72	1.64	1.64
New Zealand	0.53	0.50	0.54	0.57	0.58	0.58	2.40	2.50	2.22	2.05	1.98	1.98
Norway	7.11	7.21	7.51	7.70	7.84	7.84	9.01	9.01	9.01	9.01	9.01	9.01
Sweden	8.23	8.34	8.69	8.91	9.07	9.07	10.43	10.43	10.43	10.43	10.43	10.43
Switzerland	1.21	1.23	1.28	1.31	1.34	1.34	1.54	1.54	1.54	1.54	1.54	1.54
United Kingdom	1.48	1.49	1.43	1.39	1.37	1.37	0.86	0.84	0.84	0.84	0.84	0.84
China	6.85	6.83	6.80	6.75	6.65	6.55	8.7	8.5	8.2	7.9	7.6	7.5
India	50.0	50.0	48.5	48.3	48.3	48.0	63.3	62.5	58.2	56.5	55.5	55.2
Korea	1444	1300	1325	1300	1300	1275	1830	1625	1590	1521	1495	1466
Poland	3.05	2.96	3.33	3.21	3.17	3.04	3.87	3.70	4.00	3.75	3.65	3.50
Russia	27.9	27.7	30.9	31.9	32.6	33.0	35.4	34.7	37.0	37.3	37.5	38.0
South Africa	10.27	9.80	9.35	9.50	9.60	9.75	13.01	12.25	11.22	11.12	11.04	11.21
Turkey	1.58	1.66	1.68	1.71	1.73	1.77	2.00	2.08	2.02	2.00	1.99	2.04
Brazil	2.51	2.15	2.05	2.00	2.00	2.00	3.17	2.69	2.46	2.34	2.30	2.30
Mexico	13.7	13.0	12.8	12.5	12.3	12.0	17.3	16.3	15.3	14.6	14.1	13.8

Source: Citi.

Figure 4. Foreign Exchange Forecasts (End of Period), as of Dec 3, 2008

	vs JPY					
	Current	Dec-08	Mar-09	Jun-09	Sep-09	Dec-09
United States	93	95	93	92	90	88
Japan	NA	NA	NA	NA	NA	NA
Euro Area	118	119	112	108	104	101
Canada	74	78	74	72	70	68
Australia	60	57	60	63	63	62
New Zealand	49.2	47.5	50.2	52.4	52.2	51.0
Norway	13.1	13.2	12.4	11.9	11.5	11.2
Sweden	11.3	11.4	10.7	10.3	9.9	9.7
Switzerland	77	77	73	70	67	66
United Kingdom	137	141	133	128	123	120
China	14	14	14	14	14	13
India	1.86	1.90	1.92	1.90	1.87	1.83
Korea	15.52	13.68	14.25	14.13	14.44	14.49
Poland	30.5	32.1	27.9	28.7	28.4	28.9
Russia	3.3	3.4	3.0	2.9	2.8	2.7
South Africa	9.1	9.7	9.9	9.7	9.4	9.0
Turkey	59.1	57.2	55.4	53.8	52.0	49.7
Brazil	37.2	44.2	45.4	46.0	45.0	44.0
Mexico	6.8	7.3	7.3	7.4	7.3	7.3

Source: Citi.

Figure 5. 10-Year Yield Forecasts (Period Average), as of Dec 3, 2008

	Current	4Q 08	1Q 09	2Q 09	3Q 09	4Q 09
United States	**2.67 %**	**3.35 %**	**2.50 %**	**2.60 %**	**2.75 %**	**3.00 %**
Japan	**1.39**	**1.35**	**1.25**	**1.30**	**1.35**	**1.40**
Euro Area	**3.04**	**3.50**	**3.00**	**2.90**	**3.00**	**3.20**
Canada	3.15 %	3.45 %	2.50 %	2.55 %	2.65 %	2.85 %
Australia	4.34	4.60	3.75	3.85	4.25	4.50
New Zealand	4.84	5.35	4.10	4.10	4.25	4.50
Denmark	3.85 %	3.90 %	3.30 %	3.15 %	3.20 %	3.35 %
Norway	3.69	4.00	3.55	3.45	3.60	3.80
Sweden	2.65	3.24	2.80	2.85	3.00	3.20
Switzerland	2.11	2.42	2.00	2.00	2.20	2.40
United Kingdom	3.40	3.96	3.57	3.57	3.76	3.96

Notes: Bond yields measured on local market basis (semi-annual for the United States, United Kingdom, Canada, Australia, and New Zealand; annual for the rest). The 10-year yield for the euro area is the Bund yield. Source: Citi.

Figure 6. 10-Year Yield Spreads (Period Average), as of Dec 3, 2008

	Spread vs. US$						Spread vs. Germany					
	Current	4Q 08	1Q 09	2Q 09	3Q 09	4Q 09	Current	4Q 08	1Q 09	2Q 09	3Q 09	4Q 09
United States	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**-35 bp**	**-12 bp**	**-48 bp**	**-28 bp**	**-23 bp**	**-18 bp**
Japan	**-129 bp**	**-203 bp**	**-127 bp**	**-132 bp**	**-142 bp**	**-162 bp**	**-165**	**-215**	**-175**	**-160**	**-165**	**-180**
Euro Area	**35**	**12**	**48**	**28**	**23**	**18**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
Canada	49	10	0	-5	-10	-15	14	-2	-48	-33	-33	-33
Australia	167	125	125	125	150	150	135	115	79	99	130	135
New Zealand	217	200	160	150	150	150	186	192	114	124	130	135
France	80	57	98	88	83	68	45	45	50	60	60	50
Italy	161	182	248	218	193	168	126	170	200	190	170	150
Spain	106	82	128	118	113	98	71	70	80	90	90	80
Netherlands	84	52	98	88	83	68	49	40	50	60	60	50
Belgium	112	92	138	118	103	88	77	80	90	90	80	70
Denmark	117	52	78	53	43	33	82	40	30	25	20	15
Norway	100	62	103	83	83	78	65	50	55	55	60	60
Sweden	-3	-14	28	23	23	18	-38	-26	-20	-5	0	0
Switzerland	-58	-96	-52	-62	-57	-62	-93	-108	-100	-90	-80	-80
United Kingdom	74	61	107	97	101	96	39	50	60	70	80	80

NA Not applicable. Note: Spreads calculated on annual basis (except those of the United Kingdom, Canada, Australia and New Zealand over the United States).
Source: Citi.

Overview: Global Recession and Response

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We are in the midst of a major global recession. The economic outlook has deteriorated sharply in the wake of almost unprecedented stress in the core of the global financial system.

The global economy is in recession.

Plunging asset prices have sharply reduced global wealth and continue to generate new losses for major financial institutions. The weakened condition of major intermediaries is limiting their ability to support the economy. Financial disruptions of recent months have diminished both consumer and business confidence. All of these factors are generating a sharp deceleration of economic activity.

Investors face a complicated set of questions. Many asset prices are already quite depressed and seem to anticipate very negative economic outcomes. Given the forces at work in the global economy, however, any forecast must entail an unusually large margin for error. Moreover, the pace of adjustment at present suggests that it will be some time before it will be possible to better gauge both upside and downside risks.

Industrial economies should contract well into 2009.

That said some tentative observations are noteworthy. Major industrial economies likely will contract well into next year (see Figure 7). The adjustment that is under way appears to entail a substantial increase in desired levels of savings in many industrial economies. The underperformance of the global economy should further depress inflation in coming quarters.

Deflationary forces are likely to be met with a substantial policy response. In early October, the G7 countries committed to preventing the failure of any systemically significant financial institution. To meet that objective, they established substantial new support mechanisms designed to stabilize the core of the global financial system.

Figure 7. Global — Economic Forecast Overview, 2008-10F

	GDP Growth			CPI Inflation			Current Balance (% of GDP)			Fiscal Balance (% of GDP)		
	2008F	2009F	2010F	2008F	2009F	2010F	2008F	2009F	2010F	2008F	2009F	2010F
Global	2.6%	0.5%	2.6%	5.2%	2.5%	2.6%	0.5%	0.3%	0.3%	-1.4%	-4.0%	-3.1%
PPP Aggregation	*3.4*	*1.4*	*3.3*	*6.0*	*2.9*	*3.0*	*0.8*	*0.5*	*0.5*	*-1.5*	*-3.9*	*-3.0*
Industrial Countries	1.0	-1.2	1.2	3.4	0.8	1.1	-1.1	-0.2	-0.3	-2.3	-5.3	-3.9
United States	1.3%	-1.5%	1.7%	4.0%	0.2%	0.7%	-4.5%	-2.0%	-2.1%	-3.2%	-9.0%	-5.0%
Japan	0.2	-1.2	1.1	1.5	-0.2	-0.2	3.6	3.8	3.8	-4.6	-4.9	-4.0
Euro Area	1.0	-1.4	0.5	3.3	1.2	1.3	-0.4	-0.5	-0.6	-1.7	-3.3	-3.9
Canada	0.7	0.3	2.8	2.4	1.4	2.2	0.3	-4.3	-3.1	0.0	0.0	0.0
Australia	2.2	0.6	2.0	4.5	3.4	2.7	-4.0	-2.3	-4.9	1.5	0.0	-0.5
Germany	1.3	-1.5	0.7	2.6	0.8	1.1	5.9	3.2	3.1	-0.5	-2.5	-3.5
France	0.9	-1.2	0.4	2.9	0.8	1.1	-2.1	-2.1	-2.1	-3.2	-4.0	-4.5
Italy	-0.3	-1.2	0.3	3.4	1.4	1.3	-2.9	-3.2	-3.0	-3.0	-3.9	-4.3
Spain	1.2	-1.7	0.0	4.3	1.8	1.5	-10.0	-8.5	-7.0	-1.5	-4.5	-4.8
Netherlands	1.9	-1.2	1.1	2.3	1.5	1.4	7.0	5.0	4.5	0.6	-1.4	-2.8
United Kingdom	0.8	-1.5	0.9	3.5	1.0	2.9	-2.2	-0.2	1.5	-5.3	-8.4	-7.7
Emerging Markets	5.8%	3.8%	5.3%	8.8%	5.8%	5.3%	4.2%	3.9%	1.9%	0.3%	-1.6%	-1.5%
China	9.3	8.2	8.5	6.1	1.4	3.5	9.4	7.2	6.4	-0.2	-1.2	-1.6
India	6.8	5.5	6.6	10.5	5.0	4.5	-3.5	-2.1	-1.3	-6.6	-6.0	-5.5
Korea	4.2	2.0	3.8	4.7	3.0	2.5	-1.0	2.0	1.5	3.0	1.2	1.0
Poland	5.3	2.6	3.7	4.3	3.0	2.2	-4.8	-5.9	-4.4	-2.2	-2.4	-3.0
Russia	7.1	4.5	5.9	14.2	10.2	6.9	7.5	0.4	-2.3	3.5	-0.4	-1.0
South Africa	3.3	2.3	3.8	11.7	6.5	5.9	-8.0	-7.8	-7.6	-0.3	-1.7	-1.3
Turkey	1.0	-1.0	4.2	10.6	10.5	7.6	-6.6	-5.0	-4.3	-1.8	-2.5	-2.3
Brazil	5.2	3.0	4.0	5.7	5.6	4.1	-1.7	-1.1	-1.8	-1.5	-1.8	-2.0
Mexico	2.0	0.5	3.0	5.1	4.9	3.4	-1.6	-2.7	-2.8	0.0	-1.8	-1.4

Note: Aggregation based on nominal GDP, unless otherwise noted. F Citi forecast. Source: Citi.

There will be significant monetary and fiscal easing.

Many central banks have eased policy significantly, and we expect them to ease further. Monetary policy should provide a boost to economic activity in many countries even where short-term interest rates are already very low. Finally, many countries have already announced their intention to implement significant programs of fiscal expansion.

But the recovery should be tepid.

Despite a robust policy response, the recovery, when it comes, is likely to be tepid. We expect global growth to remain below trend in 2010. The long-term adjustment of consumers to their reduced wealth should limit the dynamism of the recovery. Finally, recovery will hinge on a general improvement in financial conditions. Recent efforts by major industrial countries to stabilize core financial institutions appear to have been successful thus far. But the financial system remains dysfunctional in key ways. The depth, scope, and pace of adjustment and recovery in the financial sector remains the most important source of uncertainty in the outlook.

Feedback

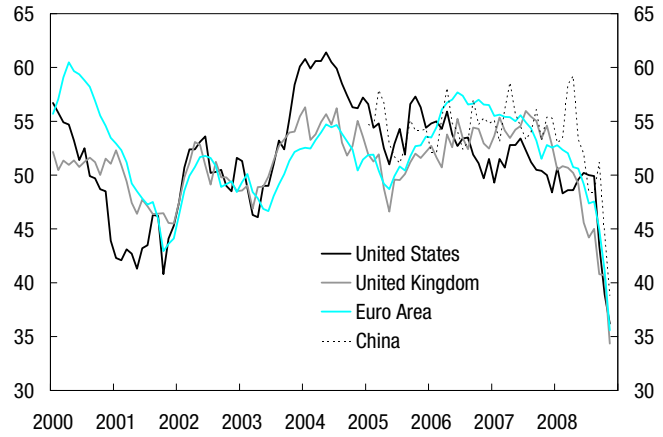
A recession is a negative feedback loop. Declines in demand lead to declines in production, which lead to declines in income and wealth, and further declines in demand. Imbalances in the financial sector and the real economy can both initiate and help to propagate economic contractions.

Recent volatility is driving a sharp contraction.

The current global recession is being driven by a variety of factors. Financial disruptions since mid-September have sharply increased uncertainty and downside risks for the global economy. In response, both consumers and businesses have become more cautious in their spending decisions. In the very near term this process is self-fulfilling, as falling demand and employment reinforce consumer and business caution. This is leading to sharp declines in forward-looking economic indicators across a broad range of countries (see Figure 8).

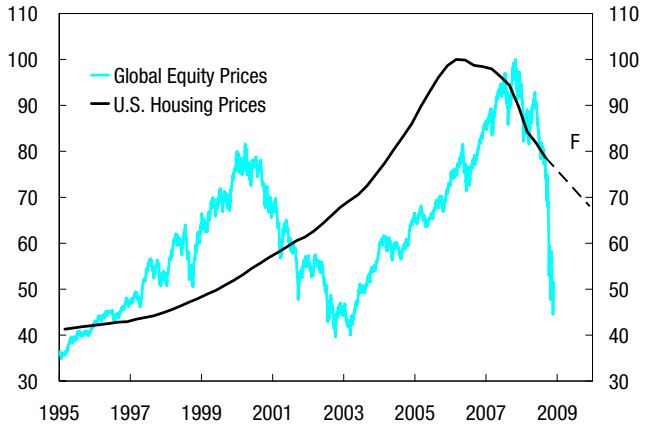
But these near-term dynamics are playing out in the presence of larger and more durable forces. First, declines in assets prices — primarily real estates and equities — have significantly reduced the net worth of households. They are responding by

Figure 8. United States, United Kingdom, Euro Area, and China — Manufacturing Purchasing Manager Indices, 2000-Nov 08



Source: Haver Analytics.

Figure 9. Global Equity Prices and U.S. Housing Prices (Recent Peak = 100), 1995-4Q 09F



Sources: Haver Analytics and Bloomberg.

limiting their spending. That is, they are seeking to increase their savings. Second, the financial sector is contracting. This process is putting further downward pressure on asset prices. But it is also disrupting the ability of the financial sector to support economic activity in a variety of ways. Finally, the correction of a number of unsustainable real imbalances is contributing to the cyclical adjustment.

Wealth and Savings

Falling wealth will reduce consumption and...

This global downturn began with a correction in the U.S. housing market. After a sharp run-up in the first half of the decade, U.S. housing prices peaked in early 2006 (see Figure 9). They have already fallen by about 22% from their peak. We expect U.S. housing prices to fall 33% peak to trough on a Case-Shiller basis. With this adjustment, the ratio of house prices to average household income should return to the levels of 2002. This correction is consistent with a reduction in U.S. housing wealth of an estimated $5 trillion, or 47% of U.S. disposable income. We do not expect a trough in U.S. house prices until the end of next year. Considerable uncertainty of the depth of the adjustment in housing prices remains.

...boost savings.

Since the summer, the broadening of the selloff in global financial markets also has generated a sharp decline in global wealth. Since their peak over the summer, global equity markets have lost about $25 trillion in value. This represents about 40% of global GDP.

These declines in wealth are contributing to a significant pullback in consumer spending. In recent years, previous gains in household wealth had sustained consumer demand and reduced savings. Now that process is working in reverse. This relationship is an important part of the recessionary dynamic. Weak consumer spending is depressing prospects for corporate earnings, which adds to the downward pressure on asset prices.

Rising savings should help to hold down interest rates.

Rising household savings have implications for interest rates. We expect the U.S. household savings rate to increase to about 5% in 2009, after averaging less than 1% between 2005 and 2007. We also expect the U.S. current account deficit to narrow to just 2% of GDP by the end of next year. Rising net savings in this context should support the demand for safe assets and this should help to hold down government bond yields.

Adjustment in the Financial Sector

The financial sector remains under stress.

We are in the middle of a major structural adjustment in the global financial system. The capacity of the core of the global financial system to cope with intermediate risk has declined for two basic reasons. First, losses have depleted the capital base. The IMF estimates that the total losses in the financial sector due to writedowns of U.S. credit instruments are likely to be about $1½ trillion. New capital, both public and private, injected into financial institutions has made up only about 60% of that amount.[1] Without additional capital injections, major financial institutions will face substantial pressure to reduce their balance sheets even if they wished to maintain the levels of leverage that prevailed before the crisis.

[1] See "Global Financial Stability Report," IMF, October 2008, and "WDCI," Bloomberg page, December 2, 2008.

The financial sector has to shrink.

It seems likely, however, that major financial institutions will want to carry substantially less leverage going forward. Effective regulatory requirements for capital and liquidity are tightening, while the riskiness of many assets has increased. Given the recent turmoil, investors are likely to favor well-capitalized financial institutions. These factors add to pressures for financial institutions to reduce their balance sheets.

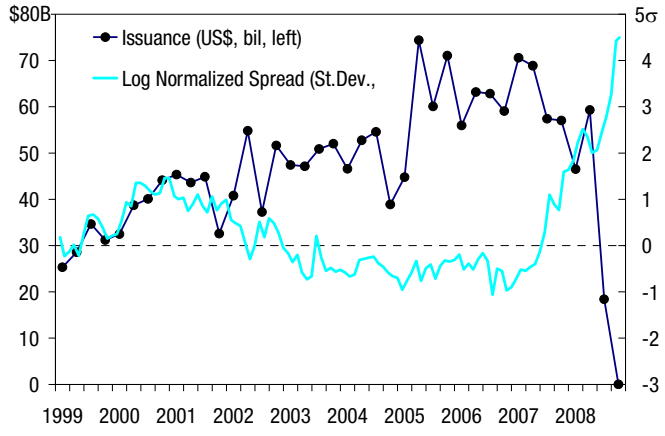
The process of deleveraging the financial system has economic consequences through a variety of channels. In the extreme, questions about the viability of individual financial institutions can disrupt the basic functioning of payments and settlements systems. Such problems already emerged in the wake of the failure of Lehman Brothers. For example, heightened concerns about counterparty risk among banks may have contributed to disruptions in trade credit that are suppressing international trade.

This adjustment is a drag on growth.

As major financial institutions incur losses and seek to shrink their balance sheets, their ability to perform key functions is diminished. Some borrowers, such as consumers and small firms, cannot borrow directly in financial markets. Financial institutions play an essential role in channeling savings to such borrowers. Disruptions to mortgage finance in the United States have been particularly acute as key mortgage finance institutions have come under pressure to retrench. The collapse of the demand for key securitized products may also disrupt the supply of retail credit they support. The new issue market for fixed-income products backed by credit card receivables, and auto, equipment, and student loans has been effectively shut down since September (see Figure 10).

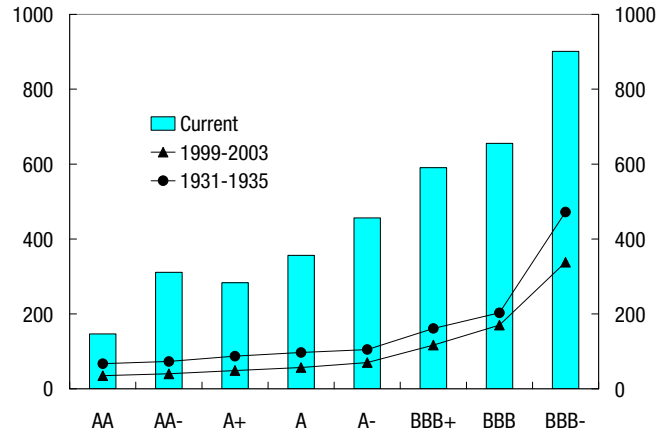
Finally, as financial institutions shrink, a greater proportion of risky financial assets must be held directly by investors (as opposed to being intermediated across the balance sheets of leveraged financial institutions). Investors are likely to demand higher risk premia to accommodate these portfolio shifts. Thus deleveraging is an ongoing source of pressure on asset prices.

Figure 10. United States — Asset Backed Securities, Issuance ($ Billions) and Normalized Spreads (St. Deviations), 1999-Nov 08



Note: Issuance data covers securities backed by credit card receivables, auto loans, equipment loans, and student loans. The last observation is for fourth quarter 2008. Spreads are for AAA securities backed by credit card receivables. Source: Citi.

Figure 11. United States — Corporate Spreads by Rating, Current and "Rock Bottom" Spreads (Basis Points), 2 Dec 08



Note: "Rock Bottom" spreads are estimates of the spreads necessary today to adequately compensate investors, taking into account volatility, for the pattern of default that occurred during specific periods in the past — in this case, 1931-1935 and 1999-2003. For a description of the methodology see Tejas Shah, Michael Hampden-Turner, and Matt King, "Hitting Rock Bottom," November 13, 2008. Source: Citi.

Deleveraging still has a way to go.

With the sharp upsurge in volatility this fall, the process of deleveraging has expanded. It is now affecting a range of institutions that relied heavily on leverage, such as hedge funds. The pricing of risky assets is already quite extreme. For example, spreads on conventional bonds of nonfinancial corporations are already well above levels that would adequately compensate investors for the level of defaults that occurred during two very stressful periods: 1999-2003 and 1931-1935 (see Figure 11). Just how long risky financial assets will remain under pressure, and how long normal patterns of financial intermediation will remain disrupted, is probably the leading source of uncertainty in the outlook.

Real Imbalances

Economic downturns are often driven or exacerbated by the elimination of unsustainable imbalances in the real economy. This cycle is no different. The correction in household savings rates in the United States and other industrial countries that is discussed above is one such imbalance.

Residential construction in the United States should be a source of resilience.

Another imbalance that is contributing to the current economic downturn is the correction in residential construction and related industries in the United States. However, this adjustment is already well advanced. U.S. housing starts peaked in January of 2006 at a seasonally adjusted annual rate of 2.2 million. A recent study by the Congressional Budget Office estimated that basic trends in housing demand, driven primarily by demographics, could only justify a pace of housing starts of 1.5 to 1.6 million per annum in coming years.[2] But in the last three months the pace of housing starts was just 824,000. The substantial stock of vacant homes for sale will continue to depress housing starts for some time. But housing construction is likely to be a stabilizing influence on the U.S. economy over the next several years as the pace of new construction first stops falling and then mounts a modest recovery.

The immediate situation in some other countries is not so favorable. For example, Spain experienced a decade-long boom in housing construction starting in the late 1990s. But construction activity only peaked in the fall of 2007. Declining construction activity is likely to be a drag on the Spanish economy for some time.

Emerging economies are vulnerable in the global recession.

Emerging market economies are far from immune from recent troubles, despite the recent solid performance in the past few years. Recent declines in trade, shrinking capital flows, and crumbling asset prices are affecting growth prospects. Private domestic demand has been slowing since the middle of 2007. Neither household nor government spending is likely to be strong enough to fully offset the real and financial shocks that will play out in coming quarters.

Prospects for the largest emerging economy, China, are particularly important. In recent years, the most dynamic components of Chinese aggregate demand have been investment and exports. Over the period 2001-07, China's exports grew at an average annual pace of 29%, and China's current account surplus reached almost 11% of GDP. Investment has also grown very rapidly in recent years and now probably accounts for about half of GDP. Few economies have ever committed that large a share of their

[2] "The Outlook for Housing Starts, 2009 to 2012," Congressional Budget Office, November 2008.

output to investment and even fewer have done it for a sustained period. These two trends are to some degree linked. Much of the investment has gone to expand China's capacity to export.

China has the policy tools to prevent a major slowdown.

China's exports have slowed sharply in recent months as the pace of global growth has eased. It would not be surprising if investment in China also decelerated. In a normal market economy these developments could easily generate a recession. But China is not a normal market economy. The government maintains a significant role in economic affairs. The financial system largely remains under state protection and control, and state-owned enterprises have maintained dominant positions in many other industries. Moreover, with rapid growth, low nominal interest rates, and limited government debt, China's government has substantial capacity to ease fiscal policy. Chinese officials have already announced a very large package of fiscal stimulus measures. Consequently, we do not expect a major slowdown in China. At some point in the future, imbalances in the Chinese economy may cause, or contribute materially to, a global recession. But we do not believe that time has come.

Outlook for Inflation

Inflation is falling rapidly.

Just a few months ago, accelerating inflation was a major concern for policymakers around the world. The global recession is rapidly dissipating that threat (see Figure 14). Commodity prices peaked over the summer. Since that time, growing evidence that the global economy is decelerating has contributed to a sharp reversal of commodity prices. Oil prices have fallen by about 65% in little more than four months and other commodities are also down sharply. These declines are lowering headline inflation very rapidly. In addition, the global recession appears to be adding to slack at a rapid clip and this should put significant downward pressure on core inflation in many countries. This rapid deceleration of inflation is removing obstacles to further monetary easing in most countries.

Policy Response

Recent events have evoked an unprecedented global policy response. Going forward, policy will be directed in three main areas: containing systemic risk in the financial system and monetary and fiscal easing.

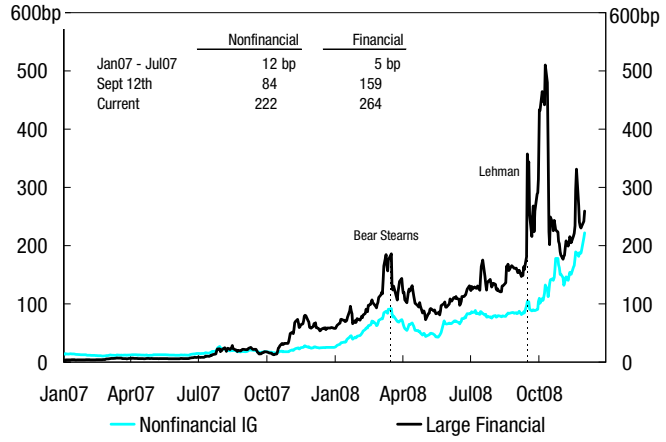
Banking/Systemic Risk

Industrial countries have acted to stabilize major financial institutions.

In late September and early October, the risk of a major disruption to normal functioning of the global financial system appeared to be material. In response, governments of the major industrial countries have taken extraordinary steps to protect the core of the system. The G7 governments actually made a public commitment to prevent the failure of systemically significant financial institutions.

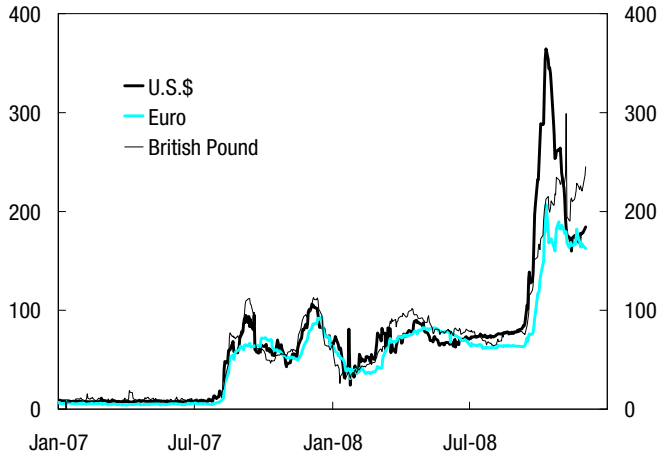
To meet this objective, governments have established or expanded a variety of mechanisms to support major intermediaries and markets. Many countries have expanded guarantee programs for bank deposits. New guarantee programs for other forms of short-term funding — money market funds and commercial paper — have also been created. Public capital has been invested in major financial institutions. In

Figure 12. United States — Credit Default Swap Rates for Major Financial and Nonfinancial Borrowers (Basis Points), 2007-Dec 08



Source: Citi.

Figure 13. United States, Euro Area, United Kingdom — Spread Between Three-Month Interbank Interest Rates and Overnight Index Swaps (Basis Points), 2007-Dec 08



Source: Bloomberg.

conjunction with capital injections, a number of countries have offered guarantees for new medium-term debts issued by major financial institutions. Programs for public sector purchases of assets have also been created.

But the financial system remains under stress.

So far, these programs have been successful in stabilizing the core of the global financial system. The most severe liquidity pressures have eased. Nonetheless, measures of credit risk for financial institutions are still very high (see Figures 12 and 13). Term inter-bank borrowing rates remain elevated relative to market expectations for overnight interest rates, suggesting that market participants do not expect these pressures to ease materially in the foreseeable future. Given these obvious fragilities and the uncertain near-term prospects for the global economy, markets may continue to test the limits of public support for major financial institutions. As long as this situation persists, the financial sector is likely to remain a drag on the global economy.

Monetary Policy

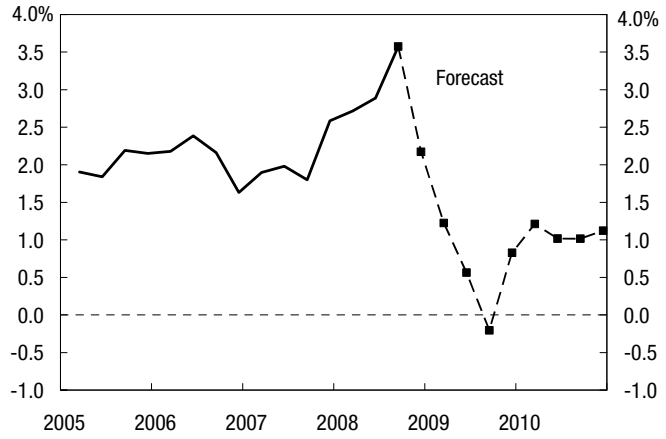
Monetary policy will ease further.

Most major central banks have eased policy, in some cases substantially (see Figure 15). But the moves toward accommodation have, more often than not, been reactive. To date, the major central banks have not eased aggressively enough to stabilize, let alone improve, financial conditions. With the global economy now decelerating sharply and inflation retreating rapidly, we expect significant further easing in most countries. If economic policy is not successful in first stabilizing and then lifting financial conditions, the risk of deflation will rise. This is not our base case outside Japan, but it remains a significant risk.

"Unconventional" monetary policies can be effective.

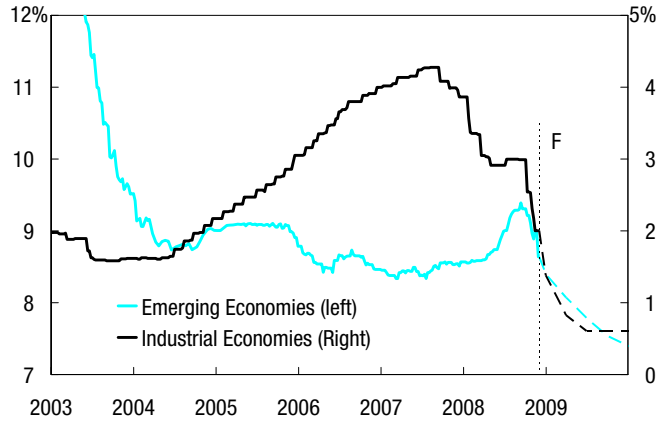
Given what has already been done, and what still needs to be done, some central banks will have to confront the effective lower bound on short-term interest rates. It is important to note that approaching this benchmark dictates a change in tactics but does not end central banks' ability to promote economic growth. A full discussion of these issues is offered in "Special Focus: Unconventional Policy Prospects," pages 14-31.

Figure 14. Major Industrial Countries — Consumer Price Inflation (Year-to-Year Percent Change), 2005-10F



Note: The aggregated series combines CPI inflation in the United States, the euro area, Japan, the United Kingdom, Canada, and Australia based on nominal GDP weights.
Sources: Haver Analytics and Citi.

Figure 15. Major Industrial and Emerging Economies — Policy Interest Rates (Percent), 2003-Dec 09F



Note: Industrial countries are United States, euro area, Japan, United Kingdom, Canada, and Australia. Emerging economies are China, India, Indonesia, Korea, Poland, Russia, South Africa, Turkey, Brazil, and Mexico. Sources: Bloomberg, Haver Analytics, and Citi.

The Swiss National Bank's (SNB) recent decision to lower its target range for three-month LIBOR to 0.5%-1.5% has effectively driven overnight rates to zero. We expect that the SNB's next step to support the Swiss economy will likely be to (threaten to) intervene in foreign exchange markets to weaken the Swiss franc.

The Fed has already begun some "unconventional" policies.

The Federal Reserve is also approaching the limit of its ability to lower overnight interest rates. The Fed is already implementing two sorts of "unconventional" policies. Since it was permitted to pay interest on bank reserves, the Fed has been supplying the banking system with a large volume of "excess" reserves. In addition, the Federal Reserve has established programs to finance or purchase a range of assets that bring with them material credit risk. The fact that the Fed has implemented these unconventional policies while short-term rates are still above their lower-bound probably reflects the special challenges of the times. The financial system is under great stress, but the threat of sustained deflation does not appear to be imminent.

We expect the Fed to commit to keeping rates low.

