

January 3, 2010
10:15 EST

**Macroeconomic Policies and the “Great Recession” of 2007-09:
Retrospect and Prospect**

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Paper to be presented at the 2010 ASSA Annual Meetings, IBEFA Session, “The Andrew Brimmer Policy Forum: National Economic and Financial Policies of President Barack Obama, Evaluations One Year on the Trail,” Atlanta Hilton, Atlanta, Georgia, January 3, 2010.

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The years 2007-09 witnessed the longest and deepest U.S. and global recessions since the 1930s. (Tables 1, 2 in the Appendix). Mild at first, the 2007-09 downturn gathered considerable force over a six-month period between September 2008 and March 2009 when a stunning and sweeping series of declines in U.S. and global economic growth; bursting of asset price bubbles in residential real estate and equities; shutdowns of credit within, and outside, the U.S. financial system; collapse in confidence, surge in liquidity preference and panic flight to ultra-safe liquid assets; functioning of many asset markets ceased; selling of assets to raise cash; huge contractions in the balance sheets of bank and non-bank financial institutions; sharp declines in consumer expenditures and in business outlays; and a slashing of employment combined to produce the worst economic and financial crises in modern history.

A financial crisis and classic Panic can be said to have characterized the episode, in full force particularly during the latter part of 2008 and first half of 2009, as the realization spread that something unusual, unexpected and unfathomable was in-process, perhaps having never been seen before (Table 1). The London, or LIBOR, overnight interbank and U.S. federal funds markets and commercial paper markets stopped functioning and borrowers were unable to sell debt or equity. A huge credit crunch within, and outside of, the financial system occurred. An already “Bear” stock market became even worse, with stock price declines almost every day on the way to becoming the second biggest equity Bear Market since 1929-32. The financing of working capital and financing, in general, dried up. Huge demands for liquidity and safety of principal crisscrossed the globe. Counterparties called in loans and withheld funds to create classic “runs” on the large banks and nonbank financial institutions that comprised the U.S. and global financial infrastructure, such as Citigroup, Lehman Brothers, AIG, FNMA and GNMA.

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Some failed, e.g., Lehman, or came close to failure, e.g., AIG, Citigroup and others, funded and ultimately supported by the Federal Reserve and U.S. Treasury. And, *most importantly, a major source of the booms in the economy and financial markets, the debt-leveraged expansion in the balance sheets of financial institutions, households and businesses, and in the funding of expenditures of new and existing businesses and asset purchases, reversed course.*

Once in motion, deleveraging and risk-aversion became pronounced, spending and economic activity fell, particularly housing then consumption later business inventories and nonresidential fixed investment, standard multiplier-accelerator interactions took place in a number of real economy subcycles, company sales and earnings declined sharply, payrolls were slashed, household incomes fell, asset prices for equities, credit, debt and derivative securities fell even more, the crunch intensified and spread globally through reductions in U.S. imports taking down exports of non-U.S. countries, U.S. and global economic growth fell further, and deep recessions, or big growth recessions, occurred almost everywhere. Credit risks increased as a result as did the perceived risks on investments, negatively affecting asset prices. Financial institutions' balance sheets continued to contract, the availability of finance and credit was reduced, the economy weakened more, profits declined, asset prices kept falling, impacting further on the economy, then back on the financial system, etc..¹

As balance sheets and asset prices fell, particularly for real estate and stock prices, the asset values of borrower collateral melted away. Real household net worth (wealth) declined sharply. Business profits and real incomes fell. Credit risk across the economy and financial institutions rose sharply. Panic and fear set in the financial markets, culminating in the second greatest equity bear market in U.S. history—second only to 1929-32.² (Table 3, Appendix).

¹See Sinai (2009, Part I) for a sketch of the possible genesis and unusual nature of the 2007-09 financial and economic crises.

²The Great Equity Bear Market of 1929-32 lasted 33 months. The S&P 500 fell 86.1%, peak-to-trough. The 2007-09 Great Equity Bear Market was much shorter, only 17 months, but very sharp, with the S&P 500 down 56.7%, peak-to-trough. The median length of equity bear markets since 1929 is 18 months; 17 months post-W.W.II. The median length of equity bull markets since 1932 is 55 months; post-W.W.II, 47 months.

Bankruptcies, foreclosures, failure fallout, the closing down of numerous banks and nonbank financial institutions, slashing of production, inventories, payrolls and capital expenditures by business, the biggest back-to-back declines in aggregate consumption since the 1930s, its negative effects on non-U.S. economies and on global trade, then a reverberation back to U.S. exports and to the overall economy all combined to intensify the downturn. A culture of risk-taking turned to risk-aversion, essentially overnight, with a huge shift to liquidity preference and fight-to-safety by households, businesses, and financial institutions all over the world.

Not since the 1930s and only a few other brief situations subsequent to World War II have there been such violent movements in the economy and financial markets, this time even greater because of the globalized and interrelated nature of economies and financial markets in a tightly intertwined global economy.

The shock to the global economy in 2007-09 came from the U.S., centered around the U.S. financial system and U.S. aggregate consumption, with asset price bubbles bursting, a collapse in housing activity and in U.S. consumption amplified globally through financial instability, reductions in trade flows, falling asset prices, market-induced increases in the cost-of-credit, and a credit crunch that curtailed financing and investments (Figures 2, 3; Appendix). The effects of the U.S. shock spread everywhere, directly and indirectly.

Unlike the 1930s, however, changes in macroeconomic policies, both monetary and fiscal, were implemented relatively quickly; far too late to prevent the Great Recession given the dynamics of the underlying processes and delays in the policy responses, but faster nonetheless. A greater range of policy reactions occurred and were more widespread geographically. The monetary and fiscal policy actions taken were huge in absolute and relative size and scope, and were spread across all major economies and a number of minor ones.

In the U.S., massive efforts were made by the Federal Reserve and U.S. Treasury to prevent the largest and systemically most important U.S. financial institutions from failing. “Too big to fail” became the policy reality.

One lesson of the 1930s had been that the collapse of banks, in credit, and of the financial system had been most likely responsible for the Great Depression, not just a contraction of the money supply, with the downturn depressing credit, lowering asset prices with a debt deflation causing losses and failures of banks, companies and other firms, then further declines in economic activity—a negative feedback loop from asset prices to the financial system to the economy, back to the financial system, and back to the economy with little or no policy intervention, and when policies were implemented, too little, in the wrong direction, or too late.

The recession of 2007-09 ended up as the longest and deepest since the 1930s with a deep financial crisis that intensified the downturn, which then worsened the financial crisis, which intensified the economic decline even more—a rare negative feedback loop, but not unfamiliar.³

Policy actions and interventions came from all directions—the Federal Reserve, U.S. Congress, Bush and Obama Administrations, foreign central banks and governments, all somewhat chaotic, panicky, but fast and furious with almost no time for considered actions given the speed and scope of the crises. *But, by the time policy actions were undertaken, the dynamics of the downturn were far ahead of the policy interventions.* The lags in recognition had been quite long. As often is the case, policymakers almost everywhere, although aware of downside risks to the economy in this episode, especially for U.S. housing and residential construction, took far too long to recognize the reality of the problems, lagging way behind the dynamics of the downturn and financial crisis.

Monetary policy first was aimed at cushioning what was perceived as a mild contraction and shoring-up financial institutions to maintain the flow of credit, with modest reductions in the federal funds rate between mid-September 2007 and January 2008. Monetary policy is the first

³Seen in the U.S. during the 1930s, Japan in the 1990s, and Asia in the late-1990s.

line-of-defense in any economic downturn and, in principle, the quickest to implement with possible scalpel-like gradations as opposed to the bluntness of fiscal policy. Fiscal stimulus, which can take considerable time to formulate and implement, and then, because of lags in its implementation and economic impacts can be slow to affect the economy, also was applied in the U.S. and a number of other countries, mostly through government spending.

Nowhere more than in the United States were so many and wide-ranging macroeconomic policies implemented, however.

The United States is the focus of this paper, in particular an evaluation of the effects from the macroeconomic policies that were used in 2007 to 2009, using counterfactual large-scale macroeconometric model-based simulations to estimate the impacts and relative effectiveness.

It is the verdict of the quantitative research for this paper that collectively the macroeconomic policies used prevented a much worse result from occurring, what probably would have been a “Mini-Depression,” but with several negative side effects, or by-products, of the actions and aftermath of the crises remaining to be addressed—1) huge and outsized U.S. federal budget deficits and debt in an already heavily indebted nation, the U.S., 2) high unemployment and severe jobs losses, possibly another “jobless” recovery, 3) a need for additional policies and actions on regulation and reform of the financial system, 4) an exit plan and process and return to normalcy for monetary policy and 5) macroeconomic policies that might help return the economy and financial system to a more normal and stable state that is sustainable in the long-run.

Perhaps most importantly, the macroeconomic policy issue for this next decade must be addressed—the policy options and actions necessary to put the U.S. economy on a path toward sustainable growth, full employment, price and financial stability, while at the same time reducing federal budget deficits and debt relative to GDP.

How much effect did the policies have that were used to combat the “Great Recession” of 2007-09? What might have happened had these policies not been instituted? What can be learned and what can be said about the actions that were taken? What now is the prospect and role for macroeconomic policy in the aftermath of the economic and financial crises, given the goals of full employment and price stability?

