

Stimulus, Recovery and Exit Policy: G20 Experience and Indian Strategy

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There are large variations among the G20 countries in their deceleration experiences, transmission mechanisms and their current macroeconomic outlook. In an integrated global economy, it is essential that the major economies coordinate their policies. But coordination does not imply simultaneous stimulus withdrawal from all G20 countries. Indeed, a phased withdrawal is probably the best guarantee against the risk of a negative global shock leading to another recession in the event of a simultaneous stimulus withdrawal from all G20 countries. Hence, this paper argues that each country needs to set the timing, scale and composition of its stimulus withdrawal keeping in mind its own macroeconomic outlook.

1 Introduction

The prompt, coordinated global response to the Great Recession, even before the group of 20 (G20) had formally emerged as the main platform for global policy coordination in the international financial architecture, was quite remarkable. It prevented the potential transformation of the Great Recession into another protracted global depression like that of 1929. The worst is now over and most economies have turned around, some more and others less. However, G20 policy coordination on policies to exit from the stimulus has been less impressive. Differences remain, especially among the advanced G20 countries, about the timing as well as the scale and composition of policies to wind down their stimulus packages. There are large variations among the G20 countries in their deceleration experiences, transmission mechanisms and their current macroeconomic outlook. Hence, this paper argues that each country needs to set the timing, scale and composition of its stimulus withdrawal keeping in mind its own macroeconomic outlook. In an integrated global economy, it is essential that the major economies coordinate their policies. But coordination does not imply simultaneous stimulus withdrawal from all G20 countries. Indeed, a phased withdrawal is probably the best guarantee against the risk of a negative global shock leading to another recession in the event of a simultaneous stimulus withdrawal from all G20 countries. Section 2 of this paper summarises the varieties of deceleration experience across G20 countries. The key macroeconomic indicators of the G20 are discussed in Section 3 to classify these countries in terms of their readiness for stimulus withdrawal. A stimulus withdrawal strategy for India is then discussed in Section 4. Section 5 concludes.

2 Varieties of Deceleration Experience

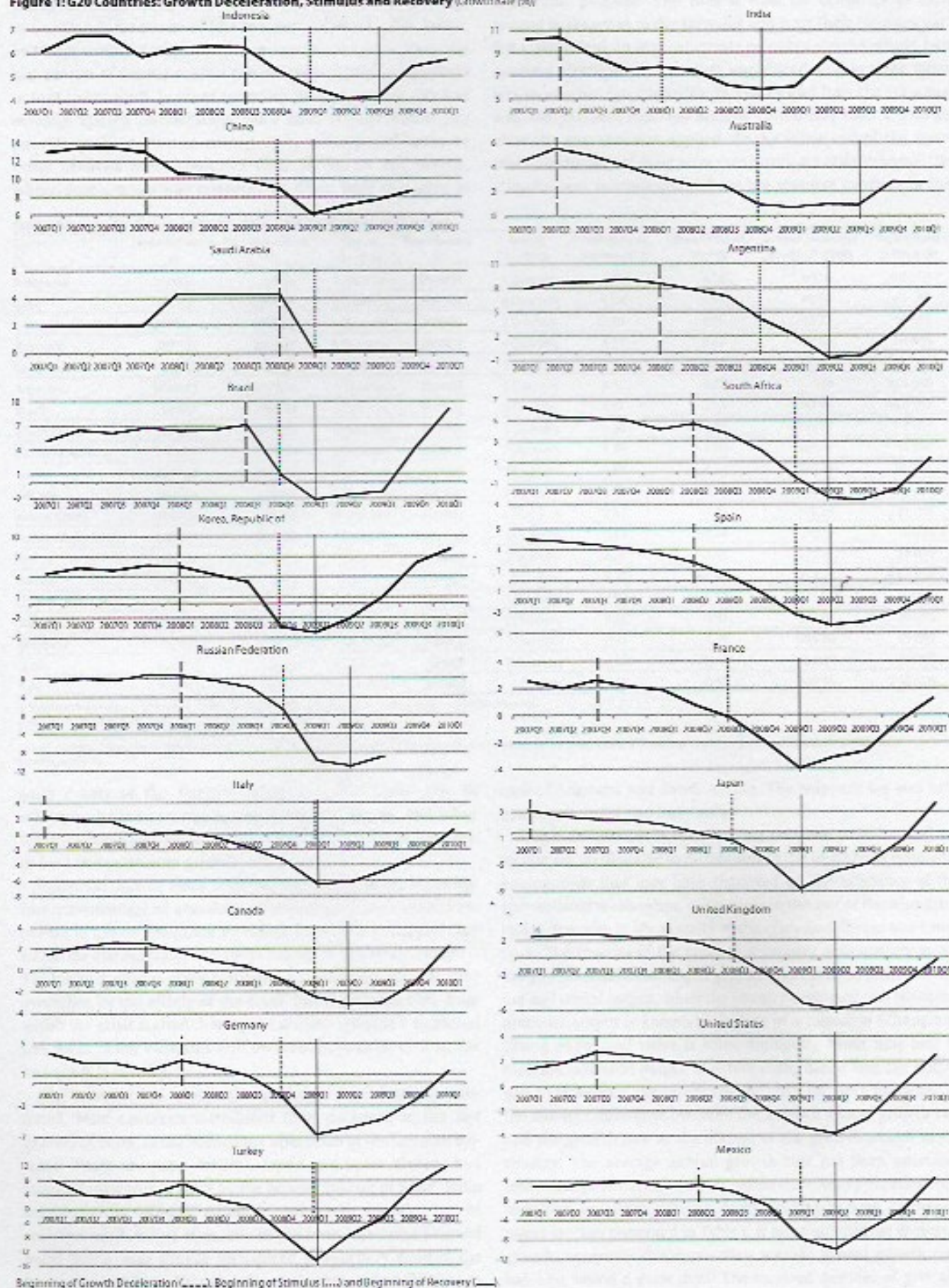
Growth was adversely affected in all G20 countries. However, there were large variations among them in the timing and severity of deceleration; the timing, scale and composition of stimulus packages; and the response lag before they began to turn around. We refer to the "deceleration" experience rather than recession because as many as five out of 20 countries, or 25% of the G20, continued to register positive growth throughout the crisis period, while the others went into recession, in some cases a very deep recession.¹

