Fiscal Policy in the Crisis: Lessons and Policy Implications

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I. INTRODUCTION

In thinking about the lessons from the crisis for fiscal policy, the first question is: Which crisis do you mean? The world economy has faced at least three crises since late 2008: a financial crisis, an unemployment crisis, and a fiscal crisis.

The three crises are clearly interrelated. The 2008 financial crisis took a terrible toll on credit availability and confidence, and so caused the unemployment crisis by devastating aggregate demand. High unemployment and measures to stabilize the financial system and spur demand pushed budget deficits to frightening levels—which unnerved bond markets and helped to drive borrowing costs to intolerable levels for some countries.

Unfortunately, we are still in the middle of the last two crises. Unemployment remains painfully high throughout much of the world. And the fiscal problems in Europe have not been fully resolved—and I strongly suspect that they will get worse before they get better. Moreover, if I am right about Europe, we may not have seen the last of the financial crisis either. Sovereign default remains a terrible threat to the health and stability of the world financial system.

Given the precarious state of the world economy, it is important to take a clear-eyed look at what we have learned about fiscal policy from all three crises. I will argue that there are two main lessons that are at once so standard they are almost trivial, and at the same time so often ignored by policymakers that they are fundamentally important. Those simple lessons are that fiscal changes have large effects on output and employment in the near term, and that unsustainable budget deficits over the long term eventually lead to ruin.

These two simple lessons, along with a number of corollaries, have important implications for policy today. They suggest that the strategies being pursued by Europe and the United States are deeply flawed, and are unlikely to see us through our trio of crises successfully. They also suggest that alternative policies that would work are available and feasible.

I suspect that much of what I have to say will sound familiar to many at the IMF. The

Fund was a strong proponent of fiscal expansion in the heart of the crisis because it understood the power of fiscal stimulus for recovery. In the past year, it has also become a crucial voice of reason in the debate over austerity, arguing for gradual fiscal consolidation and variable country responses.[1] If anything, what I hope to do is both strengthen the IMF's support for these sensible prescriptions, and urge it to make the recommendations even bolder.

II. FISCAL POLICY LESSONS

Let me start with what I think we have learned about fiscal policy over the past few years.

Lesson No. 1: Changes in Fiscal Policy Have Large Effects in the Short Run

The first lesson is that fiscal policy actions have significant and quantitatively important effects on output and employment in the near term. And, these effects are in the standard direction—fiscal expansions are expansionary, and fiscal contractions are contractionary. This lesson comes in part from research done as a result of the crisis, and in part from a serendipitous resurgence of interest in fiscal policy shortly before the downturn.

Evidence. The evidence takes two broad forms. One is better time-series evidence. A number of new studies have sought to identify fiscal changes, both positive and negative, that were not taken in response to the state of the economy. For example, David Romer and I used presidential speeches and Congressional reports to identify tax changes in the United States taken for philosophical or deficit-reduction reasons rather than for countercyclical purposes. Valerie Ramey looked at news about military spending, which should be driven by geopolitical developments, not by the current or projected state of the economy.[2]

These studies then look at what happens to output or unemployment following these relatively exogenous changes in fiscal policy. Their central finding is that fiscal changes have large and statistically significant effects in the expected direction. David Romer and I show that more careful treatment of identification leads to larger estimated impacts. Indeed, our estimated multiplier for tax changes is very large—a tax cut of 1 percent of GDP raises output by about 3 percent after 10 quarters.[3] This is more than twice as large as the estimate based on measures of tax changes that are likely contaminated with endogenous movements.

The other form of new evidence comes from cross-section studies. Researchers have looked for natural experiments where fiscal changes affect certain regions and not others for relatively random reasons. For example, in the American Recovery and Reinvestment Act of 2009, between roughly $100 and $200 billion was allocated among states according to formulas that had nothing to do with how severe the recession was in the state. Two different studies find that states that received more of this formulaic spending had substantially and significantly better output and employment outcomes than states that received less.[4]

In the past few years, there has been a veritable boom in such cross-sectional/natural experiment studies. As Table 1 shows, the multiplier at the regional level that comes out of these studies is usually between 1.5 and 2.[5] Now the translation of such a regional multiplier to an aggregate multiplier is complicated. It depends on such factors as the response of monetary policy, labor mobility, and demand spillovers to out-of-state producers. But a careful attempt to calibrate such factors by Emi Nakamura and Jón Steinsson suggests that when monetary policy is constrained by the zero lower bound, the aggregate multiplier corresponding to a regional multiplier of 1.5 is likely very large indeed.[6]

Taxes versus Spending. One area where questions remain is the relative impact of tax changes versus spending changes. Traditional macroeconometric forecasting models tend to find that spending changes, both expansions and contractions, pack a stronger punch than tax changes, particularly when the tax changes are expected to be temporary. But the needed head-to-head test of the two types of fiscal changes, where the same care is used to identify exogenous changes, has not yet been done.

A related area of controversy is whether fiscal contractions can be expansionary in the near term, particularly if they take the form of cuts in government consumption.[7] While there are certainly cases where output grew in the wake of fiscal consolidations, those are very much the exception and not the rule.[8] I find the IMF's 2010 study, which identified fiscal consolidations in fifteen countries over thirty years from budget documents and other narrative sources, compelling.[9] That study finds that fiscal consolidations based on either tax increases or spending cuts have on average been contractionary over the near term, though those based on tax increases are more so.

Recent experience is certainly consistent with the IMF finding. As many observers have noted, countries that have moved immediately to fiscal austerity have experienced worse growth performance than countries that have not.[10] This is true of countries that have been forced to contract by high borrowing costs (such as Greece and Spain), and countries undertaking austerity for more philosophical reasons (such as the United Kingdom). But much more needs to be done to address the possibility that recent moves to austerity have been correlated with other developments likely to depress output.