Some would argue that the policies taken have done little; simply spending taxpayer monies ineffectively and leaving the United States open to future financial instability and too high inflation.⁴ Others argue that not enough has been done and that even more stimulus, particularly through further increases of federal government spending, are economically and societally necessary.⁵

This paper employs a counterfactual quantitative approach to analyze the major dimensions of the macroeconomic policies used to combat the Great Recession of 2007-09. Given the complexity of the policy measures taken it attempts an extremely difficult task, to empirically assess what might have happened if nothing had been done. The method of analysis is counterfactual and uses an elaborate large-scale structural macroeconometric model of the U.S. economy and financial markets to perform the quantitative work.⁶

⁴Taylor (2009) uses a real-time counterfactual analysis to show the ineffectiveness of the monetary and fiscal actions taken up to mid-2009.

⁵Stiglitz (2009). The issue of spending increases versus tax reductions and the impact of increased federal government outlays now is a hotly debated issue, centered on the size of fiscal multipliers. Cogan, Cwik, Taylor, Wieland (2009) present estimates and assessments of federal government outlay multipliers, both in aggregate and for particular components. In Alesina-Ardagna (2009) in Sinai (2009, Part II) is found support for larger and more long-lasting effects of permanent tax reductions than increases in various types of government outlays. In Cogan, Cwik, Taylor and Wieland (2009), Hall (2009) and Barro-Redlick (2009) and is evidence of smaller multiplier effects from government purchases. Using a large-scale structural quarterly macroeconometric model, Sinai (2009, Part II) finds sizeable impact multipliers for federal government purchases, less so for various components of federal government outlays, such as transfers, and no permanent long-run gains in real GDP from the government outlay stimulus. But, impact and intermediate-term fiscal multipliers are greater than unity, at least in the initial year-or-so. The size of federal government multipliers and impact of government purchases and outlays is no small matter, since much recent fiscal stimulus has been of this nature. But, importantly for the future, a policy mix heavily oriented toward federal government outlays leaves as possible potentially large federal budget deficits and debt as a proportion of GDP, particularly if the multipliers are small and fade over time.

⁶The model used is the 2007 Version of the Sinai-Boston (SB) Quarterly Macroeconometric Model of the U.S. Economy and is discussed elsewhere, particularly with regard to the financial factor in the business cycle, Sinai (1992).

The organization of the paper is as follows. The first section takes a look at the Great Recession—some of its characteristics—especially the “financial factor” in the business cycle; and the role of the U.S. consumer.⁷ Section 2 chronicles the major macroeconomic policies taken. Standard, and nonstandard, monetary and fiscal policies were utilized to stem and cushion the economic and financial crises, to prevent them from intensifying, and reverse and stimulate the economy into recovery. In Section 3, the results of counterfactual simulations are presented. The counterfactuals are the removal, one-by-one and together, of the major elements of the monetary and fiscal actions taken and then asking of the Model what would have happened to real GDP, the unemployment rate, employment, inflation, incomes and profits if the policies had not been implemented. How much worse might the episode have been and what were the contributions of each macroeconomic policy that was used? In Section 4, the main legacies of the Great Recession are indicated, that is the conditions of the aftermath, and some perspectives are offered on possible options for macroeconomic policies going forward. Section 5 presents some concluding perspectives.

The answers to the key issues and questions of the paper must be regarded as tentative and no more than suggestive, for several reasons.

First, so far, not enough sample period history exists to make a full judgment given lags in the economy in response to the macroeconomic policies that have been implemented. Second, for any counterfactual simulations, the results are very much model-specific. There are arguable issues as to what kind of model, and structure, if any, should be used to perform a counterfactual simulation for a particular historical episode. This paper offers results based on one type of approach, that of a modern, eclectic large-scale macroeconometric model that has a long history

⁷The Financial Factor in the business cycle is more than just a financial crisis, financial instability, or credit crunch, essentially all of them as endogenous. It Financial Factor has been present in every business cycle downturn, to a greater-or-lesser degree, and develops endogenously within the financial and real business cycles of the economy. Sinai (1992).

in forecasting, policy analyses, macroeconometric simulation, and explanation, developed by conventional methods of model-building. But, large-scale macroeconometric models are not easily transparent. And, there are other possibilities.⁸ Third, simulations of the sort performed here are subject to the Lucas-criticism, especially in the current episode when deviations from historical trend have been so great as to suggest that structural parameters might respond endogenously. This can render imprecise, or at least with much larger bounds, the quantitative results from the counterfactual analyses.

Nevertheless, based on the quantitative research and analysis of the paper, some conclusions are offered. The policies examined were both fiscal and monetary, individually, together for fiscal and then monetary, all collectively, and then a counterfactual on the balance sheet collapse of households and financial institutions in so far as is possible to assess in the SB Model.

The fiscal policies were “The Economic Recovery Act of 2008,” legislated in February 2008 and the “American Recovery and Reinvestment Act of 2009” legislated in mid-February 2009 (Appendix Tables 6, 7). An additional round of stimulus passed by the House of Representatives in December, “The Main Street Jobs Act of 2010,” was not simulated.

For monetary policy, the reductions of the federal funds rate between September 2007 and December 16, 2008 were removed and then some dimensions of the subsequent “Quantitative Easing” by the Federal Reserve also were taken away, i.e., the engineering through numerous techniques a massive expansion in the asset side of the Fed’s balance sheet (Tables 4, 5 and Figure 4).

Both fiscal policies, jointly, were counterfactually simulated as were the reductions of the federal funds rate and quantitative easing, jointly. Then, the policies were removed from history, collectively, to determine what would have happened if none of them had been implemented in

⁸ Taylor (2009).

the 2007 to 2009 period. All simulations were performed on a stochastic historic Baseline where the effects of actual implementation of the policies are reflected in the historic data.

Finally, a number of the factors responsible for the contractions in household, business and financial institution balance sheets were removed, holding fiscal and monetary policy constant, to isolate in the SB Model the effects of the “financial factor,” or balance sheet contractions on the economy.

Some conclusions:

– It is clear that collectively the fiscal and monetary stimuli made a big difference to economic performance in 2009 and will in 2010. A much worse result would have occurred if nothing had been done, Tables 14, 16 and Figure 13 (Appendix); in 2009, over two percentage points less real economic growth and in 2010 more than four percentage points than is currently expected. In retrospect, implementing these macroeconomic policies was of immense help. Real GDP for the U.S. economy is estimated to have fallen 2.5% in 2009 and is forecast to rise only 2-1/2% in 2010. *Without the policy actions, the counterfactual simulations suggest that real GDP would have declined 4-1/2% in 2009 and would be down 1.7% in 2010.*

– *Also quite clear, both in history and in the business cycle in the absence of each, any, and all policies, the policymaker actions were way too late, way too slow to recognize the problem, not preemptive enough, and probably for the short-term, not of adequate magnitude.* There are also issues having to do with the composition of the policies, especially fiscal, sure to be the subject of research and controversy for many years. If some of the macroeconomic policies had been implemented at earlier stages when there were early signs of trouble, e.g., in 2006 and 2007, the stimulative impact of them would have been in 2008 and 2009 and possibly could have offset the dynamics of the downturn, its amplitude, and its duration. Policymakers needed to act sooner and more preemptively than they even did in order to have prevented this major downcycle. Yet, paradoxically, policymaking in Washington was perhaps the fastest and more

pronounced than in most episodes of business cycle history, certainly the 1930s. But, still the charge of being too little and too late can be levied.

– As between the various policies, the results show much greater effect for the monetary easing than the fiscal stimulus. This can be seen in the summary Table 16 (Appendix) and Figure 13 (Appendix). Monetary Policy Easing, both reductions of interest rates and quantitative easing, if not implemented, would have cost 1.9 percentage points of growth in 2009 and 3.3 percentage points in 2010. The Fiscal Policy Stimulus, both the Economic Recovery Act of 2008 and American Recovery and Reinvestment Act of 2009, if not implemented, would have cost the economy only 0.5 percentage points of growth in 2009 and 1.3 percentage points in 2010. The absence of Monetary Policy Easing would have resulted in a much worse economy than the absence of the Fiscal Policy Stimulus, indicating the bigger effect of monetary policy in this period compared with fiscal policy.

– Within the Monetary Policy Easing, it is notable that the Quantitative Easing (Table 16) had a bigger impact counterfactually, combining both years 2009 and 2010, than the interest rate reductions. The Quantitative Easing, simulated counterfactually as no change in Federal Reserve Credit and the removal of much of the increase in nonborrowed reserves left the economy almost three percentage points weaker than actual history. *Maintaining the flow of credit and saving those institutions deemed too-big-too fail was a policy that is supported by the SB Model results, vindicating the late but ingenious, monetary policy actions summarized in Tables 4, 5 (Appendix).*

– Within the Fiscal Policy Stimulus, the small effects from the Economic Recovery Act of 2008 are to be noted—temporary tax reductions for individuals and business, and increased government outlays having had essentially no effect on the economy.

The American Recovery and Reinvestment Act of 2009, if not implemented, would have had a greater effect, but not much according to the counterfactual simulation, subtracting just 1.3 percentage points of real economic growth from the economy in 2010.

These are just a few highlights, in summary, for the implications of the counterfactual simulations for the removal of various macroeconomic policies during 2007 to 2009 and the impact on the “Great Recession.”

Appendix Tables 8 to 15 show the results of the counterfactual simulations for 11 variables on the Economy, Unemployment and Inflation, Incomes and Profits, and Financial Markets over 2007-2012 and each’s average over that time span. Figures 5-12 show the paths and patterns from removing the various policies over 2007 to 2012 for real GDP growth, the unemployment rate, CPI-U inflation, and civilian employment. A vast amount of empirical results is available from the SB Model counterfactual simulations given its housing variables and 1000-variables and near 500 behavioral equations.