The beginning of growth deceleration in each G20 country, the point at which a stimulus package was first introduced (in some cases these were followed by a second or even a third package), and the point at which the country began its recovery after bottoming out have been marked in Figure 1 (p 86), which

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Figure 1: G20 Countries: Growth Deceleration, Stimulus and Recovery (Growth Rate (%))



tracks the annualised growth rate for each quarter from 2006Q1 to 2010Q1.² Some countries like Indonesia, Saudi Arabia, Brazil, and Argentina did not experience any deceleration until the last quarter of 2008, i.e., after the collapse of Lehman Brothers in September 2008. In other countries the GDP growth rate had actually started decelerating more than a year earlier, by 2007Q2 or Q3.³ However, among them a distinction has to be made between those countries such as the US and France, where deceleration was triggered by their high exposure to

a stimulus package. The time it took for countries to turn around in response to the stimulus and start their recovery varied a great deal. In nine countries recovery started within two quarters after the stimulus was introduced, and in three quarters in another five countries. In Turkey and Italy the response was sharper, and recovery started within less than a quarter after the stimulus was applied. At the other end of the spectrum, Spain did not start recovering until six quarters after the stimulus was introduced, and the lag was five quarters in the

Table 1: G20 Countries: Timing and Intensity of Growth Deceleration and Recovery

Country (%)	Time of Deceleration (2)	Time of First Stimulus (3)	Time Lag (4) = (3)-(2)	Time of Recovery (5)	Time Lag (6) = (5)-(3)	Average Annual Growth Rate ¹ (7)	Minimum Growth Rate ² (8)	Maximum Deceleration (9) = 100[(7)-(8)](%)	Size of Stimulus (in Billions) (10)
Indonesia	2008Q3	2008Q4	1 Quarter	2009Q4	4 Quarters	5.93	4.16	31.16	6.5 US\$
India	2007Q2	2008Q1	3 Quarters	2009Q1	4 Quarters	9.60	5.76	40.57	4.1 US\$
China Mainland	2007Q4	2008Q4	4 Quarters	2009Q2	2 Quarters	11.70	6.30	48.23	196 US\$
Australia	2007Q2	2008Q4	6 Quarters	2009Q4	4 Quarters	3.31	0.87	77.62	52.4 US\$
Saudi Arabia ³	2008Q4	2008Q4	0 Quarter	2010Q1	3 Quarters	3.77	0.15	96.02	17.5 US\$
Argentina	2008Q3	2008Q4	1 Quarter	2009Q3	3 Quarters	8.55	-0.77	109	36.5 US\$
Brazil	2008Q3	2008Q4	1 Quarter	2009Q2	2 Quarters	4.85	-2.13	143.95	94.8 US\$
South Africa	2008Q2	2009Q1	3 Quarters	2009Q3	2 Quarters	5.36	-2.47	147.77	3.7 US\$
Korea, Republic of	2008Q1	2008Q4	3 Quarters	2009Q2	2 Quarters	4.79	-4.30	189.61	11 US\$
Spain	2007Q2	2008Q2	4 Quarters	2009Q3	5 Quarters	3.83	-4.22	210.27	29 Euro
Canada	2007Q4	2009Q1	5 Quarters	2009Q3	2 Quarters	2.68	3.18	218.52	43.5 US\$
United States	2007Q3	2009Q1	6 Quarters	2009Q3	2 Quarters	2.63	-3.83	245.23	787 US\$
Russian Federation	2008Q1	2008Q4	3 Quarters	2009Q3	3 Quarters	7.44	-10.94	247.11	70 US\$
France	2007Q3	2008Q4	5 Quarters	2009Q2	2 Quarters	2.24	-3.93	275.42	33 US\$
Turkey	2008Q1	2009Q1	4 Quarters	2009Q2	1 Quarter	6.75	-14.45	314.23	9.84 US\$
United Kingdom	2008Q1	2008Q4	3 Quarters	2009Q3	3 Quarters	2.52	-5.90	334.2	30 US\$
Mexico	2008Q2	2009Q1	3 Quarters	2009Q3	2 Quarters	3.68	-9.97	371.03	20 US\$
Germany	2008Q1	2008Q4	3 Quarters	2009Q2	2 Quarters	2.34	-6.70	386.66	29 US\$
Japan	2007Q1	2008Q3	6 Quarters	2009Q2	3 Quarters	2.10	-8.57	508.48	150 US\$
Italy	2007Q3	2009Q1	6 Quarters	2009Q2	1 Quarter	1.55	-6.52	510.56	2.56 US\$

1 - Simple average growth rate based on GDP data from 2004:Q1 to one quarter before the time of deceleration.

2 - Growth rate when the country experienced maximum fall in the GDP growth rate.

3 - Interpolation method has been used to derive the quarterly numbers for Saudi Arabia.

