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**A Strategy for Renormalizing Fiscal and Monetary Policies  
in Advanced Economies**

**Presenters: Jose Viñals and Paolo Mauro**

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**A Strategy for Renormalizing Fiscal and Monetary Policies in Advanced Economies<sup>1</sup>**

Prepared by Carlo Cottarelli and José Viñals

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## I. INTRODUCTION

1. **In response to the worst economic crisis since the 1930s, government budgets and central banks have provided substantial support for aggregate demand and for the financial sector.** In the process, fiscal balances have deteriorated, government liabilities and central bank balance sheets have been expanded, and government debt has increased sharply.

2. **For most countries, some fiscal and monetary stimulus may need to be maintained well into 2010, and withdrawal could begin in 2011 if developments proceed as expected.** Now is the time, however, to clarify the strategy that governments and central banks intend to adopt to return their budgetary and monetary positions to normalcy. Failure to do so would destabilize expectations and weaken the effect of the fiscal and monetary support currently being provided.

3. **Exiting from crisis-related intervention policies should be viewed in the context of achieving strong, sustained and balanced growth.** Attaining this objective will require: meeting the onerous challenges to fiscal sustainability; normalizing monetary policy while unwinding crisis monetary measures; carefully withdrawing financial sector support; and, avoiding policy inconsistencies across countries as well as in the policy mix. Effective exit strategies share common features:

- *Integration*—The crisis strengthened and raised awareness of linkages among different sectors and policy areas, and thus the overall strategy must take these linkages fully into account.
- *Flexibility*—Exiting will not involve a single, one-off decision, but will rather comprise a series of evolving decisions and tradeoffs. Strategies should retain some flexibility to adjust the form and pace of unwinding in response to unforeseen developments.
- *Market basis*—The strategy should rely to the extent possible on market-based incentives to take advantage of price signals. More generally, policies must aim to restore the role of market forces, including in sectors in which the government has taken on a larger role during the crisis. Failure to do so could have long-lasting effects on economic growth.
- *Clear communication*—Basic principles and plans for exit should be established early and communicated clearly and consistently by policymakers, with a view to reducing uncertainty, anchoring expectations, and mustering public support for necessary measures. However, policymakers should be careful about making irreversible commitments to a schedule; rather, they should explain the factors that will determine unwinding decisions.

4. **Ensuring fiscal sustainability is a key priority and policy challenge, notably in light of the upsurge in government debt in many countries.** Achieving fiscal sustainability will be a difficult and prolonged process, making it imperative for consolidation to begin as

soon as there is clear evidence of self-sustaining recovery, whereas monetary policy being generally more nimble can respond more flexibly to evolving macroeconomic conditions. In particular, given a path for fiscal policies, monetary policy can be set to achieve a desired level of overall stimulus, tightening as needed to prevent the emergence of inflation.

5. **This paper explores the magnitude of the problem and presents elements of a strategy to bring fiscal and monetary policy back to normalcy.** It will show that the fiscal challenge is daunting for advanced economies: on average, reducing government debt-to-GDP ratios to less than 60 percent within the next two decades will require steadily improving the structural primary balance from a deficit of 4½ percent of GDP in 2010 to a surplus of 3⅔ percent of GDP in 2020—an 8 percentage point adjustment—and keeping it at that level for the following decade, despite rising pressures on health and pension spending. Addressing the fiscal problem will require clarity of intent and firm political resolve: health and pension entitlement reforms, cuts in the ratio between other spending and GDP, and tax increases will be necessary.

6. **The adjustment is, in principle, considerably more tractable on the monetary side, but should not be underestimated.** During the crisis, many central banks cut interest rates to very low levels and have undertaken extensive balance sheet operations, including some of a quasi-fiscal nature, mainly in advanced economies. Thus the key issues are: (i) when, at what pace, and how to start tightening monetary conditions; and (ii) how to preserve central bank independence. On the first, central banks have the adequate instruments to start tightening even when their balance sheets remain larger than usual. Care should be taken to do so in a manner that is fully consistent with anchoring inflation expectations, in line with the final objectives of monetary policy. To do so it is essential to clearly communicate changes in the policy stance, which may become more complex given the multiple fronts on which monetary policy is still operating as a result of the crisis intervention measures. On central bank independence, the larger crisis role of central banks and the substantial increases in public debt might give rise to pressures on some central banks to relax their commitment to price stability. Consequently, as economies recover from the crisis, it is essential that governments support the institutional, operational and financial underpinnings of central bank independence.

7. **Finally, policies will need to foster strong and sustainable growth.** Among other things, this will require that the public sector withdraws from the control of financial and nonfinancial entities acquired during the crisis, thereby allowing for increased competition and its associated advantages for productivity growth.

## II. SCALE OF THE PROBLEM

### A daunting fiscal challenge

8. **The crisis has resulted in a major increase in fiscal deficits and public debts:** assuming no further fiscal action, the general government gross debt-to-GDP ratio (henceforth “debt ratio”) of advanced economies is projected to rise from 73 percent at end-2007 to 109 at

end-2014.<sup>2</sup> By 2014 debt ratios will be close to or exceed 85 percent in all G-7 economies, except Canada. The fiscal outlook is significantly stronger for emerging economies (Horton, Kumar and Mauro, 2009), but these would unlikely be shielded from a loss of confidence in public sector solvency in advanced economies: as the recent crisis has amply demonstrated, confidence crises easily spill across borders.

9. **The fiscal challenge facing advanced economies is daunting:**

- The scale of the problem is unprecedented, at least in peacetime. Major public debt increases occurred in the 1930s, but starting from lower levels (e.g., U.S. federal government debt was 16 percent of GDP in the late 1920s). Indeed, the general government debt/GDP ratio for the largest advanced economies is now as high as it was in the early 1950s, i.e., in the immediate aftermath of World War II (Figure 1).
- The debt surge far exceeds increases in assets acquired as a result of financial support operations (whose value is currently projected at 3 percent of GDP in advanced economies).
- The fiscal problem will not be resolved simply by an improvement in the cycle, exit from fiscal stimulus, and “unwinding” financial support operations. The debt surge does reflect revenue losses associated with a widening of the output gap and, to a lesser extent, fiscal stimulus packages and support to the financial system. But it also reflects a long-lasting, if not permanent, step decline in revenues—as a result of lower revenues from asset prices and financial services and the step loss in potential output—as well as a sizeable rise in the interest bill, which will grow in the years ahead to service the additional debt accumulated during the crisis.<sup>3</sup> Thus, the structural primary deficit will be large in 2010 (4⅓ percent of GDP).<sup>4</sup> Allowing the stimulus packages to expire will only reduce this by 1½ percentage points of GDP. Moreover, the debt accumulated by 2014 will not come down on its own.
- While demographic trends were favorable in the 1930s, they are unfavorable now: the demographic shock will begin hitting advanced economies in earnest in about 5 years.

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<sup>2</sup> This assumes that the stimulus measures introduced in 2009–10, as well as some other measures due to expire in the years ahead, are not renewed, so some fiscal adjustment is already included in this baseline.

<sup>3</sup> By 2014, the interest payment burden is projected to rise by almost 2 percentage points of GDP over pre-crisis levels.

