

Forecasting the Recovery from the Great Recession: Is This Time Different? †

By KATHRYN M. E. DOMINGUEZ AND MATTHEW D. SHAPIRO*

It was well understood that the US economy was slowing heading into 2008, and indeed policy moved toward stimulus with an aim to moderate the slowdown in growth. The Federal Reserve moved to cut the Federal Funds rate sharply beginning in late 2007. Congress passed fiscal stimulus measures—economic stimulus payments and an extension of bonus depreciation—in February 2008. Nonetheless, well into 2008, the perception was that the US economy was likely to avoid recession despite rapid declines in housing prices and serious financial market distress. In Europe, the perception was similar. Indeed, because of a view that the risk of inflation was greater than the risk of recession, the European Central Bank held its target rate constant until October 2008. The preemptive fiscal and monetary policy in the United States likely delayed the slowdown in growth.¹ Obviously, they did not preempt the Great Recession.

The failure of economists, forecasters, and officials to forecast the Great Recession eerily parallels the period before the Great Depression. Output fell sharply and unexpectedly when financial markets became seriously distressed and consumption, investment, and hiring

collapsed. While we could easily write a paper paralleling our analysis of the Great Depression (see Dominguez, Fair, and Shapiro 1988), we believe that the failure to forecast the Great Recession is well understood. Instead, we take on the different, but related, question of forecasting the recovery from the Great Recession. In particular, we ask whether the slow recovery from the trough of the Great Recession was anticipated, and what factors contributed to surprises in the course of the recovery.

Some analysts, notably Reinhart and Rogoff's (2009) prescient and timely analysis, suggested that the recovery would be very slow. This perspective was not the consensus near the trough in early 2009. Romer and Bernstein (2009)—in an analysis that was based on large-scale, macroeconomic models—forecast a fairly rapid economic rebound provided there was substantial fiscal and monetary stimulus. Dissenting views on the efficacy of fiscal stimulus (Cogan et al. 2010) were also based on a model with a quick return to trend. Hence, though the Reinhart-Rogoff view has been borne out by events, it was far from universally evident at the early stages of the recovery.

This paper aims to enrich the account of the slow recovery. In particular, it seeks to document the role that successive financial shocks in Europe had in delaying the recovery in the United States. In three successive years—2010, 2011, and 2012—the United States appeared poised early in the year for sustained, moderate economic growth. In each of these years, the (relative) optimism of the first half of the year was followed by downward revisions of growth expectations. While the baseline, slow recovery in the United States clearly is rooted in domestic financial and fiscal impediments to growth, our analysis suggests that tentative recovery in the United States from these impediments was stalled repeatedly by shocks emanating from Europe.

*Dominguez: Department of Economics and Ford School, University of Michigan, Weill Hall, 735 S. State Street, Ann Arbor, MI, 48109, and NBER (e-mail: kathrynd@umich.edu); Shapiro: Department of Economics and Survey Research Center, University of Michigan, Lorch Hall, 611 Tappan Street, Ann Arbor, MI 48109, and NBER (e-mail: shapiro@umich.edu). We are grateful to Allen Sinai for excellent discussant comments and suggestions.

† To view additional materials, and author disclosure statement(s), visit the article page at <http://dx.doi.org/10.1257/aer.103.3.147>.

¹Sahm, Shapiro, and Slemrod (2010) show despite a marginal propensity to consume (MPC) of only about one-third from the 2008 Economic Stimulus Payments that they were so large and dispersed so quickly that they noticeably increased growth of consumption in the second and third quarter of 2008 and reduced growth in the fourth quarter.

TABLE 1—MAJOR US AND EU POLICY AND MARKET NEWS (*percent*)

	US policy changes	Major US market news	EU policy changes	Major EU market news
2009	43	14	29	14
2010	14	14	57	14
2011	11	17	44	28
2012	6	12	59	24

Notes: The numbers in the table are the percent of occurrences of news events in each year. See the online Appendix for individual events.

Sources: *Financial Times*, *Wall Street Journal*, Federal Reserve websites, US Treasury, ECB, European Commission.