Looking ahead, we expect that the FOMC is nearing a decision to push the funds rate to its zero bound, and officials already are encouraging speculation about still further action. The authorities likely will continue to dig deeper into the unconventional toolkit, expanding the balance sheet well beyond the purpose of lending to financial firms. The broader effort likely will include policy statements which seek to ensure that the term structure of interest rates remains accommodative. For example, the FOMC may be very close to making a conditional commitment to keep rates low as long as needed to restore financial stability and to bring about economic recovery. In addition to evidence that recovery is secure, factors influencing the duration of this commitment would likely include financial conditions such as pricing, liquidity, and new issuance across capital markets, as well as information about credit terms and standards among banks.

From this point forward, the thrust of U.S. accommodation likely will need to overcome both a liquidity trap and a credit trap. As a result, in addition to increasing the scale of asset purchases (such as long Treasuries and agencies), the trend toward assuming credit risk is likely to broaden in scope and intensity. However, more radical measures

(such as pegging bond yields or acquiring corporate debt and equities) would not be needed in our baseline scenario, which skirts outright deflation.

The BoJ should also commit to keeping rates low.

The Bank of Japan (BoJ) is also very close to the lower bound for short-term interest rates. We expect the BoJ to cut is target for short-term interest rates to 10 basis points early next year. In addition, we expect the BoJ to reintroduce a commitment to keep interest rates very low until specific economic objectives are satisfied. It is possible that the BoJ will start this type of commitment without lowering rates further. We do not expect, however, a return to quantitative easing (QE). Japanese policymakers appear to believe that QE was less effective in holding down long-term interest rates than zero interest rates with a duration commitment.

Our base-case scenario anticipates that the ECB will lower short-term interest rates to 1%. If the European economy weakens more than we anticipate we expect that the ECB will first lower interest rates further. However, if short-term interest rates at their lower bound are not enough to ease financing conditions, the ECB probably will use unconventional measures. In our view, the ECB is more likely to start with broad-based asset purchases rather than giving verbal commitments to leave rates low for a long time.

Fiscal Policy

Significant fiscal easing is coming, particularly in China and the United States.

The depth of the cyclical challenges facing the global economy has prompted many governments to announce new fiscal measures designed to stimulate their economies. Figure 16 summarizes these initiatives.

China's is the largest program announced to date. The announced measures are expected to result in new spending equal to about 2½% of GDP in each of the next two years. But with incoming data looking quite weak, the Chinese government is already talking about doing more.

The United States is also expected to put in place a significant new fiscal package early next year. But the size and composition of that package has not been announced. Our forecast for the U.S. economy assumes a relatively modest fiscal package of about 1½% of GDP. This is in line with what Senator Obama called for during the campaign. A much larger fiscal stimulus package, perhaps 4% of GDP spread over two years, could generate above-trend growth in the second half of 2010 and cap the unemployment rate at 8%.

Announcements to date suggest that fiscal policy in Europe is likely to be less ambitious. If the proposed modest discretionary fiscal measures are not sufficient to support the economy, countries (mainly Germany) will first use all available room to manoeuvre under the Stability and Growth Pact (SGP). If that is not enough, a temporary suspension of the SGP would become likely.

With these initiatives, as well as financial policies such as asset purchases and capital injections for banks, the issuance of government debt is likely to expand significantly. But issuance is not likely to be the primary factor driving long-term interest rates, at least until the economy recovers. Debt issuance to finance the purchases of assets should not have much impact on interest rates since all these transactions do is change the composition of assets held by the private sector. In addition, the fact that this

economic downturn is being driven by a desire by consumers and businesses to increase their savings should help to hold down interest rates.

Fiscal deficits will not put pressure on rates till economic prospects improve.

To be sure, once economies start to recover, governments will face the difficult problem of unwinding fiscal (and monetary) accommodation in an environment of rising interest rates. But these challenges will not emerge until the prospects of meaningful economic recovery become much more certain. During the 1990s, Japan experienced a big increase in public indebtedness, a sharp fall in household savings, and very low long-term interest rates. Until the global economy starts to recover, the upside risks for long-term interest rates appear modest.

Figure 16. Fiscal Policy Initiatives

United States	• The incoming administration is expected to propose a large multi-year fiscal stimulus package in coming weeks. During the campaign Senator Obama advocated additional fiscal stimulus of about $200B (~1.3% of GDP). But recent comments suggest that he will propose a much larger package for consideration by Congress in early January.
Euro Area	• The EU Commission has proposed a stimulus package worth EUR200B (~2% of GDP), with the majority to come from national budgets.
Germany	• The government will provide a support package for 2009 and 2010 with extra lending programs of KfW and EIB worth around EUR25B over two years and general government measures of tax reduction and investment programs worth EUR23B over two years. (The total is about 1% of GDP per year over two years.)
France	• The government announced creation of a "strategic fund" to make capital injections to nonfinancial companies worth around EUR20B (~1% of GDP).
Italy	• The government plans selective measures of tax breaks and capping variable mortgage agreements at rates of 4%.
United Kingdom	• The UK government will provide a fiscal stimulus of roughly 1% of GDP for 2009 via cut in VAT. Fiscal tightening of about 3% of GDP cumulative was announced for 2010-13, but it is unclear if this actually will happen.
Japan	• The government introduced two economic packages including direct subsidies to the household sector, tax incentive for business investment, housing, and security investment and subsidies for industries beleaguered by higher input costs.
China	• The government has announced a massive stimulus package of Rmb4T for 2009-10. About 40% appears to be new initiatives. The new measures are about $2\frac{1}{2}$% of GDP per year over two years. The spending will focus on infrastructure development, earthquake reconstruction and social security systems. • In addition, officials are in the process of drafting another program aiming at boosting domestic consumption, focusing on improving social security systems, raising farmers' income, creating more jobs, and developing rural consumer markets.
Korea	• A total of W24T (~$2\frac{1}{3}$% of GDP) in tax cuts have been announced since August. • We expect further fiscal easing, primarily through increased government spending, as the economy slows.
Australia	• The 2008/09 budget surplus of 1.8% of GDP has been cut to just 0.1% via direct fiscal stimulus to families, pensioners, and first home buyers, and increased payments to the States and a focus on infrastructure. • Further stimulus is expected in 2009/10, pushing the budget balance from a surplus of 1.5% of GDP to a deficit of 0.5% — that is, 2% of GDP stimulus.
Canada	• Previously enacted tax cuts are scheduled to take effect in 2009. But the Conservative government has proposed new spending cuts to avoid fiscal deficits.

Source: Citi.

Special Focus: Unconventional Policy Prospects

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At the zero bound,
economy not so sound.
Fiscal way is crowned.

In contrast to conventional wisdom, monetary policy *can* be effective in a liquidity trap. When policy rates hit zero (the so-called zero bound), unconventional tools can provide major stimulus to aggregate demand. Yet, uncertainty about these mechanisms has several implications:

- Monetary policy should respond aggressively to a downward demand shock when inflation is low, as it is virtually throughout the industrial world, to avoid the need for unconventional approaches.
- Once the zero bound is reached — *or before* — economic policy should embrace a broad, experimental approach to demand stimulus and market repair that includes, but goes well beyond, unconventional monetary policy.
- Discretionary fiscal stimulus becomes much more important as the zero bound approaches, even as sliding economies boost cyclical deficits and projections of the public debt. In the United States, President-elect Barack Obama's call for a large fiscal stimulus is consistent with this assessment.
- Finally, the headwinds facing policy in a zero-bound environment with a credit trap are far stronger and more enduring than in an environment with effective intermediation and functioning capital markets.

Central banks — especially the Fed — already are providing excess reserves (beyond what is needed to maintain the target interest rate) to ease liquidity conditions. Such "quantitative easing" (QE) augments conventional monetary policy, and is indistinguishable from monetary accommodation at the zero bound. Central banks also have acquired (or announced plans to acquire) large volumes of assets with credit risk in ways that alter asset prices and facilitate intermediation (for example, U.S. commercial paper and asset-backed securities). These approaches probably will gain in scale and scope at the zero bound, even if exit strategies can be problematic.

In the current crisis, one unconventional mechanism that may be used by central banks — perhaps imminently in the United States — is a conditional commitment to keep policy rates low for an extended period. The goal would be to lower long-term rates and help underpin spending and risk-taking.

From a market perspective, prospective large government debt increases will *not* boost bond yields in the industrial countries sustainably until policies — monetary, fiscal, and regulatory — counter the sharp deterioration of financial conditions and foster expectations of economic recovery.

The Need for Unconventional Measures

As we peer into 2009 and beyond, the overnight rates of several leading central banks face a higher probability of hitting zero than at any time since the 1930s. Following Keynes (1936) and Hicks (1937), economists argued for decades after the Great Depression that monetary policy would be ineffective in such a "liquidity trap." The

metaphor of central banks "pushing on a string" at the zero bound[3] reflects the familiar pattern of rising bank reserves and diminishing bank credit that was observed in both the Depression and in Japan's "lost decade."

The current crisis, like those two earlier slumps, involves both a liquidity trap and what we call a "credit trap," in which the premium paid for private funding has surged far above the cost of public funding.[4] The reasons are multiple:

- Capital shortages among intermediaries have raised doubts about solvency and constrained lending capacity.
- Losses of wealth and collateral by potential fund users have boosted the importance of information asymmetries (between lender and borrower) that can impede the flow of funds to productive uses.
- Investors have lost confidence in their ability to value opaque securities that are now illiquid.
- The dynamic of falling house prices in the United States threatens to intensify all these obstacles to the effective flow of funds from savers to investors.
- Risk tolerance has plummeted.

The question naturally arises: Can monetary policy provide effective stimulus in such dire circumstances? Our answer is yes. Even at the zero bound, unconventional monetary policy approaches can work. Actions could include: further quantitative interventions to expand the central bank's balance sheet beyond what is needed to implement a policy rate target (so-called quantitative easing or QE); changing the central bank portfolio to alter the relative supplies of outstanding assets and influence their prices (a form of Operation Twist or OT); and credible commitments to keep policy rates low.[5]

The limited experience of industrial economies at the zero-policy bound makes the impact of unconventional policies far less predictable than is usually the case for monetary policy. Exiting from some unconventional policy approaches could prove especially challenging. And some forms of intervention that bear a particularly strong fiscal character — such as the direct purchase of corporate bonds and equities — may require legislative changes.[6]

Yet, the policy challenges arising from the financial crisis and global downturn are more formidable than at any time since the Second World War. Consequently, we expect central banks to experiment with a wide variety of tools to restore financial and economic stability. The Federal Reserve began aggressive QE and OT actions well before hitting the zero bound, and continues to widen (in both scope and scale) the array of assets that it acquires (directly or through an array of new special-purpose

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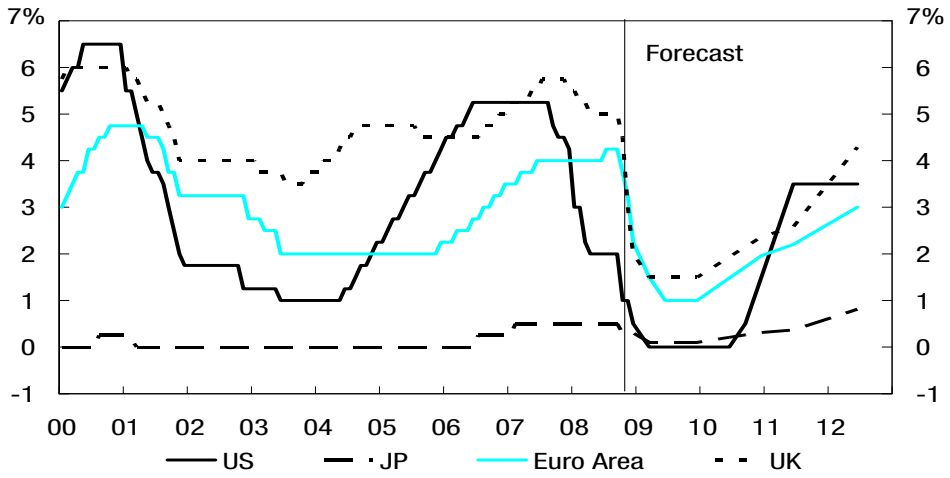
[3] In the absence of a tax on cash balances, short-term rates cannot fall below zero because banks and others can simply choose to hold cash.

[4] Bernanke (1983) emphasizes the heightened costs of intermediation as a factor that deepened and prolonged the Great Depression.

[5] See, for example, Bernanke and Reinhart (2004).

[6] The Fed has broad authority under the emergency rules of the Federal Reserve Act to provide financing against satisfactory collateral to nonbanks that do not have access to other funding. Officials used this authority in the March 2008 Bear Stearns episode. Recently, the Fed used this securitized-funding authority — in combination with a Treasury TARP-sourced capital backstop for the collateral — to create the Term Asset-Backed Securities Loan Facility (TALF). TALF will fund a special-purpose vehicle to acquire assets (ABS) that the Fed is not *expressly* authorized to acquire for its own account. If the Treasury and the Fed continue to cooperate in this fashion, it is not clear that there are any assets that *cannot* be acquired on a large scale.

Figure 17. Selected Economies — Central Bank Policy Rates, 2000-12F

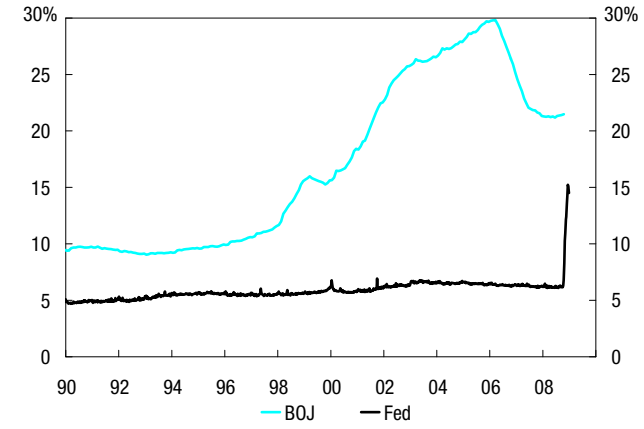


Sources: Bank of England, Bank of Japan, ECB, Federal Reserve, and Swiss National Bank.

vehicles).[7] Other policy efforts to restore intermediation and market function (including regulatory, supervisory, and recapitalization measures) serve a critical complementary role to aggregate demand stimulus in countering the credit trap.

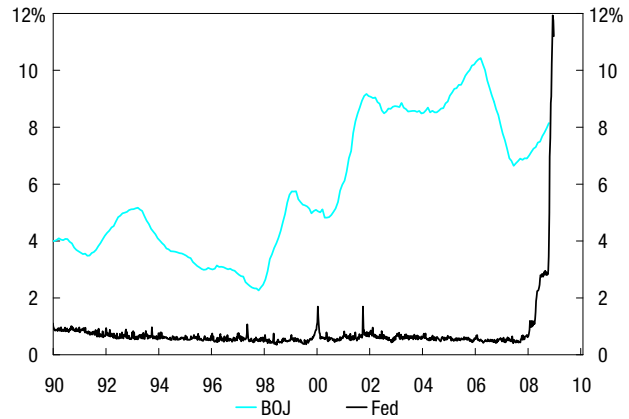
At this stage, no central bank has made the kind of "policy duration commitments" that were used to lower bond yields in the 2002-03 deflation scare in the United States and (less credibly and effectively) during Japan's QE period (five years beginning in March 2001). Some observers suggest that U.S. officials are reluctant to retry the 2003 approach (Meyer and Sack, 2008). Yet, the academic literature emphasizes such commitments as a leading means to combat deflation risks. We expect U.S. inflation to sink below the Fed's comfort zone in 2009, so a conditional policy commitment on the part of the Fed remains probable after it cuts the funds rate to zero. Japan also could revive this approach.

Figure 18. Japan and the United States — Central Bank Assets (Percent of GDP), 1990-Nov 08



Note: Japan data are a 12-month moving average.
Sources: Bank of Japan and FRB.

Figure 19. Japan and the United States — Central Bank Assets Ex-Government Bonds (Percent of GDP), 1990–Nov 08



Note: Japan data are a 12-month moving average.
Sources: Bank of Japan and FRB.

[7] See, for example, Rudebusch (2008).

Finally, the scale and scope of the crisis, combined with uncertainties about the proper mix and magnitude of monetary and credit-related policies, favor the use of discretionary fiscal stimulus to limit the damage of the recession. While we forecast outright deflation only in Japan, the scale of excess capacity that we anticipate globally, combined with the complex obstacles to intermediation and recovery, virtually ensures downward threats to price stability in several major economies. The scope for discretionary fiscal stimulus appears large, at least in Europe and the United States.

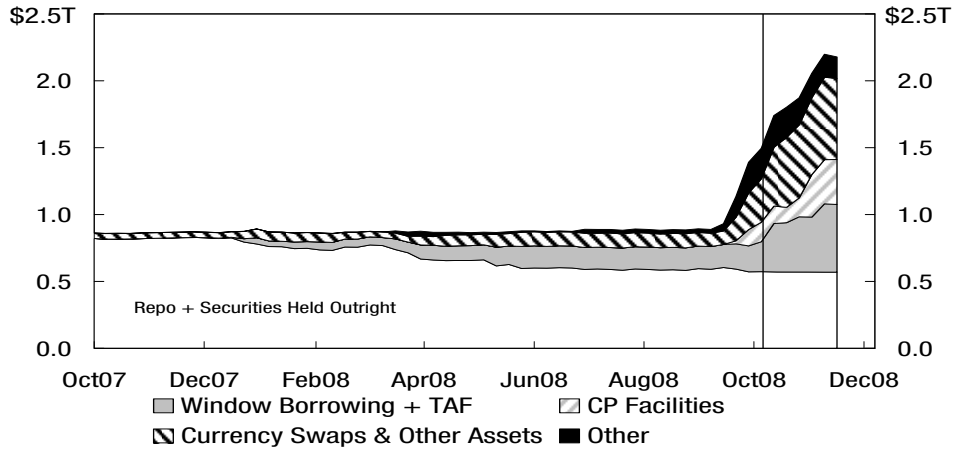
In the remainder of this article, we highlight the approach of the zero bound in several economies and discuss alternative mechanisms for monetary policy transmission in that environment. We also stress the role for complementary policies to mitigate the headwinds emerging from the credit trap.

At the Zero Bound

The prospects for a deep and prolonged recession already have prompted sizable monetary easing in the industrial world. As a result, central bank policy rates are at or near zero in Japan and the United States (see Figure 17). Policy rates also are plunging in the euro area, Switzerland, and the United Kingdom. While we do not forecast policy rates to sink below 1% in these latter areas, the range of uncertainty is so wide that a test of the zero bound has a higher probability than at any time in decades.[8]

Even before the zero bound approached, the Federal Reserve undertook unconventional policy actions in unprecedented scale and scope. The Fed has shifted its balance sheet to restore market function and support the liquidity needs of intermediaries, while adjusting its policy rate tool for the usual purpose of economic stabilization. The flexibility revealed by these unconventional actions will be of increasing importance at the zero bound. Figure 18 shows that — as a share of GDP — the Fed's balance sheet recently surged to 15%, compared to a peak of 30% in Japan during QE. Figure 19

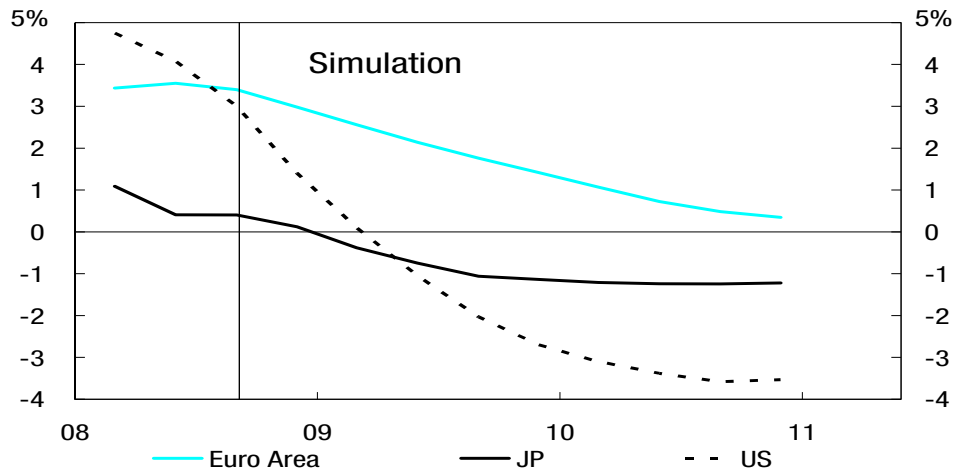
Figure 20. United States — Federal Reserve Assets (Dollars in Trillions), Oct 07-Nov 08



Notes: The vertical line represents the October 9, 2008, introduction of interest payments on depository balances at the Federal Reserve.
Sources: Federal Reserve Board and Rudebusch (2008).

[8] Note that the Swiss policy target is a LIBOR rate. In order to achieve the current 1% target, central bank overnight rates already have fallen close to zero.

Figure 21. Euro Area, Japan and the United States — Taylor Rule Simulations, 2008-10S



Note: Simulation beyond third quarter 2008. Sources: BEA, BLS, BoJ, CBO, EU Commission, Eurostat, ECB, FRB, Japan Cabinet Office and Ministry of Internal Affairs and Communications, and Citi.

shows that — excluding government bond holdings — the Fed's asset share already has topped the peak observed in Japan. Finally, Figure 20 shows the changing mix and magnitude of the U.S. central bank's balance sheet, which is now dominated by nongovernment credits for the first time in postwar experience.

Simple Taylor-rule simulations of monetary policy highlight the importance of aggressive central bank actions going forward. In Japan and the United States, for example, our 2009-10 projections for inflation and economic slack are consistent with *negative* policy rates for some period ahead (see Figure 21). Since policy rates cannot fall below zero, central bankers have an incentive to lower rates toward zero *earlier* (and possibly keep rates low longer) than these Taylor-rule simulations imply. Risk management considerations work in the same direction of aggressive monetary easing: Officials can more confidently throttle an overheated economy than they can calibrate unconventional tools at the zero bound to thwart a deep downturn. As a result, anti-deflationary policy insurance is of significant value (Ahearne et al., 2002).

$$\mathbf{(1)} \qquad r = i - \pi^e$$

The usual challenge for monetary policy at the zero bound can be illustrated in terms of the *expected* or *ex ante* real policy rate (r) — the difference between the observed policy rate (i) and the *expected* rate of inflation (π^e), as reflected in equation (1) above. The level of the ex ante real policy rate (r) that is needed to restore full use of resources in a deep economic downturn may fall well below zero for some period of time. If π^e is low amid a cyclical slump, then r may not fall sufficiently at the zero policy bound (in the absence of other policy actions) to restore full resource use in a timely fashion (Krugman, 1998). That is our view today. Moreover, if deflationary expectations arise, as they did in the Great Depression and in Japan since the early 1990s, the ex ante real rate r would be *positive*, instead of negative, helping to intensify or prolong the downturn. This pattern underlines the critical importance of expectations about the future in driving markets and economic activity today.

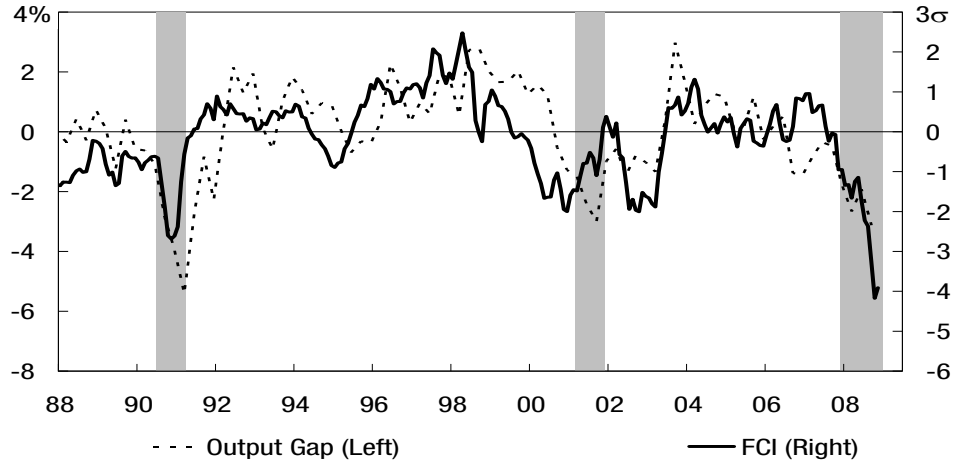
The credit trap sharply augments this challenge. Stimulative monetary policy can boost wealth levels and risk tolerance to help lower the financing premium (θ) facing private fund users. However, global wealth has plummeted this year. Partly as a result, current financial conditions facing private decision-makers remain extremely hostile (see Figure 22). Hence, today's extreme financing premiums further *lower* the ex ante real policy rate (r) that is needed to promote economic recovery in a downturn. For purposes of illustration, one might think of an *effective* real policy rate (R) that is augmented by the private financing premium — θ, see equation (2).[9] The larger the θ, the lower that the real rate (r) needs to fall to restore full resource use.

$$\mathbf{(2)} \qquad \mathbf{R = r + \theta}$$

These considerations highlight that the conventional transmission mechanism for monetary policy already is obstructed. That mechanism springs from the favorable impact of a lower policy rate (i) on financial conditions that influence private spending. In the current crisis, the dramatic deterioration of financial conditions has occurred *despite* plunging policy rates. One might say that the surge in θ has overwhelmed the decline of i, so that the effective monetary stance has been too tight, as financial conditions suggest.

Indeed, current U.S. financial conditions are *not* consistent with an economic recovery in 2009. Citi's financial conditions index (FCI) has recovered only slightly from its record low October reading, and remains four standard deviations below its norm (see Figure 22). The link between the U.S. FCI, on the one hand, and prospective economic activity and inflation, on the other, underscores the need for a timely stimulus of aggregate demand in order to anchor price expectations as spare capacity rises.

Figure 22. United States — Citi Financial Conditions Index (Standard Deviations) and the Output Gap, 1983-Nov 08



Note: Shaded regions denote recessions.
Sources: Bureau of Economic Analysis, Congressional Budget Office, and Citi.

[9] This simplification ignores that θ depends on r, and assumes that the effects of the financing premium are additive. In cases where access to credit is obstructed, this assumption fails.

Comparable challenges exist in many countries. The deterioration of U.S. financial conditions is mirrored in equity and credit markets virtually throughout the industrial world and, in recent months, has spread to key emerging economies. The resulting global recession will boost excess capacity and diminish price expectations, in some cases quite sharply. Wherever monetary policy rates approach the zero bound, officials will be looking for unconventional means of stimulus.

Policy Transmission Mechanisms When Policy Rates Are Zero

There now exists a large body of research that explores how monetary policy can operate effectively at the zero bound. That literature includes both theoretical analyses and empirical assessments of policy actions in key episodes, including the Great Depression, the lost decade in Japan, and the 2002-03 deflation scare in the United States.

Underlying much of this analysis is the view that monetary policy functions by altering financial conditions that drive private spending. In particular, most investments are funded at relatively long maturities, not at short-term policy rates. With this in mind, the principal channels of policy transmission to ultimate financial conditions can be divided into three categories: (1) expectations about future policy rates; (2) the magnitude of the central bank balance sheet; and (3) the mix of central bank assets (Bernanke and Reinhart, 2004).

Expected future policy rates naturally can affect the prices of long-term assets today, with implications for wealth and risk tolerance. The magnitude of central bank balances also can influence asset prices and the price of goods and services. To see this point, imagine that it were *not* true: Then it would be possible for a central bank to issue currency sufficient to acquire *all* the goods and services in an economy without raising their prices.[10] Finally, the mix of central bank assets can bear on asset prices by altering the relative supply of assets to the private sector.

Specific policy options at the zero bound are numerous, and operate through *one or more* of these three transmission mechanisms. Policy options vary in the degree of deviation from prevailing practices, in the distortions they introduce, and in the costs of exit. It is *not* a straightforward task to rank order different approaches in terms of effectiveness or to prescribe a generally applicable sequence of implementation. Efficacy and desirable sequencing depend on existing conditions, such as the central bank's current policy regime, the probability of a destructive deflation, the level of distant forward rates, the size of an economy in the world economy, and the existence of a credit trap. Different options also may provide collective reinforcement (say, by enhancing the credibility of a commitment to pursue accommodation). Some of the most powerful approaches have a fiscal character, or imply a heightened degree of cooperation with fiscal authorities.

[10] Bernanke (2000) presented this demonstration by counterexample in a discussion of Japanese monetary policy.

A list of possible approaches includes, but is not limited to:

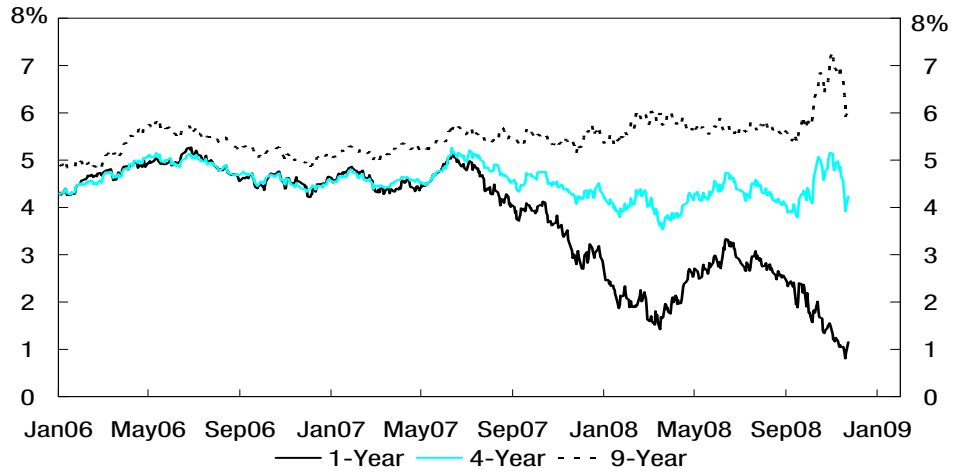
- quantitative easing (QE) that adds to central bank assets beyond levels needed to keep short-term policy rates at a target (for example, excess reserves)
- changes in the central bank portfolio that alter the mix of assets available to the private sector (ranging from extending the duration of government liability holdings to the acquisition of credit exposure)
- policy statements (either time-determined or event-conditional) that commit to keep short-term rates low beyond what markets expect (policy duration effect)
- making long-term rates a direct instrument of policy (such as a promise to cap long-term government bond yields)
- introduction of a new policy regime (such as inflation- or price-level targeting)
- liquidity or asset insurance (such as the sale of call options for future liquidity or put options on government bonds or other assets)
- money-financed fiscal expansion

Notably, the Federal Reserve already has utilized the first two options extensively, and officials have begun to discuss publicly the use of unconventional mechanisms more generally (Bernanke, 2008). While unconventional monetary policies usually are thought of as devices to counter a liquidity trap, some approaches clearly aim to mitigate a credit trap.

The Importance of Policy Commitments

One means by which central bankers can lower today's ex ante real policy rate is to lower expected future policy rates. In the United States, for example, despite low policy rates and long-term bond yields, distant forward interest rates today remain far above zero (see Figure 23). The same pattern characterized the U.S. forward rate curves in 1933 at the depth of the Great Depression (Sellon, 2003) and Japan's forward curve in 1995.

Figure 23. United States — Forward Interest Rates, 2006-Nov 08



Notes: The lines depict the one-, four- and nine-year ahead one-year forward interest rates.
Sources: Federal Reserve Board and Macroeconomic Advisers.

In those episodes, officials allowed deflation to become entrenched (thereby ensuring a *positive* ex ante real policy rate) without using unconventional means to stimulate activity.

Later policy actions in both instances helped lower forward rates and stimulate activity. In the United States, the exit from the Gold Standard and a subsequent inflow of gold boosted narrow money growth and probably contributed to rapid economic expansion in 1933-37, despite central bank inaction (Romer, 1991). In Japan, a belated shift to unconventional policies earlier this decade — that eventually included conditions for exiting Quantitative Easing (QE) and the Zero Interest Rate Policy (ZIRP) — lowered bond yields (Oda and Ueda, 2005).

Various means exist to lower expected future policy rates. The key is how a central bank can *credibly* commit to keep rates lower for longer than markets expect (and possibly longer than might seem optimal at some future date). Such a commitment can both lower long-term yields *and* raise inflation expectations, lowering the ex ante real policy rate in two ways. However, for the commitment to be credible, market participants must believe that the incentives facing the central bank in the future will be consistent with the promise made today.[11]

Various policy targeting approaches can affect credibility. Proponents of inflation targeting emphasize that the commitment to price stability promotes expectations of aggressive policy actions to thwart downward threats to price stability. Such aggressiveness could include a rush to the zero bound if policy prospects include a future need for a negative policy rate. However, inflation targeting also can weaken the credibility of promises to be highly accommodative in the future (say, when inflation has risen) that may be needed to lower today's expected real policy rate.[12]

For this reason, some analysts have advocated price-level targeting. When deflation has taken hold, a commitment to price-level targeting can be consistently optimal over time even when inflation arises — as hoped — in the future (Eggertsson and Woodford, 2003). One example stands out: In 1933, the new Roosevelt Administration explicitly sought a reversal of the price plunge that had occurred since 1929 (a 24% drop measured by the implicit price deflator). The administration's dramatic decision to exit from the Gold Standard added credibility to that commitment by radically altering the monetary regime (Eggertsson, 2008). In the sharp expansion from 1933-37, the U.S. implicit deflator rebounded by 18%, even though the central bank remained no more than a passive observer of narrow money's expansion.

Yet, we doubt that price-level targeting will become widespread. When an inflation overshoot occurs, price-level targeting commits policymakers to promote a painful deflation to restore the targeted price path. Perhaps for this reason, no major central bank has adopted price-level targeting, while many have introduced variants of inflation

[11] The problem of "time inconsistency" arises when the optimal policy of a *discretionary* central banker in the future would not be consistent with the policy commitment made today. Raising the cost of future discretionary shifts can boost the credibility of the commitment.