Interaction with Monetary Policy. The IMF study also provides a plausible explanation for why consolidations based on spending appear to be less contractionary. It finds that movements in the policy interest rate—that is, monetary policy changes—tend to mitigate fiscal contractions caused by spending cuts, but exacerbate these caused by tax increases. This, in turn, appears to be due to the fact that many tax increases for fiscal consolidation involve increases in the VAT, which increase measured inflation. Thus, the difference is largely a consequence of central banks not having the good sense to target measures of inflation that are net of tax impacts.

This finding is part of a broader realization of the crucial interaction between monetary policy and fiscal policy. Economists have long understood that monetary policy can limit the expansionary impact of fiscal stimulus and counteract the pain of fiscal contraction. But a number of recent theoretical and empirical studies have shown that fiscal changes are likely to be particularly potent when monetary policy is constrained by the zero lower bound on interest rates, as it is today in many countries.[11] This finding follows from the simple insight that if monetary policymakers would like to push the policy rate lower and are unable to do so, they are unlikely to offset a fiscal expansion and may be less able than usual to offset a fiscal contraction.

The fact that cross-region analyses of fiscal changes show large impacts is further evidence for this important interaction between the zero lower bound and the impacts of fiscal policy. Because monetary policy is fixed across regions within a country, those estimates show the impact of fiscal changes when monetary policy does not respond.

Hysteresis Effects. Fiscal changes may also be particularly powerful in times like the present for another reason, and in a very different way. When unemployment has been high for an extended period, the risks that normal unemployment may rise over the long run increase. The evidence for such "hysteresis" effects is far from ironclad. But what there is, is scary enough to be taken seriously. For example, Laurence Ball showed that countries that came out of the recession of the early 1980s more slowly, such as the United Kingdom and Germany, saw noticeable increases in their natural rates of unemployment, relative to countries that came out more quickly, notably the United States and Canada.[12]

Further evidence of such hysteresis effects comes from the fact that as high unemployment has persisted in the United States following the financial crisis, analysts have increased their estimates of the natural rate. Figure 1 shows the evolution of estimates of the natural rate from the Congressional Budget Office (CBO), the Federal Open Market Committee of the Federal Reserve System (FOMC), and the Survey of Professional Forecasters.[13] Two features stand out. First, all the estimates have increased by between a half and a full percentage point since the start of the crisis. Second, the analysts did not raise their estimates noticeably in response to the large rise in unemployment early in the crisis; it was only when unemployment remained elevated for a substantial period that their estimates rose.

These rising estimates of the natural rate do not prove that there is a hysteresis effect that can be addressed by fiscal policy. They could be the result of demographic changes or a lasting consequence of the financial crisis. But prolonged high unemployment (due at least in part to inadequate policy responses) is likely part of the story. Indeed, CBO explicitly attributes part of the increase in its estimate of the natural rate to the long-term effects of high unemployment. It estimates that this effect on the natural rate is about three-tenths of a percentage point.[14] My great fear is that if we do not take measures to get unemployment down quickly, the passage of time may provide evidence that such hysteresis effects are even more potent than currently thought.

If hysteresis might be present, fiscal changes become even more important at a time when unemployment has already been extremely high for a prolonged period.[15] Fiscal contraction would not only slow the recovery, it could cause unemployment to be permanently higher. Conversely, fiscal expansion might not only lower unemployment in the near term, but prevent a lasting rise in the natural rate.

Lesson No. 2: Unsustainable Long-Run Budget Deficits Eventually Lead to Ruin

If the first lesson was that changes in the budget deficit matter more in the near term than we previously thought, the second is that they matter more over the long run as well. The days when economists and policymakers could be blasé about large and persistent deficits are over.

Fiscal Crises. The most fundamental way that long-run deficits matter is that they can lead to a fiscal crisis. Of course, we always knew that bond markets could turn on a country. But until recent events, I am not sure that I truly believed they would ever turn on a stable, advanced economy such as Portugal or Ireland.

When markets do turn, the results are terrible. A genuine fiscal crisis sets in train uncertainty, which squelches business; austerity, which further depresses the economy; and often political instability. If Greece shows just how terrible the fallout can be, Spain and Portugal show how devastating even a constrained crisis can be. Thanks to aggressive actions by the European Central Bank and by the countries themselves, borrowing costs in Spain and Portugal have not risen to Greek levels. But even so, the fallout in terms of unemployment and damage to these economies has been enormous.

Importantly, I see no sign that bond markets are on a hair-trigger—ready to pounce at the smallest provocation. Markets have shown remarkable calm in the face of such thoroughly bush-league and irresponsible actions as the terrible fight this past summer over raising the debt ceiling in the United States. Nor is there convincing evidence that there is a magic value of the debt-to-GDP ratio at which all hell breaks loose. Coming out of World War II, the United States had no trouble borrowing despite a debt-to-GDP ratio of roughly 115 percent; and Belgium and Japan are able to borrow today at historically low rates despite very high debt ratios. Instead, markets seem to turn on a country only after it becomes very clear that its long-run budget deficits are grossly unsustainable and that there is a clear unwillingness or inability of policymakers to deal with the situation.

And in considering sustainability, markets have shown themselves remarkably wise in understanding the key role that growth plays. Indeed, news about growth has been an important factor driving bond yields in Europe in recent years. To illustrate this fact, Table 2 shows the ten largest increases in the Spanish ten-year government bond rate since April 2011.[16] For each case, I searched the *Wall Street Journal* for a story explaining the move.[17] Concern about the European response to the debt crisis was the factor cited most often. In the remaining cases, bad news about growth was as prominent as bad news about Spain's fiscal situation: each factor was cited as the main reason for two of the increases and as one reason (together with the European policy response) for one of the others. Of course, this analysis does not prove that growth prospects were moving the bond market a substantial fraction of the time. But it does suggest that professional analysts felt they were often important.[18]

Crowding Out and Unbalanced Growth. That unsustainable budget deficits can trigger a full-blown fiscal crisis even in advanced European countries is the most obvious manifestation of the general lesson that deficits matter more than we thought over the long run. But it is not the only one. I feel we have a greater appreciation than we once did that persistent deficits mess up an economy more generally.