<sup>4</sup> Almost half of the deterioration of the structural primary balance between 2007 and 2010 is accounted for by nonstimulus spending (e.g., increases in defense and security spending in the United States, social security spending in Japan, and various expenditure items in Italy and the United Kingdom (Fiscal Affairs Department, 2009).

10. **In sum, the crisis has weakened in a major way the fiscal accounts of advanced economies, compounding the impact of preexisting demographic pressures.** What are the risks, if no adjustment takes place? At best, assuming that market confidence in fiscal solvency is not shaken, this will cause higher real interest rates and crowding out (as the economy recovers). At worst, this could lead to concerns that the debt will be “inflated away” or that default is inevitable. If so, debt maturities would shorten, risk premia rise and, ultimately, refinancing crises could emerge. Thus, while the current crisis is rooted in the private sector, the next could be fiscal and, arguably, more severe because no entity would be available to bail out the public sector.<sup>5</sup>

11. **True, default has not occurred in advanced economies since the 1930s.** But the fiscal challenge is unprecedented. And while inflation expectations and interest rates on government paper remain low at the moment, recent experience has shown that markets often react late and suddenly to persistent disequilibria.

### **Implications for monetary policy**

12. **Decisive central bank action to cut policy interest rates and to provide liquidity and other financial support helped to prevent deflation and outright financial sector collapse.** Monetary policy transmission, as gauged for example by the money multiplier, dropped sharply after September 2008 (Figure 2). In response, central banks cut policy rates, lengthened lending maturities, and widened the range of collateral and counterparties to ensure a smooth flow of liquidity into the system.

13. **Central banks also engaged in various asset-driven and often unconventional crisis operations, both to deal with short-term interest rates that were close to zero in some cases and to combat market disruptions.** Notably, central banks purchased government securities to reduce longer-term interest rates; and purchased private sector assets to counter the widening of credit spreads in specific markets (becoming the buyer of last resort in a moribund commercial paper market, for example). These measures altered the size, composition and duration of central bank balance sheets (Figure 3). In a few countries, the combined impact of crisis intervention measures on central bank balance sheets has been very large: from September 2008 to end-2009, it amounted to an increase in balance sheet totals of 5 to 11 percent of GDP in several advanced economies.<sup>6</sup> The aftermath of these actions leaves central banks facing two main challenges.

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<sup>5</sup> It is sometimes argued that the risk of a fiscal crisis in advanced economies should not be taken too seriously because investors do not have many alternatives on how to store their wealth (other than, say, gold). However, a flight out of advanced economies into emerging markets with better fundamentals is not inconceivable. In any event, shifts in investments across advanced economies (say, between euro and dollar assets) could disrupt financial markets and exacerbate the refinancing problems of advanced economies experiencing depreciation.

<sup>6</sup> By end-2009, the balance sheet of the Fed had more than doubled compared with pre-crisis levels, to US\$2.3 trillion, and that of the Bank of England had more than trebled, to £240 billion.

14. **In the shorter term, central banks will face the question of when and how to withdraw monetary stimulus.** The key objective will be to maintain price stability. Inflation will likely become an issue only once economies are well on the road to recovery, so monetary tightening is not an immediate concern, and in any case, monetary tightening will proceed at a different pace across countries.

15. **Central banks will also need to unwind the various balance sheet policies.** The rolling back of liquidity providing measures is already underway and shouldn't pose major challenges. However, several central banks have large holdings of long-term securities, and of the counterpart excess reserves, that pose some technical and operational challenges.

16. **In the medium term, there is risk that the enormous and ongoing increase in government debt may lead to pressure on central banks to relax their commitment to price stability.** Independence—financial, operational, and political—may thus be challenged just when it is needed most to maintain the far reaching benefits of price stability.

17. **The situation is more varied across emerging markets.** Many emerging market countries may be tightening monetary policy sooner than in advanced economies, particularly in those areas where demand pressures are more intense. Some are also dealing with the challenges posed by large capital inflows.

### III. RETURNING TO NORMALCY

#### **Returning to fiscal normalcy: what does it mean and how can it be done?**

18. **What should be the goal of a fiscal strategy aimed at ensuring that markets remain confident in the solvency of the fiscal accounts?** The key fiscal choice facing policymakers is whether they should aim at stabilizing government debt ratios at their post-crisis high levels, or reducing them to more prudent levels. There is general agreement that the rise in government debts needs to be curbed as soon as a private sector recovery is securely under way. But choosing the level at which debt ratios should be stabilized is a less straightforward question.

19. **Stabilizing debt ratios at whatever level has been reached as a result of the crisis would be less difficult, and may thus be tempting.** Is living with high debt an option? In principle, yes. Countries such as Italy and Japan, with debt ratios in excess of 100 percent for many years, have not experienced a full-blown debt crisis. However, maintaining high government debt levels worldwide into the medium term would have significant drawbacks. First, for most advanced economies, stabilizing debt ratios at their post-crisis levels would be insufficient to create or restore fiscal space for a flexible response in the event of future crises. Second, higher debt levels would be associated with greater vulnerability to crises in all countries where the risk of (even partial) default were not seen as immaterial. Third, should high debt levels persist for many of the largest economies at the same time, higher real interest rates could ensue worldwide, with adverse consequences for private investment and global

growth.<sup>7</sup> Finally, although it is difficult to establish the direction of causality, higher debts seem to be associated with slower growth—the experience of Italy and Japan in the past two decades is suggestive in this regard.

20. **Thus, while stabilizing debt ratios at their current high levels would be consistent with sustainability, a more ambitious strategy aimed at lowering debt ratios to prudent levels within a pre-defined timeframe would lead to better economic outcomes.** The goal should be to announce a comprehensive and credible strategy aimed at lowering over time government debt to levels regarded as prudent for advanced economies. For many advanced economies, targeting debt ratios below 60 percent (the median debt ratio for G-20 advanced economies in 2007) may be appropriate.

21. **In the past, many countries succeeded in lowering debt from very high levels in an orderly way.** The good news is that the debt ratio always converges to a level that depends just on the nominal growth rate of the economy and the level of the deficit, not the initial debt level. For example, with a nominal GDP growth rate equal to the average real growth over the past two decades in advanced economies plus inflation at 2 percent, balanced budgets would be sufficient to cut debt ratios from 100 to 65 percent in 10 years. The bad news is that the higher the initial debt level, the higher would be the primary surplus needed to run a certain overall balance. And the effort would need to be larger, the higher interest rates are.

22. **It is thus critical to avoid that concerns about high deficits and debt cause a surge in interest rates, as this would lead to snowballing effects.** Indeed, there is significant evidence that the effect of high deficits and debt on interest rates is especially pronounced when high deficits lead to a perception of “regime change,” that is, of a more relaxed attitude toward fiscal solvency. This is why it is crucial that countries clarify their strategy to ensure fiscal solvency. What should be the features of such a strategy?

*The role of inflation in reducing government debt*

23. **Some commentators have suggested that higher inflation is a reasonable price to pay to reduce the real value of government debt.** We discuss first why inflation should not be part of the solution; later, we show that noninflationary solutions are possible.