Source: Authors' calculation based on GDP data from IMF, IFS, July 2010. Size and timing of stimulus for each country collected from respective country reports and various press releases (see Appendix A).

early events of the financial crisis, i.e., the sharp rise in sub-prime housing mortgage loan defaults in the US, and those where deceleration was set off by other factors such as the spike in food and petroleum prices.

Collateral data on stock price indices, capital flows, exchange rate movements, and anecdotal information on their limited exposure to the US sub-prime mortgage loan market, suggest that countries like Australia and India belong to this latter category. The initial decline in growth, triggered by other factors, was later overtaken by the effects of the crisis. But the precise time from which the crisis started driving the decline remains a matter of judgment. In our view, this shift occurred in 2008Q4 in Australia and 2008Q3 in India.

The introduction of stimulus packages was closely coordinated. Most countries introduced their packages in the last quarter of 2008, in the immediate aftermath of the Lehman collapse. There are some outliers. Japan and Spain already had stimulus packages in place by the second quarter of 2008. India introduced its "official" stimulus package in 2008Q4. But its real and much larger stimulus, in the form of a large planned fiscal deficit, was already introduced in February 2008 in the budget for 2008-09, though it was not presented at the time as

case of Australia and Saudi Arabia. The response lag was four quarters in India and Indonesia.

These differences in the time lag between stimulus and response are attributable to differences in the underlying economic environment that may have impacted on the efficiency of the transmission mechanism, differences in the size of the stimulus,⁴ and differences in the severity of the crisis in different G20 countries. The severity of the crisis in a country is frequently measured by the maximum output gap, the gap between potential output and actual output, when the country bottomed out. However, potential output is known to decline in a recession (Zhang and Zhang 2009) and there is some ambiguity about how best to measure potential output in a recession, hence also the output gap. In this paper, the severity of the crisis has been measured as the absolute difference between the average annual growth rate and the growth rate at the bottom of the growth trough in the country. The average annual growth rate has been estimated from 2004Q1 to the last quarter before the country experienced a sustained, usually monotonic, decline in growth rates. These estimates are also presented in Table 1. It turns out that the decline in growth, compared to the pre-crisis average annual growth rate, has also varied a great deal. The smallest declines of 31% and

41% were recorded in Indonesia and India respectively, followed by 48% in China. At the other end of the range, the relative decline in growth has been as much as 520% in the case of Italy, and 508% in the case of Japan. More than half of the G20 countries experienced growth deceleration in excess of 200%, most of them being advanced countries. The two emerging G20 countries that are in this group include Mexico (371% decline) and Turkey (314% decline).³

There were large variations in the time taken for the stimulus to get transmitted to the level of real economic activity, partly because of these large differences in the severity of the crisis and partly because of differences in the size and composition of the stimulus and other conditions. It is arguable that there would be similar variations in time lags for the reverse transmission when the stimulus is withdrawn, since it would operate through the same mechanism in reverse. However, other factors that may have had an impact on the pace of the response may have changed meanwhile, including the growth performance of individual countries. Hence, each country's readiness for stimulus withdrawal depends very much on its current growth, investment climate and other macroeconomic conditions that impact on the robustness or fragility of its recovery. Any "one size fits all" type proposition that all G20 countries must simultaneously initiate withdrawal of the stimulus, or that none of them is ready to initiate such withdrawal, seems quite arbitrary and irrational. Enforcing any such herd behaviour on the G20 runs the risk of either another global deceleration triggered by a G20 wide

negative shock of simultaneous stimulus withdrawal, or of overheating and high inflation in the countries ready for stimulus withdrawal if the withdrawal is postponed.

3 Readiness for Stimulus Withdrawal

An assessment of the readiness of different G20 countries to initiate withdrawal of the stimulus is, therefore, critical for successful G20 coordination on this issue. Selected macroeconomic indicators of the G20 countries have been presented in Table 2. The performance of a country in terms of each of these indicators has also been graded. The exercise is analogous to that which rating agencies undertake to rate sovereign country risk, except that our exercise is much simpler, and undertaken for purposes of assessing a country's readiness for withdrawal of the stimulus.

The countries have been grouped primarily according to their growth performance, since recovery of output and employment growth was the main objective of the stimulus packages. In general, based on the growth performance, all the G20 countries have moved out of recession with positive growth in 2010Q3. In the first group we have seven countries with high growth performance, all of them being emerging economies. Growth rates in these countries are well above 5% and in three of them over 8%. They are clearly ready for withdrawal of the stimulus. In some of these countries, e.g. India, such withdrawal is even urgent because the inflation rate (CPI) is high. Withdrawal of the stimulus in India is also urgent because it has a large primary deficit (central and state governments combined) and a large