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Appendix

Tables and Figures

Table 1
The “Great Recession” of 2007-09: A World Economic View
Real GDP Growth
(Pct. Chg. at Annual Rates)

Country and Global Region	Quarters									Years			
	2007:3	2007:4	2008:1	2008:2	2008:3	2008:4	2009:1	2009:2	2009:3	2006	2007	2008	2009F
United States *	3.6	2.1	-0.7	1.5	-2.7	-5.4	-6.4	-0.7	2.2	2.7	2.1	0.4	-2.5
Canada *	2.1	1.1	-0.7	0.3	0.4	-3.7	-6.2	-3.1	0.4	2.9	2.5	0.4	-2.5
United Kingdom *	2.0	2.2	2.9	-0.3	-3.7	-7.0	-9.7	-2.7	-0.6	2.9	2.6	0.6	-4.6
Europe	1.8	0.4	3.4	-1.1	-1.0	-5.8	-14.5	-1.8	-1.1	3.1	2.7	0.6	-3.5
France *	2.9	1.1	2.3	-1.8	-1.1	-6.4	-5.8	1.0	1.3	2.4	2.4	0.4	-2.3
Germany *	3.2	0.5	6.5	-2.2	-1.3	-9.4	-13.4	1.8	2.9	3.4	2.6	1.0	-4.0
Italy *	0.6	-1.8	2.1	-2.2	-3.2	-8.0	-10.4	-1.9	2.3	2.1	1.5	-1.0	-4.7
Switzerland *	3.7	3.9	2.3	1.0	-2.0	-2.3	-3.6	-1.1	1.2	3.6	3.6	1.8	-1.5
Asia - Pacific	0.3	1.6	5.1	-6.1	-3.2	-9.0	-9.4	2.7	1.2	2.1	2.7	-0.6	-4.0
Japan *	0.1	1.5	5.6	-8.1	-4.0	-10.2	-11.9	2.7	1.3	2.0	2.3	-1.2	-5.1
Australia *	0.8	1.5	3.6	3.6	0.5	-3.5	2.2	2.6	0.8	2.7	4.8	2.2	0.8
New Zealand *	2.8	4.0	-1.5	-2.4	-2.7	-3.4	-3.4	0.9	0.8	1.0	2.8	-0.1	-0.7
Newly Industrialized	17.7	9.5	-8.3	3.2	5.9	-13.7	-15.6	16.2	21.7	5.8	5.8	1.8	-2.3
Korea *	5.4	5.2	4.4	1.7	1.0	-18.8	0.5	11.0	13.6	5.2	5.1	2.2	-0.3
Taiwan	34.0	19.1	-34.2	17.4	5.2	-8.4	-39.6	29.2	32.7	5.4	6.0	0.7	-5.1
Hong Kong	41.2	20.1	-23.0	-10.0	27.6	1.6	-38.1	7.4	34.0	7.0	6.4	2.4	-5.5
Singapore	17.4	-1.8	0.2	-4.4	6.5	-17.5	-20.1	24.6	24.6	8.4	7.8	1.1	-3.0
Latin America	3.5	6.7	2.8	2.6	1.8	-7.3	-18.4	1.6	9.3	5.2	4.5	2.7	-4.5
Argentina	12.9	7.3	5.1	7.3	5.3	-2.0	0.2	1.1	--	8.5	8.7	6.7	0.7
Brazil	4.3	10.5	7.5	3.9	4.5	-11.2	-3.5	4.4	5.1	3.9	6.1	5.1	0.6
Mexico *	1.1	3.2	4.3	-1.4	0.2	-9.3	-23.4	-1.1	12.2	5.1	3.3	1.4	-7.0
Venezuela	25.6	37.1	-46.4	43.1	10.2	35.7	-52.3	27.1	0.9	9.9	8.2	4.8	-2.8
Chile	-3.2	5.5	7.2	7.6	-5.1	-7.9	-2.9	-1.2	4.6	4.8	4.7	2.9	-1.9

Table 1 (continued)

Country and Global Region	Quarters						Years						
	2007:3	2007:4	2008:1	2008:2	2008:3	2008:4	2009:1	2009:2	2009:3	2006	2007	2008	2009F
World	4.7	5.0	2.4	0.7	0.5	-4.0	-9.7	0.6	4.1	4.2	4.1	1.8	-2.4
OECD	3.3	1.4	1.8	-0.4	-0.9	-7.3	-11.4	0.2	3.3	3.2	2.7	0.5	-3.6
EU	2.5	1.6	3.2	-0.8	-1.8	-7.3	-9.0	-0.9	1.2	3.2	2.8	0.6	-3.7
Eurozone	2.4	1.3	3.3	-1.4	-1.7	-7.3	-9.2	-0.7	1.5	3.1	2.7	0.5	-3.9
Asia-NICs, Emerging	11.4	21.9	5.1	2.5	6.2	10.7	0.0	4.6	10.9	9.0	10.0	6.7	5.0
Europe													
Spain *	2.8	2.4	1.7	-0.1	-2.2	-4.3	-6.3	-4.1	-1.2	4.0	3.6	0.9	-3.6
Portugal *	-0.3	2.1	0.8	0.5	-2.0	-6.7	-7.8	2.1	2.8	1.4	1.9	0.0	-2.6
Netherlands *	3.4	6.1	3.8	-0.1	-3.0	-4.1	-9.4	-4.0	1.8	3.4	3.6	2.0	-4.1
Belgium *	1.9	1.7	2.0	1.6	-0.9	-8.2	-7.0	-0.3	2.2	2.8	2.8	0.8	-3.0
Austria *	1.6	4.4	5.4	1.7	-2.6	-5.0	-9.7	-1.7	2.1	3.4	3.4	2.0	-3.6
Greece *	3.4	2.1	2.7	2.5	0.5	-2.7	-2.1	-0.4	-1.7	4.5	4.5	2.0	-0.8
Ireland *	-0.2	6.2	-3.8	-7.6	0.7	-19.9	-8.0	-2.5	1.4	5.4	6.0	-3.0	-7.3
Scandinavia	3.5	2.8	0.4	1.3	-2.4	-10.2	-6.7	-2.4	1.8	3.5	2.8	0.4	-4.2
Denmark *	3.5	3.0	-3.7	2.8	-4.8	-8.6	-7.7	-6.7	1.5	3.4	2.1	-0.7	-5.7
Sweden *	2.1	1.5	1.8	-0.8	-2.2	-17.9	-3.2	1.2	0.7	4.5	2.7	-0.5	-4.4
Norway *	5.4	4.0	1.9	1.0	-2.8	0.1	-2.7	-3.7	3.5	1.7	2.7	1.7	-1.1
Finland *	2.8	2.7	0.9	3.7	0.8	-15.5	-18.2	-1.1	1.2	4.9	4.1	1.1	-7.0
Eastern Europe	31.2	-7.1	-7.3	8.4	24.4	-19.4	-23.4	24.2	38.0	6.4	5.2	2.4	-3.3
Poland * [†]	6.6	6.6	6.2	6.0	5.1	3.0	0.8	1.1	1.7	6.2	6.8	5.1	1.7
Hungary *	1.4	2.4	3.8	-0.8	-4.0	-7.3	-9.8	-7.6	-6.9	3.8	1.0	0.4	-6.4
Czech Republic *	6.0	4.1	1.1	2.8	0.7	-2.7	-16.4	0.6	3.3	7.0	6.1	2.3	-4.1
Turkey *	62.9	-22.5	-22.1	13.7	51.6	-43.2	-46.0	54.7	84.3	6.9	4.7	0.9	-6.0
Russia [†]	7.7	9.0	8.7	7.5	6.0	1.2	-9.8	-10.9	-8.9	7.7	8.1	5.6	-9.5

Table 1 (continued)

Country and Global Region	Quarters									Years			
	2007:3	2007:4	2008:1	2008:2	2008:3	2008:4	2009:1	2009:2	2009:3	2006	2007	2008	2009F
Emerging Asia	9.8	25.1	8.5	2.3	6.3	17.0	4.0	1.7	8.2	9.8	11.1	8.0	6.8
China †	13.4	12.1	10.6	10.2	9.0	7.0	6.1	7.9	8.9	11.0	13.0	9.1	8.3
India	-4.2	79.9	11.0	-29.4	-4.4	67.2	10.8	-28.4	2.0	9.9	9.3	7.4	7.2
Indonesia	15.7	-9.7	10.0	11.7	15.6	-13.8	6.9	9.9	16.4	5.5	6.3	6.1	4.5
Malaysia	19.8	4.4	-5.8	9.5	11.9	-12.9	-27.6	20.7	25.0	5.8	6.3	4.6	-2.2
Philippines	-11.7	75.0	-39.9	26.9	-10.4	63.8	-45.1	31.3	-12.8	5.3	7.1	3.8	1.0
Thailand	8.8	37.3	2.0	-19.6	-0.4	3.2	-9.9	-11.6	8.6	5.1	4.9	2.6	-2.8
Middle East	3.3	3.4	1.9	4.0	1.0	-0.8	-1.7	0.5	1.2	6.0	6.2	5.6	3.9
Israel	5.0	6.3	5.6	3.6	0.8	-1.6	-3.2	1.0	2.2	5.3	5.2	4.2	3.7
Egypt	--	--	--	--	--	--	--	--	--	6.8	7.1	7.2	4.2
Jordan	14.9	1.5	-26.8	51.9	14.0	--	--	--	--	8.0	8.9	7.9	4.4
South Africa	4.5	5.4	1.7	5.0	0.2	-1.8	-6.4	-3.0	--	5.3	5.1	3.1	-1.5

(1) Real GDP.