Economists usually focus on the degree to which government borrowing raises interest rates and so crowds out private investment. Though the evidence is mixed and not nearly as clear as one would like, my read is that this channel is present and important in normal times.[19] But what is sometimes forgotten is that extensive government borrowing harms the economy even if enough foreign capital flows in to keep interest rates low. Most obviously, foreigners accumulate claims on the future output of the country receiving the capital inflow. This cannot help but reduce the growth of domestic living standards over time.

More generally, large and persistent budget deficits financed by large capital inflows may create an atmosphere where unbalanced growth and asset price bubbles can take hold. Observing the government borrowing extensively, seemingly without consequence, may create a culture of high debt and high consumption spending in the private sector.[20] This in turn may lead to rapid house price appreciation, overinvestment in housing, and underinvestment in productive capital. This strikes me as a possible explanation for some of what happened in the United States in the mid-2000s.

Limitation of Discretionary Stimulus. A final consequence of persistent deficits that we have seen from the crisis is that they may limit the ability of countries to respond to recessions. In 2009, countries differed greatly in the amount of discretionary fiscal stimulus they undertook. This variation clearly had many determinants, including the severity of the crisis in each country and the strength of automatic stabilizers. But it also appears to be correlated with each country's fiscal health before the crisis.

Figure 2 is a scatter plot of discretionary stimulus in 2009 against the gross debt-to-GDP ratio in 2007 for the G-20 countries.[21] Though Japan is an extreme outlier, the other countries show a surprisingly strong negative correlation. Countries with high debt loads, such as Italy and Greece, did relatively little fiscal expansion in 2009; those with low debt loads, such as China, South Korea, and Australia, took more aggressive action.

This apparent impact of high debt loads is potentially important. As we saw in 2008 and 2009, countries can face very large aggregate demand shocks. Being unable or unwilling to use fiscal stimulus in such circumstances because of a lack of fiscal space can be very costly (and indeed already has been for a number of countries).

III. IMPLICATIONS FOR POLICY

The two lessons that I have highlighted—fiscal policy matters in the short run, and large, persistent deficits are ultimately very costly—are certainly not novel. To a large degree, the experience of the past few years has just solidified or amplified what we already knew (or should have known). But, the implications that flow from these lessons are at odds with much of what we see going on with policy.

Implication No. 1: Immediate Austerity Is Likely Counterproductive

The first implication is that immediate severe fiscal austerity is a very bad idea in countries with high unemployment. Even in countries flirting with a crisis, immediately cutting spending and raising taxes in the current situation is very likely to do more harm than good.

Because fiscal contraction has powerful contractionary effects in the near term, immediate austerity is likely to make it difficult, if not impossible, to achieve significant budget progress. Table 3 shows data on five European countries undergoing austerity programs. In each case, unemployment has risen—often dramatically. Also, the forecasted fiscal situation remains grim for all of the countries. The IMF is predicting substantial increases in these countries' debt-to-GDP ratios in the immediate aftermath of the consolidations.

Of course, some of this deterioration is the result of high initial deficits. Even with significant reductions, the deficits in these countries remain large. Figure 3 looks at the relationship between fiscal consolidation and fiscal health in a wider sample of countries (the G-20 plus the “traditional” OECD), controlling for initial deficit levels.[22] It is a scatter plot of the change in the debt-to-GDP ratio from 2009 to 2012 against the change in the cyclically-adjusted surplus from 2009 to 2011, where each variable has already been regressed on the level of the cyclically-adjusted surplus in 2009 and the fitted values have been subtracted off.[23] In this sample, there is no correlation between austerity and the change in the debt situation over the relatively near term. The negative effects through lower growth appear to counteract the direct positive impact of the consolidation.[24]

Not only does immediate austerity accomplish little in terms of near-term debt burdens, the longer-run effects may also be limited. Taking contractionary actions at a time of already high unemployment is bound to cause political resistance. Few are surprised to see young people taking to the streets in Athens or Madrid, when youth unemployment is over 30 percent in both countries. Painful measures are far more likely to be tolerated—and therefore to last—if they are taken at a time of relative economic health. To do them now is likely to breed turmoil and repudiation of needed actions.

The possibility of hysteresis is also very relevant. If prolonged high unemployment risks raising a country’s normal rate of unemployment or lowering its normal labor force participation rate, this too would argue strongly against immediate austerity—even if all one cared about was the budget deficit. Nothing would make it harder for countries like Spain or Ireland to eventually return to a strong fiscal position than to have a smaller fraction of their population employed even in normal times.

Implication No. 2: Back-Loaded Austerity Is Needed

The fact that immediate austerity is a bad idea for high-unemployment countries does not mean these countries should just ignore their fiscal problems. Large, persistent budget deficits are indeed a problem that demands immediate attention. The answer is that countries should pass their deficit reduction measures now, but the actual spending cuts and tax increases should be phased in gradually. That is, the austerity plans should be back-loaded.

This recommendation goes strongly against what many say is needed. Some analysts and many politicians believe that the only way for an austerity plan to be credible is for it to be front-loaded. The bond market, in this view, will only be reassured by immediate pain. I don't buy it.