The next section of the paper discusses the narrative evidence that documents the role of Europe in the protracted and ongoing financial/fiscal crisis. The following section examines economic forecasts and their revisions. It establishes a strong, albeit circumstantial, case that the financial/fiscal shocks from Europe played an important role since 2010 in the downward revision of the outlook for recovery in the United States.

I. Narrative

Identifying the factors that drive economic growth is the central question in macroeconomics. Academics and policymakers have long debated the role for fiscal and monetary policy in stimulating growth; the efficacy of US macroeconomic policies undertaken during the Great Recession is no exception. There was strong opposition to financial and fiscal policies that were put in place around the globe in the throes of the crisis, reflecting both philosophical differences of opinion as well as the difficulty of forecasting the likely effects of policy during crises. Indeed, even after the fact, disentangling the effects of specific stimulus policies will intrinsically be confounded by the fact that the same factors that led to the policy change are likely correlated with other developments in the global economy. This ubiquitous omitted variable bias—combined with the uniqueness of the events in post-World War II time series—suggests that regression analysis of GDP growth during the recovery on standard measures of policy changes will be difficult. One way of dealing with this omitted variable bias is to use the “narrative approach” employed

by Romer and Romer (2010) and Ramey and Shapiro (1998). Our narrative approach involves using news reports and government announcements to identify policy and financial market shocks in the United States and Europe over the period 2008–2012. We then use forecast revisions of economic growth to link high frequency data with the recovery narrative.

Our narrative data come from financial media reports (in the *Wall Street Journal* and the *Financial Times*) and policy announcements provided on US and European government websites (Federal Reserve Bank sites, US Treasury, ECB, and the European Commission). We include financial market news (e.g., June 1, 2009: General Motors declares bankruptcy) as well as announcements of US and European policy changes (e.g., February 17, 2009: American Recovery and Reinvestment Act of 2009 signed into law; May 3, 2010: ECB announces that it will accept Greek sovereign debt as collateral no matter the country’s rating).

Table 1 aggregates our narrative data across years and between the United States and Europe. It documents a shift in the location of the crisis: both policy and market news are predominantly coming from the United States in 2009, while European shocks dominate our data in 2010–2012. An online Appendix table provides the detailed events that underlie the counts in Table 1.

II. Forecast and Forecast Revisions

Given that the Great Recession is a singular event in post-Great Depression US time series, econometric techniques have limited applicability for addressing the issues in this paper. This section presents evidence based on forecasts by economists in the private sector and at the International Monetary Fund (IMF). Our analysis thus aggregates the implicit and explicit models of forecasters.

We examine the US Survey of Professional Forecasters maintained by the Philadelphia Fed, the Eurozone Survey of Professional Forecasters maintained by the European Central Bank (ECB), and the IMF World Economic Outlook (WEO) forecasts. The SPFs are surveys—mainly of economists in the private sector. They have the advantage of aggregating the wisdom and information of a wide range of professionals. The WEO forecasts necessarily reflect the IMF’s

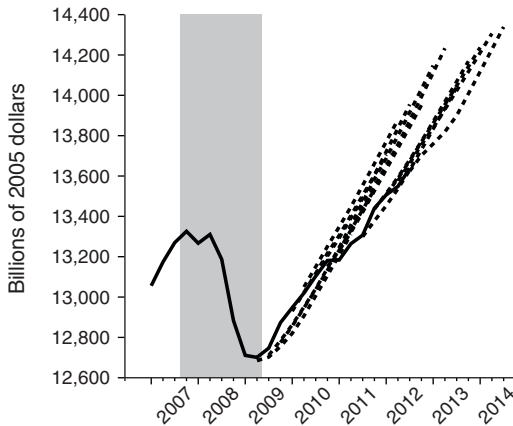


FIGURE 1. US REAL GDP: ACTUAL AND SPF FORECAST

modeling and institutional perspective. For our purposes, the WEO provides a convenient way to get forecasts of individual countries based on similar models and with consistent timing.

We focus on real GDP forecasts. Unemployment is a lagging indicator so is not as suitable for an analysis of revisions of forecasts in response to news. Inflation is interesting over this period—mainly because it moved so little despite the huge swings in real activity and economic policy. Aside from noting the importance of inflation as a “dog that did not bark” during this period, we leave analysis of it aside.