24. **Inflation can alleviate fiscal problems in two ways.** First, by raising seigniorage. This helps even if inflation is fully anticipated. However, given the low levels of base money in most advanced economies, this channel is less significant.<sup>8</sup> Second, an unexpected rise in

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<sup>7</sup> Recent staff estimates based on regressions for panels of countries suggest that long-term interest rates rise by five basis points for each 1 percent increase in the debt/GDP ratio (Fiscal Affairs Department, 2009, Appendix 1). This implies that the 36 percentage point increase in government debt ratios projected for advanced economies between end-2007 and end-2014 could, other things equal, raise interest rates by about two percentage points. The effect can be even larger when debts are high. There is also evidence that the effect of weaker fiscal accounts on interest rates is greater when it occurs in many countries at the same time, as a larger fiscal deficit in a few countries can be more easily financed abroad.

<sup>8</sup> A one percentage point increase in the inflation rate would raise seigniorage by about 0.1 percentage point of GDP in the G-7 average.

inflation would reduce the real value of government debt. This could make a more significant dent in government debt ratios because medium- and long-term, non-indexed, domestic currency debt accounts for three-quarters of government debt in advanced economies. However, risk premia would probably go up, meaning that long-term rates would rise by even more than the rate of inflation. Any maturing debt would thus have to be refinanced at higher rates, an effect that would be magnified if maturities shortened and real interest rates increased as a result of higher perceived inflation risk. Altogether, if inflation were raised to, say, six percent for the next five years—assuming this were feasible—the average debt ratio in advanced economies would be about 8–9 percentage points lower in 2014 than in the baseline.

25. **Is this debt reduction worth the costs and risks of higher inflation?** No. Inflation would erode less than one-fourth of the expected debt increase during 2008–14. Of course, double-digit inflation would have a larger effect. But a vast range of experience across the world has shown that high inflation gives rise to major distortions in resource allocation, reduces economic growth, hurts the poor, creates social and political instability, is not easily contained when unleashed, and would incur a substantial output cost when it is brought down again. Also, public debt profiles and the cost of borrowing would be adversely affected for many years to come. These were key lessons of the 1970s for the advanced economies; and the experience of developing and emerging market economies with high inflation has been arguably even worse. It will thus be essential to strongly reaffirm the commitment to price stability and ensure that central banks continue to have the independence and the tools needed to fulfill this mandate.

*How have large government debts been reduced in the past? The role of growth*

26. **Standard debt dynamics decompositions show that the top ten largest reductions in debt ratios in advanced economies over the last three decades occurred largely by running primary surpluses, not through higher growth** (Table 1). The contribution of the differential between growth and interest rates was significant only in a few episodes of rapid growth catch-up (e.g., Iceland, Ireland, and Spain). This, however, does not take into account that it is much easier for governments to run stronger primary balances when growth is higher. Higher growth raises revenues and, if these are not spent, the effect on debt dynamics can be powerful. For example, assuming a baseline debt-to-GDP ratio of 100 percent, a one percentage point increase in growth for 10 years (holding spending constant and assuming a 40 percent tax rate) lowers government debt by 29 percentage points of GDP. Therefore, growth enhancing reforms—including more competitive goods markets, removal of labor market and tax distortions—should be a priority, as they counteract the undesirable effects of population aging on both growth and public spending. Faster immigration could also help, but this may face insurmountable political difficulties.

27. **Nevertheless, there are two reasons why governments should not rely excessively on stronger growth as a solution to their fiscal problem.** First, as far as faster growth reflects the closing of the output gap, this is already reflected in the above baseline projections. Second, there is too much uncertainty on both the magnitude and timing of the effects of structural reforms on potential growth to build a credible fiscal adjustment strategy primarily around this.

28. **In sum, while structural reforms to boost growth should be pursued as part of a fiscal consolidation strategy, it would be prudent to base such a strategy on conservative growth assumptions, hoping for upside surprises.**<sup>9</sup>

*The magnitude of the primary balance adjustment*

29. **The magnitude of the needed primary adjustment depends on the debt reduction target.** And, at least in part, the debt reduction target and path depend on the nature of the supporting measures: measures affecting long-term spending trends would likely allow a more gradual adjustment, as markets would feel reassured that long-term sustainability is also being addressed.

30. **For illustrative purposes, but in line with the considerations put forward above, we assume that:** (i) the goal is to lower debt ratios to below 60 percent by 2030<sup>10</sup>; (ii) the adjustment in the structural primary balance starts in 2011 and lasts 10 years (after which the primary is maintained at the needed level).<sup>11</sup> This 10-year primary adjustment strategy would involve the average structural primary balance to improve from  $-4\frac{1}{3}$  percent of GDP in 2010 to  $3\frac{2}{3}$  percent of GDP in 2020, an 8 percentage point of GDP adjustment (Figure 4), almost 1 percentage point per year.<sup>12</sup> Given the underlying pressures from population aging, the adjustment with respect to a no-policy-change scenario is more demanding,<sup>13</sup> although attaining it could be facilitated by an increase in potential growth, as noted above.

31. **This adjustment will be daunting. It will be the first time that most advanced economies undertake a simultaneous adjustment of such a magnitude.** This will cast additional challenges, including from a global demand management perspective. But the

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<sup>9</sup> Prudence is also required because studies of growth in the aftermath of financial crises show that only a small share of the deepest output loss is regained at the end of the decade following a crisis (Cerra and Saxena, 2008; and *World Economic Outlook*, Chapter IV, October 2009, International Monetary Fund).

<sup>10</sup> Given the weaker initial primary balance, the goal for Japan would be to lower net debt to 80 percent of GDP.

<sup>11</sup> The choice of 2011 as the starting year of the tightening is in line with current WEO projections and announced government plans. This remains obviously tentative: the tightening will have to take place when there is confidence that private sector demand has clearly recovered. However, the results of the calculations of the needed primary adjustment are not much affected by the choice of the initial year.

<sup>12</sup> This assumes a 1 percentage point difference between the interest rate on debt and the growth rate, in line with the average differential during the last three decades. If the difference were zero, the required primary adjustment would be 7 percentage points of GDP. If the debt target were 70 percent, the required primary adjustment would be about  $7\frac{1}{2}$  percentage points, with a 1 percentage point interest-growth differential. The estimate of the required fiscal adjustment is also contingent on the estimated current output gap. If the output gap were larger (smaller) than currently estimated, the initial structural primary deficit would be smaller (larger), requiring a correspondingly smaller (larger) adjustment effort.

<sup>13</sup> The combined effect of higher spending on pensions, health and long-term care during 2015–2030 is of the order of 4–5 percentage points of GDP for both the U.S. and the EU.

adjustment is not unprecedented at the individual country level.<sup>14</sup> It will require addressing more forcefully than in the past some long-standing fiscal issues both on the spending and the revenue side.