[12] In this example, time inconsistency arises because the optimal policy of a *discretionary* central banker at the future date when inflation actually has risen may be to contain inflation by hiking rates, in contrast to the earlier commitment (to keep rates low) that was needed to raise inflation expectations and stimulate demand.

targeting. The most obvious candidate for price-level targeting is Japan, where the price level (measured by the GDP deflator) has fallen by 12% from its 1994 peak, but policymakers there remain shy about experimentation even though they have failed to deliver price stability over a sustained period.

In practice, central banks have made simpler "policy duration" commitments that have been effective at lowering expected future policy rates. In the United States, the Fed introduced language into its policy statement in the 2002-03 deflation scare to: (1) lengthen the period of low policy rates that markets expect ("foreseeable future" and "considerable period"); and (2) limit expectations of rate hikes when policy tightening began ("measured pace"). The policy statement also appeared to link the low rate commitment to economic developments (such as slack resources), making the policy duration commitment *conditional* on the evolution of the economy, rather than fixed in time.[13] Various assessments suggest that these "words" were at least as powerful as policy rate "deeds" in moving forward rate expectations (see, for example, Bernanke, 2004, Gürkaynak, Sack, and Swanson, 2005, and Bernanke, Reinhart, and Sack, 2004).

The importance of making policy commitments *credible* is evident in the evolution of the Bank of Japan's efforts to exit deflation. When the BoJ first introduced the Zero Interest Rate Policy (ZIRP), its stated attitude reflected a desire to exit ZIRP as early as possible, fostering doubts about the policy duration commitment. The policy exit test ("when deflationary concerns abate") was vague and uncompelling. And the first decision to exit ZIRP in 2000 *despite ongoing deflation* confirmed market skepticism about the BoJ's resolve under then-Governor Masaru Hayami to restore price stability. The BoJ's rejection of inflation targeting reinforced doubts because policymakers claimed that they did not have instruments available to meet the target (Ito, 2006, and Ito and Mishkin, 2004).

Beginning in 2003, the BoJ's policy duration commitment grew stronger and more effective under new Governor Toshihiko Fukui. The BoJ eventually introduced quantified inflation and inflation forecast tests that would be necessary (but not sufficient) to exit QE (which, as described by Ito, 2006, amounted to ZIRP *plus* the maintenance of excess reserves). These tests constituted another "conditional" form of commitment that took a small step in the direction of inflation targeting. Massive and repeated increases in QE also signaled a strengthened policy duration commitment, in part because many observers correctly expected QE to end *before* ZIRP. Partly as a result, various empirical examinations link forward rate declines with policy actions under the QE-ZIRP regime (see, for example, Oda and Ueda, 2005, and Ueda, 2005).

Like QE, other mechanisms of influencing forward rates involve fiscal-like commitments on the part of the central bank. For example, a central bank could offer to sell put options on long-term bonds. If market participants view the central bank as concerned about the burden of public debt, the option would be seen as an incentive to keep policy rates low.

[13]Conceivably, the short six-month gap between the Fed's December 2003 "considerable period" commitment to keep policy rates low and the first rate hike in June 2004 could reduce the market impact of a future Fed commitment. However, the extraordinary nature of this financial crisis and the unprecedented actions that the Fed already has taken probably limit this risk.

A central bank could go further by capping or pegging the long-term bond yield. This practice was followed in the United States from 1942 until the Treasury Accord of 1951. In periods of inflation risk, such a commitment clearly undermines the credibility of the central bank, so that the Treasury Accord has been viewed as the origin of the Fed's independence (Hetzel and Leach, 2001). In periods of deflation, however, cooperation between monetary and fiscal authorities can be desirable and fully consistent with central bank independence: For example, such cooperation may *enhance* the credibility of a central bank's commitment to price stability.[14]

Nevertheless, making a long-term interest rate into a policy instrument poses major practical concerns. For example, Woodford (2005) has emphasized the prospect for severe market volatility if changes in a targeted long-term interest rate come to be anticipated, say, at an upcoming policy meeting.[15] It also may be more problematic for an international organization like the European Central Bank, which might have to set yield caps for the debts of multiple governments. Against this background, central banks probably would not utilize this approach unless less dramatic policy options (with fewer exit costs) fail and deflation risks become severe.

Depending on the circumstances, the acquisition of unconventional assets also may be seen as a policy duration signal. Although the Fed is not expressly authorized to acquire equity or corporate debt (Clouse et al., 2000), it has crossed far beyond the Rubicon of assuming credit risk on its portfolio during this crisis (see Figure 20). And, while the BoJ's actions were not aimed to influence macroeconomic outcomes, it acquired corporate equities directly from banks earlier in this decade to relieve extreme financial stresses. Again, if central banks are viewed as concerned about public debt burdens, the fiscal-like action of assuming credit risk may create a perceived incentive to keep policy accommodative.

Perhaps the most extreme approach is a money-financed fiscal stimulus. Where deflation threatens, there is little doubt that such action would support economic activity and counter downward threats to price stability.[16] Money financing does not raise the future public debt burden because it occurs at zero funding cost. Moreover, any rise of expected inflation lowers the real burden of the public debt. As Bernanke (2000) has pointed out, for money financing *not* to be effective, it would have to be possible for the government to acquire all the goods and services of the economy without altering their prices.

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[14] With regard to the Bank of Japan, for example, Ito and Mishkin (2004) argue that "Governor [Hayami] and fellow Board members took independence literally and refused to cooperate with the government when economic conditions called for such cooperation." In our view, this error had an enduring cost: The Bank of Japan's credibility suffered from its failure to demonstrate a keen commitment to price stability, or to deliver price stability over an extended period.

[15] "Because overnight rates could never be negative, the Fed would not be able to maintain its target long bond rate on the day before the target change, by any means short of buying the entire outstanding stock of 10-year bonds; and in that case, the sense in which it would have succeeded in achieving its target for the long rate would be a meaningless one." (Woodford, 2005).

[16] Peter Morgan (2006) argues that the Bank of Japan's decision to eschew "strong" policy options (such as coordination of monetary and fiscal policy) reflected a lack of accountability, and that the central bank resisted an inflation target because strong policies might have been necessary to achieve it.

Other Transmission Mechanisms: Currency, Liquidity, Portfolio Balance[17]

Currency. While it may be impossible for a central bank to support its currency, it is usually easy to weaken it. Some analysts have labeled currency depreciation a "foolproof" means to end deflation (Svensson, 2003). However, currency depreciation is not likely to be effective for *large* economies concerned that inflation may sink too low amid a *global* downturn. It is not feasible for all currencies to depreciate at the same time (except, say, in the case of an exit from the Gold Standard, where the depreciation occurred against the commodity unit of account). However, currency depreciation may be an element in the unconventional arsenal of a small, open economy. For example, analysts from the Swiss National Bank have highlighted the role of credible communication about the currency as a policy option at the zero bound (Burkhard and Fischer, 2007).

Liquidity. Central bank liquidity supply also takes on a special economic role at the zero bound, but its effects probably are limited in scope. The supply of excess reserves beyond what is needed to keep the policy rate did not boost bank lending in Japan in the QE era or during the 1930s in the United States. At zero rates, bank reserves and short-term government liabilities are perfect substitutes for intermediaries. Consequently, in both those episodes of impaired intermediation, broad money growth stagnated at low levels or declined despite massive excess reserves.

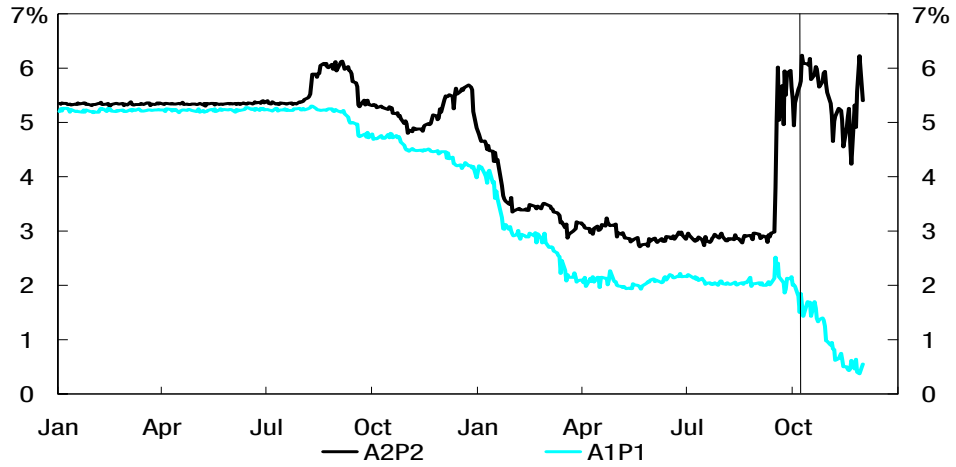
However, the excess supply of reserves probably eases liquidity concerns in a period of heightened liquidity preference. In Japan, for example, the variance of bank CD funding rates narrowed in the QE period earlier in this decade, suggesting that excess liquidity supply helped to ease funding constraints on the weakest banks (Baba et al., 2006). More dramatically, the Federal Reserve's profoundly mistaken decision to mop up excess reserves in 1937 (which can be viewed as a premature end to QE) probably contributed to the dramatic economic downturn that followed.

Portfolio Balance. Through their acquisitions, central banks can alter the supply of assets available to the private sector. The impact on asset prices depends both on the scale of action and on the availability of close substitutes. When the assets are very close substitutes for cash — such as short-term government debt at the zero-policy bound — even massive purchases may have little effect on the prices of risky assets and the level of wealth. Naturally, if a central bank is willing to buy the entire stock of long-term government debt, it can peg the yield (as previously discussed). Large purchases of risky private assets probably would alter their prices, too.

How important were portfolio balance effects in Japan's QE episode? Bank of Japan purchases of government bonds were large in this period — with central bank bond holdings eventually surpassing 20% of GDP. However, it is difficult to distinguish the impact on bond yields from: (1) the signaling effect about policy duration, and; (2) the supply effect. One careful assessment of Japan's QE policy found a modest effect from signaling (following BoJ announcements of increases in reserve supply), but did *not*

[17] Our list of mechanisms does not include Silvio Gesell's proposal to tax currency in circulation (described by Keynes in 1936) that would allow a *negative* nominal interest rate. Such a tax is not a central bank policy per se. The associated administrative challenges (for example, management of date-stamped depreciating currency notes) probably make the use of this approach unlikely except perhaps in dire deflations where other approaches have failed.

Figure 24. United States — Commercial Paper Rates, 2007-Nov 08



Note: The vertical line marks the October 7, 2008 announcement of the Federal Reserve Commercial Paper Funding Facility.
Source: Federal Reserve Board.

find a significant impact from portfolio balance changes (Oda and Ueda, 2005). In theory, the acquisition of assets that are *less* substitutable for cash and less liquid than government bonds — such as corporate bonds and equities — would result in a more powerful portfolio balance effect. However, the Bank of Japan never acquired such instruments for macroeconomic purposes.

The recent experience of the Federal Reserve in acquiring commercial paper (CP) hints at how a central bank's changing portfolio mix can alter relative prices but still leave a large financing premium if the acquisitions are narrowly focused. Following Lehman's failure, CP volume contracted and prices fell (especially on A2P2 paper) until the Fed announced its Commercial Paper Funding Facility (CPFF), which helped restore activity. However, only the highest grade (A1P1) qualifies for the CPFF, so that the spread between A1P1 and other CP has failed to narrow in a sustained fashion (see Figure 24).

Separately, changes in the Fed's portfolio mix earlier in the subprime crisis (for example, the introduction of TAF) helped temporarily to contain liquidity constraints in the interbank market (McAndrews et al., 2008). The Fed's recent moves to acquire GSE and MBS instruments, and to lend on a secured basis against new ABS issuance, underscore the broadening trend toward such portfolio interventions.

Ultimately, the lack of experience in modern financial markets with such large central bank portfolio shifts — aside from ongoing interventions in the current crisis — adds to the uncertainty about their impact. At this stage, there is little rigorous foundation for answering questions about desired scaling, scope, or exit strategies. Large interventions of this kind — especially those involving credit risk — also have a fiscal character that makes some central banks reluctant to engage, even where they are expressly authorized.

However, the more severe the crisis, the more likely that policymakers will experiment. As noted, the Fed has made unprecedented quantitative and portfolio interventions even before the use of a policy duration commitment. Treasury-capitalized special-purpose vehicles have allowed the Fed to fund asset acquisitions through its authority to provide securitized lending, even where express authority to acquire an asset type has been

lacking. If the economic slide persists, legislatures may prove willing to widen the range of risky assets that central banks can acquire directly (possibly even including broad indexes of corporate bonds and equities).

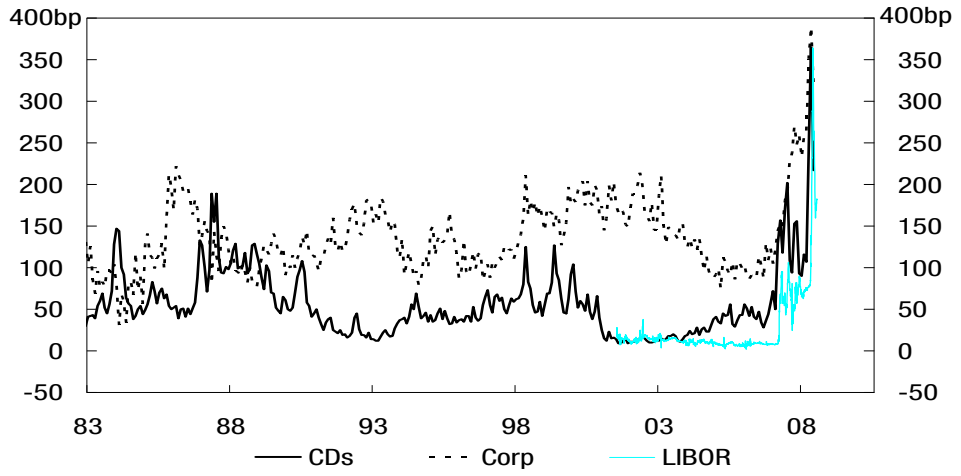
Credit Trap and *Effective* Real Rates

Monetary policy can play an important role even at the zero bound, but economic policy will have to overcome the credit trap in addition to the liquidity trap. As discussed, the surge in the financing premium (θ) that private fund users pay above the cost of public funding acts like a rise in the effective real policy rate — equation (2) — in dampening economic activity. In practice, the financing premium takes many forms. Well-known examples (as shown in Figure 25) include: (1) the spread between LIBOR rates for interbank transactions and the equivalent-maturity OIS (as a proxy for expected policy rates); (2) the spread between U.S. bank CD rates and Treasury bill rates; and (3) the spreads on high-quality corporate, mortgage, or municipal bonds versus Treasuries.

To be effective, policy stimulus has to lower the financing premium (θ) directly or counter the headwinds arising from it. The financing premium can reflect the impairment of intermediaries and capital markets and the changing risk character of fund users following their loss of wealth (collateral). As the previous section highlights, even at the zero bound, unconventional monetary policy can lower the premium by altering the price of risky assets and encouraging risk tolerance. Admittedly, the most aggressive central bank policies to counter a large financing premium have some fiscal character, but extreme circumstances encourage experimentation.

For effective stimulation of aggregate demand, other policies to repair intermediaries and capital markets (in effect, to lower θ) should be viewed as *complementary* to — and no less important than — monetary policy per se. Bank recapitalizations have done little to improve broad financial conditions, but their absence almost certainly would have triggered a worse capital markets outcome, as the recent moderation of LIBOR-

Figure 25. United States — Various Private-Public Financing Spreads (Basis Points), 1983-Nov 08



Notes: The three-month CD spread is shown versus Treasury Bill rates. The investment-grade corporate spread is shown versus 10-year Treasury yields. The three-month LIBOR spread is shown versus OIS.
Sources: Bloomberg, Federal Reserve Board, and Citi.

OIS and bank CDS spreads suggests. FDIC liability guarantees for bank funding may prove more powerful at stabilizing bank behavior. Supervisory and regulatory efforts to promote transparency and provide credible assurances of solvency are necessary to counter the perceived adverse selection ("market for lemons") that has undermined interbank activity.

Finally, the Federal Reserve and other major central banks expanded their exposure to credit risks in unprecedented fashion *before* hitting the zero bound. In effect, responses to the credit trap *preceded* the liquidity trap. In the 2002-03 deflation scare, the Fed never engaged in QE-like actions or assumed unconventional credit risk, relying primarily on conditional commitments to influence the expected duration of low policy rates. Today, the Fed is providing excess reserves without zero interest rates.[18] The surge of the Fed's balance sheet — rather than signaling a liquidity bubble — reveals the extent of market disruptions from the credit trap.

To be sure, central banks have characterized their balance sheet alterations and expansions thus far as microeconomic in purpose — relating to market and intermediary function — and have sought to assign policy rates to the goal of stabilizing aggregate demand. However, this distinction loses meaning when policy rates hit the zero bound. At that stage, further expansion of the balance sheet will be interpreted as QE, comparable to Japan's pattern earlier in this decade.

Increased Role for Fiscal Policy

The old Keynesian conclusion that a liquidity trap makes monetary policy ineffective at the zero bound is wrong. Unconventional central bank policies do not "push on a string" — they alter expectations about future policy rates or intervene to alter asset prices more directly. Nevertheless, limited experience with unconventional approaches ensures uncertainty about the proper scaling and impact of policy actions and about the credibility of policy duration commitments.

Combined with the extraordinary additional headwinds from the credit trap, these considerations favor the use of discretionary fiscal policy in combination with monetary accommodation at the zero bound. Bernanke (2002) has argued that "the effectiveness of anti-deflation policy could be significantly enhanced by cooperation between the monetary and fiscal authorities." Fiscal expansion can be viewed as raising the equilibrium level of the expected real policy rate in equation (1) that would be consistent with full use of economic resources (Gertler, 2003). By improving income expectations and reducing the risk and scale of default among borrowers, fiscal stimulus also can help lower the financing premium (θ) in equation (2).

Some observers worry about the cost of financing the endogenous surge in fiscal deficits and public debts that is sure to accompany the global downturn. Yet, the prospect for surging deficits has been accompanied by a new slide in long-term government bond yields. Moreover, the failure to engage in timely, effective fiscal stimulus easily could trigger a much larger rise in public debt over time, especially if

[18] This outcome became feasible in the United States only when the TARP bill granted the Fed authority to pay interest on reserves. Interestingly, the new Fed pattern also contrasts with earlier actions of the Bank of Japan, which undertook its QE policy only after hitting the zero-rate bound.

the sustained impairment of intermediation damages long-term productive potential, which probably occurred in Japan in the 1990s (Alexander and Schoenholtz, 2008). Noteworthy in this connection is the relatively low level of (nominal and real) government bond yields that has prevailed for more than a decade in Japan, despite the surge in public debt.

In our view, the threat of rising bond yields would surface only if collective policy stimulus were successful in fostering expectations of economic recovery. In that event, the key to ensuring bond market stability will be a credible commitment to fiscal consolidation over the medium term that extends for years beyond the usual cyclical horizon. Risk management considerations work in the same direction: If a fiscal thrust unexpectedly overstimulates an economy, conventional monetary policy is available to ensure price stability.

Conceivably, the coordination of fiscal and monetary policies could pose a special dilemma in the euro area, which has multiple fiscal agents and a fiscal discipline mechanism driven by peer pressure among finance ministers (the Stability and Growth Pact, or SGP). However, the SGP has proven flexible even in relatively mild downturns, and is unlikely to thwart discretionary fiscal stimulus if the entire euro area faces a sharp and prolonged slump, as would seem likely in the absence of fiscal action. Fortunately, automatic fiscal stabilizers are larger in Europe than in the United States. Moreover, recent moves to address financial instability in the euro area suggest that a cyclical economic crisis could elicit stronger policy responses — either through cooperation or through dynamic competition among ministries — than typically have been observed in the euro-area fiscal arena.

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Emerging Markets: The Rocky Road to Recovery

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A year ago, the salient question in emerging markets was the degree of decoupling from the evolving U.S. and European slowdown. With the collapse in emerging market asset prices, the lurching of some economies into recession and all economies into lower growth, that debate is clearly answered: decoupling is debunked. The vexing question of the moment is which emerging markets are on a road to redemption and which are on a road to perdition.

Future EM outcomes hinge on the size of the shock and the scope and implementation policy.

Answering that question is a function of three factors:

1) the potholes in the road created by the magnitude of the shocks, both real and financial, and the countries' own balance sheet vulnerabilities;
2) the scope to implement fiscal, monetary, and exchange rate policy changes to cushion the blow; and
3) the likelihood of successfully implementing those policies.

In what follows we set out our assessments of each of these factors across emerging markets and the key factors that investors should be tracking to anticipate their implications for economic and market outcomes.

EM markets will face lower growth and costlier financing even after the downturn.

For emerging markets, the road ahead will get rockier, even after the global recession has been weathered. Global capital flows and financial intermediation are likely to be more regulated and liquidity more dear, leading to higher intermediation costs and less investment. Global real interest rates are also likely to end the cycle higher, compounding the headwinds for investment. A shift on the margin to a larger dose of market regulation will also increase the importance of the quality of governance for economic performance. But capable, experienced regulators and policymakers are scarce, even in developed countries. If successful economic growth requires more active government decision-making rather than the more passive role that comes from employing market discipline, the institutional constraint on many emerging markets will tighten.

Potholes in the Road

Trade linkages are now a source of weakness as G3 growth contracts by 2%-2.5% next year.

Emerging markets are reeling from a real economic pullback and financial disruptions. The real shock can be divided into two categories: a drop in export demand as a result of lower foreign income and a change in countries' terms of trade. The former is unambiguously harmful, while the decline in commodity prices is creating a positive shock for some countries. Across emerging markets, the magnitude of the trade shock as a share of domestic GDP varies with size of trade and with its concentration either by country or product.

The United States, the European Union, and Japan are crucial markets for most emerging economies. The developed-country recessions that we expect to persist into 2009 will lead to a major drop in demand for exports from most emerging economies. Moreover, the impact is now likely to be greater than we had expected earlier this year because we now expect growth in Asia to slow next year.

The approximate impact of the trade effect can be determined by calculating the fall in the weighted average growth rate of the main global export markets. The weights are determined by the share of each of these markets in a given country's total exports. Using

our new forecasts, all emerging economies we cover face the prospect of a decline in their trading partners' weighted growth rate of between -2.0% and -2.5% in 2009.

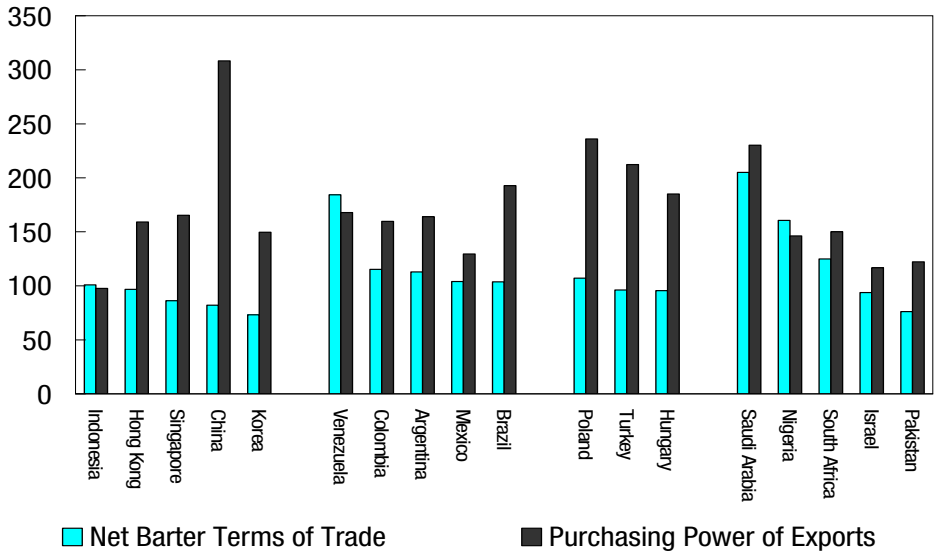
Given the similar scale of the fall in demand that emerging economies are likely to face in their main export markets in 2009, the main determining factor behind the magnitude of the shock will likely be the openness of respective emerging markets. In this case, Asian and those European economies most closely linked to the EU are likely to be hardest hit as their regional GDP-weighted trade ratios are 81% and 60%, respectively. Africa and the Middle East are also likely to be impacted, although the full effect will depend heavily on the extent that demand for oil and other commodities falls in developed economies. Latin America remains relatively unexposed, with a GDP-weighted trade ratio of 41%. This proportion would actually be lower had price effects associated with the recent commodity boom not increased the share of the export sector in the economy.

Lower service and remittance flows are another source of weakness.

But the story is slightly more complicated than shown purely by trade flows. For some countries, services and income flows have become increasingly important. In Asia, exports of commercial services are already equivalent to 21% of merchandise exports, a remarkable proportion given the substantial absolute size of the latter. For some economies, like India, this share is very high as they have been at the forefront in developing services industries, such as the offshore computing and business services sectors.

Finally, remittances from workers abroad have become an important source of foreign earnings, totaling an estimated US$283 billion in 2007 according to the World Bank. These inflows will likely fall owing to more difficult labor market conditions in host industrialized countries, amplifying the magnitude of the real shock. An important differentiation should be made between: (1) countries that are important for overall remittances inflows; and (2) countries where remittance inflows are a prime source of revenue. Among the former, five countries — India, China, Mexico, the Philippines, and Poland — account for close to 40% of global remittance inflows. Inflows to these countries will largely determine aggregate results. Inflows to Mexico and Poland come

Figure 26. Barter Terms of Trade and Purchasing Power of Exports, 2000–2007 (2000=100)



Sources: World Bank and Citi calculations.

from the United States, the EU, and the United Kingdom, where the recession will shrink remittances. Inflows to the top three Asian recipients could prove more resilient, as migrants from these nations are more geographically diversified. Meanwhile, countries where remittance inflows are equivalent to 25% or more of GDP include Tajikistan, Moldova, Tonga, Lesotho, and Honduras. In all of these cases, spillovers to international financial markets should be limited.

Terms of trade effects from lower commodity prices create winners and losers.

Trade effects will be driven not just by volumes of goods and services, but also by prices. Terms of trade effects are likely to be diverse (see Figure 26). In a decade characterized until recently by booming commodity prices, Africa/Middle East and Latin America were on the "right" side of the trade equations, as their net terms of trade rose a whopping 45% and 17%, respectively, between 2000 and 2007.[19] This positive terms-of-trade shock has also been further compounded by the fact that these economies have also attracted inflows of foreign direct investment into the commodity sector. This was particularly the case in Latin America. Between 2000 and 2007, the purchasing power of exports (that is, the change in terms of trade times the increases in export volumes) rose about 80% in both regions. The recent reversal of commodity prices is likely to have a negative impact in 2009, with falling commodity prices in these regions compounded by declining export volumes and, thus, growing idle capacity.

In contrast, the terms of trade for Asia declined by 16% between 2000 and 2007, largely because of rising world oil prices. So, Asia is likely to benefit from declining commodity prices. However, there is still a potentially important pothole facing Asian states. An important feature of its recent economic performance has been that the falling terms of trade has been largely offset by a huge expansion in export volumes. Asia's purchasing power of exports jumped a massive 140% between 2000 and 2007. A sharp slowdown in demand for Asian exports will, therefore, largely offset any gains in the terms of trade in 2009.

Figure 27. Emerging Markets — Capital Flows (US Dollars in Billions), 2006-09F

	2006	2007	2008E	2009F
Current Account Balance	380	436	378	338
Net External Financing:				
Private Flows	566	899	619	562
Equity Investment	230	296	219	263
Direct Investment	173	302	288	282
Portfolio Investment	57	-6	-69	-20
Private Creditors	336	602	401	299
Commercial Banks	208	401	245	135
Nonbanks	128	201	155	164
Net Official Flows	-61	20	3	8
IFIs	-34	3	5	7
Bilateral Creditors	-27	17	-2	1
Net Resident Lending/Other	-336	-401	-309	-308
Reserves (- = Increase)	-549	-953	-691	-600

Source: International Institute of Finance.

[19] The aggregate data for Africa, however, hide an important divergence in Sub-Saharan Africa. Here, the terms of trade of the eight oil exporters outweighs the fact that the other 42 countries are oil importers who have seen no improvement in their terms of trade in the 2000s. This indicates that modest rises in nonoil and metal commodity prices have been offset by the rise in oil prices.

Financial Effects Now a Severe Drag

Meager, uncertain financial flows cloud the outlook.

The most disruptive flows in the past year and the most uncertain ones in the next year are not trade and service flows, but financial flows. Debt flows and portfolio flows have shrunk dramatically, while FDI flows have also waned (see Figure 27). This sudden pullback in capital flows is in marked contrast to the surge between 2004 and 2007. This swing highlights again the vicissitudes of risk appetite and its effects on emerging markets.

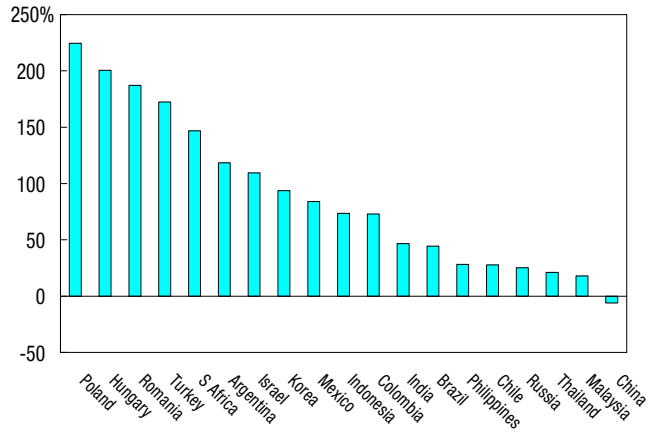
Linkages between banks have been a source of instability.

Collapsing global risk appetite is a concept quite familiar to market participants. But the decline in 2008 took an unusual form. The framework that investors normally rely on to determine a country's vulnerability to swings in risk appetite is contained in Figure 28, which shows the size of a country's gross external financing requirement (the current account deficit and gross debt refinancing) in comparison to its foreign exchange reserves. However, relying solely on such a framework, for example, would have made it impossible to predict that Russia's sovereign CDS spread would trade higher than Turkey's (see Figure 29). Russia's vulnerability is a function of the linkages between its banks and the global financial sector. Russia's loan/deposit ratio was over 150% before the crisis (see Figure 30). This meant that its banks funded themselves heavily in offshore markets, and this created vulnerability when Russian banks' international creditors demanded a return of liquidity to allow them to manage their own balance sheet problems.

Derivatives have also created worries.

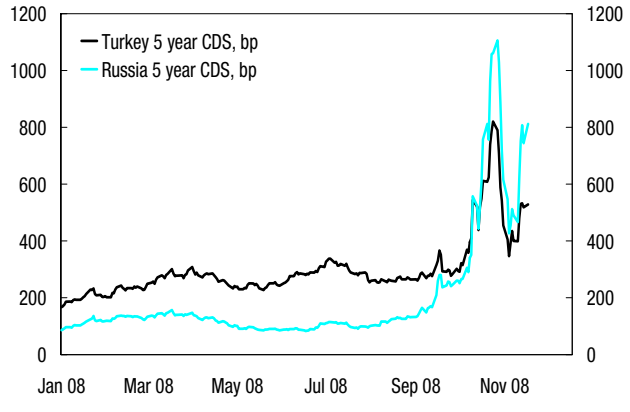
The role of inter- and intra-bank funding in this crisis has not been the only new development producing financial vulnerability in emerging markets. Another new channel that has exacerbated asset price volatility is currency exposure through derivative instruments, which were originally developed for normal hedging activity but expanded into something riskier. Several corporations, mainly exporters, revealed substantial overhedged or speculative positions looking to profit from local currency appreciation and/or interest rate differentials. Some of these positions have nonlinear payoff structures with losses accumulating faster if a local currency depreciates past a certain strike price. This has been mainly problematic in Brazil and Mexico, but also in Korea and elsewhere.

Figure 28. Selected EM Countries — External Financing Requirement as Percent of Foreign Exchange Reserves, 2009E



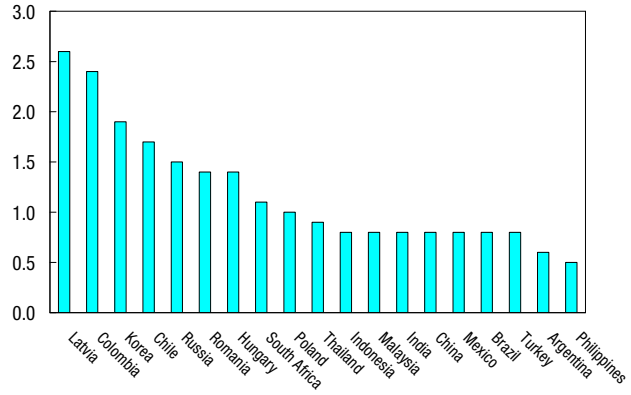
Note: 2009 current account deficit, 2009 external amortizations, short-term external debt/foreign exchange reserves. Sources: BIS, IMF, and Citi.

Figure 29. Russia and Turkey — Sovereign CDS Spread, Jan 08-17 Nov 08



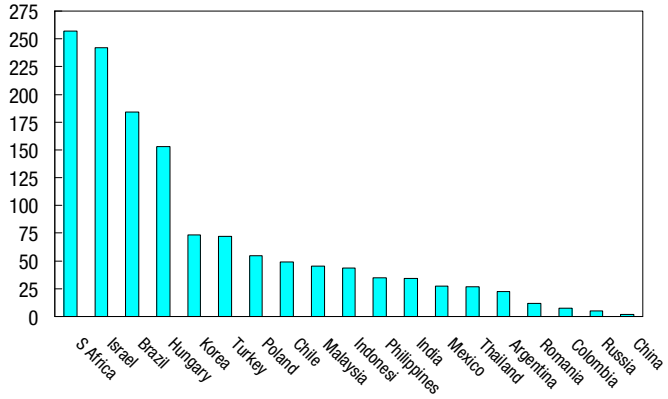
Source: Markit.