A. Forecasting the Recovery

We use the US Survey of Professional Forecasters (SPF) to provide a chronology of the revisions of the economic outlook during the recovery from the Great Recession. Figure 1 shows actual real GDP from 2007:I to 2012:III (solid line) and the mean eight-quarter ahead forecast for the level of real GDP for each quarter beginning at the trough of the recession in 2009:II (dotted lines).² The shaded area indicates the dates of the recession as determined by the NBER.

² Actual GDP data in Figure 1 are revised as of mid-December 2012. The SPF forecasts are made shortly after the preliminary release of data for the previous quarter. The SPFs provide forecasts for the level of the current and next four quarters and the current and next three years. To obtain the quarterly forecasts five to eight quarters ahead, we find constant quarterly percent changes consistent with the reported annual averages. The path of the level of the GDP forecast is adjusted up or down from the revised data by the “nowcast” error, measured

Important facts about the Great Recession and the subsequent recovery emerge from Figure 1. First, the prepeak trend path can be extrapolated from the path of GDP in 2007. Actual GDP remains far below this trend path, as do forecasts of GDP through 2014. Unlike the recessions of the 1950s through 1980s, where output grew at a faster than trend rate following the peak, in the recovery from the Great Recession, growth has been at trend rate or lower. The slow post-trough growth rate is embodied in the forecasts shown in Figure 1 both immediately after the trough and on an ongoing basis. In this regard, the Great Recession parallels the Great Depression. GDP did not get back to the pre-1929 trend path until the early 1940s. Nowhere in the forecast horizon since the 2009 trough have forecasters projected a return to the pre-Great Recession trend path. In this regard, the recessions since the 1980s are similar. Like 2009, the 1991 and 2001 troughs were followed by recoveries with average growth rather than a rapid return to the previous trend path.

Second, compounding the slow forecasted recovery that began in 2009, Figure 1 shows a series of unfavorable revisions of the outlook beginning in 2010. The forecasts shift unfavorably in 2010, 2011, and 2012, both in downward shifts of the trend path and, especially in 2012, a downward revision of the growth rate.

B. Forecast Revisions: A Slow Recovery Gets Even Slower

Thus, four years beyond the trough of the Great Recession, there have been a series of growth adjustments that were disappointing even relative to the forecasts of slow growth in 2009. The concomitance of the financial/fiscal shocks in Europe beginning in 2010 and the changes in US economic outlook suggest an important role of the unresolved financial problems in Europe damping the US recovery over several years. In this section of the paper, we develop that argument by examining how forecast revisions in the eurozone outlook relate to the bad news for growth in the United States.

Figure 2 shows the quarterly sequence of four-quarter-ahead forecasts for US and eurozone

based on the percentage difference from the “forecast” of the current quarter contemporaneous with the forecast and the preliminary announcement of that quarter’s data.

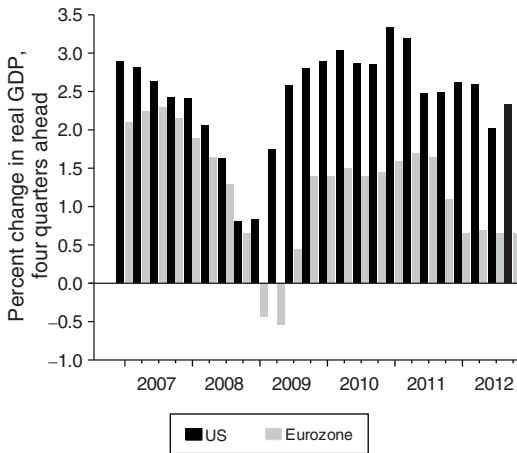


FIGURE 2. US AND EUROZONE REAL GDP:
1-YEAR-AHEAD SPF FORECASTS

GDP growth. The dark bars on the left are the mean US SPF forecast; the light bars on the right are the eurozone SPF forecast. The outlook for the United States and the eurozone deteriorated in tandem in 2007 and 2008. The trough in the outlook in the eurozone came several quarters later in 2009. As shown from a slightly different perspective in Figure 1, the US recovery slowed in the second half of three successive years—2010, 2011, and 2012—with the biggest step-down in growth in 2011. These changes in the outlook coincide with the increased prevalence of negative eurozone shocks described in the narrative. There is a slight revision downward in the eurozone forecast in 2010. The big step-down comes in 2011.³ What underlies this timing is that, although it was evident that smaller eurozone countries faced serious financial/fiscal problems beginning in the summer of 2010, it was not until the 2011 eurozone-wide crisis that the outlook for the larger countries, notably Germany, was revised down.