*What policies will deliver the needed fiscal adjustment?*

**32. Fiscal adjustments in the years ahead will have to reflect the specific circumstances currently faced by advanced economies.** In this respect, two features are relevant: first, these countries already have fairly high revenue-to-GDP ratios, so that a large part of the adjustment will have to take place on the spending side; second, pressures from aging will imply that entitlement spending will have to be reformed. More specifically:

- Fiscal adjustment will require reforming pension and health entitlements—the key source of spending pressures over the next decades. This spending already represents a sizeable share in total spending (e.g., in excess of one-third of total spending in G-7 countries); and the net present value of future spending increases due to aging is more than ten times as large as the fiscal cost of the crisis (Cottarelli et. al., 2009). Policy measures in this area are politically difficult, but have one advantage: their effects will be phased in over time. Indeed, as noted, to the extent that long-term spending trends are affected through structural reform, a *smaller* improvement in the primary balance could be then targeted. Some measures in this area can have powerful effects: for example, a two-year increase in the retirement age in EU countries is estimated to save some 40 percent of GDP in NPV terms (Barell, Hurst and Kirby, 2009). And some of these measures could, at least in principle, have a positive effect on output.<sup>15</sup>
- Fiscal reform will need to extend beyond pensions and health care. In the absence of reform, spending in these areas would increase by 4-5 percentage points of GDP by 2030. This increase will have to be prevented, but it is unrealistic to expect that reforms could reduce pension and health spending as a share of GDP in the presence of population aging.
- To start with, not renewing the stimulus measures will improve the average primary position by about 1½ percentage points.

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<sup>14</sup> Over the past four decades, 13 advanced and 22 emerging economies have experienced cumulative adjustment in the structural primary balance of at least 8 percentage points of GDP, with annual adjustment exceeding 1 percentage point per year in several cases (particularly in emerging economies).

<sup>15</sup> Extending working lives would have a positive supply-side effect on output through an increase in the labor force, which would outweigh the impact of a possible decline in the capital stock due to a reduced need to save for retirement, as the retirement period is shortened. On the demand side, consumption would rise, owing to higher incomes.

- Moving to more structural measures, on the spending side, a strategy focused on freezing real primary spending in per capita terms—the focus of some successful debt reduction strategies—could be considered.<sup>16</sup> With pre-crisis primary spending (excluding pension and health) equivalent to 23 percent of GDP ratio for the large advanced economies, and a real growth rate of 2 percent, this approach would improve the primary balance by 3½ percentage points of GDP in 10 years. Reductions in spending ratios of this magnitude will require ensuring maximum spending efficiency, but have been implemented in countries undergoing fiscal adjustment in the late 1980s and early 1990s.
- Given the primary adjustment targets, and short of additional spending cuts, some 3 percentage points of the adjustment would have to come from the revenue side (see summary Table 2). Broadening the tax base, including by fighting tax evasion, will continue to be key. And changes to the tax structure are likely to become even more relevant than in the past. In this regard, externality-correcting taxes would be among the highest priorities. Given the requirements imposed by the fight against global warming, appropriate carbon pricing (through either carbon taxation or the sale of emission rights) could represent a new important source of revenue over the coming decades, averaging some ½ percent of GDP per year in some advanced economies over the next decade (and probably more later).
- To buttress the fiscal adjustment, developing further and strengthening institutional arrangements such as medium-term fiscal frameworks, fiscal responsibility laws, fiscal rules, and fiscal councils would be important. There is evidence that strong fiscal institutions are associated with better fiscal performance. Early reforms in this area would bolster the credibility of fiscal adjustment. Policies should also ensure adequate recovery of the value of assets acquired by the public sector during the crisis. In this regard, country authorities may occasionally face trade-offs between rapidly reselling assets to the private sector as soon as acquired banks or companies return to profitability, against a more gradual approach that might ultimately yield larger gains to the government's budget.<sup>17</sup>

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<sup>16</sup> In the U.S., the Budget Enforcement Act of 1990 actually imposed a *nominal* freeze on discretionary spending and a paygo rule for any changes in entitlements to mandatory spending or tax rules. This was one of the key reasons why the fiscal deficit disappeared during the 1990s. The nominal freeze was successful because military spending fell at a sufficiently fast rate so that other discretionary spending had room to increase.

<sup>17</sup> See “Crisis-Related Measures in the Financial System and Sovereign Balance Sheet Risks” (<http://www.imf.org/external/np/pp/eng/2009/073109.pdf>).

## Returning to a normal monetary policy

33. **The ability of central banks to preserve price stability will be crucial to attain the economic growth that is desirable in and of itself and is also needed for debt sustainability.** While deflation would have pernicious effects and exacerbate the recession, inflation rates higher than those consistent with price stability would also be harmful.

34. **The key actions that central banks will need to take are:** limiting and then unwinding crisis intervention operations; restructuring balance sheets; preparing instruments for monetary tightening; and adjusting policy interest rates and communicating policy actions to anchor inflation expectations in support of price stability.

### *Unwinding crisis intervention operations and managing balance sheets*

35. **It should be stressed at the outset that central banks have effective tools to steer money market rates to the appropriate levels, even in the presence of excess bank reserves.** This can be done, for example, by increasing the rate of interest paid on reserves.

36. **Central banks have begun to unwind crisis intervention measures** (Appendix I). Most liquidity supplying crisis operations have been unwound as financial conditions normalize and the demand for excess reserve balances falls.

37. **The purchases of long-term securities have been large in several cases.** Purchases of long-term government securities were aimed mainly to reduce long-term interest rates. The Bank of England used this tool actively during the crisis, with increases in its holdings amounting to 13 percent of GDP since August 2007; there have also been significant purchases by the Federal Reserve. The purchase of private sector assets to support credit markets has mostly been time-limited.<sup>18</sup>

38. **Central banks will need to decide whether to sell their long-term security holdings taken on during the crisis.** Selling these holdings could have a macroeconomic impact, so the timing of any sales will be crucial. A running down of substantial private security purchasing operations may imply an effective tightening of monetary policy and could influence market expectations. The timing of sales needs to reflect an overall assessment of financial and economic indicators and conditions.

39. **The greatly increased asset positions of many central banks has the potential to incur losses.** Long-term securities carry market risk, as longer-term assets purchased at low yields would likely lose value when interest rates rise. If capital levels remain adequate and operations show an overall profit, then over time the balance sheet should strengthen. But in the event losses are large, which on the present outlook seems unlikely in major central banks, the government would need to transfer funds to the central bank to recapitalize it.

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<sup>18</sup> Classification of the mortgage-backed securities purchased by the Fed as public or private securities is ambiguous; these are claims on the private sector and have the policy objective of boosting private credit, but they are guaranteed by U.S. government agencies and thus do not pose credit risk to the Fed.

*Preparing to tighten monetary policy*

40. **In adjusting policy interest rates, central banks must make sure to maintain well-anchored inflationary expectations in support of price stability.** To do so, they must not fall behind the curve and take proper account of the long and variable lags between changes in the stance of monetary policy and prices and output, as well as the uncertainties in gauging potential output and risk premia. Policy decisions will have to be guided by sound judgment to avoid policy mistakes.

41. **Central banks must reestablish the short-term policy rate as the key tool for setting the monetary policy stance, so that they are prepared to tighten when the time comes.** Central banks may want to alter other aspects of the monetary framework, including tightening collateral policy to reduce the risk of future losses and avoid market distortions, and reconsidering the appropriate set of counterparties.