To begin with, there are examples of successful back-loaded plans. Table 4 shows five examples of fiscal consolidations that were legislated or fully formulated well in advance of most of the actual changes in taxes and spending. In each case, the reforms went into effect as originally legislated. The United States has a particularly strong history of such back-loaded changes to deal with the solvency of our Social Security program. There are also many examples of episodes where countries have announced broad deficit reduction goals and then legislated the needed changes over the subsequent years.[25] Thus back-loading can and often does work.

Bond markets should be wise enough to realize that such phased-in consolidations are a sensible way forward. After all, if immediate austerity will have little impact on the debt burden, lead to political unrest, and perhaps result in a repudiation of the measures, why would markets be reassured by such moves? On the other hand, if countries pass well-specified, genuinely contractionary plans that phase in along plausible, not-too-delayed schedules, that should be genuinely confidence-enhancing.

Importantly, no one should think that such back-loaded plans are easy to pass or politically costless. Politicians who propose and vote for such plans will take the political heat immediately. They will have specified whose taxes they will raise and which spending they will cut. Having already paid the political price, politicians are more likely to fight to preserve the measures.

The gradual increase in the early retirement age in France from 60 to 62 that was passed in 2010 is a recent example of back-loaded fiscal reform. It is expected to improve the country's long-run fiscal solvency without sharply reducing aggregate demand immediately. The reform will provide a test of whether such back-loaded plans can endure and phase-in as planned. It is noteworthy that so far, François Hollande, the Socialist candidate for President, has only proposed modifying the reform for people who started working at a young age; he has not urged abandoning the change altogether.

Implication No. 3: Strong Countries Should Be Pursuing Expansionary Policy

So far, I have described how immediate austerity is poor policy for countries with high unemployment, and how back-loaded consolidation is far better. Let me take that a step further and suggest that countries with elevated unemployment that can borrow at low rates should be continuing to use fiscal stimulus in the near term. They should still pass long-run fiscal consolidation measures soon, but they should be back-loaded to such an extent that they are expansionary in the short run. That is, they should be increasing their cyclically-adjusted deficits, not merely letting automatic stabilizers work.

This is certainly true for the United States. Despite some better-than-expected news on the labor market in recent months, American unemployment is still over 8 percent. Moreover, virtually no one is predicting the kind of rapid GDP growth over the next two years that is needed to return the unemployment rate to reasonable levels. At the same time, the U.S. long-run budget situation is truly abysmal. There is simply no question that the United States needs to enact a comprehensive plan for long-term deficit reduction as soon as possible. But any such plan could and should include another substantial dose of fiscal expansion in the short run—ideally one oriented toward public investment.[26] Such additional near-term public investment would help put people back to work quickly; raise future productivity; and, because it was part of a comprehensive deficit-reduction plan, would not damage our fiscal credibility.

For countries running persistent trade surpluses, such as Germany and China, expansionary fiscal policy makes particularly good sense. Though neither country is suffering high unemployment, both have seen growth slow noticeably in recent months. Moves to stimulate domestic demand, such as tax cuts for consumers, would shrink trade surpluses and raise growth.

Such expansionary policies among countries able to undertake them would not only benefit those countries, but also have positive externalities on their neighbors and trading partners. Now the strength of these impacts is likely to vary, depending on the size of trade flows.[27] But, for plausible import and overall multipliers, the effect on world trade and growth could well be large, particularly if a number of large countries undertook expansionary action. Moreover, I suspect that there are spillover effects working through channels other than trade. Concerted action by a number of countries could have an impact on confidence worldwide and on the health of the world financial system. These impacts would almost certainly benefit all countries.

Implication No. 4: Structural Reforms Are Good and Necessary, but Their Benefits Are Long-Term

Periodically, European leaders discuss the need for pro-growth policies, and I get very excited because I think they finally understand that immediate austerity is not working. But then it becomes clear that what they are actually talking about are structural reforms to make labor markets more flexible and regulations less burdensome.

Such structural reforms are unquestionably needed in many countries, including the United States. For countries like Greece, Spain, and Italy to achieve robust, sustained growth, they will surely need to loosen the monopoly power of some unions, reform tax policy and increase compliance, and make it easier for new businesses to form and operate. The United States and other basically healthy economies also suffer from some unreasonable regulations and are under-investing in public goods such as education, infrastructure, and basic scientific research. Growth could be higher over the long run if we dealt with those problems. And because growth is essential to fiscal health, such structural reforms would be helpful for long-run solvency.

But, we should not fool ourselves into thinking that structural reforms will raise growth rapidly. Right now, what is holding back growth in the United States and Europe is a continuing, profound lack of demand. Until we get demand up, growth is unlikely to accelerate noticeably.

On the other hand, the fact that structural reforms, particularly in the most troubled European countries, would be very helpful over the long run to both growth and fiscal sustainability suggests a possible alternative strategy. Rather than viewing structural changes as a complement to immediate fiscal austerity in these countries, perhaps they could be offered as a partial substitute. Indeed, they are just a more subtle form of back-loaded consolidation—countries achieve better long-run fiscal outcomes by making pro-growth structural changes today. Since bond markets seem to understand the importance of growth for fiscal health, this should be a deal they would approve of.

Implication No. 5: Monetary Policy Needs to Be More Helpful

So far I have been discussing the lessons for fiscal policy from the crisis. But perhaps one of the main messages is that monetary policy needs to play a bigger role. Many countries are in difficult situations—they have high unemployment and large long-run budget deficits. Back-loaded fiscal consolidation, with some fiscal expansion in the near term if possible, is a sensible way forward. But that process would be much easier if monetary policy were strongly expansionary.

The European Central Bank has certainly taken some extraordinary actions recently, which have been helpful. But it needs to do more. Its policy interest rate is not yet at zero, so that is the most obvious step that should be taken. Anything that would help growth is desperately needed in Europe right now.