The protracted impasse over the federal debt ceiling beginning in mid-2011 is a prime suspect in explaining the step-down in the trajectory of the US economic outlook. It is swamped

³The precise timing should be interpreted with caution. Though the forecasts are made at roughly the same time, the eurozone GDP data are available with a greater lag than the US GDP data. Hence, a US lead over the Eurozone at the one-quarter horizon can be due to data availability as well as the timing of underlying news.

TABLE 2—IMF WORLD ECONOMIC OUTLOOK (WEO):
REVISION IN TWO-YEAR-AHEAD OUTLOOK FOR REAL GDP
(percent)

	US	Germany	Greece	Spain	UK	Japan	China
2009	3.2	2.7	1.1	-0.1	2.6	2.3	3.1
2010	-0.5	0.5	-3.1	-0.3	-1.0	-0.9	-0.6
2011	-2.2	-1.6	-6.1	-1.0	-1.5	0.5	-1.0
2012	-0.5	-1.2	-7.9	-2.9	-1.8	-0.9	-1.1

Note: Revisions from the second to fourth quarter of the forecast for the cumulative percent change real GDP two years ahead.

Sources: IMF WEO reports, April 2009 through October 2012.

by news from Europe in the counts of Table 1, but it was surely big news. We conjecture that the impact of the US fiscal impasse was magnified by its arrival at the same time as the growing understanding of Europe's financial/fiscal problems. That is, it appeared that the United States was volunteering to participate in a crisis that was building momentum in Europe.

Table 2 documents the timing of the growth shock internationally. It presents the revision in the two-year-ahead cumulative (not annual rate) outlook for real GDP from the IMF WEO. The WEO forecasts are made in the second and fourth quarter of the year, so the table reflects news that arrived over the summer of each year.⁴ The revisions in the IMF outlook for the United States tell a similar story to SPF's. In 2009, there was news that the recovery of growth was under way. There was a modest revision down in 2010 and 2012, but the big news came in the downward revision over 2011. The WEO forecasts show why the slowdown in the eurozone overall took hold only in 2011. While the smaller countries facing financial distress beginning in 2010 (e.g., Greece) had growth revised down at that point, it was not until 2011 that Germany, and therefore the eurozone overall, started to slow. The United Kingdom started to slow earlier and

⁴ That the IMF forecasts get revised between the second and fourth quarter is convenient for analyzing the eurozone crises of 2010 through 2012 where much news happened to come out over the summer. Note, however, that Table 2 does not reflect all cumulative news, since forecast revisions from the fourth quarter to the second quarter of the following year are not reflected in the table. It would be difficult to do so based on published tables because the horizon of the forecasts also shifts over this interval.

had downward revisions in each of 2010, 2011, and 2012.

Table 2 also includes data for the two largest Asian economies. In the 2010–2011 period, Japan was not particularly in sync with the other countries discussed, though hardly providing any good news. China's growth slowdown is milder than Europe's, but forecast revisions are increasingly negative over the three years.

III. Discussion

The recovery from the trough of the Great Recession has been very slow. Unlike other deep post–World War II recessions such as that of 1982, there has been no period of rapid growth that has gotten the economy back to the prerecession trend path. Four years after the trough, the economy remains about as far below the trend path as it was at the trough. This slow growth did not come as a surprise to forecasters, who on average projected slow growth from the start of the recovery. Strong headwinds—including the continuing effects of the decline in housing prices, deleveraging of households, the financial sector, and nonfinancial businesses, and fiscal contraction at the state and local level—all weighed against growth.⁵ The recoveries beginning in 1991 and 2001, though they followed much less sharp declines in activities, were similar to the experience beginning in 2009. Post-recession growth was no faster than the average rate.