Table 2: G20 Countries: Selected Macroeconomic Indicators

Country	GDP Growth ¹	Inflation Rate ²	Primary Balance as % of GDP ³	Gross Government Debt as % of GDP ⁴	Non-performing Loans as % of Total Loans ⁵	Current Account Balance as % of Total Reserve Assets ⁶	Short-term Gross External Debt of Government as % of Total Reserve Assets ⁷
	2010Q3	2010Q4	2010	2010	2010	2010Q3	2010Q3
China	H (9.70) ¹	M (5.40) ²	M (-2.10)	H (17.20)	H (1.10)	H (11.52) ⁶	-
Argentina	H (8.59)	P (10.75)	H (1.50)	M (47.80)	H (1.90)	H (1.79)	M (14.48)
India	H (8.20) ¹	P (9.17)	L (-4.70)	L (72.20)	M (2.40)	L (-4.66) ⁶	H (0.60)
Brazil	H (6.71)	M (5.59)	H (2.40)	L (66.10)	M (3.10)	L (-4.11)	H (0.00)
Indonesia	H (5.82)	P (6.09)	H (0.80)	H (26.90)	M (2.50)	H (1.50)	H (1.35)
Turkey	H (5.49)	P (7.43)	H (0.50)	M (41.70)	L (4.00)	P (-12.84)	H (0.00)
Mexico	H (5.28)	M (4.25)	M (-1.80)	M (42.70)	M (2.00)	M (-1.68)	H (1.50)
Japan	M (4.97)	H (0.10)	P (-6.40)	P (220.30)	H (1.80)	H (5.12)	L (30.81)
Russia	M (4.50) ²	P (8.12)	L (-3.20)	H (9.90)	P (8.20)	H (1.16)	H (0.70)
Korea	M (4.44)	M (3.61)	H (3.60)	H (30.90)	H (1.90)	H (3.43)	H (0.00)
Germany	M (3.93)	H (1.49)	M (-1.10)	P (80.00)	M (3.30) ⁵	H (20.08)	P (153.97)
Saudi Arabia	M (3.90) ¹	M (5.67)	H (7.90)	H (10.80)	M (3.30) ⁵	H (4.36)	-
Canada	M (3.44)	H (2.26)	L (-4.90)	P (84.00)	H (1.20)	P (-16.94)	L (42.08)
South Africa	M (3.25)	M (3.49)	L (-3.10)	H (36.30)	L (5.80)	P (-8.18)	H (0.00)
United States	M (3.25)	H (1.27)	P (-8.90)	P (91.60)	M (3.80)	P (-106.58)	P (644.80)
United Kingdom	M (2.66)	M (4.77)	P (-7.80)	L (77.20)	L (4.87)	P (-13.67)	P (76.01)
Australia	M (2.65)	H (2.65)	L (-4.30)	H (22.30)	M (2.20)	P (-20.24)	M (13.67)
France	L (1.72)	H (1.65)	L (-4.80)	P (81.80)	L (4.20)	L (-6.73)	P (555.97)
Italy	L (1.10)	H (1.79)	M (-0.20)	P (119.00)	P (7.60)	P (-8.51)	P (191.83)
Spain	L (0.23)	H (2.99)	P (-7.80)	L (60.10)	L (4.30)	P (-32.97)	P (269.20)

H = High, M = Medium, L = Low, P = Poor.

GDP growth: H > 5%, M < 5% and > 2.5%, L < 2.5% P < 0%.

Inflation: H < 5%, M 5% - 6%, L 6% - 9%, P > 9%.

Primary Balance: H > 0%, M 0% - (-5%), L (-5%) - (-10%), P < (-10%).

Public Debt/GDP: H < 40%, M 40% - 60%, L 60% - 80%, P > 80%.

Non-performing Loans/Total Loans: H < 2%, M 2% - 4%, L 4% - 6%, P > 6%.

Current account Balance/Reserves: H > 0%, M < (-34%), L (-4%) - (-18%), P < (-18%).

Short-term External Debt of the Government/Reserves: H < 5%, M 5% - 10%, L 10% - 50%, P > 50%.

Notes & Source: (1) GDP Volume, Percentage change over corresponding period in the previous year. (Source: IMF 2010c). (2) 2011 Q1 (Source: Economist, 2011). (3) 2010 Q4 (Source: Economist, 2011).

(4) Annual 2010 (Source: Economist, 2011). (5) CPI Percentage change over corresponding period of the previous year. (Source: IMF, 2010d). (6) 2011 Q1 (Source: Economist, 2011). (7) Source: IBI, 2010d.

(8) Source: IMF, Global Financial Stability Report, Financial Soundness Indicators, April 2011. (9) 2009. (10) Source: IMF, 2010e and IMF Stat. (11) 2010 Q4. (Source: Economist, 2011 and IMF Stat. (12) 2010 Q1. (13) Source: Joint External Technical, www.jedh.org.

public debt in excess of 70% of GDP (IMF definition), though the sovereign external debt is quite modest. The health of the financial sector, reflected here in the ratio of non-performing loans, is quite robust in India. This allows room for monetary tightening, in addition to fiscal consolidation, without much risk of a collapse of the financial sector.

An interesting case in this group of countries is Turkey, which was one of the worst affected by the crisis (Table 1). It has recorded nearly 12% growth in 2010Q1, although this moderated to the pre-crisis level of about 5.5% in 2010Q3, implying a very sharp 'v' shaped recovery. This is partly due to its IMF assistance program. Inflation continues to be high in Turkey, making stimulus withdrawal both feasible and urgent. The primary deficit is quite modest in Turkey, as also its public debt, and sovereign external short-term debt is negligible. However, it has a high proportion of non-performing loans, highest among the seven countries in this group, which suggests that stimulus withdrawal initially could focus on fiscal measures, without too much pressure on the monetary-financial side. Argentina is another high growth emerging economy with high inflation, which makes stimulus withdrawal urgent. While it has a primary surplus, and a moderate public debt-GDP ratio, a fairly large part of public debt is short-term external debt, which reinforces the case for further fiscal strengthening at an early date.

Next we have a group of 10 countries with moderate growth performance and moderate or low inflation except for Russia that has an inflation rate of over 8%, implying there is no immediate urgency to withdraw their stimulus packages. If such growth is sustained, then these countries could also move towards withdrawal of the stimulus. This may be particularly important in the case of Japan, which has a large primary deficit, over 8% of GDP, on top of a very high public debt-GDP ratio, much larger than for any other G20 country, a significant proportion of which is short term external debt. United States has the largest primary deficit of nearly 11% of GDP and a high public debt-GDP ratio, which is projected to rise further. Also, it has a very high ratio of short term sovereign external debt to reserves. This would have raised very serious concerns about solvency, but for the fact that the dollar happens to be the world's reserve currency. Inflation is high in Russia at over 8%, but it has a very low public debt-GDP ratio, with a negligible external debt component and a weak financial sector, as reflected in a non-performing loan proportion of above 8%.