More generally, the ECB is likely to need to buy the debt of troubled countries to help reduce borrowing costs. I understand why it is hesitant to do this. But extreme situations call for extreme measures. If countries are willing to legislate serious, back-loaded fiscal consolidations, ECB actions could help to provide the breathing room they need to phase in the fiscal consolidation gradually. And if these extraordinary monetary actions were part of a broader program of expanded emergency funds from European governments and the IMF, the risk to the ECB should be manageable.

Likewise, the Federal Reserve has taken extraordinary actions in the United States to support the recovery. But given that inflation is at or below the Fed's target, while unemployment is dramatically above, it is hard to imagine why American monetary policymakers are not using the tools they still have to do more to aid the economy. This is particularly true in light of the fiscal consolidation that is going to need to take place in the United States, and the extreme difficulty of getting further fiscal stimulus through Congress.

IV. Conclusion

Fiscal policy experts and policymakers, like monetary policymakers, are often grouped into crude bins. Fiscal hawks care about the long-run deficit and want immediate action to get it down; fiscal doves care about unemployment and want to use fiscal stimulus to reduce it. My argument is that we need an approach that firmly embraces both points of view. We have learned from the crisis that persistent long-run deficits are very dangerous ***and*** that fiscal stimulus is a very effective countercyclical tool. Unfortunately, the same power that makes fiscal stimulus so helpful in a downturn means that immediate moves to deficit reduction are likely to greatly exacerbate the unemployment problem.

As I have described, there is a sensible way to balance the two fiscal policy imperatives. It is to pass specific fiscal consolidation measures right now that lower long-run deficits, but ensure that actual spending cuts and tax increases phase in only gradually as countries recover. For deeply troubled countries in desperate need of structural reforms, those reforms should be embraced not as a pleasant addendum to a fiscal consolidation package, but as a central component. They are as real and effective a long-run deficit reduction tool as phased-in tax increases or spending cuts.

For countries such as the United States, Japan, the United Kingdom, and France, whose long-run fiscal conditions are serious but where markets are not yet very concerned, the fiscal consolidations can and should be so back-loaded that they are actually expansionary in the near term. Temporary moves to reduce unemployment more quickly will help minimize any permanent toll the Great Recession takes on these countries. And in trade surplus countries, such as Germany and China, fiscal expansion to increase domestic demand would not only improve their own growth performance, it could be a prudent and cost-effective way to help their more troubled neighbors and trading partners.

The policy prescriptions I have described are not easy to explain to voters or to ideologues. They are nuanced, and so easily caricatured as undoing with one hand what the other is doing. Their key element is dynamics—using credible plans for consolidation to lower borrowing costs and end fiscal crises in the near term, while not taking immediate austerity measures that would devastate growth and raise unemployment at a time when what countries need most is to grow.

What could cause this nuanced dynamic approach to actually triumph is that the current measures are not working. Sooner or later, politicians and citizens are going to demand a strategy that actually does.

Table 1

Cross-Section Studies of the Impact of Fiscal Policy

Study	Source of Variation	Baseline Estimate of: Regional Multiplier	Baseline Estimate of: Cost per Job
Chodorow-Reich et al. (forthcoming)	Formulaic spending in American Recovery and Reinvestment Act of 2009	2.1	$26,000
Wilson (forthcoming)	Formulaic spending in American Recovery and Reinvestment Act of 2009	--	$125,000
Suárez Serrato and Wingender (2011)	Impact of decennial census on Federal transfers	1.9	$30,000
Shoag (2010)	Windfall returns on pension investments	2.1	$35,000
Nakamura and Steinsson (2011)	Regional distribution of changes in defense spending	1.5	--
Clemens and Miran (forthcoming)	Responses to mid-year budget shocks	0.3[a]	--

[a]The estimated multiplier is for a very short time period—the six months following a budget shock.

Table 2

Ten Largest Daily Increases in Spanish 10-Year Government Bond Rate and the Associated News Analysis, April 1, 2011 – March 31, 2012

Date	Amount of Increase (Basis Points)	Type of News Associated with the Increase
12/9/2011	48	European policy response
"Mr. Draghi ... poured cold water on proposals to allow Europe's national central banks to channel money to governments via third parties such as the International Monetary Fund or Europe's bailout funds. ... Mr. Draghi's remarks reversed a rally in the region's government bond markets."		
11/17/2011	47	Spanish finances, European policy response
"The euro-zone debt market brushed off renewed efforts by the European Central Bank to support Italian and Spanish government bonds after new warnings on Spanish debt sustainability. ... German Chancellor Angela Merkel on Thursday reinforced her opposition to expanding the ECB's role in supporting sovereign-debt markets."		
7/18/2011	31	European policy response
"Spanish and Italian bond yields climbed, as rifts appeared ahead of Thursday's summit of euro-zone leaders."		
1/4/2012	31	Spanish finances
"In a new sign of a Spain's deepening financial crisis, the regional government of Valencia on Wednesday said it was a week late in repaying a [euro] 123 million ($160 million) debt to Deutsche Bank AG."		
11/15/2011	28	Economic growth
"The risk of a new recession threatens to compound the euro zone's debt crisis."		
7/25/2011	27	European policy response
"Markets on Monday reflected investors' belief that the Brussels agreement fell short. Analysts and investment strategists said they still doubted EU leaders could handle fiscal problems in larger economies such as Spain and Italy."		
8/2/2011	25	Economic growth
"Worsening economic indicators in both the U.S. and Europe, as well as the debt crisis, leave little appetite for the bonds of risky countries in the euro zone's south."		
11/25/2011	20	European policy response
"Investors began giving up on the euro zone's ability to break the political gridlock that is blocking a more decisive response to the currency bloc's debt crisis."		
1/6/2012	20	Economic growth, European policy response
"The euro zone's debt stresses are back in force ... touched off by new political paralysis in Belgium, signs of slowing economic recovery and a proposed European Union rule that private investors take a hit in cases of bank failures."		
7/11/2011	19	Spanish finances
"A new leader of Spain's Castilla La Mancha region said on Monday that it has a budget deficit more than twice as large as had previously been thought, raising new concerns over the true state of regional finances and helping to send Spain's risk premium to records."		