42. **Raising policy interest rates does not require the prior unwinding of unconventional crisis measures.** As the economy emerges from the crisis, banks may still be holding substantial excess liquidity. Central banks can choose from several instruments and measures to begin to absorb excess reserves, with the choice reflecting whether they were injected by standard monetary instruments or by the purchase of long-term securities. The array of absorbing instruments includes reverse repos (selling government securities on their books that they agree to buy back later), issuing central bank bills, and raising the interest rate on bank reserves held at the central bank. Any institutions or markets that could be stressed by higher interest rates should be closely supervised and, if necessary, their problems resolutely addressed by the relevant authorities.

43. **During the unwinding, there will be an unusually high premium on effective and innovative policy communication.** Markets must be reassured that longer-term concerns about price stability will be addressed. Central banks will need to lay out a general strategy to remove crisis measures and carefully explain the significance of different actions. There are tradeoffs between the benefits of discussing specifics and the costs of having to depart from commitments in the face of unforeseen events. Consistency of messages across different government entities, as well as across countries, will help guide markets and the public.

*Preserving central bank independence*

44. **Just as importantly, government support of central bank independence and price stability through the appropriate statements and actions are needed.** These would include facilitating the restructuring of central bank balance sheets, and helping the central bank to fend off any inappropriate criticism of central bank actions during the crisis, including by emphasizing the negative consequences that inaction would have had.

**IV. TIMING AND COORDINATION**

45. **A key challenge is to determine the appropriate timing of exit in the presence of uncertainty as to when the recovery will become entrenched.** Policymakers need to chart the course between unwinding macroeconomic policies too early, which would delay the

recovery (as occurred in the 1930s, when fiscal policy in the U.S. was tightened prematurely), and maintaining intervention too long, which would distort private incentives and create macroeconomic risks. As mentioned above, for most countries continued stimulus is appropriate in 2010, but exit could begin in 2011 if the recovery takes place at the speed currently projected. This said, both the speed of recovery to date and the fiscal space to provide stimulus differ substantially across countries, so that the desirable extent of further stimulus also needs to reflect country-specific circumstances. In any case, it is important that any further measures be easily reversible.

**46. Policy action can begin now in some areas, with no adverse effects on the recovery.**

First, it is now necessary for governments to design and communicate their strategies and measures to ensure fiscal solvency. Markets need to be reassured that fiscal policy will be tightened when the economy recovers. Second, some actions that do not risk having a negative impact on demand can be implemented now, such as institutional reforms to enhance fiscal transparency and medium-term fiscal frameworks.<sup>19</sup> Even a more substantive reform of entitlements, though politically difficult, would yield important benefits in terms of signaling commitment to fiscal sustainability, without necessarily undermining demand, if the reforms focus on, say, increasing the retirement age, or if they are passed now but implemented in a gradual manner.

**47. Markets will also react positively to monetary policy actions that reassure them of the commitment to keeping inflation in check.**

Going into the crisis, there were at times challenges in clearly communicating to markets the monetary policy stance, owing to extraordinary measures aimed at ensuring financial stability or easing liquidity conditions. Meeting those challenges on the way out of the crisis will require careful analysis and clear communication. Drawing a distinction between the policy stance and the measures taken to implement it will be essential.

**48. International consistency of policies will be key to a successful exit process.**

A factor facilitating coordination in the introduction of the unprecedented policy measures was the substantial synchronicity of the onset of the crisis. However, early signs of recovery in some countries, but not others, suggest that the recovery may be less synchronized. As a result, ensuring international consistency of macroeconomic policies may face greater challenges in the next few years, with differing country specific circumstances playing a greater role in country authorities' deliberations regarding the policy stance.

**49. The rolling back of the web of domestic and international support for the financial sector will need to be done in close coordination with fiscal and monetary policy unwinding.**

A new financial regulatory framework and more capital will be needed to reduce the risks ensuing from the unwinding of crisis financial policies. International consistency is

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<sup>19</sup> The most notable development in this area relates to the German parliament's adoption, in June, of a new constitutional fiscal rule for both federal and state governments that envisages a gradual move toward tighter structural balances. The rule requires the federal government's structural deficit (the deficit adjusted for the cycle and one-off operations) not to exceed 0.35 percent of GDP from 2016; states are required to run structurally balanced budgets from 2020.

especially important for the unwinding of financial measures such as deposit guarantees, especially among tightly linked economies.

50. **Coordination in fiscal policy will continue to be relevant in four key areas.** First, in the short-run, the international dialogue is likely to continue to focus on fiscal stimulus spillovers onto trading partners' demand. Second, over the medium term, the challenge will be to manage the fiscal tightening in major advanced economies without weakening global demand. This will also require appropriate monetary policy cooperation consistent with preserving price stability, to crowd in private demand as fiscal policy is tightened, and strengthening other sources of demand, including from emerging economies with stronger current savings. Third, any increases in taxation—undertaken as part of the effort to bring the public finances under control—will be more effective when such increases are discussed with neighboring countries. Fourth, should some countries' government debt sustainability be at risk, there would be a danger of contagion to other countries. Given these spillovers, close monitoring of fiscal developments by the international community—and appropriate peer pressure—will remain important.

51. **The accommodative monetary stance of advanced countries can stimulate large and potentially destabilizing capital flows into economies with higher yields.** The right policy responses will differ depending on individual country circumstances, and may include some fiscal tightening where appropriate, exchange rate appreciation or greater flexibility, macroprudential policies aimed at limiting the emergence of new asset price bubbles, and in some instances carefully-designed temporary capital controls.

52. **The IMF will seek to support international consistency by closely monitoring the unwinding process as part of its surveillance mandate.** This will take the form of regular bilateral surveillance as well as existing multilateral surveillance vehicles such as the World Economic Outlook and the Global Financial Stability Report. These steps will complement other ongoing work on the medium-term consistency of policies among the largest economies.

**Table 1. Decomposition of Large Reductions in Government Debt-to-GDP Ratios in Advanced Economies <sup>1/</sup>**

Episodes 2/	Starting Debt Ratio	Debt Reduction	Ending Debt Ratio	Primary Surplus Contribution	Growth - Interest Rate Differential 3/	Residual
Ireland (1987-2002)	109.2	77.1	32.2	53.3	31.1	-7.4
Denmark (1993-2008)	80.1	58.1	22.0	51.3	-26.7	33.4
Belgium (1993-2007)	136.9	53.0	84.0	70.2	-25.2	8.0
New Zealand (1986-2001)	71.6	41.8	29.8	52.1	-8.9	-1.4
Canada (1996-2008)	101.7	39.0	62.7	39.3	-19.2	18.9
Sweden (1996-2008)	73.2	35.2	38.0	21.0	-4.6	18.7
Iceland (1995-2005)	58.9	33.6	25.4	17.4	4.7	11.4
Netherlands (1993-2007)	78.5	32.9	45.6	27.5	-8.3	13.7
Spain (1996-2007)	67.4	31.4	36.1	21.6	11.5	-1.7
Norway (1979-1984)	56.5	21.4	35.1	24.2	11.7	-14.5
Average	83.4	42.3	41.1	37.8	-3.4	7.9

Source: World Economic Outlook database, September 2009 and IMF staff calculations.

1/ Figures are in percent of GDP.