Next, we have a group of three low growth countries, France, Italy and Spain. It would be premature to withdraw the stimulus in these countries, since the prospects of sustained recovery remain uncertain. Also, none of these countries is subject to strong inflationary pressures at present. On the other hand, these countries have a large public debt stock, and a significant portion of it is short-term external debt, raising concerns about solvency. The situation is potentially challenging for France, which also has a high public debt-GDP ratio, projected to grow further because of a large primary deficit and very large short-term sovereign external debt liabilities, one of the highest among all G20 countries. Similarly, in Spain where output growth is still negligible, the public debt-GDP ratio is huge and is projected to rise further

because of a large primary deficit of around 8% of GDP. The ratio of short-term sovereign external debt to reserves is around 270%.

To summarise, the broad stylised facts are as follows. Barring some outliers such as South Africa and Saudi Arabia, most of the emerging G20 countries are growing quite rapidly and ready for withdrawal of their stimulus packages. In some of these countries stimulus withdrawal is also urgent because they have high inflation. In most cases, the withdrawal needs to focus on the fiscal side. But in some high inflation countries like India, which have a robust financial sector with adequate bank capitalisation and low non-performing loan ratios, there is a strong case for monetary tightening as well. In most of the advanced G20 countries, on the other hand, the recovery of growth is still moderate with manageable inflation. Hence, withdrawal of the stimulus would be premature. Continuing weaknesses in the financial sector raise the risk of double dip recession if there is premature monetary tightening in these countries. On the other hand, many of them have high public debt ratios that are rising rapidly because of large primary deficits, which raises concerns about debt sustainability in the absence of early fiscal tightening. Moreover, in some cases the short-term external component of this debt is also very high compared to reserves, raising concerns about their solvency – some of which has already been reflected in international financial markets.

The ongoing debate about stimulus withdrawal has to be seen in the context of this background, particularly the challenges being faced by some of the advanced G20 countries. Much of the debate has focused on the dilemma being faced by several advanced G20 countries. There is a consensus to move cautiously on the monetary side because of at least three reasons. First, it is possible that significant asset losses have not yet been discovered. Second, central banks may find it difficult to quickly unload the assets acquired in the course of extraordinary measures to shore up the financial market at the height of the crisis. Third, sudden monetary tightening and a sharp increase in interest rates could adversely affect the yield curves of banks that may be borrowing short and lending long (Giavazzi 2010; Minegishi and Courneade 2010; IMF 2010a).

Table 3: Deterioration in Fiscal Balances and Debt Position in G20 Countries 2007-10 (% GDP)

	2007	2008	2009	2010	Deterioration in 2010 from 2007 (Percentage Points)
Fiscal balance					
(i) Advanced G20	-1.7	4.3	-9.4	-8.9	-7.2
(ii) Emerging G20	0.3	0.4	4.8	-3.7	-4.0
(iii) All G20	-0.9	-2.7	-7.5	-6.8	-5.9
(iv) India	4.4	-7.9	-10.5	-9.2	-4.8
Primary balance					
(i) Advanced G20	0.2	2.4	-7.6	-7.0	-7.2
(ii) Emerging G20	2.6	1.8	2.5	-1.8	-4.4
(iii) All G20	1.1	-0.7	-5.5	-4.8	-5.9
(iv) India	1.1	-7.6	-4.9	-3.6	-4.7
Gross debt					
(i) Advanced G20	77.9	84.1	96.9	104.4	26.5
(ii) Emerging G20	37.3	35.0	37.4	37.0	-0.3
(iii) All G20	61.3	64.0	72.5	76.8	15.5
(iv) India	79.2	77.0	80.8	79.0	-0.3

Source: IMF (2010a).

gap between past average growth and the current actual growth rate is modest, even though the external demand for Indian exports has not revived. Second, there are strong inflationary pressures in India which require fiscal compression to support monetary tightening. Third, both the fiscal deficit and the public debt stock in India are quite high. According to the IMF Fiscal Monitor (IMF 2010d), the cyclically adjusted (CA) fiscal deficit for India in 2009 was 10.5% and it is estimated at 9.2% for 2010. This is more than double the average for emerging G20 economies (Table 3). India also has a high public debt-GDP ratio of 69.5%⁸ compared to an average of only 37.4% for emerging G20 countries. Most of this debt is internal, with little impact on India's solvency on the external account. However, servicing this debt consumes a high proportion of revenue, thereby crowding out other spending that could promote inclusive growth.

Thus, there are compelling reasons to withdraw the fiscal stimulus along with the withdrawal of the monetary stimulus that is already underway. For the medium term, the government has accepted the fiscal consolidation recommendations of the Thirteenth Finance Commission (Table 4). The commission has recommended that the fiscal deficit should be reduced from 9.5% of GDP in 2009-10 to 5.4% in 2014-15. The commission has also recommended separate targets for the central and state governments. For the central government, it has recommended that the revenue deficits should be eliminated and capital

Table 4: Consolidated Fiscal Reform Path of the Centre and States (% GDP)

	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Fiscal deficit – states	2.8	2.6	2.5	2.5	2.4	2.4
Fiscal deficit – centre	6.8	5.7	4.8	4.2	3.0	3.0
Net central loans to states	0.1	0.0	0.0	0.0	0.0	0.0
Aggregate fiscal deficit	9.5	8.3	7.3	6.7	5.4	5.4
Debt stock – states	27.1	26.6	26.3	25.5	24.8	24.3
Debt stock – centre	54.2	53.9	52.5	50.5	47.5	44.8
Outstanding central loans to states	2.5	2.2	2.0	1.7	1.5	1.3

Source: Thirteenth Finance Commission 2010-15, Table 9.7, p.141.