Figure 30. Selected EM Countries — Private Sector Loans to Deposit Ratio



Note: Data are from Sep 08 or the latest available. Source: Moody's.

Figure 31. Selected EM Countries — Foreign Holdings of Local Bonds and Equities as Share of Currency Reserves (Percent)



Note: Data are from Sep 08 or the latest available. Sources: BIS and Citi.

The exposures of Brazilian and Mexican firms to this kind of risk may amount to 2% of GDP. Estimates of the overall exposure of Brazilian firms to currency derivatives range from $20 billion to $40 billion, with losses estimated at around $12 billion or 8% of reserves. To assist firms unwinding their positions, the Brazilian central bank sold forward dollar contracts up to $20 billion. In Mexico, overall exposure is harder to estimate, but losses may already total about $3 billion. The central bank stepped in with $13 billion in spot market dollar sales in October, bringing reserves to $81 billion at the end of the month. Similar vulnerabilities may exist in countries with strong currency appreciation during the last five bull-market years.

Countries with high financing requirements are most at risk.

Although financial vulnerability in this crisis has had some "nontraditional" characteristics, it is nonetheless true that countries with large external financing requirements will remain vulnerable to a persistent absence of global risk appetite and a fall in cross-border capital flows. This will be particularly true if cross-border FDI flows to emerging economies dry up as a result of lower global growth expectations. From this perspective, it still makes sense to expect that countries to the left of the spectrum in Figure 28 will remain those most in need of some combination of: (1) measures to shrink external financing requirements; and (2) additional financing support from the IMF and others.

Another way of considering vulnerability is to factor in the amount of foreign-held securities denominated in local currencies (see Figure 31). Countries toward the left of the spectrum in Figures 30 and 31 could be those most at risk of varying forms of capital or exchange controls.

Poor information on debt and derivatives will plague emerging markets.

Finally, the quality and extent of information on private debt and hedging is crucial to the accuracy of the gross financing requirement estimates and the implications of foreign exchange fluctuations on the economy. Those data vary across emerging markets, as in the cases of Mexico and Brazil mentioned above. While past crises have usually led to improved reporting requirements on private off-shore debt, most countries have very poor data on derivative transactions — a hole that contributes to uncertainty and adds to market volatility. One of the likely outcomes of the current crisis will be a push for improved reporting of derivatives.

Balance Sheet Concerns Have Returned

Large capital inflows have rekindled concerns about balance sheet vulnerabilities.

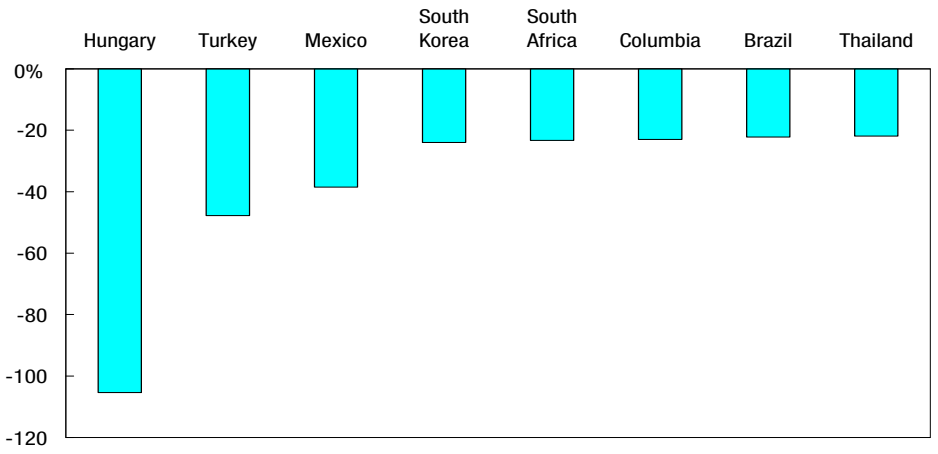
Increased access to international capital has supported deeper financial intermediation in emerging economies in recent years, but underdeveloped financial systems and significant liability dollarization in many have exposed vulnerabilities on the balance sheets of corporates and households. As a result, increased levels of domestic and foreign currency indebtedness leave these economies vulnerable to swings in interest rates and exchange rates. In such an environment, adverse currency movements can give rise to negative wealth effects, whereby firms find the value of their domestic assets fall relative to foreign liabilities, limiting their ability to obtain fresh capital. This negative wealth effect, compounded by falling stock prices and a high interest rate defense of the currency, can dominate any expansionary effects from the depreciation, resulting in a more severe contraction in output. Analysis of past episodes shows that balance sheet effects tend to affect investment rather than consumption.

Weak net international investment positions hurt Turkey and Hungary.

The net international investment position (NIIP) can be useful for understanding a part of the currency exposure of a country. Currency risk, though, may differ from the NIIP because the latter measures investments by holder (foreign versus domestic) rather than by the currency of the obligation. Foreigners holding larger positions in local currency instruments traded in local markets reduce the NIIP even as its currency risk diminishes. By the same token, domestic issuance of currency-denominated paper, even when held by locals, increases foreign exchange exposure. Further complicating the picture is the extent of hedging of currency exposure and the residence of the counterparty. Even with all these caveats, Hungary and Turkey stand out as at risk from currency movements (see Figure 32).

In recent years, domestic capital markets have developed substantially, increasing the percentage of debt placed in the domestic market. In 2005, 69% of the public debt of developing countries was placed under local law, compared to 48% in 1994 (see Figure 33). Although this does not necessarily mean an increase in local currency issuance, we believe that the level of dollarization of liabilities has dropped in recent years in some countries, notably in Latin America and Asia. However, in CEEMEA, private sector external indebtedness has grown rapidly in recent years, leaving these economies

Figure 32. Selected EM Countries — Net International Investment Position (Percent of GDP), as of 2007



Source: IMF

Figure 33. Selected EM Countries — Domestic Public Debt as a Percent of Total Public Debt, 1994, 1999, and 2005

	1994	1999	2005
East Asia and Pacific	0.46	0.71	0.80
East Europe and Central Asia	0.46	0.45	0.50
Latin American and Caribbean	0.40	0.49	0.66
Middle East and North Africa	0.47	0.48	0.59
South Asia	0.77	0.81	0.87
Sub-Saharan Africa	0.73	0.67	0.65
Total	0.48	0.59	0.69

Source: Panizza, Ugo, 2008. "Domestic and External Public Debt in Developing Countries", Unctad Discussion Paper 188, March 2008, available at http://www.unctad.org .

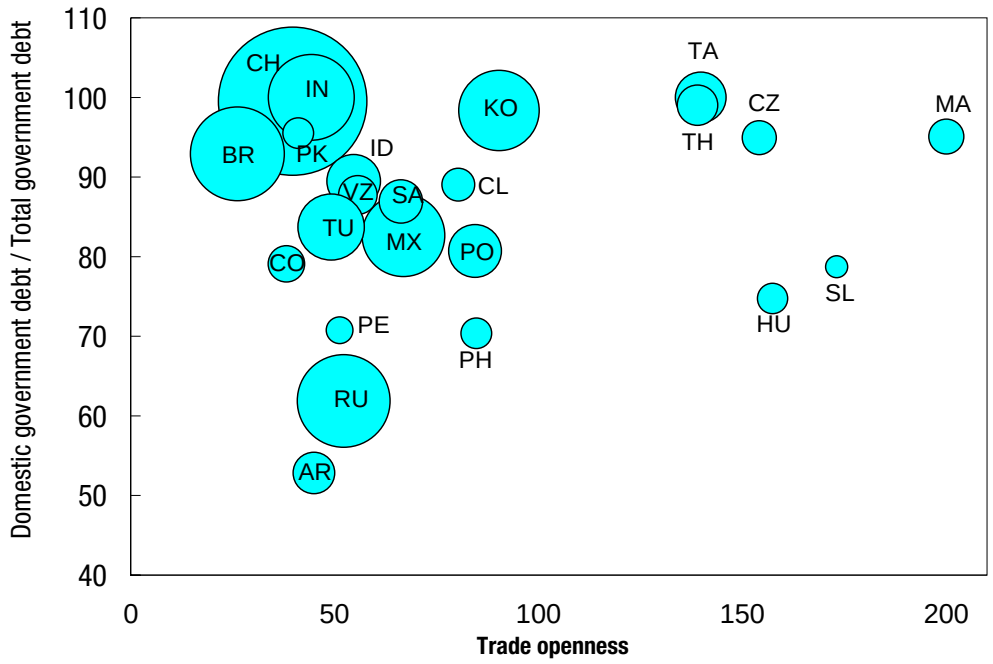
exposed to "sudden stops" in capital. In addition, the risk borne by each country is likely to have some relationship with its openness to trade.

More open economies likely need smaller currency adjustments.

Countries with large tradable sectors need smaller real exchange rate depreciation to restore external balance. Hence, these countries have lower probability of experiencing capital flight. In that sense, countries like Malaysia, Thailand, and Czech, with large domestic capital markets and high trade integration, are likely to suffer less than countries like Argentina and Russia, which have the opposite characteristics (see Figure 34).

The seeds of problems from balance sheet effects are evident in countries with significant external imbalances — such as Ukraine, Hungary, South Africa, and Turkey. Policymakers, the IMF, and other official lenders, aware of the potential implications from negative wealth effects, are likely to follow tighter monetary

Figure 34. Selected EM Countries — Domestic Debt Markets and Trade Openness, 2007



Notes: Size of circles represents 2007 USD GDP for each country. AR - Argentina, BR - Brazil, CL - Chile, CO - Colombia, CZ - Czech Republic , HU - Hungary, ID - Indonesia, IN - India, KO - Korea, MA - Malaysia, MX - Mexico, PA - Pakistan, PE - Peru, PH - Philippines, PO - Poland, RU - Russia, SA - South Africa, SL - Slovak Rep., TA - Taiwan, TH - Thailand, TU - Turkey, VZ - Venezuela. Sources: BIS, Haver Analytics, and Citi.

policies to protect these currencies and, thereby, national balance sheets. However, higher interest rates take their toll on economic activity. Often this leaves a choice of bleeding to death slowly from high interest rates or dying from the heart attack of a large devaluation.

Efforts to link more closely to the euro or dollar are unlikely to ignite capital flows.

Countries like Poland are looking to tighten their linkages to the euro as a means of anchoring currency expectations and thereby forestall risks from currency volatility. Such moves, though, are not likely to be effective for two reasons. First, the time frames for adopting the euro are simply too far in the future to be relevant. Second, fixing an exchange rate creates a target for attack, as the countries of the Balkans and Bulgaria are now experiencing. Without a combination of flexible local wages, robust financial institutions able to weather high interest rates, and ample international reserves, a fixed exchange rate is a poor defense against capital flight.

Indicators of bank soundness are generally robust, but weakening.

The ratings agencies also have developed measures of banking system risk. Fitch relies on a combination of rapid private credit expansion, real exchange rate appreciation, and real asset price gains.[20] In their October 2008 report Turkey, Brazil, Romania, Kazakhstan, and Slovakia all slipped into the weakest grade of three. Nonetheless, emerging market countries overall have 40% of their banking systems in the highest category versus only 20% in developed countries.

While financial soundness indicators in most emerging markets appear benign and generally compare favorably to those in developed countries, we believe they mask important vulnerabilities that could manifest in 2009. As of mid-2008, capital-to-asset ratios were generally around 10%, provisions covered all nonperforming loans (NPLs) in most countries, and profitability indicators were significantly higher than those of developed countries. [21]

Corporate leverage is generally lower than ten years ago.

Our own analysis of listed company accounts shows high levels of interest cover and solid aggregate debt-to-equity ratios (see Figures 35 and 36). Interest cover appears particularly strong, reflecting both lower interest rate and higher profits. With corporate borrowing costs rising even as policy rates fall, and slowing profits, interest cover will diminish, but at least on average the measure looks solid. Net debt-to-equity ratios have improved most drastically in Asia. Czech, too, has reduced net debt-to-equity in contrast to Hungary and Turkey.

Despite this positive picture, significant vulnerabilities have emerged as a result of very rapid credit growth over recent years, the extraordinary increase in asset prices, and the increase in wholesale and parent bank funding, often in foreign currencies. We have already seen negative spillovers from the earlier rapid increase in bank leverage across many emerging markets. In addition, the rapid increase in foreign funding (generally in foreign currencies) has also raised the exposures of banks to foreign currency-induced credit risk, as the share of foreign currency loans to nonforeign currency earners has increased substantially. This especially holds true because most of the emerging countries either lack adequate hedging instruments or have had limited domestic currency fluctuations, reducing incentives to hedge (Russia, Egypt, and Taiwan).

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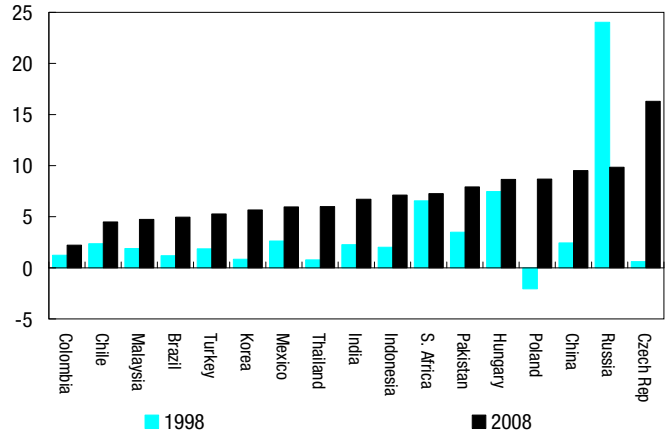
[20] See *Bank Systemic Risk Report*, Fitch Research, April 2008.

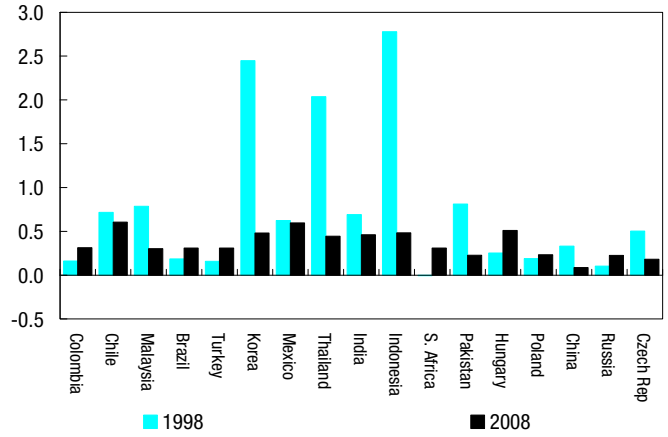
[21] See "Global Financial Stability Report," IMF, October 2008.

Figure 35. Selected EM Countries — Interest Cover, 1998 and 2008



Source: Citi.

Figure 36. Selected EM Countries — Net Debt-to-Book Equity, 1998 and 2008



Source: Citi.

Furthermore, the rapid increase in long-term credit portfolios in recent years in emerging Europe and Latin America has not been matched by availability of long-term funding. This has led to the buildup of balance sheet maturity mismatches and significant short-term rollover risks. New funding, where available, is likely to come at a much higher price, putting pressure on bank borrowers' ability to repay and/or banks' profitability.

Under the adverse macroeconomic and liquidity outlook, bank asset quality and profitability will deteriorate sharply. What were earlier considered "stress scenarios" by country supervisors and international financial institutions have become "baseline scenarios" for 2009 — a sharp drop in real GDP growth, depreciation of domestic currencies, a sharp decline in real estate prices, a sudden pullback in capital inflows, and an increase in lending rates. This will lead to rising NPLs in corporate portfolios (from negative terms of trade shocks in many countries) and retail portfolios (especially for foreign currency loans). Banks' profits will likely fall sharply due to higher funding costs and writeoffs.

Lower growth and weaker capital flows will likely drive an emerging market credit crunch.

As a result, a credit crunch is likely to emerge in most countries, which will lead to a negative feedback loop into the real sector. At the same time, banks are likely to face significant recapitalization needs that, in cases like Russia, may lead to government intervention with its attendant fiscal costs. In countries across Central Europe, recapitalization will need to come from parent banks. These banks may prove unwilling to provide this given their own capital constraints. Recapitalization issues are likely to be more pronounced in Central and Eastern Europe because provisioning and capital adequacy calculations have been based on the probabilities of default calculated during the upswing in the business cycle rather than through the cycle.

The Road Map: Policy Options Are Constrained

Faced with the deepening global recession, shrinking capital flows, and tightening credit conditions, the scope to map out a course of policy actions and the ability to carry such actions out will be critical for how emerging markets perform in 2009 and beyond. Here, the terrain is more varied and constrained than in the G3. We consider fiscal policy issues first, which are likely to be at the heart of many policy responses, and then

turn to the role of monetary and exchange rate policy, which we have touched upon in discussing balance sheet problems. We end with a discussion of the likely effectiveness of governments in responding appropriately to the crisis.

Fiscal Policy Flexibility Varies

Fiscal policy will be a driver of emerging market growth.

Alongside external financing risks, fiscal policy flexibility will likely be a key driver of divergence among the emerging market economies. Recent studies by the IMF have shown that discretionary fiscal policy can have a quick effect on spending power, and many governments already have shown a strong inclination toward fiscal responses to the global recession. Nonetheless, individual countries' ability to implement fiscal easing is dependent on a number of factors, including:

- the fiscal balance and its likely evolution;
- governments' overall debt burdens relative to GDP; and
- sources of deficit financing, both domestic and external

The success of fiscal stimulus will partly depend on whether its financing results in crowding out effects that push domestic interest rates higher. This in turn depends on the degree of monetary policy accommodation as well as concerns related to public debt. Therefore, the expected path of inflation, as well as the level of public debt, could be a significant constraint on both the scope and the effectiveness of fiscal easing.

Most emerging market countries have fiscal deficits.

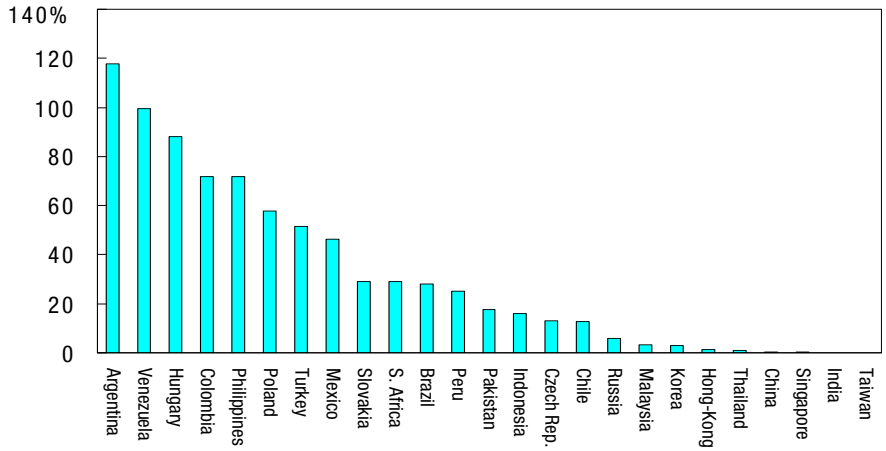
Most emerging market economies are running fiscal deficits. The only exceptions are several Latin American economies and the Gulf countries in the Middle East (GCCs), both linked in part to the recent commodity market boom. But this likely will change in the future. For instance, if oil prices average $50/barrel in 2009, the GCCs' fiscal balances could shift from surpluses of 8%-32% of GDP in recent years to deficits of 10%-26% of GDP. However, lower oil prices may increase the scope and efficacy of fiscal easing, by reducing fuel subsidies in Asian net oil importers, including China, India, and Indonesia.

Figure 37. Fiscal Conditions, 2007-2009F

	Govt Gross External Debt/GDP (%)	Total Govt Debt/GDP (%)	Fiscal Balance/GDP (%)		
	2007	2007	2007	2008E	2009F
EM Asia					
China	11.3	20.8	0.3	-0.2	-1.2
India	4.3	75.6	-5.3	-6.6	-6.0
Indonesia	19.2	36.8	-1.3	-1.3	-1.5
Korea	1.1	32.0	3.8	3.0	1.2
Singapore	0.0	40.3	12.2	6.0	2.0
LATAM					
Argentina	26.0	66.9	1.1	1.5	-0.2
Brazil	6.3	57.2	-1.7	-3.0	-3.1
Mexico	12.2	26.4	0	0	-1.8
Peru	18.4	26.9	1.8	4.6	0.3
CEEMEA					
Poland	10.6	44.9	-1.4	-2.2	-2.4
Russia	2.9	6.7	5.4	3.5	0.4
South Africa	3.8	28.4	0.8	0.3	-1.7
Turkey	9.1	38.9	-1.6	-1.8	-2.5

Sources: Moody's and Citi estimates.

Figure 38. International Government Debt Securities as Percent of Net International Reserves, 1Q 08



Sources: BIS and Haver.

Public indebtedness will also affect fiscal policy choices.

Of all the emerging markets, China, Korea, Singapore, Peru, Russia, and South Africa probably have the greatest scope for fiscal stimulus, given their relatively sound fiscal and debt positions (see Figure 37). For Peru, Russia, and South Africa, this ability could be proscribed by future commodity prices. China, Korea, Singapore, and Russia have already announced fiscal expansion plans, with China likely to announce an even larger expansion early in December.

At the other extreme are Hungary and Pakistan, both of which have arranged IMF programs that target shrinking fiscal deficits. Colombia, India, Indonesia, Argentina, and the Philippines face fiscal constraints because of significant fiscal deficits and/or a relatively large stock of public debt, in some cases external debt (Pakistan, the Philippines, and Argentina).

The proportion of government external debt can be a particular constraint on policymaking in emerging markets. A high stock of government external debt can hold back fiscal expansion, especially in the face of scarce foreign capital, and restrain monetary policy by forcing the central bank to defend the exchange rate more aggressively to protect the government's balance sheet (see Figure 38).

Contingent liabilities from weakening banking systems are a risk.

Contingent liabilities are another fiscal risk, especially in the banking system. We have argued above that emerging market bank capitalization, and problem assets and provisioning are stronger than in the past. Risks remain for fiscal sustainability should conditions worsen much more than expected. In that case, the potential fiscal exposure will vary in part with the size of the banking system in the economy (see Figure 39). Korea in Asia and Hungary in Europe are most at risk.

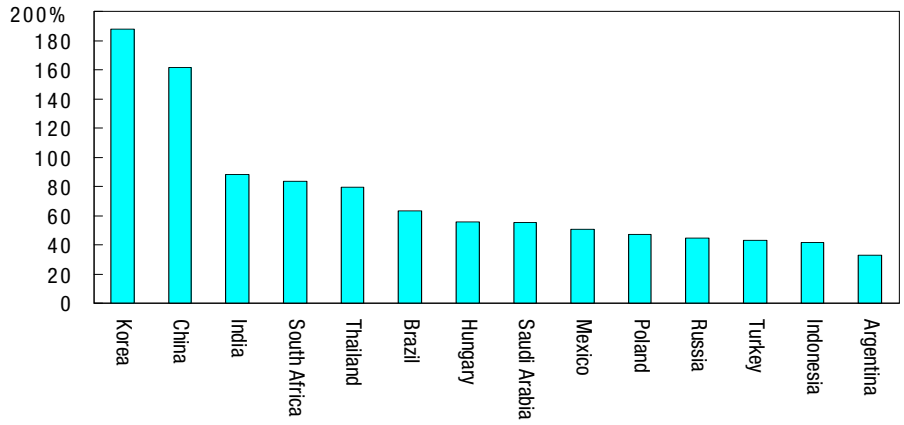
Policy Complicated by Pass-Through and Inflation Targeting

Balance sheet and currency pass through worries may hinder monetary easing.

Central banks in emerging economies are now facing the opposite tradeoff to the one observed in the past few years. Their economies now face strong headwinds and their currencies are now depreciating against the U.S. dollar. Weak external demand, slower growth, and falling commodity prices should ease inflation concerns, underscoring our

forecast for less hawkish central banks. However, less favorable external conditions, large capital outflows, and increased risk aversion also mean weaker currencies and tighter credit conditions, especially in those commodity-dependent countries. Fear of floating and/or of balance-sheet effects will likely delay the transition from tight monetary policy to normal policy. In more extreme cases, monetary policy may tighten further.

Figure 39. Size of Financial Sector as Proxied by Measure of Broad Money in GDP (Percent), 2007



Source: Haver Analytics.

In general, currency pass-through pressures show up more quickly in inflation than the output gap. One risk in our view is that inflation in the emerging world will become unanchored. Because of second-round effects, the inflationary currency pass-through effect could dominate the deflationary force of slowing growth. Therefore, central bank credibility is crucial to prevent the foreign exchange shocks from spurring inflation expectations and to keep inflation anchored.

Strong central bank credibility is key to policy flexibility.

In our view, central bank credibility will play an important role in shaping the policy response to the ongoing financial turmoil. Specifically, given the widely anticipated decline in economic growth in emerging markets, many central banks will be under pressure to support economic activity, while coping with inflation above their targets. In this respect, central banks with good track records in meeting their inflation targets will likely be in a stronger position to pursue countercyclical policies. Since consumer and business inflation expectations are more solidly anchored in such countries, temporary adverse shocks are likely to have a limited impact on forward-looking expectations.

Unfortunately, the majority of central banks in emerging markets begin with inflation well above their targets (see Figure 40). However, central banks that acted preemptively and counter-cyclically — such as Brazil, Chile, Colombia, Hungary, and South Africa — will likely have room to normalize monetary policy. Other countries, like Argentina and Venezuela, in which inflation is a problem and monetary policy is still loose, will likely have to tighten, weakening economic activity further.

Monetary policy in emerging markets can also be constrained by the degree of exchange rate pass-through. Although exchange rate pass-through is generally low and depends on a number of factors — such as the initial inflation rate, the business cycle, the degree of dollarization, and real exchange rate misalignment — we believe that

Figure 40. Inflation Target and Headline Inflation in Selected Emerging Countries 2005 and 2008

	2005			2008		
	Target	Outcome Average	Outcome End of Period	Target	Forecast Average	Forecast End of Period
China	3.0-3.5	1.8	1.6	Below 4.8%	6.1	5.0
India	5.0	4.4	4.1	7%	10.5	9.0
Korea	2.5 to 3.5 (BoK)	2.8	2.6	2.5-3.5	4.7	4.4
Poland	2.5 +/-1% point	2.1	0.7	2.5 +/-1% point	4.3	3.8
Russia	7.5-8.5	12.7	10.9	6.0-7.3 (10.5)	14.2	14.0
South Africa	3.0-6.0	3.4	3.6	3.6-6.0	11.7	11.2
Turkey	8	8.2	7.7	7.5	10.6	11.6
Brazil	2.0-7.0	6.9	5.7	2.5-6.5	5.7	6.5
Mexico	2.0-4.0	4.0	3.6	2.0-4.0	5.0	5.7
Chile	2.0-4.0	3.1	3.7	2.0-4.0	8.8	8.3
Colombia	4.5-5.5	5.0	4.9	3.5-4.5	7.0	7.6
Peru	2.5	1.6	1.4	1.0-3.0	5.7	6.2

Sources: Official sources and Citi.

monetary policy will likely be more difficult for central banks that confront economies with inflation that is sensitive to changes in the nominal exchange rate. This is especially true for countries like Peru, Russia, and Turkey, in which exchange rate movements translate considerably into retail prices. Pass-through is less of a problem for countries like Colombia, China, India, Korea, Mexico, Poland, and South Africa, where a 10% depreciation shock translates only into less than two percentage points in inflation in the short run, and less than 3 percentage points in the long run (see Figure 41).

In countries with credible central banks, like Brazil, Chile, and Poland, temporary currency shocks are unlikely to have a large impact on forward-looking inflation expectations. This, in turn, gives greater scope for interest rate reductions within an inflation-targeting regime.

In conclusion, countries where central banks have good track records and manageable foreign exchange positions and external financing needs can rely more on monetary policy easing to support economic activity, without jeopardizing macro stability.

Government Policy Effectiveness

Government policy effectiveness will be crucial in 2009.

Judging the likely path of monetary, fiscal, and exchange rate management involves an assessment of a government's ability to operate effectively given the constraints it

Figure 41. Select EM Countries — Effect of a 10% Nominal Depreciation Shock on CPI Inflation

	Short Run	Long Run
China	1.0%	1.8%
India	0.8	1.7
Korea	1.0	1.4
Poland	1.1	1.8
Russia	3.0	6.0
South Africa	1.0	1.4
Turkey	3.0	4.0
Brazil	2.0	8.0
Mexico	1.5	3.5
Chile	2.0	3.5
Colombia	1.5	2.6
Peru	22.0	55.0
Median	1.5%	3.1%

Note: Short run is less than one year and long run is one year or more. Source: Citi.

faces, beyond those that come from the structure and history of a particular emerging market country. Here, too, countries differ dramatically. The World Bank has compiled a variety of survey data across countries and years looking at government effectiveness and regulatory quality (see Figures 42 and 43). Much of the risk in Argentina and Venezuela, for example, may lie in the ineffectiveness and unpredictability of government policies and the quality of their implementation. In contrast, countries like Singapore and Hong Kong have policies that are both predictable and effectively implemented. Other places — where risks may arise not from the severity of the problems but from the government's inability to confront them — include Indonesia, Russia, Ukraine, and Pakistan. In contrast, many of the exposed countries of Central Europe — Czech, Slovakia, and Hungary — come out relatively well by measures of government effectiveness.

A Rocky Road: Forecasts and Vulnerabilities

2009 may be a downbeat year for emerging markets.

Piecing together our views on vulnerability and the global context gives a divergent but generally downbeat view of 2009. As in developed countries, we expect GDP growth to fall by some 2 percentage points in 2009 relative to 2008. And growth in 2008 likely declined by 2 percentage points from 2007 (see Figure 45). The largest growth declines mesh relatively well with our vulnerability index. We expect Asia to be least affected, largely because of relatively strong growth in China and India. Africa, the Middle East, and Latin America will suffer from weaker terms of trade along with the fall in external demand, but should be roughly on a par with emerging Europe. We expect the biggest declines in countries where policies are incoherent or the shock is especially large — Argentina, Ecuador, Romania, Saudi Arabia, Ukraine, UAE, and Venezuela.

Inflation pressures should abate substantially, allowing scope for monetary easing, but with smaller declines in Latin America, Turkey, and Russia, where currency weakness and high pass-through will offset some of the weakness in aggregate demand. Asia shows the largest expected declines in inflation.

Current account patterns will shift.

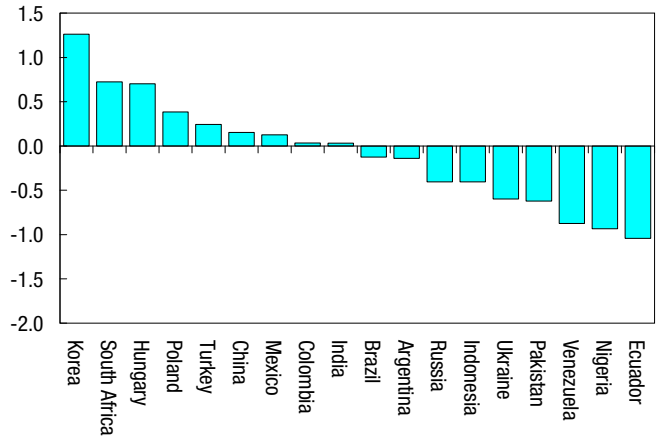
Because of the differing effects of commodity price changes, current account balances will move in very divergent patterns across emerging markets. Lower oil prices will push Russia and Ecuador into deficit and shrink the Middle Eastern and Venezuelan surpluses dramatically. These countries will take up the bulk of the increase in current account surpluses/shrinkage in deficits that we expect to see in the United States and Japan. We expect other emerging markets to show lower surpluses or higher deficits as weaker exports and higher fiscal deficits are reflected. Overall, however, 2009 and 2010 should show more balance in global trade.

Fiscal deficits will mount nearly everywhere.

Higher fiscal deficits are expected across the globe next year, including emerging markets. In some countries the higher deficits will simply reflect automatic stabilizers (largely lower tax revenues). But in more fiscally robust countries — China, Singapore, Korea, Hong Kong, and Chile — the deficits also will reflect explicit efforts to bolster aggregate demand with higher spending programs.

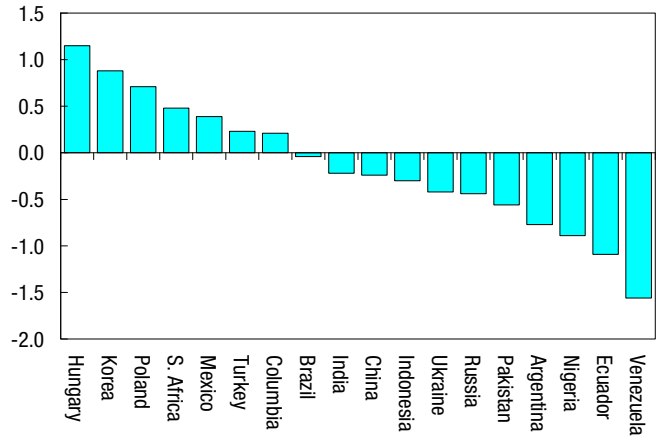
Beyond the macro forecasts, our earlier analysis laid out a variety of other factors that will continue to affect emerging markets going forward: their openness to trade and financial flows; their balance sheet vulnerabilities and financing needs; their constraints on fiscal, monetary, and exchange rate policy; and their government effectiveness.

Figure 42. Government Effectiveness in Emerging Markets



Source: World Bank.

Figure 43. Regulatory Quality in Emerging Markets



Source: World Bank.