2/ The episodes listed are based on a sorting of the largest reductions in the Government Debt-to-GDP ratio observed between any two years up to 15 years apart over the last three decades.

3/ The interest rate used in the computation of the growth interest rate differential is the “effective” interest rate, calculated as a ratio of government interest payments to the previous period’s ending debt stock.

**Table 2. Required Improvement in the Primary Position, 2011–2020** <sup>1/</sup>  
(in percentage points of GDP)

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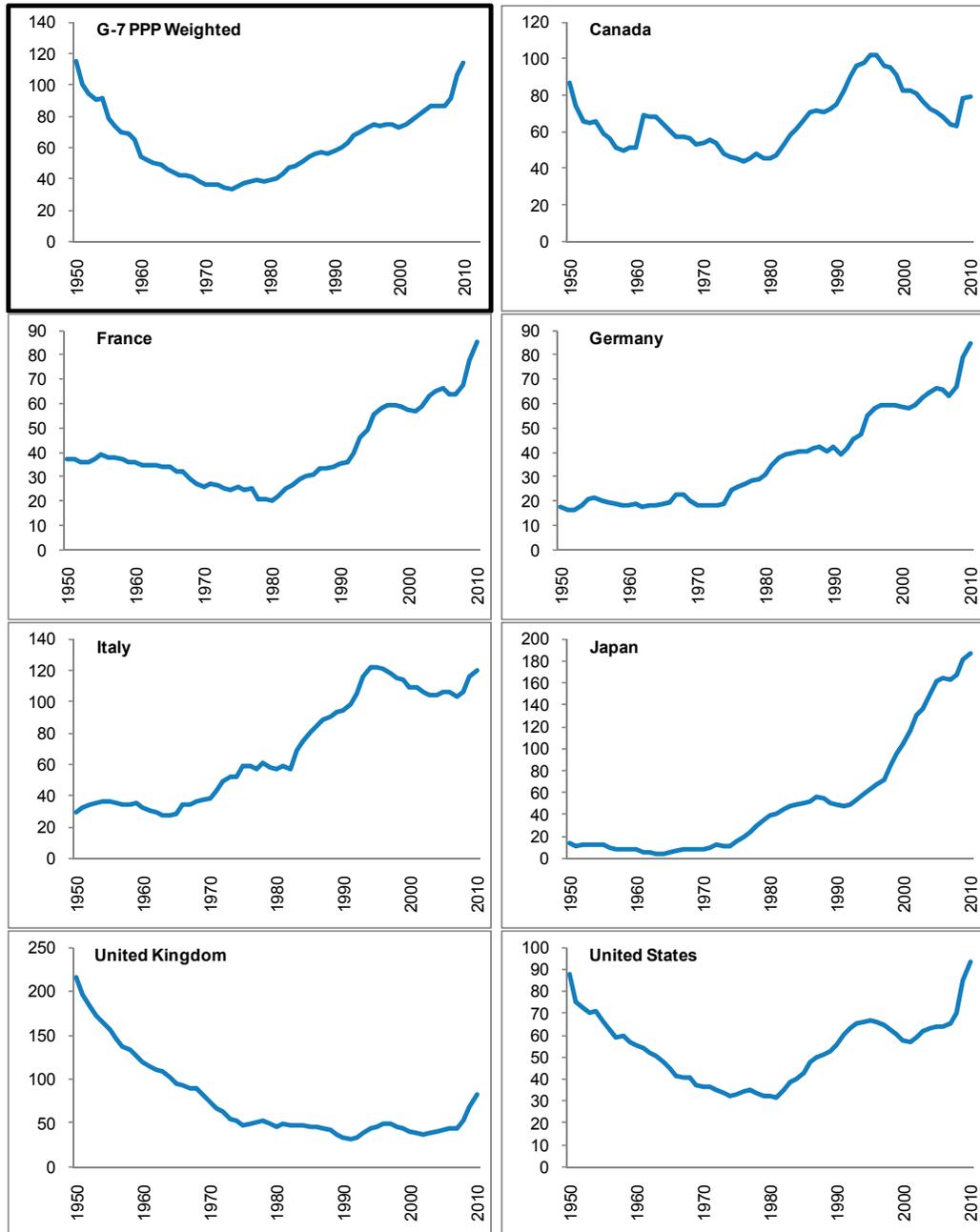
Cyclically adjusted primary balance in 2010	-4 $\frac{1}{3}$
Cyclically adjusted primary balance in 2020	3 $\frac{2}{3}$
Improvement in the cyclically adjusted primary balance	8
Allowing fiscal stimulus to expire	1 $\frac{1}{2}$
Freeze in real spending outside pension and health	3 $\frac{1}{2}$
Tax increases	3
Memorandum item:	
Measures to keep health and pension spending constant in relation to GDP 2/	4–5

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1/ Improvement in the cyclically adjusted primary balance of advanced economies needed to lower the general government gross debt below 60 percent (below 80 percent for net debt for Japan) by 2030, assuming the primary improvement takes place during 2011–2020 and the primary surplus is maintained at its 2020 level in relation to GDP for the following ten years.

2/ In the absence of measures, health and pension spending will rise by 3–4 percentage points of GDP over the next two decades. Offsetting measures for that amount would thus be required to maintain health and pension spending constant as a share of GDP.

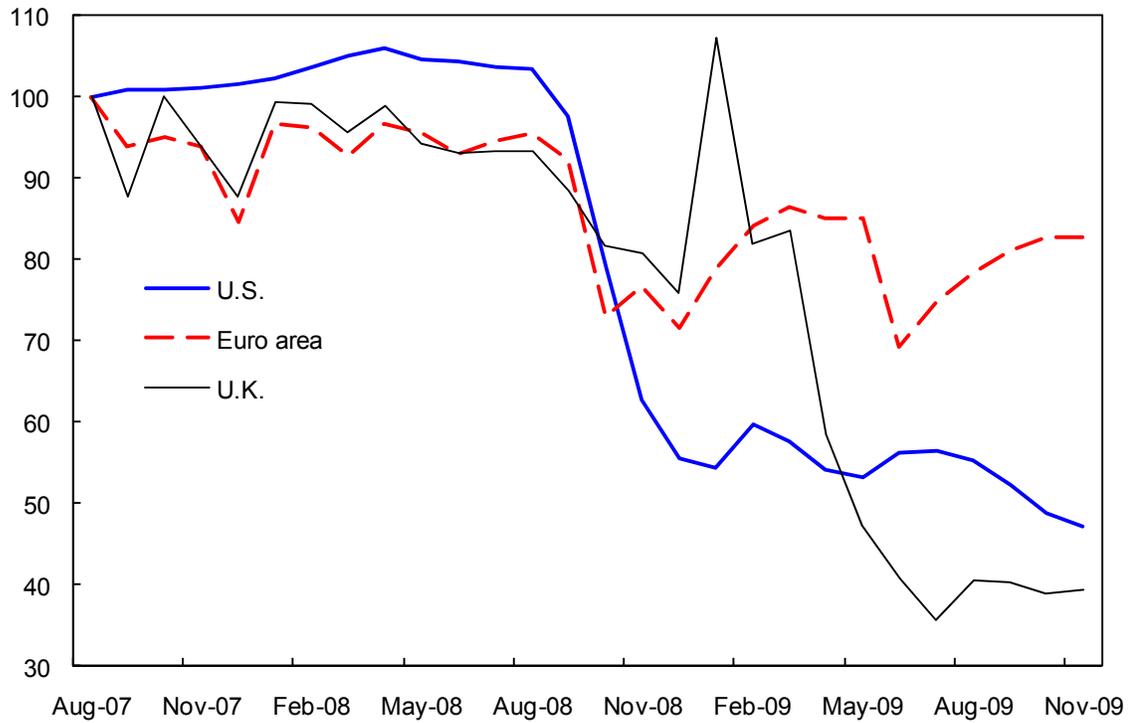
Figure 1. Government Debt in G-7 Countries, 1950–2010  
(In percent of GDP)