(2) Annual averages, except for Latin American countries and Russia, which are percent change, December-over-December.

* OECD countries.

§ Regional and world totals are weighted averages of countries shown.

† Quarterly changes calculated as percent change from year ago.

F-Decision Economics, Inc. (DE) forecast.

Table 2
Postwar Recession: How Long and How Deep?

	Peak	Trough	Length (Mos.)	Pct. Chg. in Real GDP: Peak-to-Trough
1	Nov. 1948	Oct. 1949	11	-1.58
2	Jul. 1953	May. 1954	10	-1.93
3	Aug. 1957	Apr. 1958	8	-3.14
4	Apr. 1960	Feb. 1961	10	-0.53
5	Dec. 1969	Nov. 1970	11	-0.16
6	Nov. 1973	Mar. 1975	16	-3.19
7	Jan. 1980	Jul. 1980	6	-2.23
8	Jul. 1981	Nov. 1982	16	-2.64
9	Jul. 1990	Mar. 1991	8	-1.36
10	Mar. 2001	Nov. 2001	8	0.73
11	Dec. 2007	Oct. 2009E	23	-2.20 (-3.66*)
	Average Length (10)		10.4	-1.60
	Median Length (10)		10.0	-1.76
	Average Length (11)		11.5 (11.2*)	-1.66 (-1.79*)
	Median Length (11)		10.0	-1.93

*If 2009Q2 is treated as end of recession for real GDP.

Sources: National Bureau of Economic Research, Bureau of Economic Analysis, Decision Economics, Inc. (DE).

Table 3
Asset Prices, Consumer Sentiment, and the Household Balance Sheet in Postwar Recessions
Peak-to-Trough (Pct. Chg.)

Business Downturn	S&P500 Price	Crude Oil Price	Median Home Price	Real Net Worth	Household Sector		U. of M. Consumer Sentiment	3-Mos. Treasury Rate (%)	10-Yr. Treasury Yield (%)
					Stock Mkt. Net Worth	Real Estate Net Worth			
1948-1949	-15.41	--	--	--	--	--	--	NM	--
1953-1954	NM	--	--	NM	-18.85	-2.26	--	-70.78	-26.05
1957-1958	-16.53	--	--	-1.73	-12.59	-3.28	--	-76.82	-27.46
1960-1961	-10.85	--	--	-1.15	-11.93	-2.14	--	-50.11	-21.40
1969-1970	-32.90	NM	NM	-8.12	-41.13	-0.29	-22.6	-57.05	-27.94
1973-1975	-46.18	-18.10	NM	-13.04	-59.69	-13.55	-44.2	-51.45	NM
1980	-10.57	NM	NM	-0.83	-11.23	-2.99	-22.8	-53.46	-23.29
1981-1982	-21.26	-23.94	NM	-0.33	-32.60	-2.46	-19.7	-52.71	NM
1990-1991	-15.84	-49.85	-6.54	-3.95	-20.92	-9.90	-33.3	-67.51	-40.04
2001	-46.28	-44.31	NM	-13.21	-54.36	NM	-24.0	-85.14	-31.38
2007-2009	-52.56	-70.59	-27.44	-29.28	-50.30	-63.35	-42.9	-99.31	-52.55
Excluding 2007-2009:									
Average	-23.98	-34.05	-6.54	-5.29	-29.26	-4.61	-27.8	-62.78	-28.22
Median	-16.53	-34.13	-6.54	-2.84	-20.92	-2.73	-23.4	-57.05	-27.46
Including 2007-2009:									
Average	-26.84	-41.36	-16.99	-7.96	-31.36	-11.14	-29.9	-66.43	-31.26
Median	-18.89	-44.31	-16.99	-3.95	-26.76	-2.99	-24.0	-62.28	-27.70

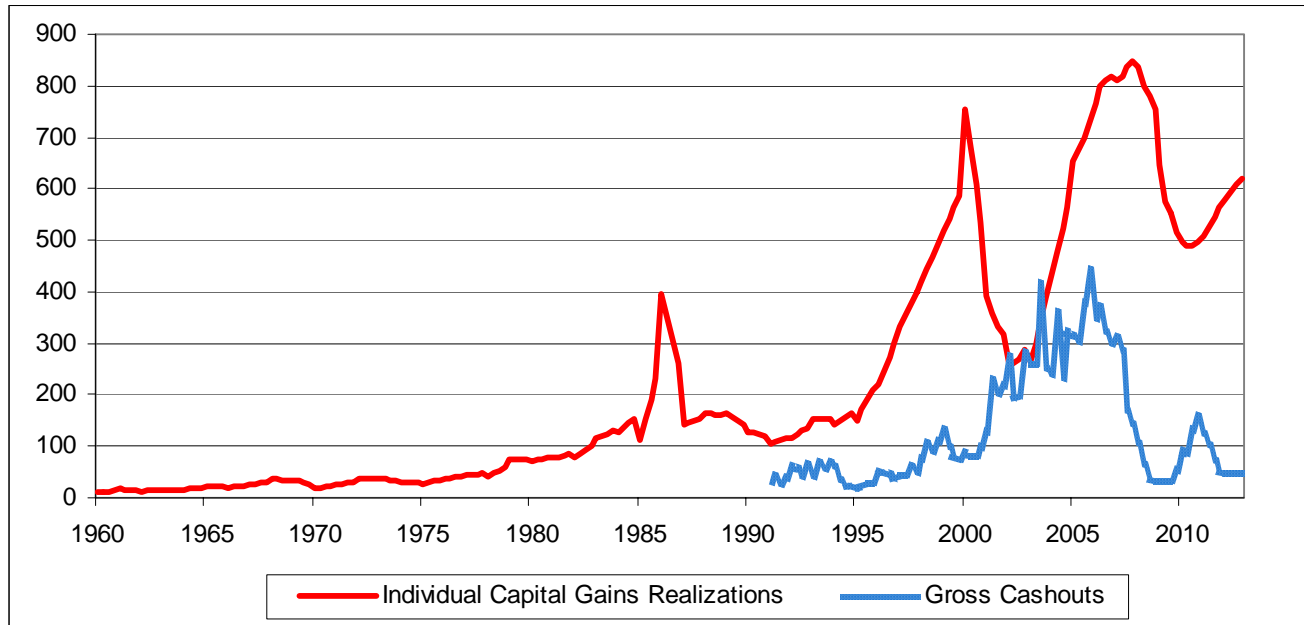
NM=Not Meaningful (no significant peak/trough).

--="No data available for time period.

Home Prices=Quantity weighted average of new and existing median home sale prices.

Sources: Standard and Poor's, OECD, University of Michigan, National Association of Realtors, Federal Reserve, Decision Economics, Inc. (DE).

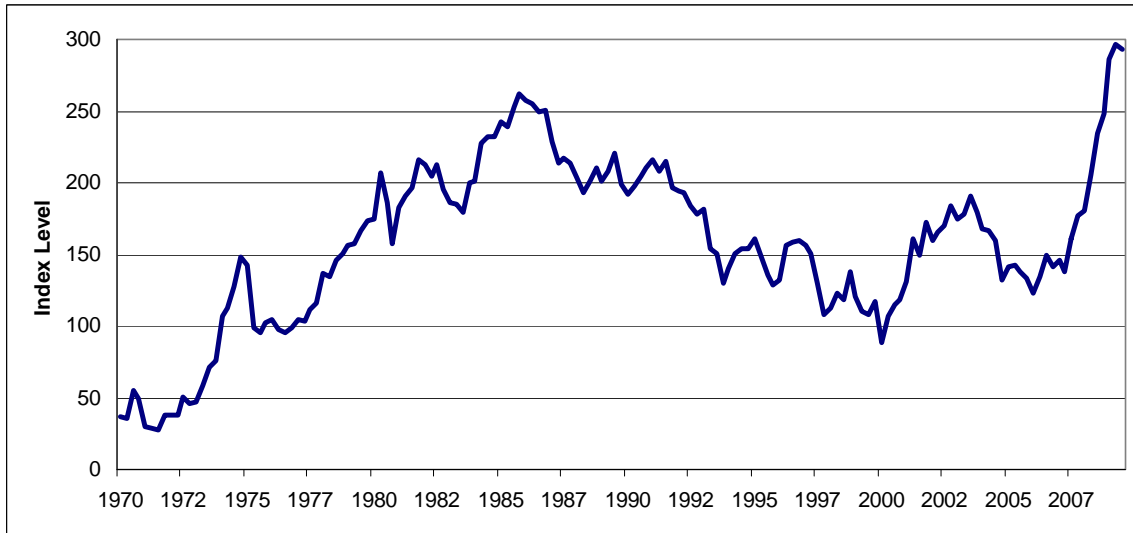
Figure 1
Sources of Funds for Household Spending*
(Bils. \$s)



Sources: Department of the Treasury, A. Greenspan & J. Kennedy “Estimates of Home Mortgage Originations, Repayments, and Debt on One-to-Four-Family Residences” 2009, Decision Economics, Inc. (DE).

*Individual Capital Gains Realizations and Gross Cashouts.