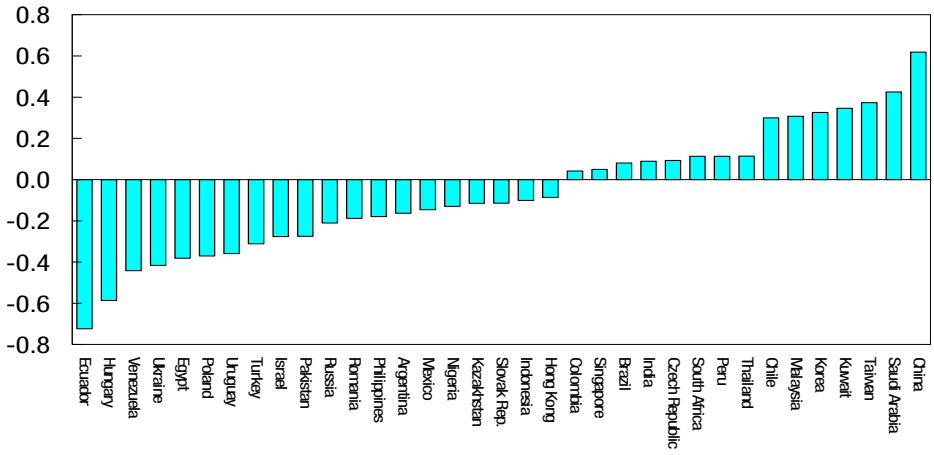
Our revised resiliency index countries ranks.

In an effort to consolidate these measures, we have revised and expanded the work we introduced last year on an emerging market vulnerability index. This year, with the financial system at the heart of the problem rather than trade, we have expanded the variables we track to include a set that focuses on financing needs and the resilience of emerging market banks and firms. We have also included measures of government effectiveness. These are added to last year's three broad groupings: openness, balance sheet resiliency, and cyclical position. The new index now includes 20 variables, rather than the original seven (see Figure 44). The index variables and its method of construction are detailed in the Appendix.

Asia looks best positioned.

The new ranking of resiliency/vulnerability is largely consistent with our earlier version. Countries in CEEMEA are among the most vulnerable, with Hungary leading the pack. But including the aspects of government effectiveness has important effects on countries like Venezuela and Ecuador, which suffer, and Czech and Korea, which

Figure 44. Citi Resiliency Index, November 2008



Note: The Resiliency Index above scores each country's trade openness, FDI activity, remittances, government debt and the foreign share of that debt, net international investment position, debt-to-equity ratio of corporations, banking strength as measured by their loan-to-deposit ratio, capital adequacy ratio, nonperforming loans, the country's gross financing requirements, foreign holding of equity, net international reserves, inflation, fiscal balance, current account balance, change in the terms of trade, and governance and regulatory measures.
Sources: IMF, World Bank, Fitch Ratings, Moody's, data collected by Haver Analytics, Citi estimates.

gain. Government effectiveness and the new financial and corporate variables weaken the ranking of Russia and Mexico. Furthermore, the addition of the change in terms of trade and in real exchange rates helps to improve the position of Asia at the expense of commodity producers.

Future Potholes: Financial and Real Obstacles to Growth

Recent events have added long-term risks to emerging markets.

Beyond the next two years, recent events have added risks to the outlook for emerging markets. A variety of factors may on the margin lower average growth and the speed of convergence of emerging markets to the developed world. First among these factors is the likely rise in the real cost of capital to emerging markets once the global economy stabilizes. In our forecasts, the long-term U.S. dollar real interest rate creeps up from relatively low levels and the spread on risky assets does not fall to its 2006-07 levels. Meanwhile, global capital flows and financial intermediation are likely to be more regulated and liquidity more dear, leading to higher intermediation costs and less investment. Some of this will be a needed adjustment that better matches risk and return after a period of excess, mainly in the developed world. But emerging markets will suffer from spillover from the adjustment.

Lower investment will likely mean slower gains in labor productivity. If FDI flows remain depressed, the transfer of technology they embody would also suffer, affecting productivity more heavily.

Beyond the new equilibrium effects of higher real rates and intermediation costs, there are also risks that re-regulation will go too far or that governments will stifle financial innovation out of concern for maintaining financial stability. This would make matching borrowers and lenders more costly and less efficient, harming growth unnecessarily.

Even if re-regulation strikes that right balance between market discipline and formal regulatory oversight, the shift on the margin to a larger dose of market regulation will also increase the importance of the quality of governance for economic performance. But capable, experienced regulators/policymakers are a scarce resource, even in developed countries. If successful economic growth needs more active government decision-making rather than the more passive role that comes from employing market discipline, then the institutional constraint on many emerging markets will tighten, creating more headwinds to growth.

Finally, emerging markets run the risk that the souring of near-term global growth sparks more protectionist trade attitudes and generally undermines confidence in the ability of markets to provide for predictable growth. While world leaders have been quick to call for the avoidance of beggar-thy-neighbor devaluations or trade barriers, the worst for many countries still lies ahead. Fortunately, China already demonstrated a willingness to hold its exchange rate during the Asia crisis and the United States has done nothing yet to offset the real rise in the dollar.

Figure 45. Emerging Markets — Economic Forecast, 2008-10F

	GDP Growth			CPI (Average) Inflation			Current Balance (% of GDP)			Fiscal Balance (% of GDP)		
	2008F	2009F	2010F	2008F	2009F	2010F	2008F	2009F	2010F	2008F	2009F	2010F
Asia	**6.9%**	**5.6%**	**6.6%**	**7.0%**	**2.7%**	**3.5%**	**6.8%**	**5.3%**	**4.9%**	**-1.0%**	**-1.9%**	**-1.9%**
Bangladesh	5.7	5.1	5.5	8.0	6.2	5.5	-1.4	-2.3	-2.0	-5.0	-4.9	-4.7
China	9.3	8.2	8.5	6.1	1.4	3.5	9.4	7.2	6.4	-0.2	-1.2	-1.6
Hong Kong	2.5	0.3	2.3	4.5	2.7	2.2	10.8	8.6	8.4	-3.0	-4.5	-3.0
India	6.8	5.5	6.6	10.5	5.0	4.5	-3.5	-2.1	-1.3	-6.6	-6.0	-5.5
Indonesia	6.0	3.8	5.0	10.2	6.0	5.0	1.0	0.4	0.0	-1.3	-1.5	-1.5
Korea	4.2	2.0	3.8	4.7	3.0	2.5	-1.0	2.0	1.5	3.0	1.2	1.0
Malaysia	5.2	3.1	4.9	5.7	3.6	2.4	15.7	12.0	13.0	-4.8	-5.0	-4.5
Philippines	4.3	3.0	4.6	9.5	5.3	3.9	1.3	2.1	1.1	-0.9	-1.4	-1.0
Singapore	2.2	-1.2	3.8	6.6	1.2	2.1	13.0	10.0	15.0	6.0	2.0	4.0
Sri Lanka	6.0	4.8	5.5	23.0	15.0	10.0	-7.1	-8.0	-7.2	-7.0	-6.5	-7.2
Taiwan	2.1	1.5	3.0	3.6	1.0	1.2	5.0	7.8	8.4	-1.1	-1.7	-1.5
Thailand	4.5	1.0	3.1	5.6	1.1	2.5	0.4	2.0	1.3	-0.4	-2.9	-1.5
Vietnam	6.3	5.2	5.6	23.3	7.5	6.5	-12.9	-7.5	-7.3	-1.7	-2.4	-3.0
Latin America	**4.5%**	**2.2%**	**2.8%**	**8.9%**	**8.80**	**8.7%**	**0.8%**	**-0.2%**	**-1.7%**	**-0.3%**	**-1.9%**	**-1.7%**
Argentina	6.9	2.9	2.0	22.9	17.7	17.5	2.5	0.9	1.4	1.5	-0.2	-0.2
Brazil	5.2	3.0	4.0	5.7	5.6	4.1	-1.7	-1.1	-1.8	-1.5	-1.8	-2.0
Chile	4.1	2.3	3.5	8.8	5.8	3.5	-2.5	-4.5	-1.4	5.4	0.0	0.5
Colombia	3.5	2.5	1.0	7.0	5.8	3.9	-1.9	-3.0	-3.0	-1.0	-2.0	-3.0
Ecuador	6.7	1.5	3.5	8.5	0.2	-1.1	5.6	-4.9	-5.3	4.2	-3.8	-5.7
Mexico	2.0	0.5	3.0	5.1	4.9	3.4	-1.6	-2.7	-2.8	0.0	-1.8	-1.4
Panama	8.0	6.0	7.0	9.1	5.3	4.5	-9.0	-6.5	-6.2	-0.3	-0.8	-0.5
Peru	9.5	6.0	6.2	5.8	3.9	2.9	-3.2	-4.5	-2.3	4.6	0.3	1.5
Uruguay	11.8	3.0	4.0	7.8	8.0	6.2	-3.7	-5.5	-2.0	-1.0	-1.4	-1.0
Venezuela	5.9	0.5	-2.5	31.5	37.0	46.0	13.5	1.2	7.0	-3.2	-5.8	-3.5
Europe	**5.0%**	**2.4%**	**4.7%**	**11.2%**	**8.5%**	**5.9%**	**-0.8%**	**-0.2%**	**-2.6%**	**0.2%**	**-1.5%**	**-1.7%**
Czech Republic	4.4	2.7	3.8	6.4	2.3	2.5	-2.1	-2.3	-1.9	-1.6	-2.0	-1.8
Hungary	1.1	-0.8	1.7	6.2	3.5	2.6	-5.5	-3.7	-3.6	-3.4	-2.6	-2.8
Poland	5.3	2.6	3.7	4.3	3.0	2.2	-4.8	-5.8	-4.3	-2.2	-2.4	-3.0
Romania	7.8	2.8	6.0	8.0	6.1	4.0	-13.8	-9.0	-8.0	-3.0	-3.2	-3.0
Russia	7.1	4.5	5.9	14.2	10.2	6.9	7.5	0.4	-2.3	3.5	-0.4	-1.0
Slovak Rep.	6.8	4.0	4.3	4.5	3.5	2.8	-5.2	-4.6	-3.0	-2.3	-2.2	-1.4
Turkey	1.0	-1.0	4.2	10.6	10.5	7.6	-6.6	-5.0	-4.3	-1.8	-2.5	-2.3
Ukraine	5.5	-1.9	0.6	25.2	16.6	10.2	-8.1	-4.9	-2.1	-1.4	-0.5	-0.9
Africa/Mideast	**5.3%**	**2.6%**	**4.6%**	**12.2%**	**6.9%**	**5.5%**	**8.3%**	**13.0%**	**0.9%**	**6.9%**	**0.1%**	**0.7%**
Egypt	5.8	4.6	2.6	18.7	10.9	7.5	-0.8	-3.3	-3.5	-6.3	-6.6	-6.5
Israel	3.7	1.3	2.7	4.7	3.4	2.6	0.4	-0.1	-0.1	1.2	0.1	0.6
Jordan	4.4	3.5	4.6	15.1	7.2	4.2	-20.7	-18.4	-18.1	-6.4	-5.0	-2.6
Kazakhstan	4.4	3.6	4.5	17.3	7.6	7.1	2.8	-2.7	1.5	-2.3	-3.4	-3.5
Kuwait	5.6	1.4	4.5	10.5	4.8	3.0	48.0	31.4	31.7	32.4	10.4	9.7
Lebanon	4.5	3.2	5.0	6.8	6.1	5.9	-7.2	-10.5	-13.6	-8.4	-9.2	-9.2
Nigeria	6.6	6.7	7.0	10.7	10.5	8.8	4.4	0.2	5.0	-1.3	-2.4	-1.7
Pakistan	3.7	4.8	5.3	20.8	5.4	6.4	-6.9	-6.1	-5.6	-4.6	-3.3	-2.7
Qatar	8.1	2.8	6.3	15.1	9.5	6.5	24.3	4.1	7.9	22.7	6.7	6.8
Saudi Arabia	5.8	0.3	4.7	10.0	6.0	3.5	30.4	4.3	5.1	17.8	1.2	3.2
South Africa	3.3	2.3	3.8	11.7	6.5	5.9	-8.0	-7.8	-7.6	-0.3	-1.7	-1.3
United Arab Emirates	7.7	2.3	5.0	12.2	7.1	5.8	30.1	2.0	1.4	12.2	1.9	3.0
Total EM	**5.8%**	**3.8%**	**5.2%**	**8.8%**	**5.8%**	**5.3%**	**4.2%**	**3.9%**	**1.8%**	**0.3%**	**-1.6%**	**-1.5%**

Note: Argentina CPI forecasts reflect our own estimate of the Argentina's 'true' CPI. Sources: National sources, Haver Analytics, and Citi.

Foreign Exchange Strategy

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The global economy is in the midst of significant recession. Most industrial countries are being affected. But the U.S. economy is, to some degree, ahead of other regions largely because it has been struggling with cyclical headwinds for a longer period of time. After the recent period of consolidation, we expect the euro (EUR) will continue to fall against the U.S. dollar (USD) well into 2009. As evidence mounts that the euro-area economy is facing a more severe cyclical adjustment than the market expects, we look for a further weakening of the EUR against the USD. However, the EUR probably will continue to appreciate against other European currencies. Hence, the depreciation of the trade weighted EUR is likely to be modest in 2009.

We expect the Japanese yen (JPY) to retain its unique position in the currency market in 2009. The yen likely will continue to appreciate against the USD through 2009, as uncertainty surrounding the global economic outlook and volatile financial markets persist. However, economic spillover from a strong yen will likely be capped. Japan's Ministry of Finance (MoF) will probably intervene in the currency market if the JPY appreciates against the USD in a way that takes a significant toll on the economy and financial markets. A revival of capital outflow from Japan to overseas markets through the household sector will likely be delayed until 2010 when the outlook for the global economy improves.

Sterling is likely to remain weak well into 2009, reflecting the United Kingdom's severe recession, ballooning fiscal deficit, and falling policy rates. A weak pound will help underpin exports and offer a useful support in the face of shrinking domestic demand. The potential boost to inflation from a weaker pound should be offset by the squeeze on margins from the recession and collapse in commodity prices. To be sure, a collapsing pound would inhibit the Monetary Policy Committee from cutting rates, but the decline in sterling so far does not pose an obstacle to further easing.

Asian currencies generally weakened in recent months, on reduced risk appetite, slowing growth, and deteriorating current accounts. The Korean won (KRN), the Indonesian rupiah (IDR), and the Indian rupee (INR) led the decline due to their greater external financing risks. We expect the IDR, INR and PHP to underperform against the USD forwards in the next six months, before recovering on a 12-month horizon as global market volatility subsides. The CNY/USD exchange rate stagnated during recent months, having appreciated rapidly earlier. The CNY/USD rate is likely to remain sticky before the CNY resumes a path of around 5% annual appreciation against the dollar once global financial risks subside. Other Asian currencies, particularly the Korean won are likely to follow a similar trajectory.

The Australian dollar (AUD) should retain a downside bias in the near term, as global commodity prices continue to decline, official interest rates are cut and risk appetite remains impaired. Further into 2009, however, we expect the AUD to recover some of its lost ground, especially if China can avoid the worst of the global downturn and the Australian financial system remains in better shape than many of its peers. The New Zealand dollar (NZD) is also expected to remain weak into 2009 as the recession continues. Gains late in 2009 could be expected if some risk appetite returns.

The Canadian dollar (CAD) has retreated sharply with the slide in commodity prices since the 2008 peaks. U.S. dollar strength, spill-over from ongoing global financial

market imbalances, Bank of Canada (BoC) policy easing, and downbeat Canadian data reports have also facilitated the reversal of the exchange rate. The risks are generally tilted towards further deterioration in the CAD on a nominal and trade-weighted basis going forward.

Exchange rates in CEEMEA are likely to remain volatile going into 2009. The evident slowdown in domestic spending in many countries — Turkey, South Africa, Hungary, and Ukraine for example — will help shrink current account deficits. Nonetheless, cross-border capital flows are likely to remain under pressure. We expect the USD and EUR to outperform CEEMEA currencies over the next three to six months before a fall in risk aversion prompts the opposite by the end of 2009. Monetary easing may also be a risk for regional currencies. Interest rates have been cut in Israel, Poland, Hungary, and Turkey recently on the expectation of very weak domestic spending, and the market is priced for substantial monetary easing during the course of 2009.

In an environment of high risk aversion, currencies in Latin America face headwinds going into 2009 from weaker terms of trade, tight financial conditions, and declining external demand. Our foreign exchange forecasts indicate that once the financial volatility recedes, most currencies are likely to stay around current levels, as the deterioration in fundamentals does not allow much room to move to stronger levels. The exception is Argentina, where we continue to favor long positions in USD/ARS, given that financing problems are becoming more evident. However, we acknowledge that the government might try to keep the exchange rate stable with the help of capital account restrictions.

Figure 46. Currency Recommendations, as of December 3, 2008

	Current	3-Month Forecast	Annual Return vs FWD	Implied Vol.	12-Month Forecast	Annual Return vs FWD	Implied Vol.
United States	NA	NA	NA	NA	NA	NA	NA
Japan	93	94	-3.5	20.8	89	3.6	16.0
Euro Area	1.27	1.22	-16.2	22.0	1.15	-9.8	18.4
Canada	1.26	1.24	5.5	22.5	1.30	-3.8	19.7
Australia	0.64	0.63	-3.3	26.0	0.70	10.1	22.1
New Zealand	0.53	0.50	2.2	24.0	0.58	11.8	21.0
Norway	7.11	7.41	-14.9	25.0	7.84	-9.1	20.9
Sweden	8.23	8.58	-17.1	24.8	9.07	-10.2	20.7
Switzerland	1.21	1.23	-18.7	18.7	1.34	-11.3	16.4
United Kingdom	1.48	1.45	-8.0	23.3	1.37	-7.9	20.1
China	6.85	6.81	15.3	10.1	6.58	10.3	17.1
India	50.0	49.0	22.0	25.0	48.1	12.2	27.2
Korea	1444	1317	31.2	40.0	1283	8.7	29.7
Poland	3.05	3.21	-17.6	35.4	3.08	0.2	29.4
Russia	27.9	29.9	15.5	26.3	32.9	7.7	30.2
South Africa	10.27	9.49	40.4	30.6	9.70	12.7	27.9
Turkey	1.58	1.67	-11.5	25.4	1.76	1.8	22.5
Brazil	2.51	2.08	89.0	40.6	2.00	30.0	32.6
Mexico	13.7	12.8	33.4	37.2	12.1	19.2	33.3

Source: Citi.

Equity Strategy: Outlook for 2009

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The year 2008 has proven to be extremely tough for global equity investors. However, at current valuation levels we think a lot of the bad news is already factored into global equities; they look extremely cheap on an absolute basis and relative to risk-free asset classes. As such, we expect the equity markets to recover some time in 2009, but it will continue to be a rough ride and volatility is likely to remain elevated. We do not expect a sustainable recovery until investors have greater visibility on the depth and duration of the recession and earnings downturn and there is further progress toward resolving the global financial crisis. For now, we favor buying the dips rather than chasing the rallies. We prefer Europe over Asia, and are neutral on U.S. markets. We prefer defensive sectors over cyclicals.

The MSCI World Index is down 48% year to date and has fallen 51% from its 2007 high. This has been easily the worst calendar year's performance since the index's inception in 1970 and as bad a bear market as those experienced in the mid-1970s. The broadening financial crisis, deteriorating economic outlook, declining earnings, and deleveraging have all weighed heavily on markets.

The impact of the credit crisis and the weakening economic outlook paint a depressing picture for corporate earnings. Given the extent of the financial crisis and the synchronized nature of the global recession, the risk is that this earnings downturn will be the worst in 40 years. We now expect the global ROE to fall back from its peak level of 16% to around 8%, consistent with the trough levels of the past two major earnings downturns in the early 1990s and early 2000s. This implies an overall decline in earnings of between 40% and 50%. Thus far, earnings are down only 10% from their late-2007 peak, so the adjustment has much further to run. This is much worse than previous downturns where, on average, global earnings fell 25% over a period of 25 months (see Figure 48).

Such an earnings decline provides a formidable headwind for global equity markets, particularly because the aggregated bottom-up earnings forecasts from IBES analysts do not yet reflect these downside risks. Although 2008 forecasts now predict a contraction (-5%), analysts still expect growth of 8% and 13% in 2009 and 2010, respectively. The pace of downgrades has accelerated in recent months, but forecasts still look far too high, particularly for 2009.

However, just because earnings are falling and analysts are downgrading their forecasts does not mean that equity markets will perform poorly. Global equities have bottomed before earnings in all but the early-2000s' earnings recession, when a combination of high starting valuations (25 times PE) and the worst earnings downturn in 40 years proved insurmountable. Normally, multiple expansion more than offsets earnings declines. This is clearly demonstrated in Figure 47, which shows the MSCI World trailing PE, with the shaded areas reflecting the major global earnings recessions.

At its current trailing PE of around 10 times, the global equity market is now at its lowest valuation since the early 1980s. At these levels, valuations are already discounting a lot of bad news on the earnings front. For example, a further 30% drop in earnings, at the top end of our expected range, would take trough valuations back to 14 times, similar to levels in the mid-1970s and early 1980s. A 40% decline in earnings

would take trough valuations back to 17 times, in line with the long-term average and well below trough levels seen in recent cycles.

The collapse in risk appetite means that global equities look particularly cheap relative to defensive assets, such as cash and government bonds. Against these assets, they are now trading at their most attractive valuations in 40 years. As global interest rates continue to be cut aggressively, the relative attractiveness of equities will increase further. In the United States and Europe, the yield on equities has crossed the yield on government bonds in recent weeks. Even in the deflationary Japanese equity market of the past ten years, this crossover has been a good trading buy signal. While dividends are clearly at risk in the current environment, they have proved far more resilient than earnings in previous cycles.

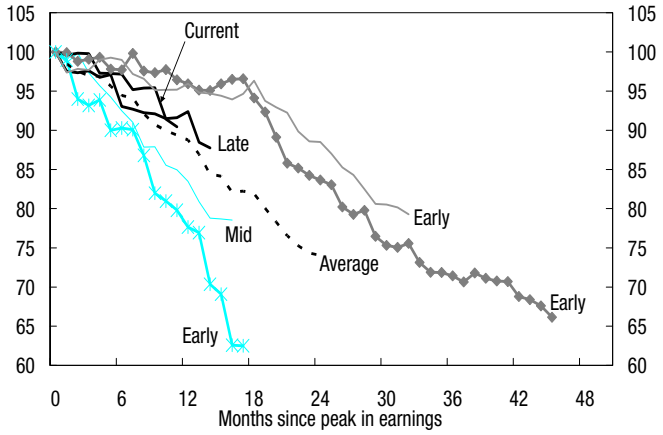
We expect global equities to stabilize in 2009 as a lot of the bad news is already factored into equity valuations. However, a sustainable recovery is unlikely to occur until there is a clearer patch out of the current economic and earnings downturn and a sense of stability in global financial markets. This visibility may take some time to emerge. Equities will remain volatile, so we would use dips to increase exposure.

At a regional level, we currently favor the lowly-rated European markets over their more expensive Asian peers. The United States looks expensive, but we are neutral because the U.S. economy is further through the downturn. Our sector strategy has a defensive bias for now. We are overweight in healthcare, consumer staples, and telecoms, where earnings and dividends should remain relatively resilient. We continue to avoid leverage and exposure to discretionary capex. Financials, information technology, and consumer discretionary are all underweights. At some point in 2009, expectations of an improving macro and earnings outlook will encourage consideration of a move from a defensive cyclical stance to a more pro-cyclical one.

Figure 47. MSCI World Trailing PE, 1970-Nov 08

Sources: Citi Investment Research and MSCI.

Figure 48. Global Earnings Recession (Previous Peak = 100)



Sources: Citi Investment Research and MSCI.

Bond Strategy

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Next year is likely to be another challenging year for fixed-income investors. Long-term interest rates have fallen to very low levels that offer little long-term value. Moreover, credit products appear cheap based on conventional measures of valuation. But the economic outlook and continuing deleveraging works against the obvious trades — that is, short duration and long credit. In coming months, long-term interest rates are likely to fall further and credit products are likely to remain under pressure. But at some point next year, when the economic and financial outlook is more clear, credit products will be attractive and long-term interest rates should start moving higher.

Long-term interest rates have fallen dramatically since June and are now at extremely low levels from a historical perspective. When we consider that U.S. inflation has averaged 2.8% since 1992 and that equity markets currently have dividend yields in the region of 3.5%, it seems hard to imagine that sub-3% ten-year Treasury yields will prove to be a wise long-term investment. Moreover, with issuance set to rise at a prodigious pace next year, it is hard to see how a meaningful scarcity premium for individual issues could develop.

That said, it is hard to justify being underweight duration at present. Historical comparisons make little sense given the near-term economic and policy outlook. Incoming economic data continue to paint a picture of the global economy that is slowing rapidly. Meanwhile, the yield curve is steep enough to offer reasonable compensation for holding duration. Confidence in equity markets remains very low, and the recent rise in real yields and the widening in swap spreads suggest that rising issuance is already being factored in. Furthermore, the Fed's embrace of unconventional policies, including its program to buy mortgage and agency bonds across the curve, should prevent any significant upside in yields for the time being.

Bond markets are likely to remain firm and yields should stay low for a considerable period of time, but we do expect a significant reversal once the credit and equity markets begin to stabilize.

We expect yield curves in the low interest rate markets (the United States, Japan, and Switzerland) to flatten as yields fall. Quantitative policy measures will give momentum to this trend but are not a prerequisite; late-cycle bull flattening of yield curves is a relatively common phenomenon. In the markets that have scope for significant further monetary stimulus, notably the euro area, the United Kingdom, and Scandinavia, we expect yield curves to retain a moderate steepening bias.

Swap spread curves remain extremely distorted, with short maturity spreads close to -100 basis points in the United States and euro area, while at the long end spreads are positive. With issuance rising and the Fed buying agency and mortgage debt, we expect the bias to remain toward cheapening of government bonds. Thus, we expect swap spread curve normalization to come about via tighter short maturity spreads.

Inflation markets also look likely to offer attractive opportunities. As deflation fears have gripped the markets, breakeven inflation spreads have collapsed and, in many areas, turned negative. For the time being, we would avoid buying breakeven spreads, as sentiment seems firmly entrenched. But with growth likely to remain subdued for

some time, we think that buying real yields, particularly in the United States and Japan, is probably a very attractive trade.

Credit investors also face tough choices in 2009. The global recession implies deteriorating corporate fundamentals. In addition, ongoing deleveraging is likley to keep the pressure on asset prices. However, credit spreads are at levels that have not been seen since the Great Depression.

The early part of 2009 is likely to generate further pressure on credit markets. On the supply side, ongoing pressures on bank balance sheets will probably prompt substitution from loans to corporate bond issuance. With the perils of excessive reliance on short-term wholesale funding all too apparent, we expect a significant drive to term out average bank debt maturities.

The near-term outlook for the demand for credit products is not encouraging. Hedge fund redemptions will likely bring about more selling. Unencumbered cash holdings are much lower, so more redemptions will lead to more selling. By the second half of the year a leaner hedge fund industry should be emerging.

The market will have to look to fundamental long-term investors for any pickup in demand. This will not happen overnight. Many real money credit funds have also been experiencing significant outflows over the past few years. This trend should reverse during 2009. As rates and risk-free yields grind lower, eventually money will be put to work in risk assets again.

Corporate fundamentals, however, are set to deteriorate further in 2009. Falling profits could be a trigger for the substantial rise in default rates that many have been predicting. But credit spreads reacted much sooner and much more violently than past relationships with fundamentals would suggest. This is reflected in the record gap between current credit spreads and current default rates.

Deleveraging has caused spreads to overshoot fundamentals, at least in investment-grade credit. The implication is that, even as fundamentals continue to worsen during the year, spreads actually could start to perform better, if deleveraging pressures fade at some point in 2009. Before that happens, spreads may move even wider, especially in high yield. So mark-to-market investors should probably stay short of the benchmark for now, but in much smaller size than during 2008. Hold-to-maturity investors are already being compensated for the risk.

Figure 49. Long-Term Forecasts (Calendar Average), as of Dec 3, 2008

	GDP					CPI					Short-Term Interest Rates				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
United States	**-1.4%**	**1.7%**	**2.5%**	**2.5%**	**2.5%**	**0.2%**	**0.7%**	**2.0%**	**2.0%**	**2.0%**	**0.1%**	**0.4%**	**2.9%**	**3.5%**	**3.5%**
Japan	**-1.2**	**1.1**	**1.5**	**1.5**	**1.5**	**-0.2**	**-0.2**	**0.3**	**0.5**	**1.0**	**0.1**	**0.1**	**0.4**	**0.8**	**1.3**
Euro Area	**-1.4**	**0.5**	**1.1**	**1.5**	**1.7**	**1.2**	**1.3**	**1.5**	**1.6**	**1.7**	**1.1**	**1.1**	**2.2**	**3.0**	**3.5**
Canada	0.3	2.8	3.4	3.7	3.2	1.4	2.2	2.0	2.0	2.0	1.1	1.0	1.6	3.2	4.0
Australia	0.6	2.0	3.0	3.0	3.0	3.4	2.7	2.5	2.5	2.5	3.5	5.0	5.5	6.0	6.0
New Zealand	0.5	1.5	2.0	2.5	2.5	2.8	2.5	2.3	2.3	2.3	4.0	5.0	5.5	6.0	6.0
Germany	-1.5	0.7	1.8	1.7	1.8	0.8	1.1	1.5	1.4	1.4					
France	-1.2	0.4	1.7	1.8	1.8	0.8	1.1	1.3	1.5	1.7					
Italy	-1.2	0.3	1.0	1.2	1.3	1.4	1.3	1.3	1.5	1.8					
Spain	-1.7	0.0	0.7	1.3	1.3	1.8	1.5	1.2	1.3	1.5					
Netherlands	-1.2	1.1	2.0	2.1	2.5	1.5	1.4	1.5	1.8	2.2	3.9	3.5	4.0	4.5	4.8
Norway	1.3	2.1	2.2	2.5	3.0	2.8	2.5	2.3	2.3	2.5	2.3	2.0	2.8	3.0	3.5
Sweden	-0.2	1.5	1.8	2.0	2.4	1.7	1.5	1.8	2.0	2.0	1.0	1.0	1.5	1.8	1.8
Switzerland	0.1	1.9	2.5	2.7	2.7	0.5	1.3	1.4	1.5	1.5	1.7	1.5	2.6	4.3	4.5
United Kingdom	-1.5	0.9	1.9	2.3	1.6	1.0	2.9	2.7	2.0	2.1	4.0	4.0	5.3	5.9	6.1
China	8.2	8.5	9.5	9.0	8.8	1.4	3.5	4.0	3.8	3.5	7.0	7.0	7.0	7.0	7.0
India	5.5	6.6	7.3	8.4	8.5	5.0	4.5	4.5	4.5	4.5	3.1	3.5	4.4	4.5	4.5
Korea	2.0	3.8	4.5	4.5	4.5	3.0	2.5	2.5	2.5	2.5	4.5	4.0	4.8	5.0	5.0
Poland	2.6	3.7	4.9	5.5	5.5	3.0	2.2	2.1	2.5	2.8	10.0	11.5	9.5	7.5	5.5
Russia	4.5	5.9	6.1	6.5	6.5	10.2	6.9	6.2	5.9	5.7	10.0	9.0	9.5	9.5	9.5
South Africa	2.3	3.8	4.8	5.2	5.0	6.5	5.9	5.4	5.5	0.0	16.7	13.0	11.3	10.2	8.7
Turkey	-1.0	4.2	5.8	6.0	6.0	10.5	7.6	6.0	5.2	4.0	13.8	12.5	11.5	10.5	9.5
Brazil	3.0	4.0	4.0	4.0	4.0	5.6	4.1	4.0	3.5	3.5	6.0	6.0	6.0	6.5	6.5
Mexico	0.5	3.0	3.7	4.2	3.5	4.9	3.4	3.2	3.1	3.1	0.1%	0.4%	2.9%	3.5%	3.5%

Note: For Norway, mainland GDP.

Source: Citi forecasts.

Figure 50. Long-Term Forecasts (Calendar Average), as of Dec 3, 2008

	Ten-Year Yields					Exchange Rate vs. U.S. Dollar					Exchange Rate vs. Euro				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
United States	**2.70%**	**3.55%**	**4.25%**	**4.50%**	**4.75%**	**NA**	**NA**	**NA**	**NA**	**NA**	**1.17**	**1.20**	**1.20**	**1.20**	**1.20**
Japan	**1.35**	**1.60**	**1.75**	**1.75**	**2.00**	**91**	**97**	**102**	**102**	**102**	**106**	**116**	**122**	**122**	**122**
Euro Area[a]	**3.35**	**3.70**	**4.00**	**4.20**	**4.30**	**1.17**	**1.20**	**1.20**	**1.20**	**1.20**	**NA**	**NA**	**NA**	**NA**	**NA**
Canada	2.62	3.40	4.05	4.25	4.50	1.28	1.29	1.29	1.31	1.30	1.49	1.55	1.55	1.57	1.56
Australia[b]	4.10	5.05	5.75	6.00	6.25	0.68	0.70	0.75	0.80	0.80	1.72	1.71	1.60	1.50	1.50
New Zealand[c]	4.25	5.30	6.00	6.25	6.50	0.57	0.58	0.60	0.64	0.64	2.05	2.07	2.00	1.88	1.88
Norway	3.93	4.30	4.68	4.90	5.10	7.11	6.58	6.50	6.42	6.42	8.30	7.90	7.80	7.70	7.70
Sweden	3.29	3.75	4.15	4.35	4.45	8.22	7.92	7.75	7.67	7.58	9.60	9.50	9.30	9.20	9.10
Switzerland	2.47	2.80	3.10	3.30	3.40	1.30	1.27	1.27	1.27	1.27	1.52	1.52	1.52	1.52	1.52
United Kingdom[d]	4.08	4.35	4.70	4.90	5.00	1.39	1.43	1.43	1.43	1.43	0.84	0.84	0.84	0.84	0.84
China	2.1	2.8	3.3	3.5	3.3	6.72	6.40	6.13	5.88	5.83	7.8	7.7	7.4	7.1	7.0
India	8.5	8.0	8.0	8.0	8.0	48.0	47.0	46.0	45.0	45.0	56.0	56.4	55.2	54.0	54.0
Korea	3.7	4.5	5.0	5.0	5.0	1300	1200	1125	1100	1100	1518	1440	1350	1320	1320
Poland	4.9	4.7	5.5	5.5	5.2	3.22	2.75	2.69	2.65	0.00	3.76	3.30	3.23	3.18	3.13
Russia	8.5	6.5	6.4	6.3	6.3	31.1	32.9	32.9	32.9	32.9	36.3	39.5	39.5	39.5	39.5
South Africa	9.2	9.5	9.7	9.9	9.8	9.55	10.00	10.50	11.00	11.35	11.15	12.00	12.60	13.20	13.62
Turkey	NA	NA	NA	NA	NA	1.71	1.75	1.77	1.78	1.77	2.00	2.10	2.12	2.13	2.12
Brazil	13.7	12.7	11.7	10.7	9.7	2.03	2.00	2.02	2.06	2.01	2.37	2.40	2.42	2.47	2.41
Mexico	7.5	7.0	7.0	7.5	7.5	12.5	11.8	11.1	11.1	11.3	14.5	14.2	13.3	13.3	13.6

[a] Ten-year bund yield. Exchange rate versus U.S. dollar shows US$/€.