Sources: The data are drawn mainly from the IMF's World Economic Outlook database (2009 and 2010 are projections). They refer to the general government, except for Japan (Central Government). WEO data are supplemented by the following: *Canada* (1950-60) - Federal Gross Government Debt (Haver Analytics); *France* (1950-77) - National Debt (Goodhart, 2002); *Germany* (1950-75) - Credit Market Debt and Loans (Statistisches Bundesamt Deutschland); *Italy* (1950-78) - National Government Debt (Banca D'Italia); *Japan* - Central Government Debt (Ministry of Finance of Japan); *United Kingdom* (1950-79) - National Debt (Goodhart, 1999); *United States* - Gross Federal Debt (Office of Management and Budget; and U.S. Census Bureau).

Figure 2. Money Multipliers, 2007–09

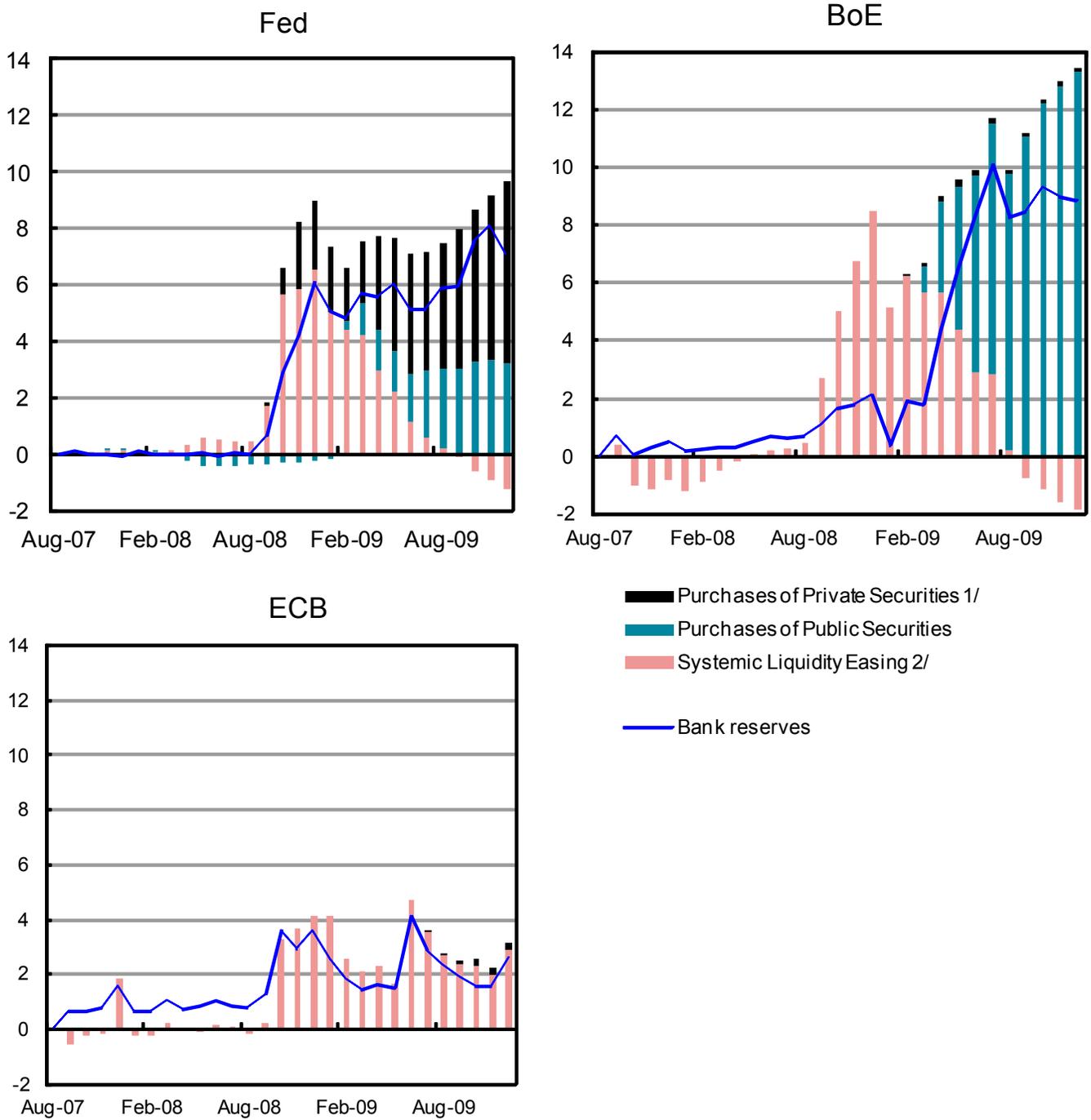
(August 2007 = 100) 1/



Source: Haver Analytics.

1/ Ratio of broad money (U.S.: M2, Euro area: M3, U.K.: M4) to base money.

Figure 3. Key Central Bank Balance Sheet Items  
 (Cumulative changes from August 2007, in percent of GDP)