Figure 2
DE Household Financial Conditions Index*
(1970-2009:3)

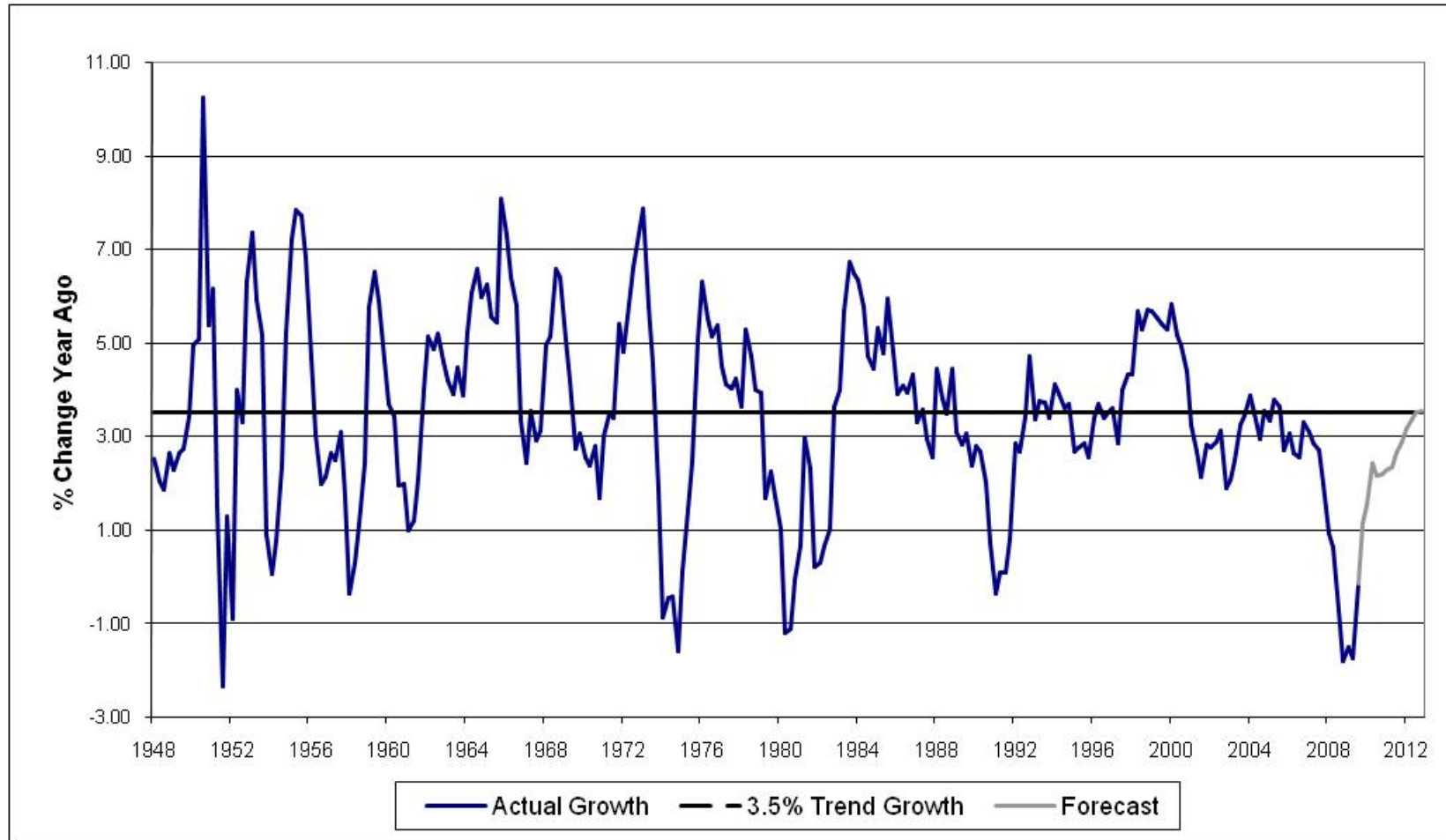


Source: Decision Economics, Inc. (DE).

Constructed using a weighted average of eight household sector variables that characterize consumer financial conditions.

Note: A higher level indicates worse financial conditions

Figure 3
Actual vs. Historic Trend Growth in Real Consumption
(1947 to 2012: History and Forecast)



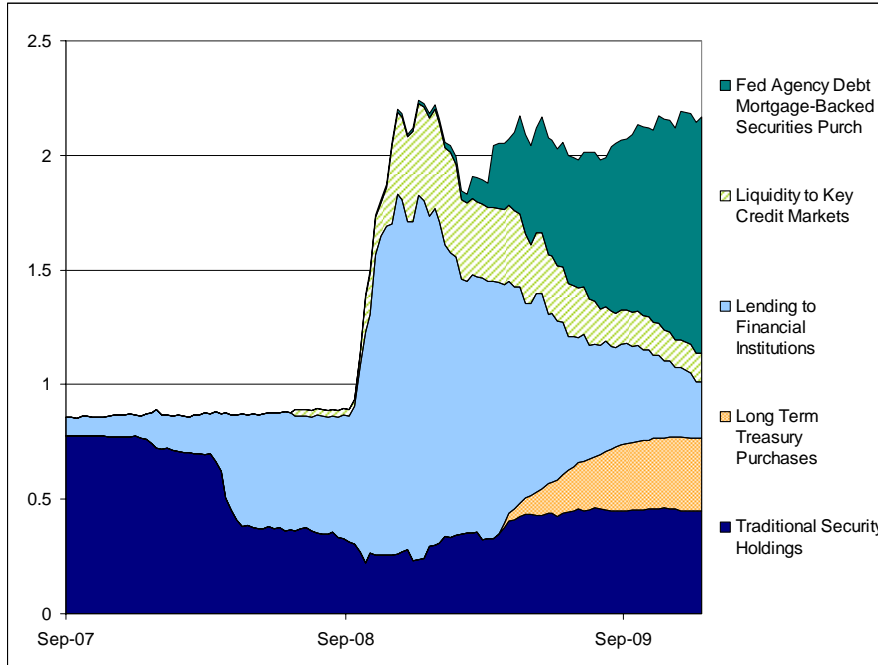
Sources: Bureau of Economic Analysis; Decision Economics, Inc. (DE).

Table 4
Fed Policy and the Fed Funds Rate in the Great Recession:
2007-Present

Date	Initial Level (percent)	Change (basis points)	New Level (percent)
2007			
Sep 18	5.25	-50	4.75
Oct 31	4.75	-25	4.50
Dec 11	4.50	-25	4.25
2008			
Jan 22	4.25	-75	3.50
Jan 30	3.50	-50	3.00
Mar 18	3.00	-75	2.25
Apr 30	2.25	-25	2.00
Oct 8	2.00	-50	1.50
Oct 29	1.50	-50	1.00
Dec 16	1.00	-75 to -100	0.00-0.25

Source: Federal Reserve.

Figure 4
Federal Reserve Balance Sheet Assets
(As of December 16, 2009, Trils. \$s)



Source: Federal Reserve

Table 5
Federal Reserve Quantitative Easing During the Great Recession
(December 2007—Present)

<i>Short-Term Lending Programs for Financial Institutions—Lender of Last Resort to Banks</i>	<i>Targeted Lending by Fed—Lender of Last Resort to the Private Sector</i>	<i>Purchases of Longer-Term Marketable Securities—Fed Support of Markets</i>
<p>TAF (Term Auction Facility) - December 2007</p> <ul style="list-style-type: none"> • Short term funds auctioned to depository institutions eligible for discount window borrowing, to address interbank credit crunch. • Helped stabilize interbank lending markets and narrow credit spreads. • At its Dec. 2008 peak, banks held \$450B in term funds. • In June 2009, Fed announced it would begin to reduce the amount of funds offered at TAF auctions through time as conditions in funding markets improve. 	<p>CPEF (Commercial Paper Funding Facility)—October 2008</p> <ul style="list-style-type: none"> • Purchases three-month unsecured and asset-backed commercial paper from eligible issuers to enhance liquidity in commercial paper markets. • Program authorized until February 1, 2010. • Fed’s net holdings of CP under the program reached \$350B in January 2009, but are currently around \$32B. 	<ul style="list-style-type: none"> • GSE Debt Purchase Program—November 2008 • Fed authorized to purchase up to \$200B in agency debt to help maintain functioning of mortgage market. • \$160B in agency debt securities currently on Fed’s books.
<p>Dollar Liquidity Swap Lines—December 2007</p> <ul style="list-style-type: none"> • FOMC authorized dollar liquidity swap lines with the European Central Bank and the Swiss National Bank to meet dollar-funding needs of foreign banks. • Program is subsequently expanded in size and scope to include swap lines with central banks of Australia, Brazil, Canada, Denmark, the U.K., Japan, Korea, Mexico, New Zealand, Norway, Singapore, and Sweden. • Program authorized until February 1, 2010. 	<p>TALF (Term Asset-Backed Securities Loan Facility)—November 2008</p> <ul style="list-style-type: none"> • Issues loans with a term of up to five years to holders of eligible asset-backed securities (ABS). • Intended to assist financial markets by facilitating the issuance of ABS collateralized by a variety of consumer and business loans. • Eligible collateral initially included highly-rated U.S. dollar-denominated ABS backed by student loans, auto loans, credit card loans, SBA-guaranteed loans, loans or leases related to business equipment, leases of vehicle fleets, floor plan loans, and mortgage servicing advances. • Overtime, Fed raised lending limit on facility, and broadened eligible collateral for ABS to include newly issued commercial mortgage-backed securities and high-quality legacy CMBS. • Program authorized until June 30, 2010, for loans collateralized by newly issued CMBS and through March 31, 2010, for loans collateralized by all other TALF-eligible securities. 	<ul style="list-style-type: none"> • MBS Purchase Program - November 2008 • Fed authorized to purchase up to \$1.25T in mortgage-backed securities to help maintain proper functioning of mortgage market and mortgage rates. • \$910B in MBS currently on Fed’s books.