[b] US$/A$. [c] US$/NZ$. [d] US$/£.

Source: Citi forecasts.

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United States: Out of Bounds

The serious stresses that emerged across financial markets in the middle of 2007 overwhelmed the U.S. economy in the past year, precipitating the worst recession in a generation. As 2008 winds down, economic activity and inflation are slowing rapidly. The feedback from rising unemployment and other weakness is hampering policymakers' attempts to restore financial stability. Breaking this vicious circle of weakness remains an urgent challenge. We are not optimistic that the hurdles to recovery can be overcome over any short horizon or without further significant policy steps.

Recession has been under way for a year.

While the economy expanded at nearly a 2% annual rate through midyear, that growth reflected a jury-rigged combination of rebate-driven consumption, government spending, and exports. More fundamentally, recessionary influences were battling elements of resilience from the outset. Cyclical metrics such as industrial output, payroll employment, business sales, and personal income stripped of government supports peaked toward the end of 2007 and have since declined steadily. Six-month employment diffusion, a key barometer of the breadth of cyclical weakness, pierced the recession threshold of 40% in June and has since weakened to just 34%.

A pullback by consumers has accelerated the downturn.

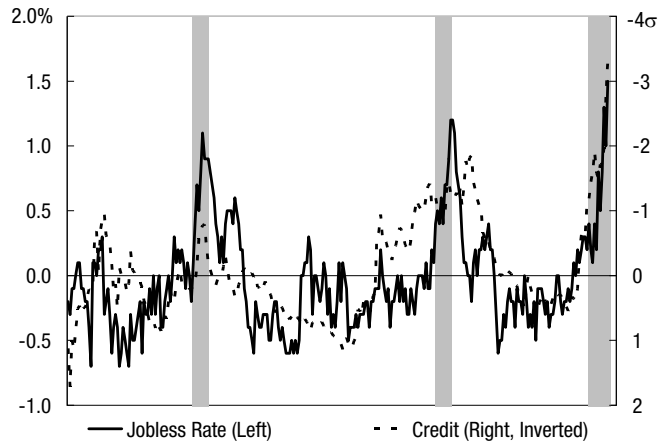
After flattening out in the third quarter, GDP appears to be contracting at more than a 4% annual rate in the fourth quarter. The quickening pace of the decline reflects in part the fallout from the sharp pullback in consumer spending this summer and the September failure of Lehman Brothers, which triggered a run on money market funds and dealt a severe blow to asset prices, risk appetite, and income expectations.

The sources of weakness have become mutually reinforcing.

The resulting swift rise in unemployment now under way means that this process has an undesirable self-reinforcing dynamic that policy efforts have yet to arrest. Moreover, earlier hope that the housing correction was beginning to taper off has given way to new threats of another down leg as household financial stress rises and home-buying conditions remain depressed.

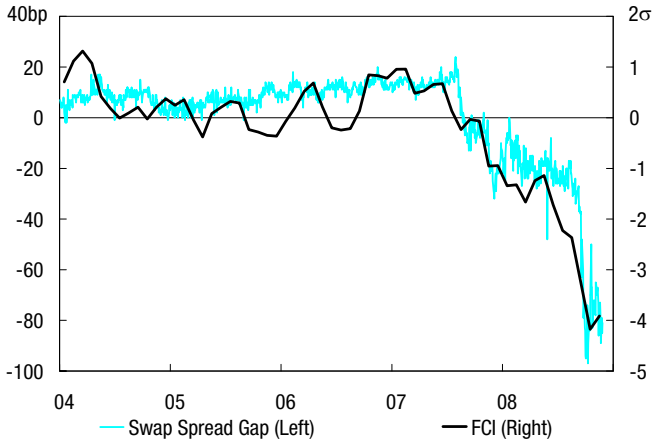
This economic timeline tracks closely the path foreshadowed by financial conditions. The pronounced erosion in liquidity, credit cost and availability, and equity values has warned of spreading weakness at each step of the slowdown. The Citi Financial

Figure 51. Credit Contribution to Citi FCI and Six-Month Change in Unemployment Rate, 1985-Oct 08



Note: Shaded regions denote recession.
Sources: Bureau of Labor Statistics and Citi.

Figure 52. Difference Between Ten-Year and Two-Year Swap Spreads vs. Citi FCI, 2004-21 Nov 08



Sources: Federal Reserve Board and Citi.

Financial conditions warn that recession will continue.

Conditions Index (FCI) began this past year at an already weak minus one sigma, suggestive of subpar economic growth. But the FCI now rests at a staggering minus four standard deviations below norms, indicative of the most severe financial headwinds the economy has faced anytime in the past half century. Unchecked, these conditions would likely produce enormous economic slack consistent with double-digit unemployment and a sharply widening output gap.

Policy efforts have failed.

The lack of response of financial conditions to sweeping policy efforts has been a defining feature of this year-and-a-half-long crisis. By now, virtually all policymakers and market participants recognize that notional monetary accommodation, symbolized by a negative real overnight funds rate, has not translated into financial stimulus in practice.

The risk of deflation has emerged.

The prevailing financial restraints on economic growth are not only hampering activity, but now they are beginning to undermine pricing power broadly. In the absence of successful efforts to shore up financial defenses and boost aggregate demand, the incipient near-term disinflation could become a deflationary undertow.

Recovery scenarios are premature.

Against this unprecedented backdrop, fashioning an outlook is an exercise in finding a reasonable mid-range in a wide distribution of potential outcomes with unusually "fat tails." Our forecasts assume continued broad-based policy measures, but the relative improvement in financial conditions underlying the numbers leaves us well short of economic recovery next year. At no time over the two-year forecast horizon do we anticipate a financial tailwind for economic growth.

A wide range of outcomes is possible.

This scenario leaves us with the possibility of an upside surprise if recent spotty improvement in credit conditions is reinforced by other policy breakthroughs and a sustained lift in investor confidence. But that prospect is counterbalanced to the downside by the specter of intractable housing imbalances, spreading weakness in the corporate sector beyond financial firms, and the concern that any unforeseen shock to an already weakened economy could put still more dire scenarios in play as financial intermediation remains seriously impaired.

On balance, the outlook discussion is centered on an interrelated set of questions:

- Do erratic signs of reduced short-term funding pressures signal that the retreat from healthy risk-taking is leveling out as a first-stage lift to broader financial conditions?
- Is the recent sharp decline in consumer spending a one-time response to the post-Lehman turmoil or symptomatic of a more enduring shift in savings preferences?
- Are fading inflation pressures a lifeline for real income and investor confidence or will policy ultimately be forced to head off an undesirable tilt toward deflation?

The Tail Wags the Outlook

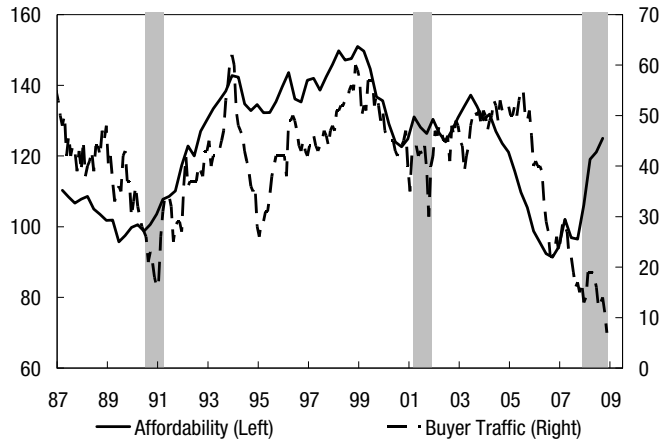
Banks and other lenders need greater capital cushions to reassure their counterparties that they will be able to meet their obligations, and they need it soon.

— Federal Reserve Vice Chairman, Donald L. Kohn, October 15, 2008

Baseline projections foresee a slow recovery process.

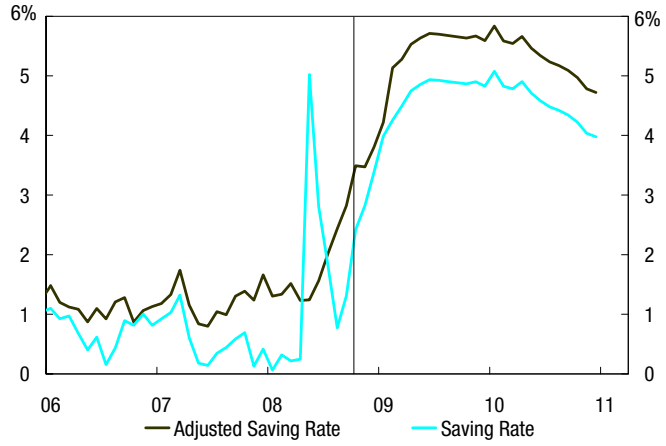
Our baseline view anticipates that the pace of decline in output will subside gradually in 2009. But unemployment will continue to rise to near 9% as growth does not return to trend until the latter part of 2010 (see Figure 61). Additional monetary and fiscal stimulus, efforts to slow home foreclosures, and the boost to real incomes from lower energy prices are not enough to overcome the hurdles of reduced credit access, slow-healing confidence in financial intermediaries, and outsized negative wealth effects.

Figure 53. Affordability Index Based on FHFA Prices and Home Buyer Traffic, 1987-Nov 08



Note: Shaded regions denote recession. Sources: Federal Housing Finance Agency, National Association of Home Builders and Citi.

Figure 54. Official Savings Rate and Savings Rate Adjusted for Temporary Shocks, 2006-Dec 10F



Sources: Bureau of Economic Analysis and Citi.

Some policy measures have shown encouraging signs.

To be sure, the pace of policy measures has increased since the abrupt deterioration in markets in mid-September. The combination of Treasury's capital injections for banks and the massive expansion of the Fed's balance sheet (especially for expanded dollar swaps, money market backstops and the latest program to purchase GSE debt and agency MBS) has produced signs of thawing in the credit freeze. Interbank markets have loosened, and commercial paper issuance beyond a few days has resumed. And while we have seen false bottoms before, these particular changes are encouraging signs that policy efforts can prove effective.

But credit intermediation remains impaired.

Nonetheless, as the Citi FCI illustrates, conditions are very far from normal, particularly in term credit, where Treasury's announcement on halting plans to buy troubled assets set off a sharp retreat. The fear and uncertainty surrounding the ultimate cost of credit losses and writedowns at financial firms has thrown a wedge into the intermediation process that might ultimately constitute a "credit trap" if the widening array of Fed and Treasury stabilization measures is unable to pare financing premiums or facilitate access to funding.

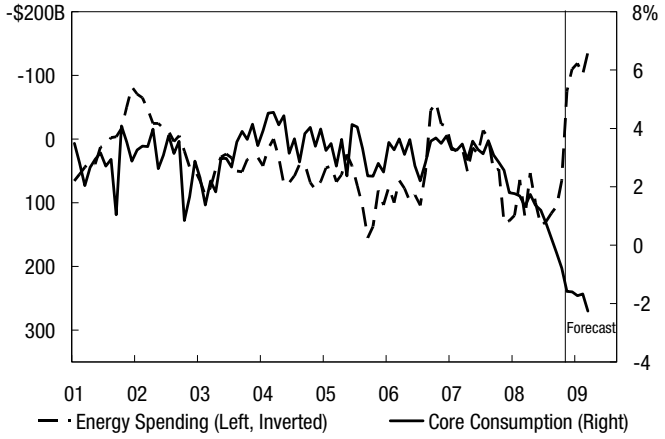
Investors lack confidence in the adequacy of bank capital.

Banks are caught in a Catch-22. The need for stronger capital cushions, as Fed Governor Kohn suggests, requires better margins and access to markets. But hostile market conditions have forced the bidding up of deposit rates and other costs along with pressures to deleverage that have undermined existing capital positions. At the very least, this suggests an urgency to slow mortgage foreclosures as well as jump-start the FDIC's Temporary Liquidity Guarantee Program, which would bridge current conditions toward a healthier environment for raising capital.

Healthier financial conditions must precede economic recovery.

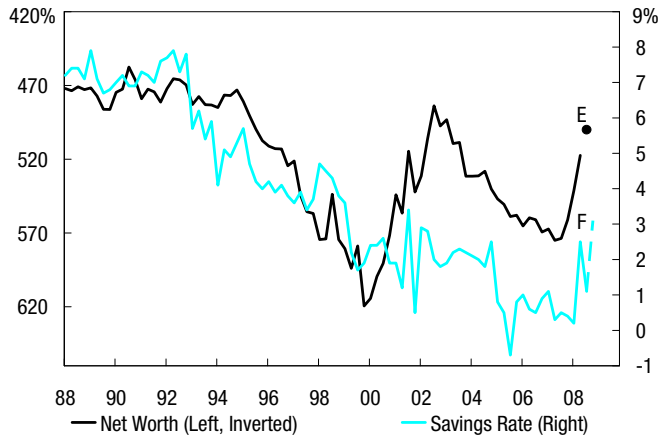
The immediate backdrop lends support to the view that the restoration of a more accommodating financial setting will take some time. Recognizing that a sustained economic upturn is unlikely without first boosting financial conditions, what are the signposts for a thaw in financial markets? In our experience, the rate of change in unemployment (or the level of initial jobless claims) can be a guide to turning points in the credit component of the Citi FCI (see Figure 51).

Figure 55. Year-to-Year Change in Energy Costs ($ Billions) versus Real Core Consumer Spending (Year-to-Year Pct. Change), 2001-Mar 09F



Sources: Bureau of Economic Analysis and Citi.

Figure 56. Household Net Worth as a Percent of Disposable Income and Savings Rate, 1988-Sep 08



Sources: Federal Reserve Board and Bureau of Economic Analysis.

A relative improvement in corporate cash flow would also be a favorable signal. Alternatively, the swap spread curve could provide a real-time guide to how financial conditions important to the economic outlook are evolving (see Figure 52).

Housing imbalances persist...

Prospects for financial stability are intimately linked to the path for housing markets and the consumer. Although the housing correction is now three full years along, there are only scant signs that conditions are moving toward balance, while increasing financial strains on households are frustrating hopes that record levels of vacant homes for sale will ebb sufficiently before substantial further declines in prices occur.

...as broader weakness has delayed a revival in home sales.

By some measures, the correction in housing may already be overshooting sustainable norms. This is noticeable in employment among housing-related industries and new construction of homes, as well as in some measures of home prices relative to income. Nonetheless, we expect housing construction, already down by more than 40% from expansion highs, to decline by more than 10% in 2009 as rising unemployment and downbeat confidence weigh on a much needed market clearing process.

Prospective homebuyers have not been enticed by lower prices.

Housing affordability has improved substantially, but home-buying conditions and prospective buyer traffic are languishing, with the latter at all-time lows (see Figure 53). Moreover, the large overhang of unsold homes remains at the core of the broader challenges to recovery. Housing could prove a wild card for optimists if policy efforts to stem foreclosures and temper price declines take hold.

The Consumer Regroups

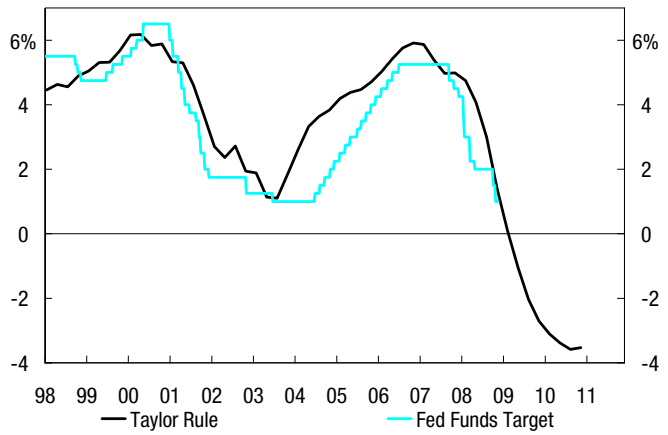
Consumer retrenchment is a key theme.

The path for consumer spending looms large in our overall outlook. Every item on our checklist of recovery hurdles bears directly on the well-being of households. The combination of slowing income, negative wealth effects, tight credit, and dimming expectations is expected to weigh on spending over the entire forecast horizon, with significant near-term weakness followed by modest recovery.

Spending has slowed sharply.

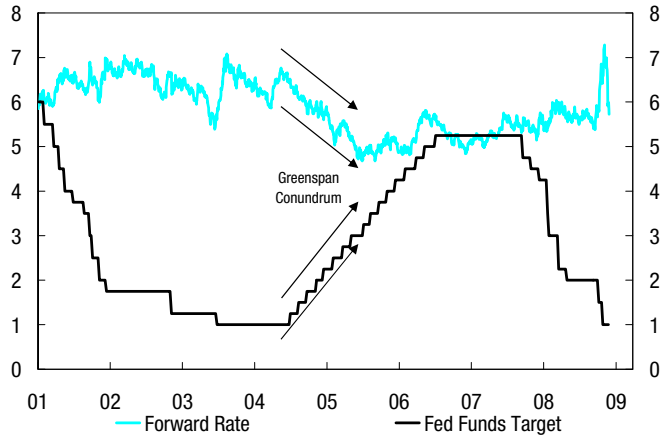
Data in hand on consumer spending show that outlays declined outright in the third quarter and that the pullback has accelerated more recently. Nominal dollar spending is falling for the first time in more than 50 years.

Figure 57. Taylor Rule and Actual Funds Rate, 1998-4Q 10F



Sources:Federal Reserve Board and Citi.

Figure 58. One-Year Forward Rate Nine Years Ahead and Federal Funds Target Rate, 2001-20 Nov 08



Source: Federal Reserve Board.

It is tempting to argue that the abrupt and steep falloff since September reflects the unusual confluence of the extraordinary financial shocks and the 1% spike in joblessness over just the past few months. If that were true, we might expect those negative impulses to dissipate somewhat, particularly as the cost of daily necessities retreats. The savings from lower gasoline prices, for example, is generating easily more than $200 billion in discretionary income relative to peak summer prices.

Stronger savings preferences are emerging.

We would anticipate some easing up in the rate of consumer retrenchment. However, the evidence increasingly suggests the patterns now emerging are part of a more enduring change in savings preferences. That evidence has been building up since the spring, but it may have been masked temporarily by the combination of sharply higher energy costs (which lowered the savings rate) and tax rebates (which overstated savings).

The official savings rate is rising.

To illustrate that an important shift in consumer behavior may have begun last spring, we devised a path for consumer spending that eliminates these transitory forces. Since the spring, our adjusted savings rate has increased steadily to 3.5%, following a period of relative stability around 1.2% (see Figure 54). Meanwhile, this rise in underlying savings is only now becoming evident in official numbers reported by the Commerce Department.

Consumers are saving the windfall from lower fuel bills.

At first, the official savings rate was depressed by soaring gasoline prices. Then, the series became meaningless as consumer incomes spiked with the rebates. Recently, however, even the official savings rate has begun to rise meaningfully. Now that gasoline prices have fallen, the lack of any positive response from consumers akin to previous patterns (see Figure 55) has lent additional support to the judgment that motives and behavior are changing.

The savings rate could top 5%.

Based on our expectations for personal income and spending in coming quarters, we anticipate further increases in the savings rate initially to more than 4% of disposable income. In addition, we believe that a fiscal stimulus package early next year will include a tax cut that will boost the savings rate *permanently*. Based on a fiscal package with a tax cut of $90 billion, we figure that the savings rate could top 5% of disposable income.

Negative wealth effects represent a sizable drag.

While stimulus may provide support to consumers, unless it is much larger than assumed and has the unusual ability to boost demand quickly, the economy may remain too weak to

support employment and income. Consumers are also reeling from massive declines in wealth and the fact that the traditional monetary policy-induced incentives are not operative because interest rates and credit are frozen. To gauge the impact of falling home and equity prices on spending, we rely on structural estimates of wealth effects, which play out over two years and constitute a cumulative drag of 2.7% on spending growth.

Over time, income growth will support modest gains in spending.

Nonetheless, unless declines in wealth persist, history would suggest that the rise in savings rates will level off or begin to moderate as financial restraints loosen and consumer confidence rebounds. As mentioned, the savings rate gravitates into a 5% to 6% range, consistent with previous relationships to net worth (see Figure 56). Real disposable income rises at an estimated 2½% pace over a two-year horizon, supporting a gradual albeit modest rebound in overall spending as well.

Policy and Interest Rates: Accommodation, Accommodation...

Further accommodation efforts lie in store.

In the context of a rapidly weakening economy and highly resistant financial conditions, policy stabilization measures of all sorts remain in prospect for the year ahead. The unprecedented scope of measures already undertaken and the limited successes so far add tremendous uncertainty to this aspect of the outlook.

Fed officials will commit to an especially aggressive tack...

The path for monetary policy appears the most clear-cut. With the day-to-day funds rate averaging below a half percent, a move to a zero interest rate policy could be imminent, especially since inflation pressures are now fading rapidly and officials will want to preempt even a small chance of deflation. This move should be accompanied by a strong communications effort to commit to the current tack until there is compelling reason to expect a return to maximum sustainable economic growth with price stability.

...using unconventional measures.

Now that inflation is in full retreat, one of the lessons to draw from the past year is that monetary policy cannot be characterized as accommodating — or working — as long as it fails to stimulate the financial conditions that influence spending decisions. Even at the zero rate, we expect continued efforts to buoy the near-term economy and head off an undesirable slowing in inflation. As a result, policy strategy will have to entail an increasingly unconventional tack.

Standard policy rules raise concerns.

The Taylor rule framework offers a simplified glimpse of the challenge the Fed faces. As discussed previously, our baseline view is that restrained demand and steadily rising slack will likely slow inflation well within ranges policymakers define as price stability. Plugging those estimates into a standard Taylor formulation results in a negative nominal funds rate of 3.5% (see Figure 57).

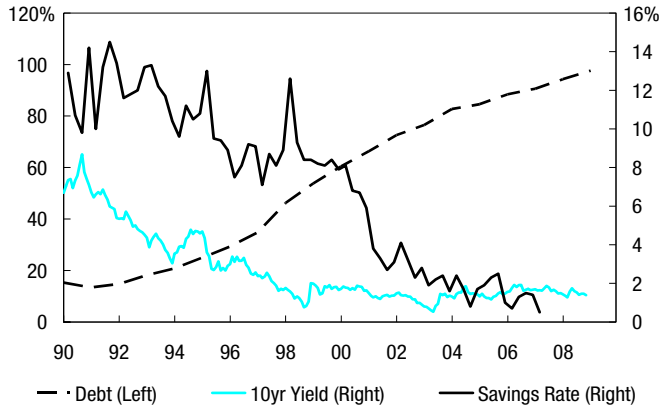
Policy success hinges on improving financial conditions.

In this context, the yardstick for gauging policy's success will be the Fed's progress in encouraging and sustaining an improvement in financial conditions. Although we expect a slow ebbing in overall financial restraint, markets have so far to go that — barring a breathtaking revival in investor confidence — we expect the Fed to remain on an accommodative tack at least through 2009 and probably most of the 2010 as well.

The Fed has taken initial steps to bolster easing efforts.

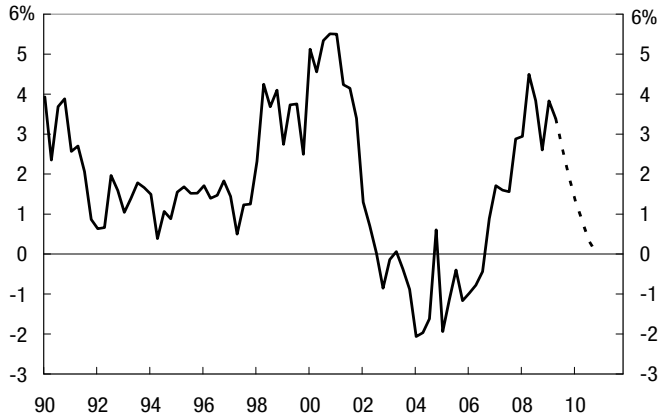
The options and rationale for further alternative means of accommodation are discussed in "Unconventional Policy Prospects," (see pages 12-28). Importantly, much of the plumbing for unconventional measures has been in place for some time, and policymakers have signaled that they are ready to act. Moreover, the recent step to allow payment of interest on reserves has unleashed the Fed from its self-imposed balance sheet constraint, paving the way for a range of options from macro-oriented quantitative easing to targeted

Figure 59. Japan — Net Government Debt as Percent of GDP, Ten-Year JGB, and Household Savings Rate, 1990-Nov 08



Sources: Japan Cabinet Office, Japan Securities Dealer Association and IMF.

Figure 60. Business Financing Gap (Percent of Sector GDP), 1990-4Q 10F



Sources: Bureau of Economic Analysis and Citi.

efforts at loosening the "credit trap" to, in the extreme, capping the term structure and monetizing fiscal deficits.

Fiscal plans have yet to overwhelm the demand for Treasuries...

Against this backdrop, longer-term Treasury yields likely will probe deeply into overvalued ranges until risk tolerance improves and the case for economic recovery is compelling. This situation is well suited for fiscal stimulus to boost demand. The President-elect has expressed support for forceful action, perhaps a two-year package upwards of 4% of GDP. Effective implementation of such a package could put above-trend growth in play by 2010 with unemployment capped near 8%. For this forecast round, we assumed a modest but front-loaded 1½% package, if only to underscore the severity of the constraints in force. Importantly, if risk appetites are not restored along with financial intermediation, even the largest fiscal boost could provide limited benefit.

...despite initial concerns about stimulus.

The recent sharp plunge in 30-year Treasury bond yields below 3½% marks a 50-year low and should dissuade fiscal policymakers from the fear that their actions might upend the bond market. To be sure, an abrupt increase in Treasury borrowing in the past couple of months aroused understandable concerns. Estimates that financing needs would approach $2 trillion this fiscal year were accompanied by a pronounced spike in far distant forward rates. The rise was especially evident in the nine-year forward one-year rate made famous by former Fed Chairman Greenspan's conundrum (see Figure 58).

Bond yields may reflect a higher term premium.

Some of the spike probably did reflect deficit worries, but some of it also may incorporate a higher term premium consistent with the broader volatility and rising risk premia across asset classes. In either case, if sustained, this would need to be reflected in judgments about financial conditions.

Japan's experience should encourage bold fiscal action.

Nonetheless, the latest collapse in rates across the curve has shown that the full array of forces determining long-term interest rates is a complex one. In an extreme example, Japan's experience with sustained declines in bond yields amid a sharply rising public debt burden and a declining household savings rate in the 1990s should caution against hasty conclusions of a fiscal trap in current circumstances (see Figure 59). Falling bond yields in Japan were a warning that policy never effectively checked the deflationary undercurrent.

Some Treasury borrowing is not a net drain on available funds.

In the immediate U.S. setting, even under aggressive stimulus assumptions, the prospective increase in the public debt ratio would pale next to the Japan case. Equally important, weighing the burden of Treasury borrowing on markets should recognize that much of the increase reflects TARP (which constitutes a recycling, not a net drain of funds, and ought to be unwound over time) or the endogenous effects of recession.

Private sector borrowing needs have plummeted.

The flipside of a recessionary surge in the fiscal deficit is that private sector borrowing declines (the opposite of "crowding out") and saving rises. Earlier we discussed the oncoming surge in household saving rates. Businesses also are retrenching and their own financing deficit will shrink over the forecast period (see Figure 60). The combined increase in net private saving will likely run upwards of an $800 billion rate. Those funds have to go somewhere. Moreover, in a world of heightened risk aversion and declining inflation expectations, the demand for Treasuries could draw from the existing pool of invested funds. In this case, we cannot rule out excess *demand* for Treasuries.

As policy action succeeds, reviving risk tolerance should lift bond yields...

The greater hope is that the cumulative weight of policy measures will gradually foster conditions for economic recovery. In that event, market participants and policymakers would doubtless welcome the shift to riskier assets, an increase in investment, and an inevitable rise in benchmark yields as a measure of policy success. In this case, fiscal authorities could act to minimize the risk of a lingering deficit premium by establishing a credible program for longer-term budget restraint. Likewise, if confidence in recovery produces a financial tailwind of heightened risk appetite, monetary policy would be poised to normalize interest rates and unwind its liquidity facilities.

...and set the stage for recovery.

On balance, the gradual rise in benchmark yields we anticipate in the base case reflects a highly conditioned optimism on our part — that policymakers across the board have ample scope to close off further financial deterioration and provide a bridge to sustained recovery.

Figure 61. United States — Economic Forecast, 2008-10F

					2008			2009			
		2008F	2009F	2010F	2Q	3Q	4QF	1QF	2QF	3QF	4QF
GDP	SAAR				2.8%	-0.3%	-4.2%	-3.2%	-0.9%	0.6%	1.5%
	YoY	1.3%	-1.5%	1.7%	2.1	0.8	-0.2	-1.3	-2.2	-1.9	-0.5
Consumption	SAAR				1.2	-3.1	-4.4	-1.3	-1.2	0.6	1.5
	YoY	0.3	-1.5	1.7	1.3	0.0	-1.4	-1.9	-2.5	-1.6	-0.1
Business Investment	SAAR				2.5	-1.0	-7.8	-9.7	-9.9	-7.6	-5.4
	YoY	2.7	-7.0	-2.1	4.2	1.8	-1.1	-4.1	-7.1	-8.7	-8.2
Housing Investment	SAAR				-13.3	-19.1	-22.8	-23.8	-14.7	-1.6	4.4
	YoY	-21.1	-16.7	3.8	-21.7	-21.3	-20.2	-19.8	-20.2	-16.2	-9.6
Government	SAAR				3.9	5.8	1.6	2.9	3.0	2.3	1.2
	YoY	2.9	2.9	1.5	2.6	3.1	3.3	3.6	3.3	2.5	2.3
Exports	SAAR				12.3	5.9	-4.6	-2.6	-1.3	-1.1	-0.8
	YoY	8.0	-0.6	0.9	11.0	6.9	4.5	2.5	-0.7	-2.4	-1.4
Imports	SAAR				-7.3	-1.9	-3.0	-4.8	-3.1	-2.1	0.6
	YoY	-2.3	-3.3	1.3	-1.9	-3.1	-3.3	-4.3	-3.2	-3.3	-2.4
CPI	YoY	4.0	0.2	0.7	4.3	5.3	2.2	1.0	0.2	-1.1	0.8
Core CPI	YoY	2.3	1.6	0.8	2.3	2.5	2.1	1.9	1.8	1.3	1.3
Unemployment Rate	%	5.7	7.8	8.6	5.3	6.0	6.7	7.2	7.7	8.0	8.3
Govt Balance (Fiscal Year)	% of GDP	-3.2	-9.0	-5.0							
Assumed WTI Spot Price	US$	99.9	58.5	69.0	124.0	118.0	59.5	54.6	57.4	60.5	61.5
Current Account	US$bn	-648	-294	-311	-733	-720	-435	-322	-290	-278	-287
	% of GDP	-4.5	-2.0	-2.1	-5.1	-5.0	-3.0	-2.2	-2.0	-1.9	-2.0
S&P 500 Profits (US$ Per Share)	YoY	-14.2	-14.5	4.8	-18.9	-16.9	0.1	-18.0	-19.1	-14.1	-5.0

Notes: F Citi forecast. YoY Year-to-year percent change. SAAR Seasonally adjusted annual rate.

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, I/B/E/S, Treasury Department, *Wall Street Journal*, and Citi.

Japan: Continued Recession with External Challenges

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We expect Japanese GDP to continue to contract until midyear 2009, before returning to a below-trend growth track in the second half of the year. Sluggish exports and the resulting drop in corporate profits will likely continue to check overall economic activity in coming quarters. We expect core inflation to moderate rapidly and turn negative again in the middle of 2009, thanks to the recent sharp drop in oil prices and widening economic slack. Against this backdrop, the Bank of Japan (BoJ) will probably cut policy rates again to 0.1% by the first quarter of 2009. There should also be the moderate potential for further declines in ten-year JGB yields amid sluggish economic activity and further rate cuts by the major central banks.

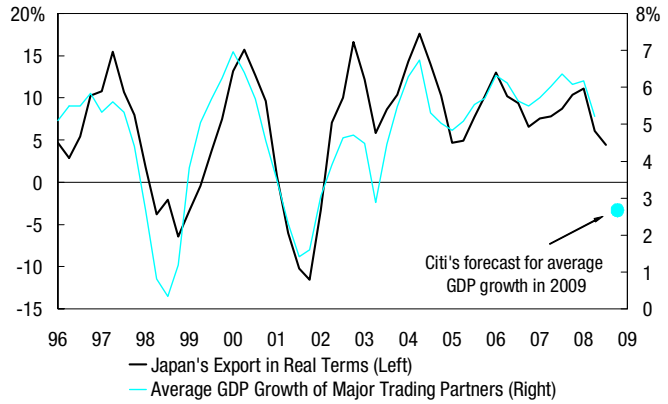
Exports are likely to continue to decline, as most trading partners are expected to grow at a pace meaningfully below trend in coming quarters (see Figure 62). We expect a negative impact from recession in the United States and the euro area to be only partially offset by relative resilience in the Chinese economy.