Except for a brief period at the end of 2009, economic growth during the recovery has been disappointingly slow. In the course of 2010, 2011, and 2012, there was bad news for the trajectory of US GDP. The news was especially bad in 2011. This paper documents this news by examining revisions in forecasts for GDP growth. It uses a narrative of news about financial/fiscal issues in the United States and Europe to provide a circumstantial account of the sources of the revisions. News documented in our narrative timeline and forecast revisions

during the recovery from the Great Recession suggest that successive financial/fiscal shocks emanating from Europe together with self-inflicted wounds from the political stalemate over the US fiscal situation help explain the slowing of the pace of an already slow recovery.

The negative news from Europe seems to have magnified home-grown concerns about the ability of US policymakers to resolve the fiscal impasse. Implicitly using the models of forecasters rather than specifying one explicitly, we are capturing the collective wisdom about the likely magnitudes of these channels. Since countries like Greece and Spain are small relative to the world, it suggests that there are more to linkages than can be attributed to trade flows. On the other hand, small-country financial crises can be contained. The examples of Iceland and Ireland come to mind. Coming earlier in the crisis, before the understanding of the depth of the financial/fiscal issues in the eurozone and also the United States, they did not cause downward revisions in the global outlook.

So is this time different? The slow pace of the projected path of GDP from the trough has been a feature of US recoveries since the 1990s, though the depth of the 2009 trough was of course unique in post-Great Depression experience. The halting recovery—coming from the continued unfolding of joint financial/fiscal crises internationally—has made the recovery from the Great Recession even slower than initially expected.

REFERENCES

- Cogan, John F., Tobias Cwik, John B. Taylor, and Volker Wieland.** 2010. "New Keynesian versus Old Keynesian Government Spending Multipliers." *Journal of Economic Dynamics and Control* 34 (3): 281–95.
- Dominguez, Kathryn M., Ray C. Fair, and Matthew D. Shapiro.** 1988. "Forecasting the Depression: Harvard versus Yale." *American Economic Review* 78 (4): 595–612.
- European Central Bank.** 2012. ECB Survey of Professional Forecasters [Euro]. <http://www.ecb.int/stats/prices/indic/forecast/html/index.en.html> (accessed December 17, 2012).
- Federal Reserve Bank of Philadelphia. Survey of Professional Forecasters [US].** <http://www.phil.frb.org/research-and-data/real-time-center/survey-of-professional-forecasters/> (accessed December 15, 2012).

⁵ We are grateful to Allen Sinai, who foresaw the slow pace of the recovery from the Great Recession, for stressing these factors in his discussion of this paper (see Sinai 2008). Sinai (2010) emphasizes the importance of financial factors in explaining recent business cycles and particularly how they magnify the effects of other channels that propagate the business cycle internationally.

- International Monetary Fund.** 2008–12. World Economic Outlook Database. Washington, DC: International Monetary Fund. (April and October).
- Ramey, Valerie A., and Matthew D. Shapiro.** 1998. “Costly Capital Reallocation and the Effects of Government Spending.” *Carnegie-Rochester Series on Public Policy* 48 (1): 145–94.
- Reinhart, Carmen M., and Kenneth S. Rogoff.** 2009. *This Time Is Different: Eight Centuries of Financial Folly*. Princeton, NJ: Princeton University Press.
- Romer, Christina, and Jared Bernstein.** 2009. “The Job Impact of the American Recovery and Reinvestment Plan.” http://otrans.3cdn.net/45593e8ecbd339d074_13m6bt1te.pdf (accessed December 15, 2012).
- Romer, Christina D., and David H. Romer.** 2010. “The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks.” *American Economic Review* 100 (3): 763–801.
- Sahm, Claudia R., Matthew D. Shapiro, and Joel Slemrod.** 2010. “Household Response to the 2008 Tax Rebate: Survey Evidence and Aggregate Implications.” In *Tax Policy and the Economy*, Vol. 24, edited by Jeffrey R. Brown, 69–110. Chicago: University of Chicago Press.
- Sinai, Allen.** 2008. “Seismic Shifts and Global Rebalancing: How Long Can Expansion Last?” In *The Economic Outlook for 2008*. University of Michigan: Ann Arbor.
- Sinai, Allen.** 2010. “The Business Cycle in a Changing Economy: Conceptualization, Measurement, Dating.” *American Economic Review* 100 (2): 25–29.