<p>PDCF (Primary Dealer Credit Facility)—March 2008</p> <ul style="list-style-type: none"> • Overnight loan facility for primary dealers - helps foster improved conditions in financial markets. • Eligible collateral initially restricted to investment-grade securities, but broadened in September 2008. • Program authorized until February 1, 2010. • Credit extended peaked at \$148B in October 2008. 		<p>Long-Term Treasuries Purchase Program—March 2009</p> <ul style="list-style-type: none"> • Fed authorized to purchase up to \$300B in long-term Treasury debt. • \$708B in long-term Treasury notes and bonds currently on Fed’s books
<p>TSLF (Term Securities Lending Facility)—March 2008</p> <ul style="list-style-type: none"> • Lends Treasury securities to primary dealers for one month against eligible collateral to support liquidity in credit markets. • Authorized until February 1, 2010. • Fed Treasury holdings reduced to \$470B (at program’s peak) from \$700B. 		
<p>AMLF (Asset-backed Commercial Paper MMMF Liquidity Facility)—September 2008</p> <ul style="list-style-type: none"> • Finances purchases of high-quality asset-backed commercial paper (ABCP) from money market mutual funds by U.S. depository institutions and bank holding companies. • Intended to assist money funds to meet demands for redemptions by investors and to foster liquidity in the ABCP market and money markets more generally. • Program authorized until February 1, 2010. 		
<p>MMIFF (Money Market Investor Funding Facility)—October 2008</p> <ul style="list-style-type: none"> • Finances purchase of assets from money market mutual funds including U.S. dollar-denominated certificates of deposit and highly-rated commercial paper. • Provides liquidity to U.S. money market mutual funds, increasing their ability to meet redemption requests and their willingness to invest in money market instruments. • Participants expanded to include U.S.-based securities lenders, and U.S.-based investment funds that operate in a manner similar to money market mutual funds, such as certain local government investment pools, common trust funds, and collective investment funds. • Facility expired on October 30, 2009. 		

Sources: Federal Reserve Board. Ben S. Bernanke, “The Federal Reserve’s Balance Sheet: An Update,” October 8, 2009, Decision Economics, Inc. (DE).

Table 6
Economic Recovery Act of 2008
(Bils. \$s, Annual Rates, Quarters and Fiscal Years)

	2008				2009				Annual			Total
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2008	2009	2010	2008-18
Individual Recovery Rebate	0.0	317.4	56.9	12.0	18.0	24.0	18.0	18.0	96.6	19.5	0.0	116.1
Bonus Depreciation	50.0	50.0	50.0	50.0	50.0	-7.5	-7.5	-7.5	28.4	6.9	-7.5	7.5
All Other	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-1.0	0.9
Total	51.0	368.4	107.9	63.0	69.0	17.5	11.5	11.5	126.0	27.4	-8.5	124.5

Sources: CBO, OMB, JCT, Congressional Committees, Decision Economics, Inc. (DE).

Table 7
American Recovery and Reinvestment Act of 2009
(Bils. \$s, Annual Rates, Quarters and Fiscal Years)

	2009				2010				Annual			Total
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2009	2010	2011	2009-19
Total	64	253	368	490	589	645	315	173	171	510	118	790
Tax Cuts	64	110	165	180	199	235	95	65	85	177	16	219
Individual*	4	50	105	120	145	220	80	50	40	141	13	193
Payroll tax cut/credit	4	50	50	50	40	40	40	40	26	42	10	78
2009 AMT fix			15	25	75	150	25	0	4	69	0	73
All other			40	45	30	30	15	10	10	30	3	43
Corporate	60	60	60	60	54	15	15	15	45	36	4	26
Bonus depreciation/expensing	35	35	35	35	35	-4	-4	-4	26	16	-4	6
5-yr. carryback of NOLs	5	5	5	5	-1	-1	-1	-1	4	1	-1	1
All other	20	20	20	20	20	20	20	20	15	20	9	19
Outlay Increases		143	203	310	390	410	220	108	87	333	102	571
Discretionary/Purchases		10	25	50	75	90	60	30	9	69	8	85
Mandatory/Transfers*		133	178	260	315	320	160	78	78	264	95	486
Tax credits counted as outlays*					65	135	30	0	0	58	50	108
Payroll tax credit*					20	50	5	0	0	19	18	36
All other credits*					45	85	25	0	0	39	33	71
Aid to families*		83	78	135	100	60	30	3	40	81	1	123
Grants		50	100	125	150	125	100	75	38	125	44	256
Addendum:												
*Counted in disposable income	4	133	183	255	310	415	140	53	80	280	63	423
As counted by BEA (Excl. NW taxes)	4	133	128	185	140	100	70	43	66	124	11	201
All other taxes		60	60	60	54	15	15	15	45	36	4	26
All other outlays		60	125	175	225	215	160	105	46	194	51	341
Counted directly in GDP		10	25	50	75	90	60	30	9	69	8	85

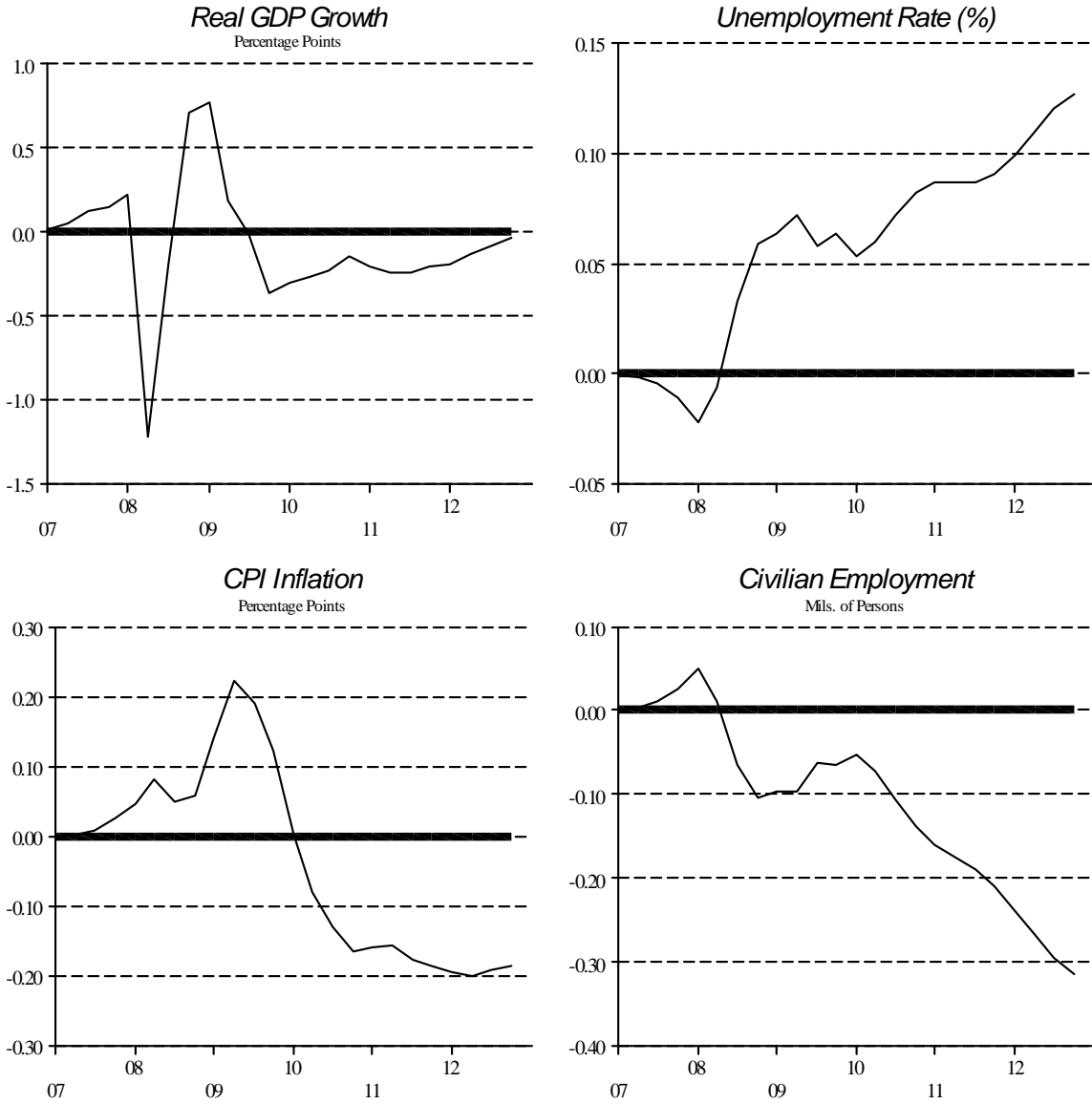
Sources: CBO, OMB, JCT, Congressional Committees, Decision Economics, Inc. (DE).