Sluggishness in exports and the recent appreciation of the yen, along with the earlier surge in raw materials prices, already are causing steep declines in corporate profits. Recurring profits of listed companies (excluding financials) fell by about 20% in the past two quarters. We expect the sharp decline in profits to continue through most of 2009 as sales show outright declines.

In this environment, business investment shows increasing signs of sharper declines. Machinery orders, a leading indicator of private capital spending, declined by 10.4% (not annualized) in the third quarter, indicating that more and more companies are reacting to the rapidly shifting environment by postponing or reducing investment plans. Moreover, tightening lending standards at financial institutions also appear to be weighing on business investment at small- and medium-sized firms.

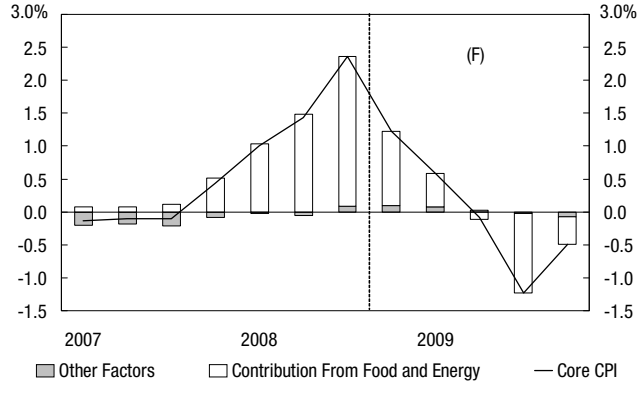
Consumer spending is likely to remain relatively stable in 2009. Income and labor conditions are expected to deteriorate amid faltering economic activity and profits, but a prospective sharp decline in core inflation should support consumer purchasing power in coming quarters. We expect *real* disposable income to grow by about 1% in 2009, in part helped by the government's ¥2 trillion subsidy to the household sector.

Figure 62. Japan — Real Exports and Average GDP of Major Trading Partners (Year-to-Year Percent Change), 1996–09E



Sources: Cabinet Office, Haver Analytics, and Citi.

Figure 63. Japan — Forecasts of the Core CPI and Breakdown (Contribution to Year-to-Year Percent Change), 2007-09E



Sources: Ministry of Internal Affairs and Communications and Citi.

The inflation outlook has shifted significantly since summer, along with the sharp fall in crude oil prices. We expect core inflation (excluding fresh food) to drop below 1.0% year to year in December (from 1.9% in October) and turn negative in the middle of 2009 (see Figure 63). Widening economic slack would also exert downward pressure on underlying inflation, excluding both food and energy.

We expect the BoJ to cut policy rates again by the first quarter of 2009. Based on our economic outlook, we estimate that the Taylor-rule policy rate will sink into negative territory in 2009, with growth continuing to fall short of trend and inflation slipping quickly. Moreover, domestic financial conditions — banks' lending attitudes and credit spreads — also tightened. Facing the zero interest rate bound, the BoJ might explore non-conventional policy tools such as an explicit commitment to leave monetary policy unchanged until certain economic conditions (for example, positive core inflation) are satisfied.

The Japanese government introduced two economic packages this summer and autumn. These packages included direct subsidies of ¥2 trillion to households, expansion of public loan guarantees for small firms, tax incentives for investment, and recapitalization programs for financial institutions. An introduction of another economic package cannot be ruled out, especially given the upcoming general elections, but a worsening fiscal balance will likely limit the size of additional stimulus measures.

We expect that ten-year JGB yields will decline moderately in coming months. To be sure, concerns over fiscal deficits appear pervasive as new issuance of JGBs in the initial 2009 budget (starting April 2009) likely will exceed ¥30 trillion, reflecting rising fiscal spending and significant declines in tax revenues. Moreover, low risk appetite among investors, should also limit declines in ten-year JGB yields. However, continued negative growth, additional rate cuts by the BoJ and significant declines in the U.S. Treasury yields will probably combine to overwhelm these factors.

Figure 64. Japan — Economic Forecast, 2008-10F

					2008			2009F			
		2008F	2009F	2010F	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Real GDP	YoY	0.2%	-1.2%	1.1%	0.7%	0.0%	-1.0%	-2.0%	-1.3%	-1.2%	-0.3%
	SAAR				-3.7	-0.4	-2.2	-1.9	-0.8	0.2	1.3
Domestic Demand	YoY	-0.5	-0.4	0.9	-0.5	-0.5	-0.8	-1.3	-0.3	-0.3	0.1
	SAAR				-3.6	0.2	-0.7	-0.9	0.1	0.3	1.0
Private Consumption	YoY	0.8	0.7	0.9	0.5	0.6	0.5	0.1	1.0	0.8	0.9
	SAAR				-2.2	1.1	0.8	0.7	1.1	0.4	1.2
Business Investment	YoY	-2.0	-4.9	1.3	0.6	-2.8	-5.3	-6.5	-6.1	-4.5	-2.3
	SAAR				-5.5	-6.7	-7.8	-5.9	-3.8	-0.1	0.8
Housing Investment	YoY	-8.4	2.2	0.9	-15.9	-4.5	6.7	1.0	5.0	1.8	1.1
Public Investment	YoY	-4.6	-3.2	-2.3	-6.1	-4.0	-5.0	-6.5	-1.0	-2.8	-2.5
Exports	YoY	4.9	-4.8	1.8	6.1	4.1	-1.0	-6.0	-4.7	-5.6	-2.7
	SAAR				-10.2	2.8	-9.1	-7.0	-5.0	-1.1	2.6
Imports	YoY	0.7	0.1	0.5	-1.3	1.1	0.1	-1.2	1.8	-0.2	-0.1
	SAAR				-11.5	7.9	0.3	-0.7	0.1	-0.3	0.5
Core CPI	YoY	1.5	-0.2	-0.2	1.4	2.4	1.2	0.6	0.0	-1.1	-0.4
Nominal GDP	YoY	-0.9	-1.0	0.6	-0.9	-1.7	-1.1	-1.7	-0.9	-0.5	-0.8
Current Account	¥ tn	18.2	19.1	19.3	19.2	13.7	17.7	18.4	20.1	18.9	19.1
	% of GDP	3.6	3.8	3.8	3.8	2.7	3.5	3.6	4.0	3.7	3.8
Unemployment Rate	%	4.0	4.5	4.8	4.0	4.1	4.2	4.4	4.5	4.6	4.7
Industrial Production	YoY	-1.3	-6.9	1.4	1.0	-1.3	-6.8	-7.7	-8.1	-7.9	-3.7
Corporate Profits (Fiscal Year)	YoY	-20.0	-22.5	15.0							
General Govt. Balance (Fiscal Year)	% of GDP	-4.6	-4.9	-4.0							

F Citi forecast. YoY Year-on-year percentage change. SAAR Seasonally adjusted annual rate. Corporate profits are TSE-I non-financials consolidated recurring profits. Source: Citi.

Euro Area: Recession and Low Inflation

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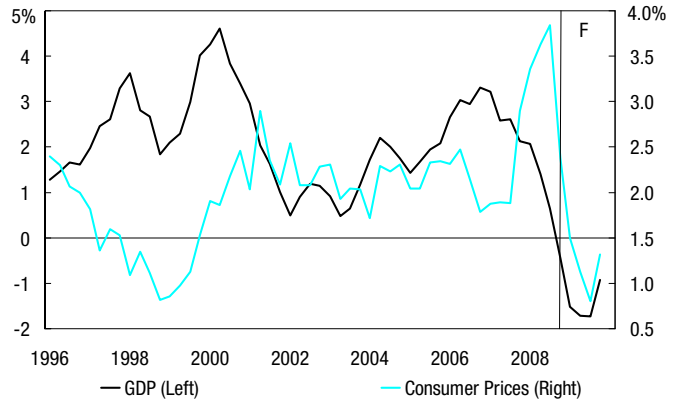
The euro area went into recession before the escalation of the financial market crisis in autumn 2008. The economic slowdown is broad-based among member countries, and the sharp drop in sentiment readings since September suggests that the recession is likely to deepen at least into the first half of 2009. The stimulus from monetary and fiscal policy may prevent a depression, but it is too late and too small to end the recession anytime soon. However, with quickly falling inflation rates and disappearing inflation risks, we expect further sizable ECB rate cuts to around 1% by mid-2009. As recent initiatives from the EU Commission suggest, additional modest discretionary fiscal policy is likely as well in 2009. These measures probably will help to stabilize the economy at some stage in 2009 or 2010.

Weaker domestic and foreign demand has caused the euro area economy to slow down and we expect a further deterioration in demand in 2009. With our forecast of a global recession, euro area exports probably will drop substantially in 2009, the first contraction since euro area data began in 1995. Regarding domestic demand, falling capital expenditures will be a major drag. The downward correction in construction activity in several countries (especially Spain) is likely to intensify, and we expect a decline in nonfinancial business investment. In addition, as bank lending is very important for euro area firms, the tightening of bank lending standards is likely to contribute to the decline in business investment.

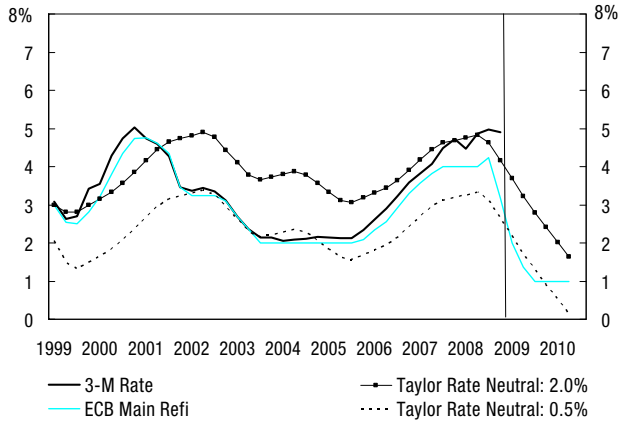
Private consumption probably will stagnate in 2009. The modest increase in euro area unemployment since the spring of 2008 probably will accelerate sharply in 2009, turning into a major headwind for consumption. The jobless rate was held in check by a drop in German unemployment. Highly leveraged euro area households will also suffer from tighter financing conditions. Of course, negative wealth effects, particularly in countries with house-price corrections, will be an additional drag on consumption. However, the ongoing sharp drop in inflation rates is likely to partly restore households' purchasing power. Furthermore, households in some member countries probably will benefit from fiscal policy easing.

Figure 65. Euro Area — GDP and Consumer Prices (Year-to-Year Percent Change), 1996-09F



Sources: Eurostat and Citi.

Figure 66. Euro Area — ECB Main Refinancing Rate and Three-Month Rate (Percent) and Taylor-Rule, 1999-10F



Sources: Eurostat and ECB.

The cyclical downturn will lead to a substantial deterioration of general government balance sheets. While the work of automatic stabilizers explains a large part of the increase in deficits, discretionary fiscal easing will contribute as well. Fiscal stimulus packages so far have been modest, with the exception of Spain, partly because countries already have breached the Stability and Growth Pact's 3%-of-GDP deficit limit. However, recent proposals by the EU Commission suggest additional discretionary easing in 2009. This is likely to propel the euro area's budget-deficit-to-GDP ratio from 1.7% in 2008 to 3.3% in 2009, which would be the highest reading since 2003. Issuance of government debt in 2008 and 2009 will be much higher, as governments also have to fund bank capital injections of around €310 billion (3.5% of GDP), which are not covered by the government deficits. Including total new borrowing, the area-wide debt-to-GDP ratio probably will surge from 66.3% in 2007 to 73% in 2009, a record high since the introduction of the euro.

The euro area recession and plummeting commodity prices will lead to a sharp decline in inflation rates. After peaking at 4.0% in July 2008, inflation rates probably will fall to around 1% in mid-2009. In addition, as the ECB already mentioned, negative year-to-year inflation rates are possible in 2009. In this recession and low-inflation environment, we expect further substantial ECB easing. In our view, the ECB will cut rates quickly to around 1% by mid-2009. This would be consistent with a Taylor-Rule policy rate, using our GDP and inflation forecasts (see Figures 65 and 66). The rate cuts probably will prevent the euro area economy from slipping into deflation, but we do not rule out the possibility of ECB rates going to zero. In that case, the ECB probably will use alternative measures to ease monetary policy.

Figure 67. Euro Area — Economic Forecast, 2008-10F

					2008			2009			
		2008F	2009F	2010F	2Q	3QF	4QF	1QF	2QF	3QF	4QF
Real GDP	YoY	1.0%	-1.4%	0.5%	1.4%	0.7%	-0.4%	-1.5%	-1.7%	-1.7%	-0.9%
	SAAR				-0.7	-0.8	-2.9	-1.7	-1.5	-0.8	0.3
Final Domestic Demand	YoY	0.9	-0.1	0.9	1.1	0.6	0.0	-0.3	-0.1	-0.1	0.3
Private Consumption	YoY	0.4	0.2	0.8	0.3	0.0	-0.1	0.0	0.2	0.1	0.4
Government Consumption	YoY	1.7	2.0	1.8	1.7	1.8	1.9	2.0	2.1	1.9	1.9
Fixed Investment	YoY	1.5	-2.6	0.2	2.5	1.0	-1.2	-3.2	-2.9	-2.6	-1.7
- Business Equipment	YoY	1.6	-4.3	0.0	2.9	1.0	-2.2	-3.9	-4.9	-4.8	-3.4
- Construction	YoY	1.3	-2.5	-1.5	2.1	0.6	-0.5	-3.4	-2.4	-2.1	-2.0
Stocks (contrib. to GDP)	YoY	0.2	0.0	0.0	0.1	0.2	0.6	0.2	0.3	-0.1	-0.1
Exports	YoY	2.9	-3.0	0.8	3.7	2.4	0.3	-2.5	-3.1	-4.1	-2.4
Imports	YoY	3.3	0.1	1.7	3.2	2.9	2.5	0.4	0.9	-1.0	0.0
CPI	YoY	3.3	1.2	1.3	3.6	3.8	2.4	1.5	1.1	0.8	1.3
Core CPI	YoY	2.5	2.1	1.4	1.7	1.8	1.9	1.9	2.1	2.0	1.8
CPI Ex Energy and Food	YoY	1.8	2.0	1.2	2.5	2.5	2.3	2.0	2.3	2.2	2.0
Unemployment Rate	%	7.4	8.3	9.0	7.4	7.5	7.7	8.0	8.3	8.5	8.6
Current Account Balance	€bn	-38.8	-50.0	-58.0							
	% of GDP	-0.4	-0.5	-0.6							
General Gov't Balance	€bn	-158.0	-305.0	-367.0							
	% of GDP	-1.7	-3.3	-3.9							
Public Debt	% of GDP	69.8	73.0	75.9							
Gross Operating Surplus	YoY	2.0	-2.0	1.0							

F Citi forecast. SAAR Seasonally adjusted annual rate. YoY Year-to-year growth rate. The annual forecasts for GDP are consistent with the quarterly (seasonally and work-day adjusted) figures. Core CPI is defined as excluding energy and unprocessed food. Sources: Eurostat, national government sources, and Citi.

Euro Area

Germany

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Germany moved into recession in mid-2008 and 2009 GDP is likely to show the largest fall since WWII. A sharp drop in foreign orders suggests that the important export sector is at the beginning of a painful downward correction. This slowdown in exports is likely to be a headwind for domestic capital expenditure and job creation. However, German nonfinancial companies are entering the global recession with healthy balance sheets, suggesting that there will be less need for expenditure cuts. Indeed, compared to other euro area countries, the direct impact of the financial crisis will be limited because the private sector debt ratio is modest and has declined in recent years. However, the government's €480 billion bank stabilization fund highlights the fragility of the German banking system. Despite this fund, banks are likely to tighten lending standards to households and companies. To cushion the adverse impact of falling exports and tighter lending conditions, the government agreed on a modest stimulus package, including tax reductions, public investment, and loans to households and small businesses for 2009 and 2010. With unemployment likely to rise significantly in 2009, further fiscal easing is possible. Regarding structural reforms, progress is unlikely before the autumn 2009 general election.

France

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The French economy is in stagnation, but thanks to a small increase in third-quarter GDP, the economy is not yet in recession. The French economy is suffering from tighter financial conditions caused by the financial crisis, lower global demand, and the housing correction. The French government already has injected fresh capital to the banking sector and provided guarantees for new bank debt, but the Bank of France lending survey highlights that financial conditions tightened further at the end of 2008. After the credit expansion in recent years, French companies and households probably face larger constraints than their German neighbors. To stimulate the economy, the French government plans to inject fresh capital to "strategic" industrial sectors. As such "nationalization" measures do not affect the general government deficit under the Stability and Growth Pact (SGP), this is a way of conducting fiscal easing that is not visible in the deficit ratio. However, France will be entering the cyclical downturn with an already high deficit ratio. As such, we expect France may breach the SGP's 3% deficit mark in 2008 and 2009.

Figure 68. Germany and France — Economic Forecast, 2008-10F

		Germany			France		
		2008F	2009F	2010F	2008F	2009F	2010F
Real GDP	YoY	1.3%	-1.5%	0.7%	0.9%	-1.2%	0.4%
Final Domestic Demand	YoY	1.2	0.4	1.1	1.0	0.1	1.2
Private Consumption	YoY	-0.4	0.7	0.7	0.9	0.2	1.1
Fixed Investment	YoY	4.1	-2.3	1.2	0.6	-1.9	1.2
Exports	YoY	3.9	-3.4	1.5	2.3	-2.6	0.5
Imports	YoY	4.6	0.5	2.4	2.6	1.6	2.8
CPI	YoY	2.6	0.8	1.1	2.9	0.8	1.1
Unemployment Rate	%	7.3	8.0	9.2	7.4	8.4	9.0
Current Account	€bn	146.7	78.3	77.0	-40.7	-41.7	-41.7
	% of GDP	5.9	3.2	3.1	-2.1	-2.1	-2.1
General Govt. Balance	€bn	-13.6	-62.0	-89.0	-62.2	-78.0	-89
	% of GDP	-0.5	-2.5	-3.5	-3.2	-4.0	-4.5
General Govt. Debt	% of GDP	67.3	69.8	72.5	68.2	72.7	76.0
Gross Trading Profits	YoY	2.4	-3.0	2.0	0.4	-2.0	-1.0

F Citi forecast. YoY Year-to-year growth rate. Note: The German annual figures are derived from quarterly Bundesbank data and, thus, adjusted for working days. The forecasts for GDP and its components are calendar adjusted. Sources: Deutsche Bundesbank, Statistisches Bundesamt, and Citi.

United Kingdom

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Prospects for the U.K. economy are grim, with a fairly severe recession now starting to unfold. We now are in a vicious circle — recession, asset price declines and financial stress are mutually reinforcing. We expect GDP to fall by 1.0%-1.5% in 2009, with domestic demand falling by about 2.5%. For GDP, this will be among the worst of the last 60 years, and for domestic demand, this would be the sharpest drop in over 60 years.

The economic and financial crisis has elicited a massive policy response, with liquidity injections, recapitalization of banks, guarantees for short- and medium-term bank debt, sharp rate cuts, and large near-term fiscal stimulus. These measures should be enough to reduce the more extreme downside risks to the economy, and ensure that retrenchment is not so abrupt that the basic structure of the economy disintegrates. Nevertheless, this does not alter the fact that the economy is heading for a severe recession. The massive debt-propelled boom in U.K. spending and asset prices has left a legacy of very high private debts, inflated house prices, overextended banks, deteriorating credit quality, and heightened risk aversion. Retrenchment and deleveraging inevitably will produce an extended period of extreme weakness in asset prices and spending. Unemployment is already rising quickly. However, most of the pain from the economic downturn — in terms of job losses, house price declines, business failures — probably still lies ahead.

CPI inflation already is falling sharply and is likely to briefly turn negative in late 2009, helped by falling commodity prices, the squeeze on margins from recession plus the VAT cut. The fiscal deficit is surging, and is likely to reach 8%-9% of GDP in 2009-10, the highest since WWII. The government's forecasts of a fairly rapid decline in borrowing thereafter are likely to prove overly optimistic.

The Bank of England is likely to cut rates further near term, and we expect rates to fall to 1.5% during 2009 and stay at that level through 2010. Even after that, rates will probably rise only gradually given the likelihood of extended tax hikes and a squeeze on public spending to get the fiscal position on a sustainable path.

Figure 69. United Kingdom — Economic Forecast, 2008-10F

					2008			2009			
		2008F	2009F	2010F	2Q	3QF	4QF	1QF	2QF	3QF	4QF
Real GDP	YoY	0.8%	-1.5%	0.9%	1.5%	0.3%	-1.0%	-1.7%	-2.2%	-1.5%	-0.4%
	SAAR				0.0	-2.1	-2.8	-1.8	-2.2	0.7	1.7
Domestic Demand	YoY	0.7	-2.5	0.3	1.9	0.0	-1.4	-2.3	-3.2	-2.9	-1.7
(Incl. Inventories)	SAAR				-0.6	-1.6	-3.4	-3.5	-4.3	-0.4	1.5
Consumption	YoY	1.9	0.0	1.1	2.5	1.1	0.3	-0.6	-0.2	0.2	0.7
	SAAR				-0.5	-0.7	-0.8	-0.4	1.2	0.8	1.3
Investment	YoY	-3.7	-14.4	-9.1	-2.8	-2.4	-0.7	-4.4	-8.8	-2.8	-1.4
	SAAR				-10.7	-9.2	-2.8	-16.5	-30.9	-10.6	-5.6
Exports	YoY	1.8	5.6	7.5	1.9	-0.3	2.6	3.2	4.6	7.4	7.1
	SAAR				-0.2	-1.2	9.1	5.4	5.2	9.7	8.2
Imports	YoY	1.4	1.3	5.2	3.1	-1.2	0.6	0.6	0.5	1.8	2.1
	SAAR				-2.1	0.3	-5.7	-1.2	-2.6	5.4	7.0
Unemployment Rate	%	5.6	7.5	8.8	5.4	5.9	6.2	6.6	7.2	7.9	8.4
CPI Inflation	YoY	3.5	1.0	2.9	3.4	4.8	3.6	2.4	1.1	0.0	0.6
Merch. Trade	£bn	-90.5	-60.8	-41.8	-21.5	-21.8	-25.9	-20.5	-15.7	-12.5	-12.1
	% of GDP	-6.2	-4.1	-2.7	-5.9	-6.0	-7.2	-5.7	-4.3	-3.4	-3.3
Current Account	£bn	-32.2	-3.0	23.5	-11.0	-6.4	-9.5	-6.5	-1.4	2.2	2.9
	% of GDP	-2.2	-0.2	1.5	-3.0	-1.8	-2.6	-1.8	-0.4	0.6	0.8
PSNB	£bn FY	-77.3	-124.2	-118.5							
	% of GDP	-5.3	-8.4	-7.7							
General Govt. Balance	% of GDP	-4.8	-7.9	-8.1							
Public Debt	% of GDP	45.8	53.3	59.0							
Gross Nonoil Trading Profits	YoY	0.1	-0.5	14.2							

F Citi forecast. SAAR Seasonally adjusted annual rate. YoY Year-to-year growth rate. Investment excludes inventories. Source: Citi.

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Switzerland

Economic growth next year probably will be much weaker than many expect. The inflation outlook has improved because of the economic recession, markedly lower oil prices, and the strong Swiss franc (CHF). As a result, the Swiss National Bank (SNB) should be able to loosen its monetary policy reins further. We anticipate an extended policy rate trough of 1%. With the one-week repo at just 0.1%, Switzerland may be among the first central banks to have to resort to unorthodox instruments to deal with the zero bound on rates. With the CHF extremely elevated, currency intervention would probably be the most straightforward and effective tool for the SNB.

Sweden

A recession in Sweden is now our base case. The widening financial crisis likely will reinforce the already deteriorating economy. Inflationary pressures — combined with lower prices on energy and other commodity prices — are likely to ease markedly. With inflation set to hit 1% next year, the bottom of the target range, sizable policy easing is needed and likely. We expect the repo rate to drop to 2.0% next year, and stay low through 2010. This would imply total easing of 275 basis points, which would be slightly more than the previous easing cycle of late 2002 to 2005. However, with growth and sentiment indicators indicating a weaker economic outlook than three years ago, more aggressive monetary loosening cannot be ruled out.

Denmark

Like the rest of the Nordic countries, Denmark is also facing some years of lackluster growth. The economy already is in technical recession, and is expected to contract slightly next year. Fundamentally, the Danish economy remains quite healthy without serious imbalances. This provides scope for stabilizing fiscal policy in case the downturn turns out more severe than expected. As a means of defending the krone (DKK), the Danish central bank has widened the policy rate spread versus the ECB to an all-time high of 175 basis points. We expect a gradual narrowing of the policy spread, with a return to the long-held spread of 25 basis points by late next year.

Norway

The deepening financial crisis is likely to reinforce the ongoing economic slowdown in Norway, but decent growth in oil-related sectors and an expansive fiscal policy should keep the Norwegian economy clear of recession. Inflation is likely to remain sticky, with headline and underlying CPI staying above target next year — and only meeting the target in 2010. Continued kroner (NOK) weakness is a challenge for the price outlook, making it less clear-cut as to whether the Norges Bank should ease as aggressively. Thus, we do not expect a rerun of the collapse in policy rates in 2002-04. Instead, we forecast a trough for the Norwegian policy rate of 3.5% next year.

Figure 70. Switzerland, Sweden, Denmark, and Norway — Economic Forecast, 2008-10F

		Switzerland			Sweden			Denmark			Norway		
		2008F	2009F	2010F	2008F	2009F	2010F	2008F	2009F	2010F	2008F	2009F	2010F
Real GDP[a]	YoY	1.7%	0.1%	1.9%	0.7%	-0.2%	1.5%	0.4%	-0.1%	1.0%	2.4%	1.3%	2.1%
Public Consumption	YoY	-0.8	0.9	0.8	0.7	0.8	1.4	1.7	1.8	1.3	3.6	3.5	3.5
Private Consumption	YoY	1.8	0.6	1.1	1.3	0.5	1.1	1.6	0.8	1.1	1.9	1.6	2.8
Investment (Ex Stocks)	YoY	-0.8	-4.1	-0.6	2.6	-1.9	1.4	-0.1	-1.8	0.0	3.7	0.9	1.4
Exports	YoY	4.0	0.2	4.1	2.8	0.7	2.9	2.9	0.9	2.8	2.1	1.5	2.0
Imports	YoY	0.7	-1.2	3.0	4.4	1.4	3.0	3.6	1.6	2.4	4.1	2.6	2.9
CPI (Average)	YoY	2.5	0.5	1.3	3.6	1.7	1.5	3.5	2.1	1.8	4.1	2.8	2.5
Unemployment Rate	%				6.2	6.9	7.8	1.8	2.3	3.1	2.5	3.2	3.9
Current Account	% of GDP	13.5	12.5	10.5	7.1	7.5	7.2	1.0	1.4	1.5	18.8	18.3	17.8
General Govt Balance	% of GDP				2.0	-1.1	-2.1	4.1	3.3	2.4	18.9	18.1	17.7
General Govt Debt	% of GDP				35.0	33.0	32.0	21.0	17.5	15.0	37.0	37.0	37.0

[a] For Norway, mainland GDP. F Citi forecast. YoY Year-on-year growth rate. Source: Citi.

Canada

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The medium-term outlook for Canada is dim. While the economy entered the financial market turmoil on strong footing, many of the fundamentals are set to erode. Canada's relatively healthy financial system provides an important backdrop for stabilization, but the impetus for recovery will be largely externally driven. As the economy is on course for a mild recession, the Bank of Canada (BoC) likely will respond by lowering rates further, and the government may implement a stimulus package. Growth should pick up in 2010, but the pace will depend on improvement in financial conditions and global demand.

Retrenchment among U.S. consumers will continue to weigh on Canadian exports, and the reduction in global commodity needs will dampen profits for key industries. Canadian businesses likely will continue to reduce investment and cut jobs, and consumer spending probably will continue to moderate. Financial losses and softening housing indicators pose additional risks to households' net worth. However, further depreciation of the Canadian dollar (CAD) should offer some positive offset for sheltered sectors.

Inflation prospects should continue to improve. The sharp retreat in food and energy commodity prices significantly lowered the trajectory for headline consumer inflation, reining in inflation expectations. Core inflation will briefly edge higher in the fourth quarter of 2008 as 2007 retail price discounts unwind, but it should remain below the 2% target for some time. On balance, softer domestic demand and limited pricing power portend a relatively benign underlying inflation path ahead.

All of the key downside risks that the BoC considered earlier this year have materialized. Domestic financial conditions have soured, exports are impaired by flagging U.S. domestic demand, and commodity price declines and volatility are diminishing terms of trade. The new balance of risks centers primarily around the success of the extraordinary measures of central banks and governments to provide liquidity, recapitalize financial institutions, and restore confidence in global financial markets. For Canada, the resolution of financial market dislocations, the rate of recovery in the U.S. economy, and a clearer perspective of global demand for commodities are the most pivotal factors.

Figure 71. Canada — Economic Forecast, 2008-10F

					2008F			2009F			
		2008F	2009F	2010F	2Q	3Q	4QF	1QF	2QF	3QF	4QF
Real GDP	YoY	0.7%	0.3%	2.8%	0.8%	0.5%	0.1%	0.0%	0.1%	0.2%	1.1%
	SAAR				0.6	1.3	-1.0	-0.8	0.9	1.7	2.5
Final Domestic Demand	YoY	3.2	1.5	2.0	3.9	2.7	1.9	1.6	1.4	1.6	1.5
	SAAR				2.1	0.6	2.7	1.2	1.0	1.7	2.0
Private Consumption	YoY	3.4	1.6	2.5	4.0	3.1	1.7	1.3	1.3	1.7	1.9
	SAAR				2.0	0.7	1.5	1.0	1.9	2.3	2.5
Government Spending	YoY	3.9	3.1	2.2	5.0	3.1	2.8	3.4	2.7	3.3	3.1
	SAAR				3.9	0.4	3.8	5.5	1.2	2.9	2.9
Private Fixed Investment	YoY	1.8	-0.7	0.2	2.1	1.1	0.9	0.3	-0.3	-0.8	-1.8
	SAAR				0.3	0.5	3.5	-3.0	-2.2	-1.3	-0.7
Exports	YoY	-4.6	-4.5	3.6	-4.5	-5.6	-5.6	-6.2	-5.7	-4.3	-1.8
	SAAR				-5.2	-5.4	-7.6	-6.5	-3.3	0.2	2.4
Imports	YoY	1.8	-1.1	0.8	5.2	-1.2	-2.2	-1.4	-2.5	-0.3	-0.4
	SAAR				2.8	-6.1	4.1	-5.8	-1.9	2.9	3.4
CPI	YoY	2.4	1.4	2.2	2.4	3.4	1.9	1.8	1.1	0.6	2.1
Core CPI	YoY	1.6	1.3	1.9	1.5	1.7	1.8	1.5	1.3	1.2	1.3
Unemployment Rate	%	6.1	6.9	6.8	6.1	6.1	6.3	6.7	7.0	6.9	6.8
Current Account Balance, SA	C$bn	5.3	-69.3	-52.9	32.8	22.6	-53.8	-56.8	-66.9	-76.5	-77.0
	% of GDP	0.3	-4.3	-3.1	2.0	1.4	-3.4	-3.6	-4.1	-4.7	-4.7
Net Exports (Pct. Contrib.)		-2.5	-1.2	0.9	-2.7	0.1	-4.6	0.2	-0.3	-1.1	-0.6
Inventories (Pct. Contrib.)		-0.1	0.2	-0.3	1.5	0.5	2.0	-2.3	0.2	1.0	1.0
Budget Balance	% of GDP	0.0	0.0	0.0							

F Citi forecast. YoY Year-to-year percent change. SAAR Seasonally adjusted annual rate. Sources: Statistics Canada and Citi.

Australia and New Zealand

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The Australian economy has not experienced the excesses and imbalances evident in many of the major economies, but it has not escaped the fallout from the global financial crisis. The outlook for business investment in particular deteriorated as funding tightened, confidence plunged, and as the terms of trade unwound from record highs. Until the global economy begins to recover, growth in Australia will depend on the rapid easing of monetary and fiscal policies to support household demand.

Indeed, existing and expected policy measures could add about 4% to household incomes through midyear 2009. The cash rate has also been cut from 7.25% to 4.25%, and a further move to 3.5% or lower is expected early in the new year. Fiscal authorities already eased by 1.7% of GDP, and we expect more stimulus in 2009 via automatic stabilizers and new initiatives. Indeed, the 2009 and 2010 budgets are likely to post relatively small deficits, against previous forecasts of surpluses of about 2% of GDP. At the same time, the abrupt decline in the Australian dollar (AUD) will cushion the loss of income to exporters from falling terms of trade. Overall, we expect economic growth to slow sharply to near 0.5% in 2009 (well below the consensus), before picking up moderately to 2% in 2010.

The New Zealand economy already is in recession. We expect real growth of just 0.5% in 2008 and 2009, with downside risks to this outlook. Inflation is currently near 5%, but we anticipate a return to the 1%-3% target range by mid-2009. The Reserve Bank of New Zealand already is responding to this weak outlook, having eased the cash rate by 325 basis points (from 8.25% to 5.0%). We expect another 100 basis points of easing early in the New Year, taking the cash rate to 4.0%, with a risk to the downside.