Table 5: Impact of Tax Information Network on Income Tax Revenue

Year	Actual Revenue from Income Tax (I)	Revenue Excluding the Effect of TIN (II)	Percentage of Income Tax Revenue due to TIN (III = 100*(I)-II/II)
2003-04	1,04,949	94,106.91	10.3
2004-05	1,31,948	1,17,086.7	11.3
2005-06	1,64,906	1,38,701.5	15.9
2006-07	2,79,007	1,67,891.8	26.7
2007-08	2,95,555	1,99,990.2	32.3
2008-09	3,19,441	2,41,143.4	24.5

Source: Estimated from the Regression Equation

expenditures should be increased by 2.4 percentage points during the period. In the case of the states, those with revenue surpluses in 2009-10 are required to maintain the surpluses and those with deficits are required to eliminate them, such that the consolidated fiscal deficit of the states in 2014-15 is limited to 2.4% of GDP.

The essential logic of the finance commission recommendations is to combine fiscal consolidation with high growth by reducing the fiscal deficit while preserving growth promoting capital expenditure. This is to be accomplished by a gradual elimination of the revenue deficit, i.e., a compression of revenue

expenditure.⁹ There is a long held view that in India public investment crowds in private investment. Supporting evidence on the strong multiplier effects of government capital expenditure compared to current or revenue expenditure is provided by Das (2007) and more recently Guimaraes (2010). The latter estimates the initial multiplier for current government expenditures at 1, which declines to 0.5 after four or five quarters. In contrast the estimated multiplier for capital expenditure is greater than 1 initially and remains so even after 16 quarters. Recent simulation exercises by Mundie, Bhanumurthy and Das (2010) also confirm the strong multiplier effect of government capital expenditure via the crowding in of private investment. Additionally, over the medium-term infrastructure investment can also ease capacity constraints on the supply side in a country like India, where poor infrastructure is often a binding constraint on growth.

The main fiscal challenge in India today is to combine the finance commission's emphasis on capital expenditure preserving fiscal compression, i.e., compressing revenue expenditure, with the present government's emphasis on inclusiveness promoting public expenditure on education and health. Public spending on education in 2009-10 relative to GDP was about 3.1% as against the National Common Minimum Programme (NCMP) target of 6% and on healthcare it was 1.2% as against the NCMP target of 3%. This implies that public spending on human development will have to actually increase by 3-4% of GDP in the medium term. Similarly, ensuring food security to all could increase the outlay from the prevailing 0.8% of GDP to about 1.5% of GDP in the medium term. Thus, there would be additional expenditure requirement of at least 5.4% of GDP for human development and social protection by 2014-15. This is in addition to the 2.4% of GDP increase in government capital expenditure recommended by the finance commission. In other words, the expected bill of additional expenditure to achieve high and inclusive growth would add up to about 7.8% of GDP over the medium term.

This expenditure programme has to be somehow made consistent with the fiscal consolidation targets. Fiscal adjustment in 2009-10 was relatively easy for the central government because of the automatic elimination of large one time expenditures of the previous year on payment of arrears following pay revision in government and commitments on loan waivers. There were also significant one time non-tax revenue receipts on account of the first telecom spectrum sale and divestment of public sector equity. This is again true for the current year 2010-11, the base year of the finance commission reference period, thanks to the very large one time receipts from telecom spectrum auction and a buoyant trend in revenue from direct taxes and customs duties. However, for the next four years the fiscal consolidation effort will have to be much more concerted if the finance commission targets are to be met along with the increase in spending necessary to meet the requirements of high and inclusive growth.

Thus, maintaining the growth momentum and ensuring inclusiveness in the growth process would require additional government spending of about 7.8% of GDP over the medium term. In addition, according to the fiscal consolidation plan of the finance commission, compared to 2009-10 the fiscal deficit will have to be reduced by 4 percentage points to GDP by 2014-15. Financing

additional expenditures of this magnitude, while at the same time achieving the deficit reduction target set by the finance commission, will require bold measures both on the expenditure side as well as on the revenue side.

The most important reform the government will have to introduce on the expenditure side is to drastically reduce explicit and implicit subsidies. Mundle and Rao (1991) estimated that the unrecovered cost of providing social and economic services amounted to 15% of GDP in 1987-88. Other studies that have followed (Mundle 2007) suggest that this proportion, if anything, may have increased. There is certainly a strong case for revising user charges on non-public good or non-merit services, revising administered prices in line with the market for several public monopolies, and targeting food and fertiliser subsidies along the lines indicated in the *Economic Survey 2009-10*. At the state level, a major problem continues to be the burgeoning losses of electricity utilities arising from free and unmetered supply of power to the farmers. This haemorrhage clearly needs to be plugged. However, though economically rational, it is not politically easy to raise substantial resources by levying user charges on non-merit non-public goods and services. Assuming, optimistically, that the government is able to compress unintended subsidies and raise resources from user charges to the tune of about 3% of GDP, this will require an additional 8.8% of GDP to be mobilised on the revenue side over the medium term to achieve the fiscal consolidation target. The finance commission recommends that the central government should raise about 1% of GDP from disinvestment of public sector equity. If the plan of divesting up to 10% of public

enterprises equity is implemented, it may be possible to meet this goal. This will still require raising additional resources amounting to about 7.8% of GDP from direct and indirect taxes.