Table 8
What If No “Economic Recovery Act of 2008?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)

	2007	2008	2009	2010	2011	2012	2007-12 Avg.
Economy							
Real GDP (Bils. '00 \$s)	4.3	-7.4	22.8	-1.5	-26.3	-47.1	9.2
Real GDP Growth (Pct.)	0.0	-0.1	0.3	-0.2	-0.2	-0.2	-0.1
Real Consumption (Bils. '00 \$s)	2.8	-16.3	14.0	-8.0	-29.9	-41.5	-13.1
Unemployment and Inflation							
Unemployment Rate (%)	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Civilian Employment (Mils. Persons)	0.011	-0.027	-0.081	-0.093	-0.184	-0.279	-0.109
CPI-U (Pct. Chg.)	0.00	0.04	0.13	0.02	-0.15	-0.19	-0.02
Incomes and Profits							
Real Disposable Income (Bils. '00 \$s)	1.8	-77.9	26.3	-12.0	-15.0	-10.3	-14.5
S&P500 Operating EPS (Pct. Chg.)	0.1	-0.3	-0.2	-1.1	-0.8	-1.1	-0.6
Financial Markets							
3-Mos. T-Bill Note (Pct.)	0.0	-0.1	0.1	0.1	0.0	-0.1	0.0
10-Year T-Note Yield (Pct.)	-0.4	-0.7	0.2	0.5	0.8	0.7	0.2
S&P500 (Pct. Chg.)	0.5	3.8	4.0	-0.7	-2.8	-3.1	0.3

*Counterfactual simulations with the SB Macroeconometric Model of the U.S. Economy. Government outlays and tax fiscal stimulus in the 2008 and 2009 programs removed from history; unchanged federal funds rate.

Figure 5
What If No “Economic Recovery Act of 2008?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)



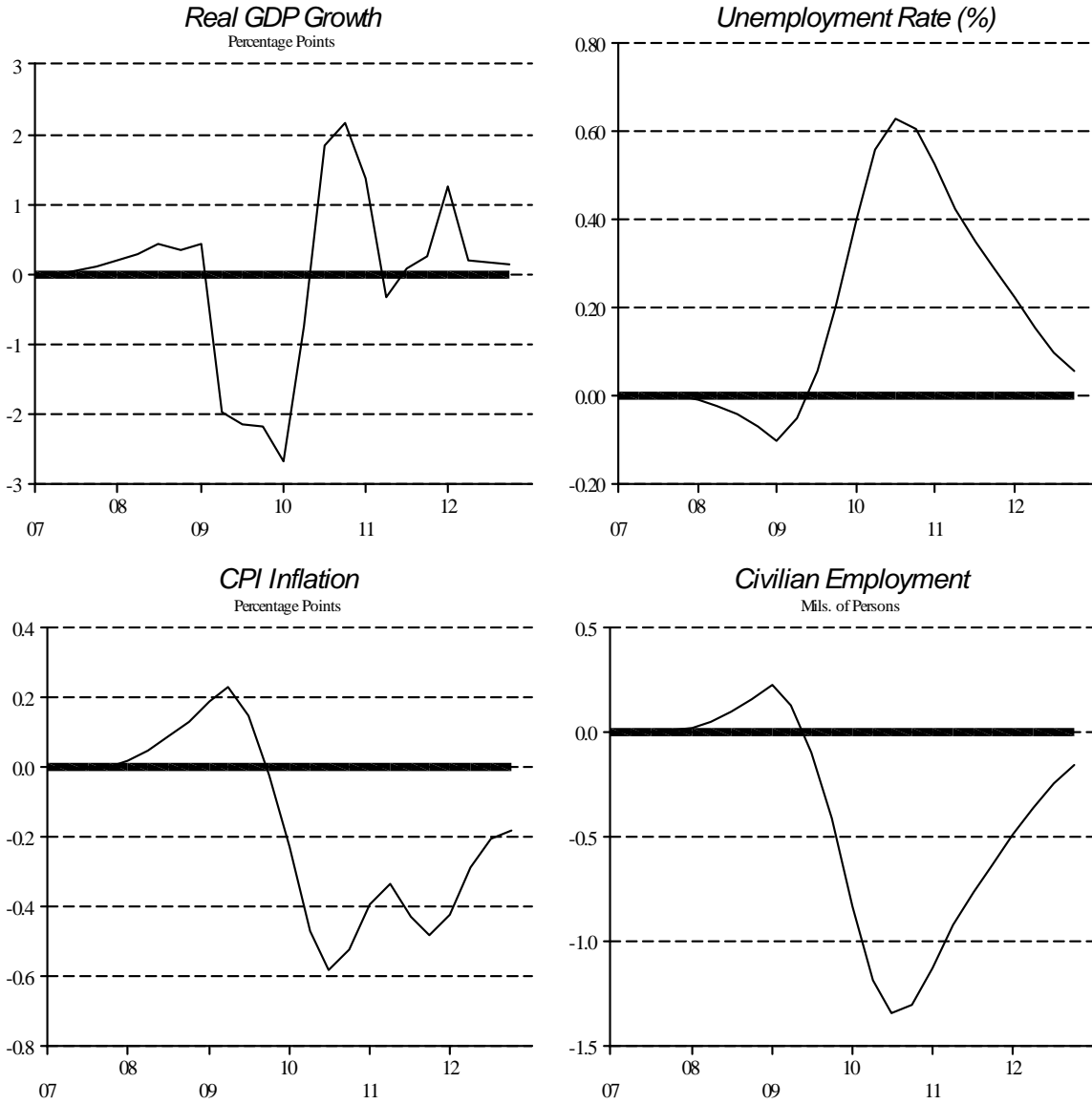
*Counterfactual simulations with the SB Macroeconomic Model of the U.S. Economy. Government outlays and tax fiscal stimulus of the 2008 and 2009 programs removed from history; unchanged federal funds rate.

Table 9
What If No “American Recovery and Reinvestment Act of 2009?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)

	2007	2008	2009	2010	2011	2012	2007-12 Avg.
Economy							
Real GDP (Bils. '00 \$s)	1.0	24.5	-36.0	-182.0	-85.6	-39.1	-52.9
Real GDP Growth (Pct.)	0.0	0.2	-0.5	-1.3	0.9	0.4	-0.1
Real Consumption (Bils. '00 \$s)	1.0	20.4	17.1	-96.2	-91.9	-64.5	-35.7
Unemployment and Inflation							
Unemployment Rate (%)	0.0	0.0	0.0	0.5	0.4	0.1	0.2
Civilian Employment (Mils. Persons)	0.000	0.080	-0.039	-1.167	-0.861	-0.318	-0.384
CPI-U (Pct. Chg.)	0.00	0.03	0.15	-0.22	-0.45	-0.36	-0.14
Incomes and Profits							
Real Disposable Income (Bils. '00 \$s)	0.8	8.9	-73.5	-189.4	-75.9	-13.6	-57.1
S&P500 Operating EPS (Pct. Chg.)	0.0	0.9	0.9	-1.7	-2.2	-0.9	-0.5
Financial Markets							
3-Mos. T-Bill Note (Pct.)	0.0	0.0	0.0	0.1	0.2	0.1	0.1
10-Year T-Note Yield (Pct.)	-0.1	-0.8	-0.5	-0.1	0.5	0.4	-0.1
S&P500 (Pct. Chg.)	0.3	4.1	8.9	4.9	0.1	-1.5	2.8

*Counterfactual simulations with the SB Macroeconometric Model of the U.S. Economy. Government outlays and tax fiscal stimulus of the 2008 and 2009 programs removed from history; unchanged federal funds rate.

Figure 6
What If No “American Recovery and Reinvestment Act of 2009?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)



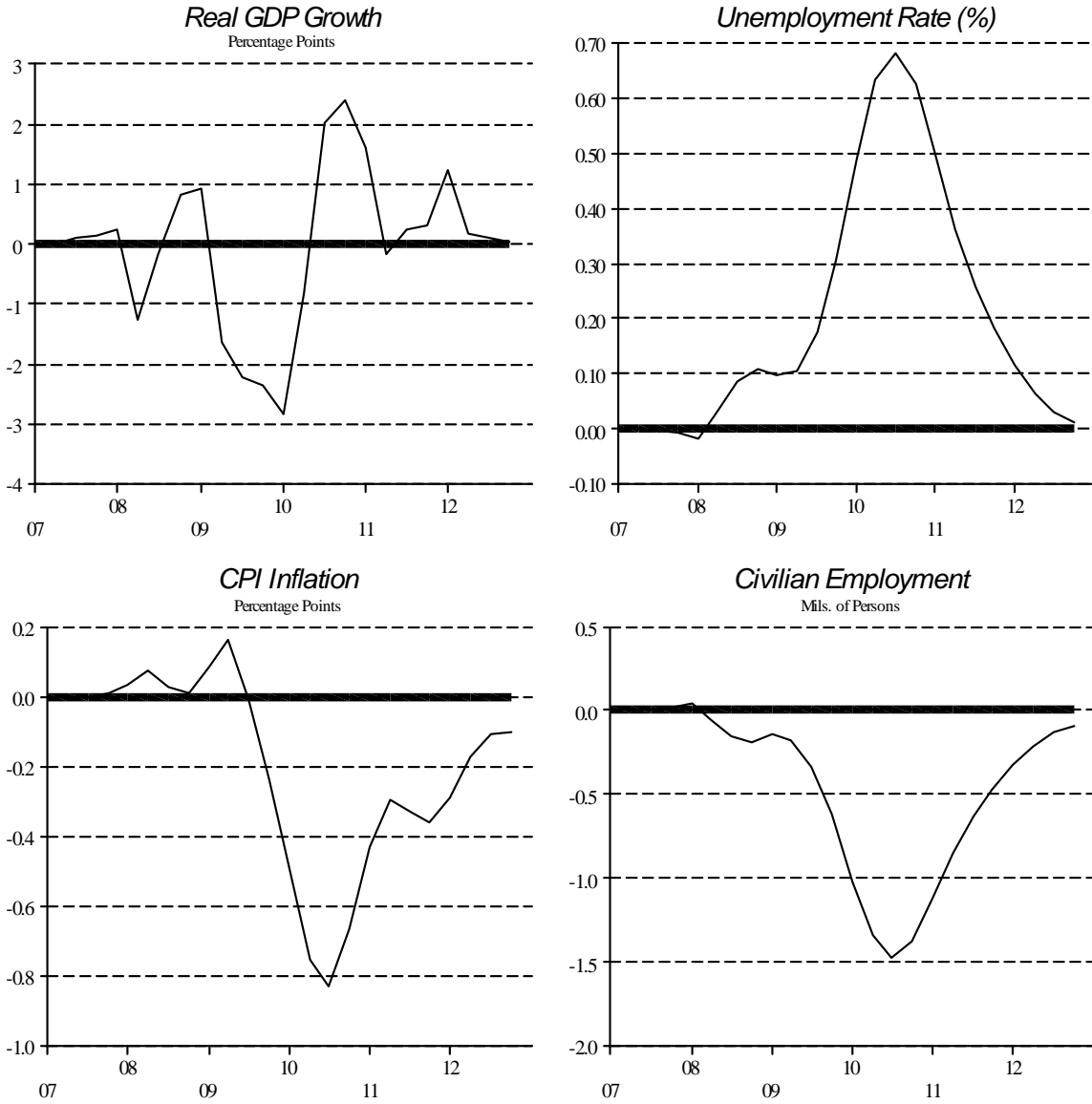
*Counterfactual simulations with the SB Macroeconomic Model of the U.S. Economy. Government outlays and tax fiscal stimulus of the 2008 and 2009 programs removed from history; unchanged federal funds rate.