Sources: Eurostat and *Wall Street Journal.*

Table 3

Fiscal Austerity and Fiscal Outcomes

Country	Cyclically-Adjusted Surplus in 2009 (Percent of GDP)	Change in Cyclically-Adjusted Surplus, 2009-2011 (Percent of GDP)	Change in Unemployment Rate, 2009-2011 (Percentage Points)	Change in Gross Debt-to-GDP Ratio, 2009-2012 (Percent of GDP)
Greece	-17.5	11.5	8.2	30.9
Ireland	-9.6	3.7	2.5	56.0
Portugal	-7.4	4.2	2.3	18.5
Spain	-9.7	5.0	3.7	13.9
United Kingdom	-8.5	1.9	0.5	18.2

Sources: International Monetary Fund (2011) and Eurostat.

Table 4

Examples of Back-Loaded Fiscal Consolidations

Country	Years	Actions and Carry Through
United States	1979-1982	Social Security Amendments of 1977. Raised taxes in a series of steps over twelve years. Early increases occurred as legislated; later increases were accelerated by the Social Security Amendments of 1983.
United States	1984-2027	Social Security Amendments of 1983. Raised taxes over seven years and phased in a gradual increase in the retirement age through 2027. All actions have occurred as originally legislated.
United States	1990-1995	Omnibus Budget Reconciliation Act of 1990. Raised taxes and cut spending over five years. The total projected consolidation was 2.2 percent of GDP, with roughly twice as much coming from spending cuts as from tax increases. All changes occurred as originally legislated.
Sweden	1995-1998	European Union Convergence Program, June 1995. Aggressive fiscal consolidation equal to 8 percent of GDP; almost all components were specified at the outset. Changes occurred as planned.
Australia	1996-1999	Multi-year consolidation program announced in the 1996-97 budget. Actions specified in advance included both tax increases and spending cuts, totaling 1.2 percent of GDP over four years. Consolidation occurred as planned.

Sources: Romer and Romer (2009) and Devries, Guajardo, Leigh, and Pescatori (2011).