In this context, the two major tax reform initiatives, the enactment of direct taxes code and the introduction of goods and services tax (GST) are extremely important. On the former, with the government withdrawing many of the base broadening measures earlier envisaged, additional revenue mobilisation in the short and medium term may be difficult, though simplification of the laws is likely to reduce arrears from litigations. The most important tax reform for additional resource mobilisation is introduction of the GST. If a broad-based GST is introduced, supported by a good technology platform to track input tax credit and interstate transactions, it may be possible to generate significant additional revenues. It should be noted in this context that a major factor which contributed to significant fiscal consolidation during the period 2003-04 to 2007-08 was the spectacular growth of income tax revenues. On average, income tax revenue increased at over 30% per year. As a proportion of GDP, the revenue from personal and corporation income taxes increased from 3.8% in 2003-04 to 6.5% in 2007-08 (Table 5, p 91). This was partly attributable to general buoyancy of the economy, but a significant proportion was also due to the application of new technology through the introduction of the electronic tax information network (TIN).

The impact of this innovation on tax revenues has been estimated by regressing the revenue from income tax on GDP from non-agricultural incomes in a log-linear regression model over

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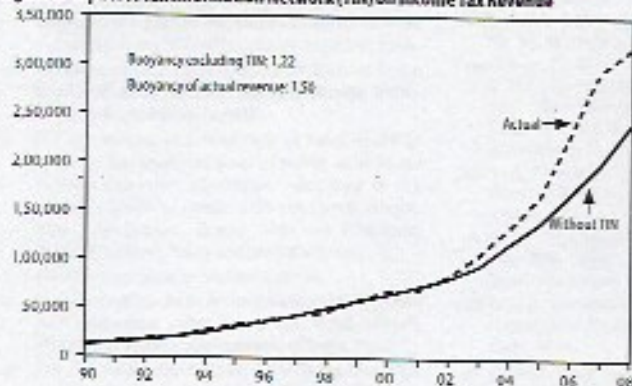
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Figure 2: Impact of Tax Information Network (TIN) on Income Tax Revenue



the period from 1990-91 to 2009-10 with dummies introduced to capture the impact of TIN. Dummy variables were specified for both the intercept and change in the slope from 2003-04. The regression results are summarised below:

$$\ln(Y) = -6.2323 + 1.2214 \ln(\text{NAGDP}) - 3.9290 D_1 \\ (-14.27) \quad (38.16) \quad (-3.24) \\ + 0.2791 D_2^* \ln(\text{NAGDP}) \\ (3.40)$$

(Adj R-squared = 0.997 $F(3, 16) = 2081.31$)

Y = Direct tax revenue; NAGDP = Non-agricultural GDP; D₁ = Intercept Dummy for technology from 2003-04; D₂ = Slope Dummy for technology.

The regression coefficient of the slope dummy is positive and significant. The analysis shows that buoyancy of income tax revenue with respect to non-agricultural GDP increased from 1.22 for the period prior to the introduction of TIN to 1.56 for the period after its introduction (Figure 2). The application of TIN technology led to an increase in the probability of detection, and this significantly increased tax compliance. Not surprisingly, the revenue from income tax as a ratio of GDP increased by 2.8 points in just four years. These results underscore the importance of technology in tax administration. The introduction of GST, if supported by a good technology platform, could raise tax compliance significantly, and perhaps make it possible to increase the tax: GDP ratio by around 3 percentage points.

Even with these reforms in expenditure and revenue there will still be a shortfall in the revenues required to meet the finance commission's target of reducing the fiscal deficit to 5.4%, raise the allocations relative to GDP for capital expenditure and also for education and health as indicated in the NCMR. There is a trade-off between these three fiscal policy priorities. Perhaps, instead of loading the entire burden of adjustment on only one of these priorities it may be appropriate to allow some adjustment of all three. Settle

for a slightly lower level of social sector spending than 9% of GDP, a slightly lower share of capital expenditure than the 2.4% of GDP additional spending proposed by the finance commission, and allow for a slightly higher fiscal deficit than that proposed by the finance commission.

5 Conclusions

There were large variations in the timing and intensity of growth deceleration and the recovery lag of G20 countries following the financial crisis of 2010. This variety of deceleration experience suggests that "a one size fits all" approach to withdrawal of the stimulus would be flawed. In fact, the negative shock of such a simultaneous withdrawal of the stimulus from all G20 countries could seriously raise the risk of double-dip recession. Instead, it is essential that the programme for stimulus withdrawal be tailored to the specific circumstances of each G20 country. As it turns out, barring some outliers, most emerging G20 economies are ready for withdrawal of the stimulus, and in some cases it is even urgent because of high inflation and other factors. In contrast, most advanced G20 countries are not yet ready for stimulus withdrawal. Recovery has been tentative in most of these countries, and some of them are still in recession. At the same time, the existing high levels of public debt, including external sovereign debt, and the debt dynamics of large primary deficits make it difficult to postpone fiscal consolidation without risking unsustainable levels of debt.

To deal with this dilemma, several strategies have been proposed, especially the introduction of reforms in entitlement spending such as pensions and health expenditure that would endogenise future expenditure reversals without immediately withdrawing the stimulus. This discussion of approaches to address the dilemma of the advanced G20 countries, however, is not very relevant to countries like India that are not only ready for withdrawal of the stimulus, but urgently need it to curb over heating and high inflation. Apart from gradual withdrawal of the monetary stimulus, India has also initiated a strategy of fiscal consolidation with high growth as proposed by the Thirteenth Finance Commission. Essentially, it entails phased reduction of the fiscal deficit, while preserving and even enhancing growth promoting capital expenditure.