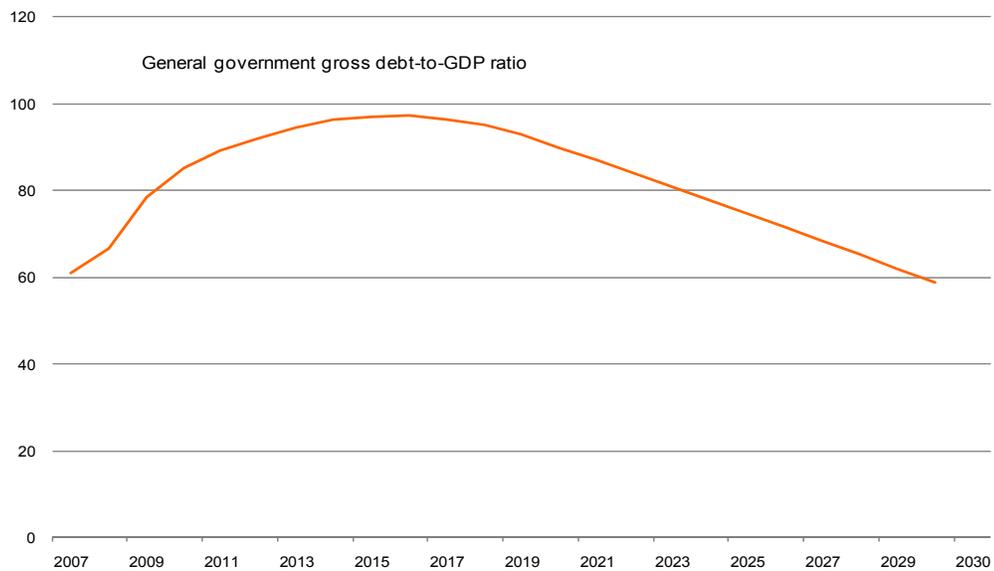
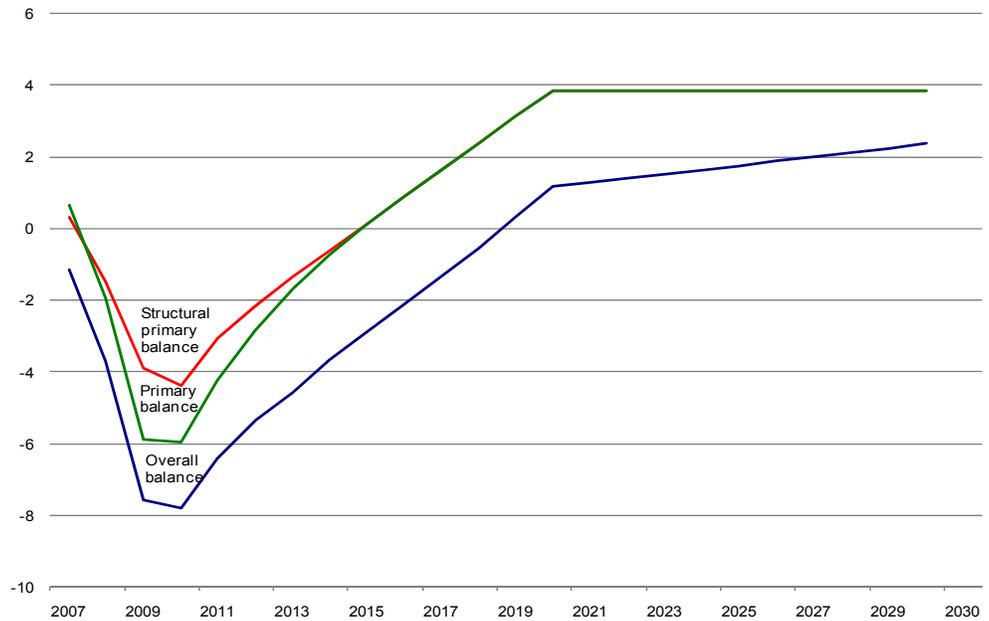


Source: Central bank websites.

1/ Private securities include MBS.

2/ Systemic liquidity easing consists of short-term operations such as repo operations and Term Auction Facility and discount window lending.

Figure 4. Advanced Economies: Illustrative Scenario for Fiscal Adjustment  
(In percent of GDP)



Sources: IMF, World Economic Outlook, January 2010, and Fund staff estimates.

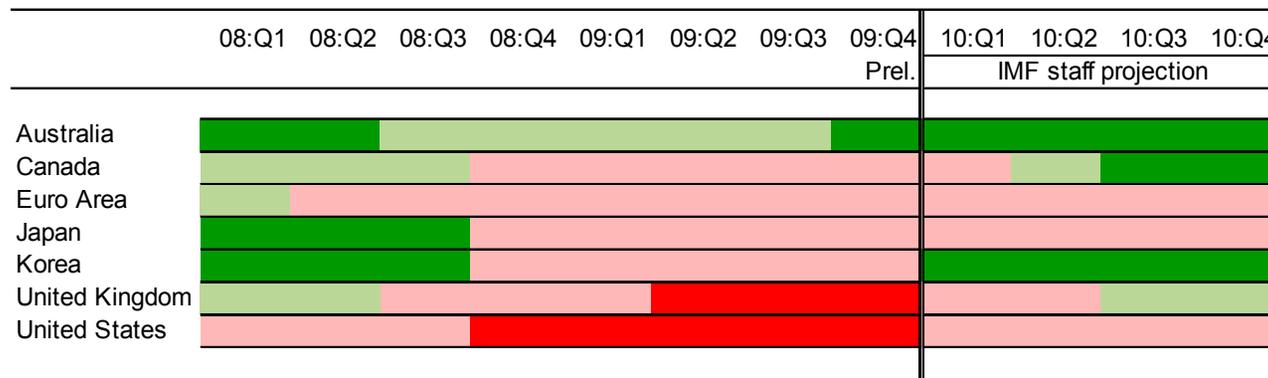
Notes: All concepts of fiscal balance exclude losses from United States financial sector support measures. Structural balances are reported in percent of nominal GDP. In this paper's scenario, the primary balance is assumed to improve gradually from 2011 until 2020; thereafter, the primary balance is maintained constant until 2030. The primary balance path is set to stabilize a country's debt/GDP at its end-2012 level if this is less than 60 percent; otherwise, it is set to reduce the debt/GDP ratio to 60 percent by 2030. Illustrative scenarios for Japan are based on its net debt, and assume a target of 80 percent of GDP. For Norway, maintenance of primary surpluses at the projected 2012 level is assumed. The analysis is illustrative and makes some simplifying assumptions: in particular, beyond 2011, an interest rate–growth rate differential of 1 percent is assumed, regardless of country-specific circumstances.

**V. REFERENCES**

- Barrel, Ray, Ian Hurst, and Simon Kirby, 2009 “How to Pay for the Crisis,” *National Institute of Economic and Social Research*, Mimeo.
- Cerra, Valerie, and Sweta Saxena, 2008, “Growth Dynamics: The Myth of Economic Recovery,” *American Economic Review*, Vol. 98, No. 1. pp. 439–457.
- Cottarelli, Carlo, et. al., 2009 “The State of the Public Finances: Outlook and Medium-Term Policies After the 2008 Crisis,” Fiscal Affairs Department (Washington: International Monetary Fund).
- Fiscal Affairs Department, 2009, “The State of Public Finances Cross-Country Fiscal Monitor: November 2009,” IMF Staff Position Note 09/25 (Washington: International Monetary Fund).
- Horton, Mark, Manmohan Kumar, and Paolo Mauro, 2009, “The State of Public Finances: A Cross-Country Fiscal Monitor,” IMF Staff Position Note 09/21 (Washington: International Monetary Fund).

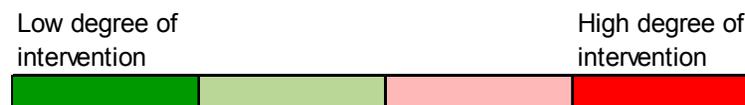
**APPENDIX I. ADVANCE ECONOMY COUNTRIES: MONETARY CRISIS INTERVENTION POLICIES**

**Monetary Sector Heat Map**



Notes:

1. The colors indicate the status of exiting from intervention policies as following.



2. The heat map is designed to show the extent of the use of key monetary crisis-intervention measures. They are based on: (i) policy interest rates, (ii) the size of central bank balance sheets, and (iii) the number of crisis-intervention measures. Information for the fourth quarter of 2009 is preliminary, and policy interest rates for 2010 are based on market forecasts.