Figure 1

Estimates of the Natural Rate of Unemployment in the United States

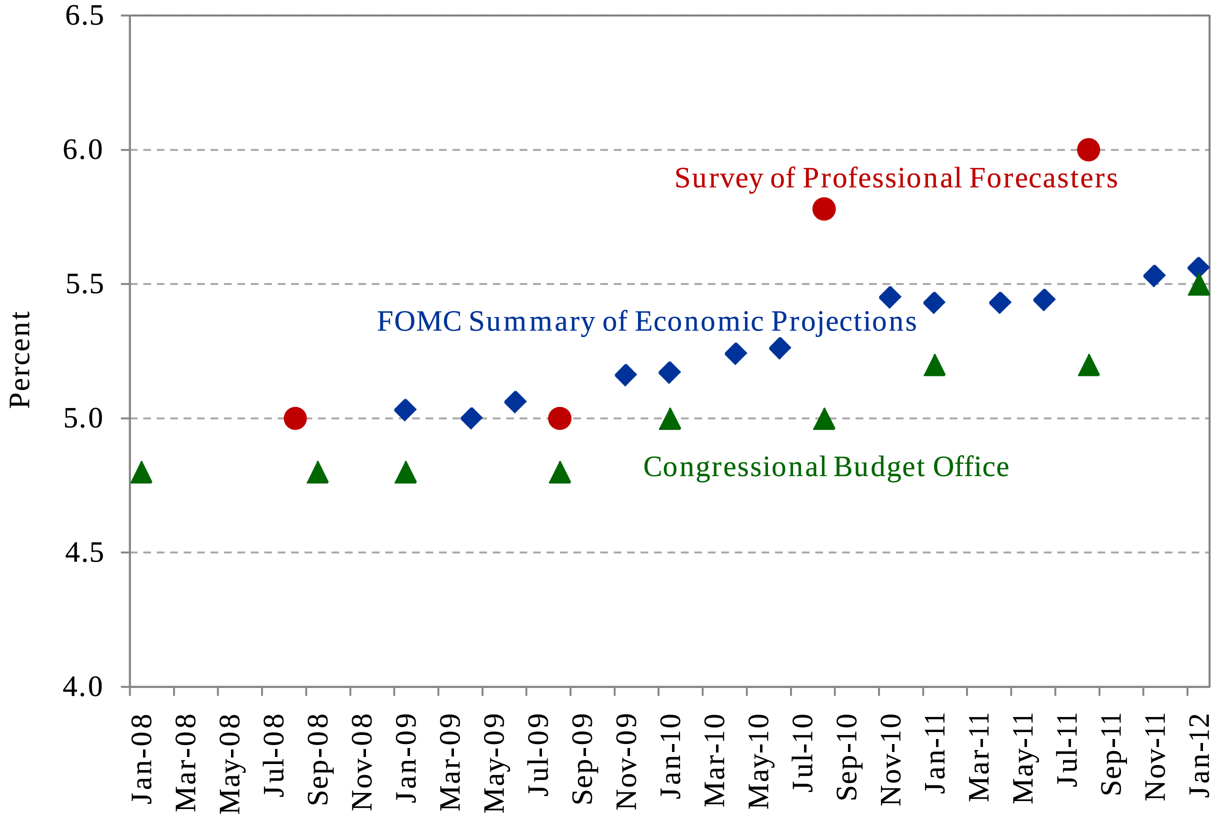


Figure 2

Fiscal Stimulus and Debt Loads in the G-20

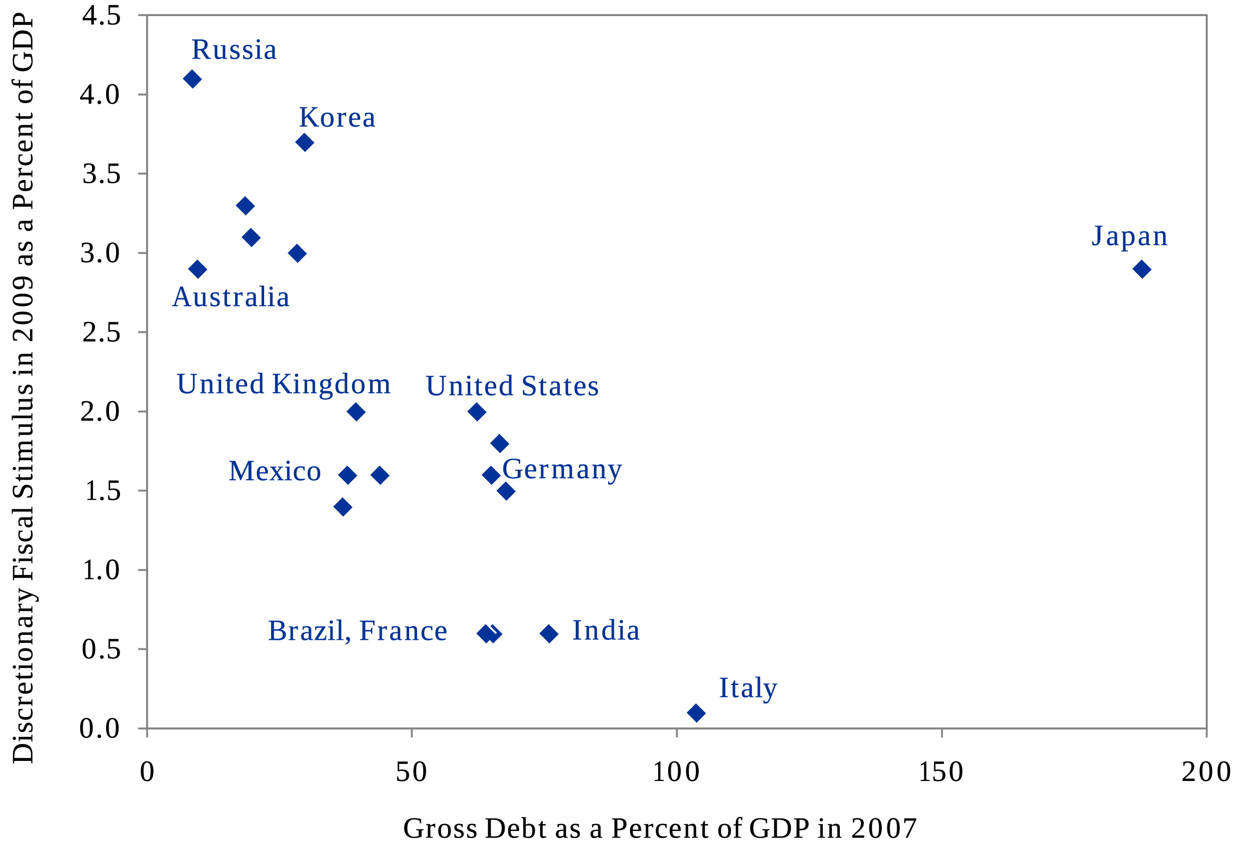
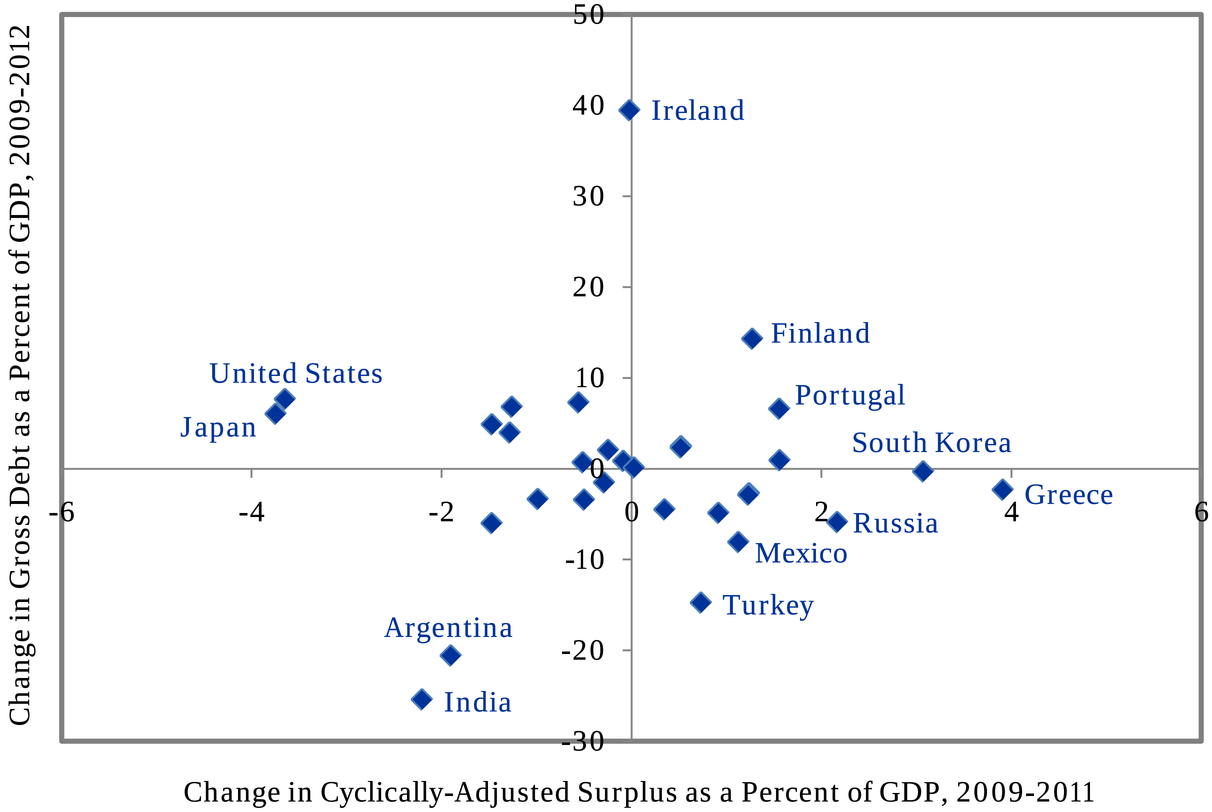