The main fiscal challenge in India today is to combine this strategy with the NCMR of the present government that focuses on enhanced social spending to make growth more inclusive. Despite strong reform measures on both the expenditure and revenue side, it turns out that a realistic programme of fiscal consolidation with high and inclusive growth may require some downward adjustment in all these three fiscal priorities.

NOTES

- Spain is being counted as one of the G20. Though it is not among the original G20, it has been attending G20 meetings with the country occupying the EU chair as leading the EU delegation vacating its country chair for Spain in each meeting.
- This is the last quarter for which data on growth rates are available for most G20 countries in our source, IMF (2010e) at the time of writing. For a few countries the data are available only up to 2009Q3 or 2009Q4.

3 In India, for example, the deceleration had started in 2007Q2, but was much sharper after the Lehman crisis. On this point see Rakshit (2009) and Mukherjee (2009) among others.

4 The size of the stimulus and its composition in different G20 countries has been presented in Appendix A (p 94). However, the data presented here has been compiled from multiple sources and has to be handled with caution. Different packages have continued to be introduced from time to time, with some countries having several packages. Further, there is ambiguity about what

constitutes a stimulus. Technically, on the fiscal side, any increase in public expenditure is a stimulus, even if it is fully financed by additional revenues, because of the balanced budget multiplier. In actual fact stimulus packages in most countries have typically involved large deficits. However, large budget deficits have not always been counted as a part of the stimulus package, as for instance in the case of India's FY 2008-09 budget cited above. Similarly, on the monetary and financial side, any policy intervention that encourages greater private spending, whether it

- lowers the cost of funds or raises the value of real balances, is a part of the stimulus but these have not always been officially recorded as such.
- For an analysis of cross-country differences in the impact of the financial crisis see Berkmen, Gelas, Rennhack and Welsh (2009).
 - For an analysis and definition of fiscal space in terms of the projected level of public debt based on debt dynamics simulation, compared to the tolerable levels of public debt see Ostry, Ghosh, Kim, and Qureshi (2010). Also see Freedman, Kumbhof, Laxton, Maiti, and Mursula (2009).
 - See the discussion in Section 2 above.
 - Estimated on the basis of the information contained in "Government Debt: Status and Road Ahead", Ministry of Finance, Government of India, 2010.
 - For the model simulations underlying this logic see Mundle, Bhanumurthy and Das (2010).

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Appendix A: Timing and Size of Fiscal Stimulus in G20 Countries

Item	Timing of Stimulus
Argentina	1 December 2008, a package of \$3.9 billion to spur consumption and exports
	2 September 2010, \$32.65 billion through investments in infrastructure
Australia	1 A stimulus of A\$10.4 billion in October 2008 to protect pensioners and parents
	2 A stimulus worth of A\$42 billion in February 2009 through cash transfers (for workers and families to cope with crisis) and investments in infrastructure
Brazil	1 December 2008, \$94.0 billion through tax intervention.
	2 January 2010, through exemptions and reduction of taxes (for renewable energy).
Canada	1 January 2009, a package of \$35.5 billion through tax relief and expenditure on housing sector and additional \$8 billions on skill development.
China	1 November 2008 with stimulus package worth around 4% of GDP in 2009. The stimulus is largely for investment purpose
France	1 December 2008, \$33 billion for carmakers and public sector investments
Germany	1 November 2008, a package worth of \$29 billion through tax breaks and concessional loans
	2 March 2009, through "Pact for Employment and Stability in Germany" programme
India	1 December 2008, \$4.1 billion for enhancing development expenditures, cheaper credit to housing
	2 July 2009, through cuts in taxes, increasing spending in rural infrastructure and through INNUFRM
Indonesia	1 December 2008, income tax relief to eight industries
	2 February 2009, \$6.5 billion
Italy	February 2009, \$2.56 billion through creating incentives for carmakers and homes
Japan	1 First stimulus in August 2008 to mitigate the global food and fuel prices
	2 Second in December 2008 to protect job losses due to crises.
	3 April 2009, \$150 billion package through subsidies and tax breaks
Korea	1 November 2008, \$11 billion through public expenditure and tax reduction
	2 February 2009, \$660 million through special loans for infrastructure
Mexico	1 January 2009, a \$54 billion package through reducing gasoline prices and increasing spending on public works
	2 May, 2009, a package of \$1.3 billion for the tourism industry following outbreak of AH1N1 flu
Russia	1 November 2008, a package of \$20 billion through tax cuts, hike in pensions and unemployment benefits
	2 April 2009, with \$90 billion through tax cuts and social welfare funding
Saudi Arabia	1 No specific package. But in December 2008, the public spending of \$127 billion approved (for 2009), which is rise of 16% over the year, a highest in the history of the country.
	2 Again in December 2009, the spending for 2010 was enhanced by 16%, thus continuing the fiscal stimulus measures.
South Africa	1 February 2009, \$3.7 billion for saving job losses, tax relief and infrastructure spending
Spain	1 April 2008, a 18 billion Euro package through tax cuts and spending on housing
	2 November, 2008, 11 billion Euros package for infrastructure and auto industry
Turkey	1 March 2009, of \$9.84 billion for financial support to companies to curb lay offs and for infrastructure spending
United Kingdom	1 November 2008, a package worth of \$30 billion (1.4% of GDP). This is through reduction in VAT and through Lending Panel
United States	1 17 February 2009, \$787 billion stimulus package (for 10 years)