Figure 72. Australia and New Zealand — Economic Forecast, 2008-10F

	Australia			New Zealand		
	2008F	2009F	2010F	2008F	2009F	2010F
Real GDP[a]	2.2%	0.6%	2.0%	0.5%	0.5%	1.5%
Real GDP (4Q versus 4Q)	1.1	1.1	2.6	-	-	-
Real Final Domestic Demand	3.5	0.7	3.0	-	-	-
Consumption	2.6	1.6	2.7	-	-	-
Govt. Current & Capital Spending	5.5	3.5	3.5	-	-	-
Housing Investment	-0.6	0.9	8.7	-	-	-
Business Investment	7.0	-6.1	0.3	-	-	-
Exports of Goods & Services	4.3	4.0	3.5	-	-	-
Imports of Goods & Services	10.3	0.5	9.6	-	-	-
CPI	4.5	3.4	2.7	4.2	2.8	2.5
CPI (4Q versus 4Q)	4.5	3.2	2.5	4.3	2.5	2.8
Unemployment	4.2	5.4	6.4	4.5	6.0	6.5
Merch. Trade, BOP (Local Currency, bn)	6.2	23.6	-7.1	-	-	-
Current Account, (Local Currency, bn)	-46.9	-28.0	-61.9	-14.5	-12.2	-11.5
Percent of GDP	-4.0	-2.3	-4.9	-8.0	-6.5	-5.8
Budget Balance[b] (Local Currency, bn)	16.8	0.0	0.0	5.6	0.0	-1.7
Percent of GDP	1.5	0.0	-0.5	3.1	0.0	-0.9
General Govt. Debt (% of GDP)[c]	-3.8	-3.9	-4.3	0.0	2.8	5.3
Gross Trading Profits[d]	14.2	-1.8	1.7	NA	NA	NA

BOP Balance of payments basis. CPI Consumer Price Index. F Citigroup forecast. NA Not available. [a]Averaged-based GDP in Australia; Production in New Zealand. [b]Fiscal year ending June. Australia's underlying cash balance [c]Australia and New Zealand Budget definition and forecasts — debt equals an asset. [d]Company gross operating surplus. Source: Citi.

China: Supporting Growth

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The recent growth slowdown in China was brought about abruptly by the widening global recession. A key theme for the Chinese economy in 2009 and beyond will likely be fiscal stimulus to support growth and generate a soft landing. The government's strong political will and its capability in mobilizing resources imply that growth will probably stay at 8%–9% over the next two years. Growth in that range would be in line with China's long-term growth potential.

China's GDP growth already slowed to 9% in the third quarter from 10.6% in the first quarter. But the near-term outlook appears to be even more worrisome. In October, the purchasing managers' indices fell well below 50, industrial production cooled rapidly, auto sales collapsed, steel inventories piled up quickly, corporate earnings weakened, and housing prices began to fall across the country. Some of our competitors are predicting a hard landing, arguing that the Chinese economy already is a typical capitalist country and should be subject to normal business cycles.

China has been implementing market-oriented reforms for 30 years, but it is by no means a typical market economy. The state sector contributes about 43% of total fixed asset investment and the state-owned banks account for nearly 60% of total banking assets. Fiscal revenues grew by 25% per annum during the past five years and rose to 21% of GDP from 11% of GDP in 1997. This high rate of state involvement gives the government direct control over production that is unusual but helpful in times of weakening private demand.

Beyond direct control, there is also scope for traditional macroeconomic easing. Public debts are only about 30% of GDP. Abundant bank liquidity could also be an important contributing factor to robust growth. Total deposits are about 150% of GDP and the deposit reserve requirement ratio is still at 16%.

The announcement of the Rmb4 trillion government stimulus package in early November demonstrated determination and the ability to support growth. This package, which is equivalent to 16% of 2007 GDP, will be spent before the end of 2010 in ten key areas, including railways, rural electricity and gas facilities, low-rental housing, agricultural subsidies, and minimum income support. About Rmb2.5 trillion was known to the market. The additional Rmb1.5 trillion will likely add 2–3 percentage points to GDP growth in 2009 and 2010.

The government plans to issue a total of Rmb1.2 trillion of public debt to finance this package. About Rmb2 trillion will probably be funded by supplementary loans from the banking system. Many investors are skeptical about the government's ability to start projects quickly. Past experience suggests, however, that the government can be very effective and decisive in a crisis. In the week following the central government announcement, the provincial governments of Beijing, Shanghai, Jiangsu, and Guangdong all announced investment projects worth hundreds of billions of yuan in each province.

Expenditure-based GDP components all contained elements of resilience in recent months. The trade surplus rebounded, nonresidential investment accelerated, and nondiscretionary consumer spending was quite stable. These could be another important reason for the possible soft landing. However, it is also important to recognize that official production-based GDP measures probably underestimate China's economic

growth. The official GDP will likely show growth of less than 8% in the current quarter and the first quarter of 2009 before the stimulus package lifts growth aggressively.

Our call for a soft landing comes not just from fiscal policy or defects in the measurement of GDP, but also from shifting monetary policy, especially where fiscal expansion might not have immediate effects. CPI inflation is likely to fall below 3% by yearend and overcapacity issues would likely spread and present deflationary risks in 2009. The latest 108bp rate cut demonstrated policymakers recognition that the severe downside economic risks far outweigh future inflation threats. As a result, we believe further rate cuts are likely. But to stimulate lending activity, more unconventional measures, such as credit guarantees, may be necessary.

Rapid appreciation of the CNY against the USD halted abruptly around midyear as the USD began to rise and export markets started to weaken. During much of the second half, the CNY/USD had remained relatively stable, although the yuan appreciated sharply against other currencies, including the EUR and the AUD. The PBOC does not rule out depreciating the CNY against the USD in order to support export growth. The CNY/USD rate will probably remain sticky during the first half of 2009. But over time, we still expect the yuan to gain modestly against both the USD and the basket of currencies of China's main trading partners, especially if the USD resumes its weakening trend.

While growth itself might not be at risk, China's structural imbalance problem could worsen as a result of the stimulus policies. Although the government devised measures such as low-rent housing and minimum income supports, infrastructure spending will still be at the core of the package supporting growth. Therefore, the overinvestment and inefficiency problems will probably worsen. Meanwhile, corporate earnings are likely to suffer further, adding pressure on the near-term performance of the asset markets.

China's housing market also faces serious risk. Although both local and central governments will attempt to stabilize the markets, housing prices are likely to drop across the country as income expectations decline. As the housing sector accounts for 20% of total fixed asset investment and 20% of total bank loans, a weakening housing market could have spillover effects on both the real economy and the financial system.

Figure 73. China — Economic Forecast, 2008-10F

		2008F	2009F	2010F
Real GDP	YoY	9.3%	8.2%	8.5%
Real Final Domestic Demand	YoY	13.4	13.3	12.1
Consumption	YoY	12.7	10.0	10.3
Fixed Capital Formation	YoY	15.0	13.8	14.0
Exports	YoY	21.4	5.4	11.0
Imports	YoY	26.0	9.3	13.5
Industrial Production	YoY	13.6	4.2	10.5
Merchandise Trade Balance	$bn	274.1	241.4	235.1
FX Reserves	$bn	1975	2100	2200
Current Account	% of GDP	9.4	7.2	6.4
Fiscal Balance	% of GDP	-0.2	-1.2	-1.6
General Govt. Debt	% of GDP	38.6	38.6	41.5
Urban Unemployment Rate	%	4.0	4.3	4.3
CPI	YoY	6.1	1.4	3.5
Exchange Rate	CNY/$	6.92	6.72	6.40
One-Year Base Lending Rate	%, p.e.	6.39	3.96	3.96

Source: Citi estimates.

Latin America

Brazil

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We expect the 250-basis-point tightening cycle, which began in April 2008, and a more challenging global outlook to lead to a deceleration of GDP growth to 3% in 2009. Investment is likely to lead the slowdown, as financing sources become scarce and the weaker currency increases the costs of capital goods imports. A global recession should toughen financing sources, leading to an adjustment of the current account. We expect a 2009 trade balance of US$44 billion (3.3% of GDP), as the weaker currency rate should offset the drop in commodity prices and export volumes. We expect monetary policy to tighten in early 2009, but policymakers could ease in the second half as the economic deceleration becomes more significant. Fiscal policy will likely ease, with the primary surplus falling to 3.8% of GDP in 2009. The main reasons behind this are that the government will face lower revenue growth and rigidities, preventing a marked slowdown of spending. Despite the more negative scenario, we do not expect the government to abandon the pillars of macroeconomic stability: inflation targeting, a floating currency, and a primary surplus.

Mexico

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A longer recession in the United States does not bode well for Mexico. We have revised our GDP growth forecast for 2009 down to 0.5%. We expect export growth will decelerate to -2.4% from 10.7% in 2008. Private consumption will expand modestly as growth rates for employment, workers' remittances, and banking credit to households decelerate. A countercyclical fiscal policy is the only mitigating factor: The broad fiscal deficit will likely go up to 2.8% of GDP from 1.8% in 2008, as extra spending worth MXN90 billion will allow infrastructure spending as a proportion of GDP to reach 4.8%. Concerns about falling oil prices threatening the execution of this program have eased, as the government has confirmed it hedged the budgeted oil price against declines. With inflation risks clearly receding — we think the pass-through from recent peso depreciation will be limited — monetary policy is set to adopt an easing stance. We expect Banxico to make cuts totaling 225 basis points between now and yearend 2009, when we expect the overnight rate to reach 6.0%. Financial conditions and the extent of global risk aversion could influence the timing of Banxico actions, but we think the direction is beyond doubt.

Figure 74. Brazil and Mexico — Economic Forecast, 2008F-10F

		Brazil			Mexico		
		2008F	2009F	2010F	2008F	2009F	2010F
Real GDP	YoY	5.2%	3.0%	4.0%	2.0%	0.5%	3.0%
Final Domestic Demand	YoY	7.4	3.0	3.5	3.3	1.6	4.1
Private Consumption	YoY	5.8	2.6	2.4	2.8	1.1	3.8
Fixed Investment	YoY	17.1	3.5	3.3	5.6	3.0	5.9
Exports	YoY	2.3	5.4	7.1	3.3	0.5	5.6
Imports	YoY	20.9	5.5	3.7	7.1	3.3	8.0
CPI	YoY	5.7	5.6	4.1	5.1	4.9	3.4
Unemployment Rate	%	7.7	8.5	8.5	3.9	4.1	3.7
Current Account	US$bn	-27.8	-16.2	-27.6	-18.3	-29.8	-33.6
	% of GDP	-1.7	-1.1	-1.8	-1.6	-2.7	-2.8
Fiscal Balance	% of GDP	-1.5	-1.8	-2.0	0.0	-1.8	-1.4
US Dollar Exchange Rate	Average	1.8	2.0	2.0	11.1	12.5	11.8

F Citi forecast. Source: Citi.

Argentina

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In our base case, we expect our Argentina Activity Index (AAI) to fall 2% in 2009. Activity could fall by 5% if downside risks to global growth materialize or domestic policies continue to harm credibility. We expect the peso to trade at about USD/ARS4.25 at the end of 2009. Downside risks are significant, but we acknowledge that the government will likely try to limit currency depreciation as much as possible before the October 2009 midterm elections. We expect expansionary fiscal and monetary policies at the beginning of 2009, and increasing capital controls to avoid the loss of reserves. However, over time these policies should prove ineffective in our view, and a devaluation of the peso will be difficult to avoid.

Chile

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The drop in international demand and prices will likely lower exports by about 25% next year. Imports may also fall, but the current account deficit will probably hover around 4.5% of GDP in 2009. Fiscal and monetary policies will likely limit the downside. Fiscal policy can be expansionary because the government saved the copper windfall from 2004 to 2008. We also expect the central bank to cut interest rates aggressively, but widespread indexation practices will likely make it delay the cuts until the second quarter. We believe activity will grow between 2% and 3%, with downside risks, and we expect all credit-driven sectors to be flat or down relative to 2008.

Venezuela

The drop in oil prices is likely to expose underlying macro imbalances, leading to important external and fiscal adjustments, probably through a series of significant devaluations. The government will likely begin with a combination of timid devaluations and depletion of its large public asset stock to finance spending in the near term. The more aggressive the devaluations, the more fiscal room the government buys at the cost of higher inflation. The government's focus on social spending increases the likelihood of devaluations. Ultimately, we think it is highly probable that the government's slow pace of exchange rate adjustment may mean too little too late, and an eventual large forced disorderly adjustment is likely in the medium term. The likelihood of a credit event will increase sharply over the next two years.

Figure 75. Argentina, Chile, Venezuela – Economic Forecast 2008F-10F

		Argentina			Chile			Venezuela		
		2008F	2009F	2010F	2008F	2009F	2010F	2008F	2009F	2010F
Real GDP	YoY	6.9%	2.9%	2.0%	4.1%	2.3%	3.5%	5.9%	0.5%	-2.5%
Final Domestic Demand	YoY	9.1	2.1	1.7	9.7	2.4	4.3	5.3	-0.4	-3.0
Private Consumption	YoY	8.0	2.2	1.5	5.6	1.4	2.6	7.7	2.5	-2.1
Fixed Investment	YoY	13.7	1.0	2.1	24.1	1.5	7.6	2.0	-7.5	-3.9
Exports	YoY	2.3	-2.2	2.0	1.8	-2.0	2.0	-0.2	-1.2	2.0
Imports	YoY	18.9	-7.3	2.0	16.0	-2.0	4.0	2.7	-2.6	-1.5
CPI	YoY	22.9	17.7	17.5	8.8	5.8	3.5	31.5	37.0	46.0
Unemployment Rate	%	8.5	9.7	10.0	7.8	8.6	8.2	7.5	8.4	8.5
Current Account	US$ bil	8.1	2.8	4.0	-4.4	-6.6	-2.1	43.6	4.4	19.6
	% of GDP	2.5	0.9	1.4	-2.5	-4.5	-1.4	13.5	1.2	7.0
Fiscal Balance	% of GDP	1.5	-0.2	-0.2	5.4	0.0	0.5	-3.2	-5.8	-3.5
US Dollar Exchange Rate	Average	3.2	3.8	4.9	528.8	671.8	702.5	2.2	2.7	4.1

Notes: F Citi forecast; Argentina CPI forecasts are based on our own estimate of the country's 'true' inflation. Source: Citi.

Central and Eastern Europe

Russia

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The economy will remain exposed to the uncertainties of global growth and commodity prices, adding downside risks to our 2009 GDP forecast of 4.5%. The banking system is in crisis, a crisis that has spilled over into the real sector. The authorities have announced a package that combines liquidity provisions for banks and a fiscal stimulus close to US$400 billion, or about 25% of GDP. The disbursement of funds, however, has been slowed by legislative and administrative hurdles. Domestic private banks are likely to remain cut off from funding and suffer from depositor withdrawals, increasing the likelihood that they will be nationalized. With commodities accounting for over 80% of Russia's exports, the ruble has come under pressure. We believe that the central bank will try to manage a modest ruble depreciation, eschewing rate hikes. State support should remain crucial for the economy in 2009 and 2010. If temporary liquidity is extended too long, however, it could hinder Russia's long-term potential growth.

Turkey

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With subpar growth expected in coming years, balancing growth concerns with the need to ensure disinflation and external adjustment is an important challenge for policymakers. Specifically, we look for a marked slowdown in GDP growth to 1% this year and a contraction of 1% in 2009. Looking ahead, we expect an IMF arrangement and its implementation to shape the country's economic performance. In the fiscal sphere, we believe that the 2009 budget is not tight enough to form a credible base for a possible IMF arrangement. As a result, we think additional fiscal measures are necessary. Moreover, we believe the adoption of a fiscal rule is the most credible policy option due to the rising pressure to alleviate the tax burden and increase public investment. Meanwhile, Turkey cannot afford to put price stability on the back burner in view of its dismal record since the adoption of inflation targeting. In this respect, the Central Bank of the Republic of Turkey's (CBT) surprise rate cut of 50 basis points in November does not bode well for the credibility of the inflation targeting regime. Nonetheless, the likely IMF program should lead the CBT to revise its stance and pursue a more prudent policy.

Figure 76. Russia and Turkey — Economic Forecast, 2008F-10F

		Russia			Turkey		
		2008F	2009F	2010F	2008F	2009F	2010F
Real GDP	YoY	7.1%	4.5%	5.9%	1.0%	-1.0%	4.2%
Final Domestic Demand	YoY	18.1	6.4	9.5	0.8	-2.2	3.9
Private Consumption	YoY	14.0	7.0	10.0	0.8	-1.0	3.7
Fixed Investment	YoY	19.0	5.5	10.0	-0.3	-5.9	5.0
Exports	YoY	7.6	2.4	5.0	-0.5	-2.7	5.1
Imports	YoY	20.5	7.5	13.8	-1.8	-6.9	4.4
CPI	YoY	14.2	10.2	6.9	10.6	10.5	7.6
Unemployment Rate	%	5.4	7.0	7.0	10.2	11.3	10.8
Current Account	US$bn	126.6	5.8	-39.9	-48.2	-31.3	-29.3
	% of GDP	7.5	0.4	-2.3	-6.6	-5.0	-4.3
General Govt. Balance	% of GDP	3.5	-0.4	-1.0	-1.8	-2.5	-2.3
US Dollar Exchange Rate	Average	24.7	31.1	32.9	1.3	1.7	1.8

F Citi forecast. Sources: Citi.

Hungary

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The economy is likely to slip into recession in 2009 and face continued weakness in 2010. As the external outlook continues to deteriorate, the reduction in capital inflows to the banking sector is likely to lead to a sharp slowdown in credit growth. In addition, fiscal and monetary policies have limited room to stimulate growth without jeopardizing financial stability. We expect a sharp decline in foreign exchange credit flows to the private sector to drag down consumption and investment. Rising unemployment, tight wage policies, and rising funding costs are likely to lead to deterioration in the quality of bank loan portfolios, adding to the capital squeeze.

Weak domestic demand, strict wage policy, and the correction in energy prices suggest inflation may approach the central bank's 3% target in the second half of 2009. Nonetheless, the scope for fast rate cuts is likely to be limited by exchange rate vulnerability. We expect the currency to remain under pressure as bank foreign exchange assets and nonresident portfolio investments continue to unwind. Therefore, we expect rate cuts to begin in the spring of 2009 at the earliest and see continued sluggish growth.

Poland

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Despite relatively strong performance in 2008, the Polish economy is likely to slow substantially in coming quarters and GDP growth will likely decline below 3% year to year in 2009. Recession in the euro zone will contribute to weaker export growth, while tighter lending standards by Polish banks is likely to limit investment growth in 2009 and 2010. Price pressures will weaken because of lower commodity prices and below-potential economic growth, pushing the year-to-year inflation rate toward the central bank's inflation target of 2.5%.

A substantial GDP slowdown in Poland, as well as rate cuts by other central banks, will likely open the door for monetary easing in coming months. Taking this into account, we expect the Monetary Policy Council to reduce interest rates by 175 basis points within the next two years. Although the government is planning to adopt the euro as early as 2012 (which would call for ERM-2 entry in 2009), we think the accession is likely to be delayed owing to a lack of political support and a deteriorating fiscal outlook.

Figure 77. Hungary and Poland — Economic Forecast, 2008F-10F

		Hungary			Poland		
		2008F	2009F	2010F	2008F	2009F	2010F
Real GDP	YoY	1.1%	-0.8%	1.7%	5.3%	2.6%	3.7%
Final Domestic Demand	YoY	-0.5	-1.8	1.0	6.4	3.6	4.0
Private Consumption	YoY	0.7	-1.1	0.8	5.4	4.0	3.8
Fixed Investment	YoY	1.4	-0.3	1.5	13.3	3.3	5.0
Exports	YoY	7.2	4.1	7.0	7.1	0.0	6.0
Imports	YoY	6.7	3.8	6.8	9.8	4.5	7.0
CPI	YoY	6.2	3.5	2.6	4.3	3.0	2.2
Unemployment Rate	%	7.7	8.2	7.9	13.3	12.5	13.0
Current Account	US$bn	-8.7	-4.7	-4.8	-25.7	-25.0	-21.9
	% of GDP	-5.5	-3.7	-3.6	-4.8	-5.8	-4.3
General Govt. Balance	% of GDP	-3.4	-2.6	-2.8	-2.2	-2.4	-3.0
US Dollar Exchange Rate	Average	172.0	218.2	219.5	2.4	3.2	2.9

F Citi forecast. Sources: Citi.

Middle East and Africa

Israel

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Israel's economy will remain exposed to global economic and financial uncertainties in 2009 despite the relative resilience of its banking sector to the wider credit crunch. Weakened demand among Israel's main trading partners, notably the United States, will increasingly weigh on the manufacturing sector, contributing to deteriorating labor market dynamics. Against this backdrop, we expect growth to fall to 1.3% in 2009 from 3.7% this year, but note that risks are to the downside.

Despite downward sticky inflation, the 125 basis points in rate cuts delivered since the beginning of October has clarified the Bank of Israel's commitment to growth objectives. The combination of these cuts and the foreign exchange reserve accumulation program has contributed to shekel weakness, which we expect to be reinforced by additional monetary easing into 2009. We also expect further fiscal stimulus at a time of falling tax revenues and political uncertainty from the early general elections, widely expected to be held in the first quarter of 2009.

South Africa

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Risks to the growth outlook remain skewed to the downside. Export growth is suffering from weak global demand. Slowing corporate earnings are likely to dampen private-sector investment plans. The housing market is flat and private consumption is unlikely to revive until inflation and interest rates have declined, which probably will not be before the second half of 2009. However, continued ambitious public infrastructure spending plans and a moderately countercyclical fiscal stance should help limit the risk of recession. Longer term, 5% growth remains reachable provided that policies remain focused on boosting physical and human capital growth.

The mix of declining inflation and sub-par growth should allow the South African Reserve Bank to cut rates significantly. We look for a cumulative 200 basis points of cuts in 2009 and another 100 basis points in 2010, although we think that the easing process will commence in June 2009, later than the markets discount. Longer term, however, the likelihood of sustained real exchange rate depreciation — as the wide current account deficit unwinds only gradually — suggests that rates will not fall as low as in the previous cycle. In that context, domestic bonds appear somewhat expensive.

Figure 78. Israel and South Africa— Economic Forecast, 2008F-10F

		Israel			South Africa		
		2008F	2009F	2010F	2008F	2009F	2010F
Real GDP	YoY	3.7%	1.3%	2.7%	3.3%	2.3%	3.8%
Final Domestic Demand	YoY	3.5	2.5	2.7	4.7	2.5	4.3
Private Consumption	YoY	4.6	3.1	2.0	2.6	1.2	3.3
Fixed Investment	YoY	0.2	-1.0	4.6	8.7	5.3	9.5
Exports	YoY	6.2	2.5	6.6	1.9	2.7	3.9
Imports	YoY	3.9	3.4	6.3	4.0	3.1	6.7
CPI	YoY	4.7	3.4	2.6	11.7	6.5	5.9
Unemployment Rate	%	6.1	6.4	0.0	24.2	23.9	23.5
Current Account	US$bn	0.7	-0.2	-0.3	-22.6	-20.6	-21.1
	% of GDP	0.4	-0.1	-0.1	-8.0	-7.8	-7.6
General Govt. Balance	% of GDP	1.2	0.1	0.6	-0.3	-1.7	-1.3
US Dollar Exchange Rate	Average	3.6	3.8	3.7	8.1	9.6	10.0

F Citi forecast. Source: Citi.

Asia

India

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Slumping domestic investment on that back of tighter credit standards and external weakness should slow GDP growth to 6.8% in fiscal-year 2009 and 5.5% in fiscal-year 2010. Companies across sectors have begun announcing plant shutdowns and delays in project implementation. The negative factors appear to more than offset the possible lagged impact of aggressive monetary easing and lower commodity prices. A poor initial fiscal position leaves no room for discretionary fiscal easing. Our forecasts factor in a further 200-basis-point reduction in policy rates. Given the global recession, we expect export growth to slow to 5.9% in fiscal-year 2010. However, lower oil prices, coupled with new oil and natural gas discoveries, will likely result in an improvement in the trade and current account deficits in 2010. We expect the rupee to remain weak until deleveraging subsides and risk levels normalize. Longer term, we expect the INR to marginally strengthen, but the timing of the reversal is difficult to estimate and depends on the normalization of global risk appetite. Given the prevailing uncertainty associated with external financing, we expect the INR to trade at Rs48.5/USD with a range of +/-Rs2.

Indonesia

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Indonesia is the second least open economy in Asia, but the country's domestic demand resilience is increasingly being stressed by external funding pressures. There is a growing risk that external funding pressures could morph into domestic capital flight, thereby adding to rupiah (IDR) weakness. This risk is behind the government's new foreign exchange rule that broadens the reporting requirement of foreign currency purchases to residents. Indonesia's seeming reluctance to access the IMF's new short-term liquidity facility to bolster its currency intervention efforts raises the possibility that more stringent currency regulations could be imposed, especially if IDR weakness persists. The overall fiscal capacity to pump up the economy is limited by the need to contain bond issuance. Fiscal authorities want to avoid adding to bond market selling pressure caused by the unwinding of positions by nonresidents. Moreover, the need to limit currency weakness amid the still-high inflation backdrop constrains the speed at which the central bank can ease monetary policy to support the economy. The policy rate has probably peaked, but we expect Indonesia to lag the rate-cut cycle within Asia.

Figure 79. India and Indonesia— Economic Forecast, 2008F-10F

		India			Indonesia		
		2008F	2009F	2010F	2008F	2009F	2010F
Real GDP	YoY	6.8%	5.5%	6.6%	6.0%	3.8%	5.0%
Final Domestic Demand	YoY	7.1	5.5	6.6	7.7	5.5	5.8
Private Consumption	YoY	7.0	6.0	6.5	5.4	3.8	4.4
Fixed Investment	YoY	7.3	4.4	6.1	14.8	4.2	8.8
Exports	YoY	7.0	5.9	8.8	13.5	4.3	6.4
Imports	YoY	7.7	5.6	6.3	16.3	8.6	9.0
CPI	YoY	10.5	5.0	4.5	10.2	6.0	5.0
Unemployment Rate	%	7.3	7.5	7.5	9.4	9.8	9.5
Current Account	US$bn	-40.2	-26.1	-19.3	4.9	1.8	0.0
	% of GDP	-3.5	-2.1	-1.3	1.0	0.4	0.0
General Govt. Balance	% of GDP	-6.6	-6.0	-5.5	-1.3	-1.5	-1.5
US Dollar Exchange Rate	Average	47.0	48.0	47.0	9329	11300	9250

F Citi forecast. Sources: Citi.

Korea

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GDP growth in 2009 will likely be the lowest since the 1998 currency crisis, as Korea faces slower exports and credit tightening. Policymakers are likely to deploy considerable monetary and fiscal stimulus. We expect the Bank of Korea to cut its policy rate to a historically low level of 3.0%, and the government already has implemented or announced a total of W33 trillion in fiscal easing packages. Besides the timing of global economic recovery, the key uncertainty for Korea lies in the process of financial market restructuring. The chances of increasing forbearance by banks on potential nonperforming loans, which could be encouraged by the government, would hinder effective financial intermediation and delay the timing of recovery in domestic demand.

Taiwan

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Real GDP growth in 2009 will probably dip to the slowest pace since 2002, but it should recover to a still below-trend pace in 2010. As a small open economy, Taiwan is highly vulnerable to the slowing of global growth and trade. But because of a conservative leverage ratio, the domestic banking system is not likely to experience sharp credit tightening and a liquidity squeeze like those in the United States and Europe. A closer economic tie with China and some boost from Chinese tourists and Chinese investments should help buffer the slowdown in domestic demand. The government will also likely adopt a more expansionary fiscal policy to fight against downside growth risk. However, we expect short-term interest rates and bond yields to stay at historically low levels next year, before rising gradually in 2010. The new Taiwan dollar will likely weaken against the dollar along with other Asian currencies next year, but it should stay relatively stable.

Thailand

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Political instability is likely to continue to threaten the government's ability to prime the economy after proposing to hike the fiscal deficit target to 3.5% of GDP in fiscal-year 2009 from the pre-global crisis target of 2.5%. Since the government lacks scope for aggressive fiscal spending, the risk of a near-term export collapse should deflate GDP growth to less than 2% year to year and risk recession. With a temporary easing of political tensions, the below-trend growth prospects, a larger fiscal gap, and a weaker current account will likely soften the baht. The Bank of Thailand, despite having official reserves equal to about 37% of GDP, is unlikely to defend the baht with its accommodative bias.

Figure 80. Korea, Taiwan, Thailand — Economic Forecast, 2008F-10F

		Korea			Taiwan			Thailand		
		2008F	2009F	2010F	2008F	2009F	2010F	2008F	2009F	2010F
Real GDP	YoY	4.2%	2.0%	3.8%	2.1%	1.5%	3.0%	4.5%	1.0%	3.1%
Final Domestic Demand	YoY	1.7	0.9	2.5	-1.3	1.2	1.6	2.3	3.7	1.6
Private Consumption	YoY	1.9	1.4	2.5	-0.1	1.5	2.1	3.3	4.8	0.0
Fixed Investment	YoY	2.1	-2.5	2.1	-4.6	-0.9	-0.7	10.9	0.0	3.1
Exports	YoY	8.9	2.7	5.6	4.2	-0.1	3.6	5.3	-1.2	4.0
Imports	YoY	6.6	0.7	4.0	0.1	-1.3	1.4	6.0	0.6	4.4
CPI	YoY	4.7	3.0	2.5	3.6	1.0	1.2	5.6	1.1	2.5
Unemployment Rate	%	3.2	3.5	3.6	4.0	4.5	4.3	2.0	2.5	2.0
Current Account	US$ bil	-9.3	16.0	14.0	20.0	30.0	35.0	1.1	5.5	3.9
	% of GDP	-1.0	2.0	1.5	5.0	7.8	8.4	0.4	2.0	1.3
Fiscal Balance	% of GDP	3.0	1.2	1.0	-1.1	-1.7	-1.5	-0.4	-2.9	-1.5
US Dollar Exchange Rate	Average	1105	1300	1200	31.5	33.9	32.7	33.3	35.4	35.0

Notes: F Citi forecast. Source Citi.

APPENDIX: CONSTRUCTING THE CITI RESILIENCY INDEX

The Citi Resiliency Index is designed to quantify a country's ability to withstand external shocks, either real or financial. It divides a country's resiliency in five broad, equally weighted categories:

- openness to international trade and financial flows
- external financing needs
- balance sheet vulnerabilities
- constraints on fiscal, monetary, and exchange rate policies
- government effectiveness

The first two categories capture the exposure to real or financial flows from overseas. The third ranks countries by the resilience of their government, corporate, and financial firms' balance sheets to shocks. Greater degrees of leverage, lower liquidity, or capital all create vulnerabilities that can amplify the effects of shifting international trade and financial flows. The fourth and fifth categories capture both the scope for countercyclical policy action and how effective policy actions are likely to be. A strong fiscal and current account balance, low inflation, and fairly valued currency provide room for countries to counter external shocks. But the scope for action is not enough. Timely, appropriate policies need to be put in place. A government's capacity to manage effectively is also crucial to a country's overall resiliency.

In total, the index includes 20 variables, collected from a variety of sources and weighted in relation to our judgement of their importance to resiliency. These data, their sources, and weights are indicated below.

Figure 81. Citi Resiliency Index: Categories, Weights and Sources

Measure	Weight (%)	Data Source
Openness to International Trade and Financial Flows		
Share of total external trade to GDP	12	National accounts definition. Official data collected by Haver Analytics
Total FDI activity (percent of GDP)	4	FDI data from IMF Balance of Payments Statistics except Hungary where we use official data and Nigeria where we used our own estimate. GDP data from official sources.
Worker's remittances share to GDP	4	FDI data from IMF Balance of Payments Statistics. GDP data from official sources.
Balance Sheet Vulnerabilities		
Government debt as percent of GDP	4	Moody's Investor Service
Share of general government foreign currency and foreign currency-indexed debt to total general government	2	Moody's Investor Service
Net international investment position	4	IMF International Financial Statistics
Corporate net debt to book equity ratio	4	Citi Investment Research
Loan-to-deposit ratio	2	Citi Investment Research where we have research coverage, and Central banks. If the actual loan-to-deposit ratio data is not available, we construct estimates based on the central banks' data on private loans and total deposits (all types).
Capital adequacy ratio	2	Citi Investment Research and central banks where available. For the Philippines, http://www.bsp.gov.ph/banking/pbs_new/3.htm. Hungary - http://www.iht.com/articles/2008/11/06/business/imf.php. Russia - http://cbr.ru/analytics/bank_system/obs_081001.pdf. Turkey - http://www.tbb.org.tr/english/bulten/3%20aylik/bankabilgileri/200609/The%20Banking%20System%20in%20Turkey.pdf. Ukraine - http://www.ftglobalevents.com/corporateukraine/images/contentpage/national%20bank%20of%20ukraine%20-%20kireev.ppt. South Africa - http://www.moneyweb.co.za/mw/view/mw/en/page38?oid=221911&sn=Detail
Nonperforming loans ratio	2	Citi Investment Research. Philippines - Bangko Sentral ng Pilipinas (http:\\www.bsp.gov.ph/banking/pbs_new/7.htm). Russia - http://cbr.ru/analytics/bank_system/obs_081001.pdf
Financing Needs		
Gross external financing requirement	14	See Donald Hanna and Tania Reif, "IMF & Fed Extend Liquidity: Money for Nothing and Swaps for Free," Citi, October 30, 2008. We used our estimate of Gross External Financing Requirements excluding Short-Term Debt
Foreign holding of equity	2	Fitch Ratings Special Report: Emerging Markets Liquidity, August 23, 2007
Net international reserves cover of short-term debt	4	International reserves data from the IMF International Financial Statistics. Short-term debt data from the Joint BIS-IMF-OECD-World Bank statistics on External Debt (http://www.jedh.org/)
Constraints on Fiscal, Monetary and Exchange Rate Policies		
CPI inflation	4	Citi forecasts for 2009
Fiscal balance to GDP	4	Citi forecasts for 2009
Current account balance to GDP	3	Citi forecasts for 2009
One-year changed in net barter terms of trade	4	Calculated using data from the World Bank, World Development Indicators
One-year change in the real effective exchange rate	5	Based on CTERI, Citi's preferred measure of the real effective exchange rate (available on Citi FIDirect website: https://fidirect.citigroup.com)
Government Effectiveness		
Quality of regulatory measures	10	World Bank Worldwide Governance Indicators: 1996-2007 (http://www.govindicators.org)
Government effectiveness	10	World Bank Worldwide Governance Indicators: 1996-2007 (http://www.govindicators.org)

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