Figure 3

Change in Debt-to-GDP Ratio, 2009-2012 and
Change in Cyclically-Adjusted Surplus, 2009-2011,
Partialling Out the Level of the Cyclically-Adjusted Surplus in 2009



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<u>ENDNOTES</u>

[1] See, for example, Lagarde (2012), Blanchard (2012), and Cottarelli (2012a).

[2] Romer and Romer (2010); and Ramey (2011).

[3] Cloyne (2011) finds comparable results in a similar study for the United Kingdom.

[4] Chodorow-Reich et al. (forthcoming); Wilson (forthcoming). Chodorow-Reich et al. look at a relatively narrow component of formulaic spending; Wilson augments their measure with other spending that also has a strong formulaic component.

[5] The Clemens and Miran (forthcoming) study finds a substantially lower multiplier, but the horizon considered is much shorter than in the other studies. Clemens and Miran's multiplier is for just the six months after a mid-year budget shock. When they look over longer horizons, the effects are larger, but also substantially less precisely estimated.

[6] Nakamura and Steinsson (2011).

[7] Alesina and Ardagna (2010).

[8] See Giavazzi and Pagano (1990) and Perotti (2011).

[9] International Monetary Fund (2010).

[10] See, for example, Shambaugh (2012).

[11] See, for example, Christiano, Eichenbaum, and Rebelo (2011) and Woodford (2011).

[12] Ball (1999).

[13] Congressional Budget Office (various dates); Board of Governors of the Federal Reserve System (various dates); Federal Reserve Bank of Philadelphia (2011). For the last two observations for CBO, I use the "long-term" natural rate, which is steady for at least the first five years after the forecast date in both cases. The FOMC estimates are computed as the means from the histograms of the estimates of the unemployment rate in the long run among the committee members.

[14] Congressional Budget Office (2012, p. 36). Half of the remaining increase in CBO's estimate of the natural rate comes from CBO's reassessment of what the natural rate prior to the crisis was. CBO attributes the other half to the effects of extended unemployment insurance and the sectoral reallocation of workers caused by such factors as the long-term reduction in the size of the construction sector.

DeLong and Summers (2012) focus on CBO's downward revision of the path of potential output since 2008. CBO (2012, pp. 44-45) attributes 1¼ percentage points of this revision to long-term effects of the crisis.

[15] See DeLong and Summers (2012).

[16] The interest rate data are from Eurostat, series IRT_LT_MCBY_D. The data also show an increase of 41 basis points on 12/27/11 and 25 basis points on 7/12/11. However, news reports make no mention of an increase on those days, and in fact report that rates fell. For that reason I exclude those two observations and continue down the list of largest increases.

[17] In particular, I searched for the terms "Spain" or "Spanish" and "bond" or "interest." In each case, the date of the article matches the date of the interest rate change, which makes sense given the time difference and the timing of online posting. I double-checked any cases that were not completely clear using articles in the *New York Times*.

[18] Along the same lines, Cottarelli (2012a) notes that Standard and Poor's, in their January 2012 downgrade of the debt of several European countries, cited the negative impact of austerity on economic growth as a factor.

[19] See Gale and Orszag (2003) for a careful review of the literature on the effect of budget deficits on interest rates.

[20] Niskanen (1978) makes a related argument in the context of government spending and taxes. He argues that cutting taxes and causing budget deficits may not lead to pressure to reduce spending. Instead, by breaking the link between taxes and spending, it can lead citizens to think spending is not costly and so to actually demand more spending.

[21] The discretionary stimulus estimates are from the U.S. Council of Economic Advisers (2010, p. 98). The gross debt-to-GDP ratios are from the International Monetary Fund (2011, p. 127). The results are qualitatively similar using net debt in 2007, but the sample size is smaller because net debt figures are not available for some countries. Using net debt, Japan is a much smaller outlier.

[22] By the traditional OECD, I mean countries that were members in 1980.

[23] The data on both the cyclically-adjusted deficit and the gross debt-to-GDP ratio are from the International Monetary Fund (2011, pp. 124, 127). The results are very similar using the change in the net debt-to-GDP ratio.

[24] Cottarelli (2012b) presents simulations showing how the impact of consolidation on the debt-to-GDP ratio depends on both the size of the fiscal multiplier and the initial debt load.

[25] See Devries, Guajardo, Leigh, and Pescatori (2011).

[26] Under current U.S. law, the cyclically-adjusted deficit is scheduled to decline greatly in 2013 due to the end of temporary stimulus measures and the expiration of the 2001 and 2003 Bush tax cuts. The appropriate policy is unquestionably to increase the cyclically-adjusted deficit relative to current law in 2013, but whether it should be larger or smaller than the 2012 level depends on the strength of the recovery over the next year.

[27] See Ivanova and Weber (2011).