Table 10
What If No “Fiscal Policy Stimulus?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)

	2007	2008	2009	2010	2011	2012	2007-12 Avg.
Economy							
Real GDP (Bils. '00 \$s)	2.9	-9.2	-57.6	-208.5	-92.5	-44.0	-68.2
Real GDP Growth (Pct.)	0.0	-0.1	-0.4	-1.3	1.1	0.4	0.0
Real Consumption (Bils. '00 \$s)	2.1	-18.2	-20.5	-145.2	-126.4	-86.9	-65.9
Unemployment and Inflation							
Unemployment Rate (%)	0.0	0.1	0.2	0.6	0.3	0.1	0.2
Civilian Employment (Mils. Persons)	0.006	-0.087	-0.318	-1.304	-0.769	-0.189	-0.444
CPI-U (Pct. Chg.)	0.00	0.03	0.05	-0.45	-0.50	-0.25	-0.19
Incomes and Profits							
Real Disposable Income (Bils. '00 \$s)	1.4	-86.4	-110.7	-253.6	-101.7	-29.0	-96.7
S&P500 Operating EPS (Pct. Chg.)	0.1	-0.3	0.1	-1.4	-1.2	-0.9	-0.6
Financial Markets							
3-Mos. T-Bill Note (Pct.)	0.0	0.0	0.0	0.1	0.2	0.1	0.1
10-Year T-Note Yield (Pct.)	-0.3	-1.0	-0.5	-0.0	0.6	0.5	-0.1
S&P500 (Pct. Chg.)	0.5	5.2	10.8	5.5	0.3	-0.9	3.6

*Counterfactual simulations with the SB Macroeconometric Model of the U.S. Economy. Government outlays and tax fiscal stimulus of the 2008 and 2009 programs removed from history; unchanged federal funds rate.

Figure 7
What If No “Fiscal Policy Stimulus?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)



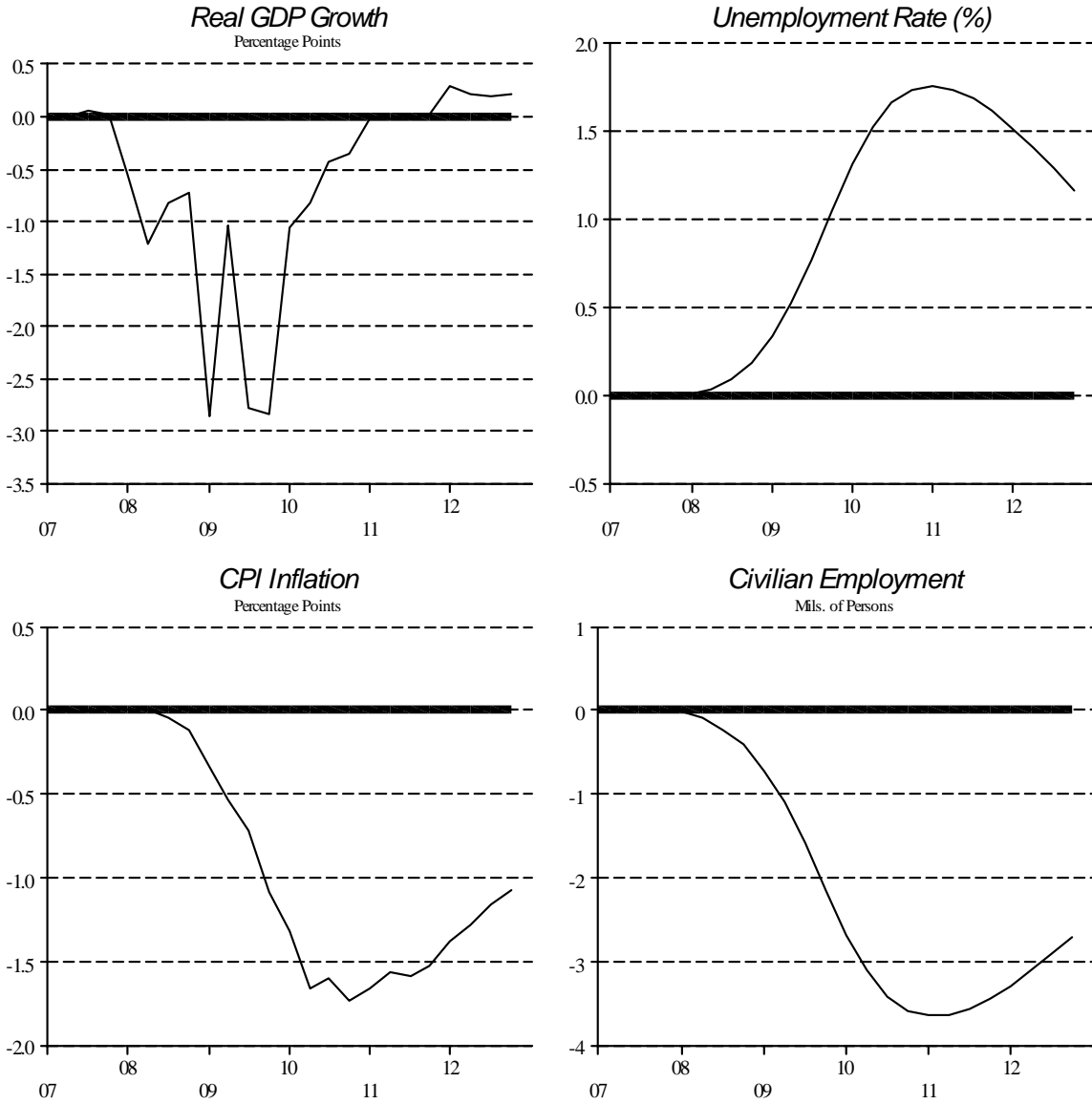
*Counterfactual simulations with the SB Macroeconomic Model of the U.S. Economy Government outlays and tax fiscal stimulus of the 2008 and 2009 programs removed from history; unchanged federal funds rate.

Table 11
What If No “Fed Interest Rate Cuts?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)

	2007	2008	2009	2010	2011	2012	2007-12 Avg.
Economy							
Real GDP (Bils. '00 \$s)	0.5	-57.5	-259.0	-428.4	-461.0	-458.8	-277.4
Real GDP Growth (Pct.)	0.0	-0.5	-1.7	-1.5	-0.2	0.2	-0.6
Real Consumption (Bils. '00 \$s)	0.2	-69.9	-282.7	-406.3	-408.0	-367.5	-255.7
Unemployment and Inflation							
Unemployment Rate (%)	0.0	0.1	0.7	1.6	1.7	1.3	0.9
Civilian Employment (Mils. Persons)	0.000	-0.184	-1.378	-3.191	-3.564	-2.997	-1.886
CPI-U (Pct. Chg.)	0.00	-0.01	-0.37	-1.27	-1.63	-1.38	-0.78
Incomes and Profits							
Real Disposable Income (Bils. '00 \$s)	0.4	-41.6	-148.9	-173.6	-153.3	-140.7	-109.6
S&P500 Operating EPS (Pct. Chg.)	0.0	-2.7	-9.1	-11.6	-11.8	-12.9	-8.0
Financial Markets							
3-Mos. T-Bill Note (Pct.)	0.2	2.8	4.5	3.9	2.5	1.7	2.6
10-Year T-Note Yield (Pct.)	-0.2	-0.0	1.4	2.0	2.2	1.7	1.2
S&P500 (Pct. Chg.)	-0.4	-13.3	-34.7	-29.0	-21.7	-16.2	-19.2

*Counterfactual simulations with the SB Macroeconometric Model of the U.S. Economy. Federal funds rate kept near 5.25%; fiscal policy unchanged.

Figure 8
What If No “Fed Interest Rate Cuts?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)



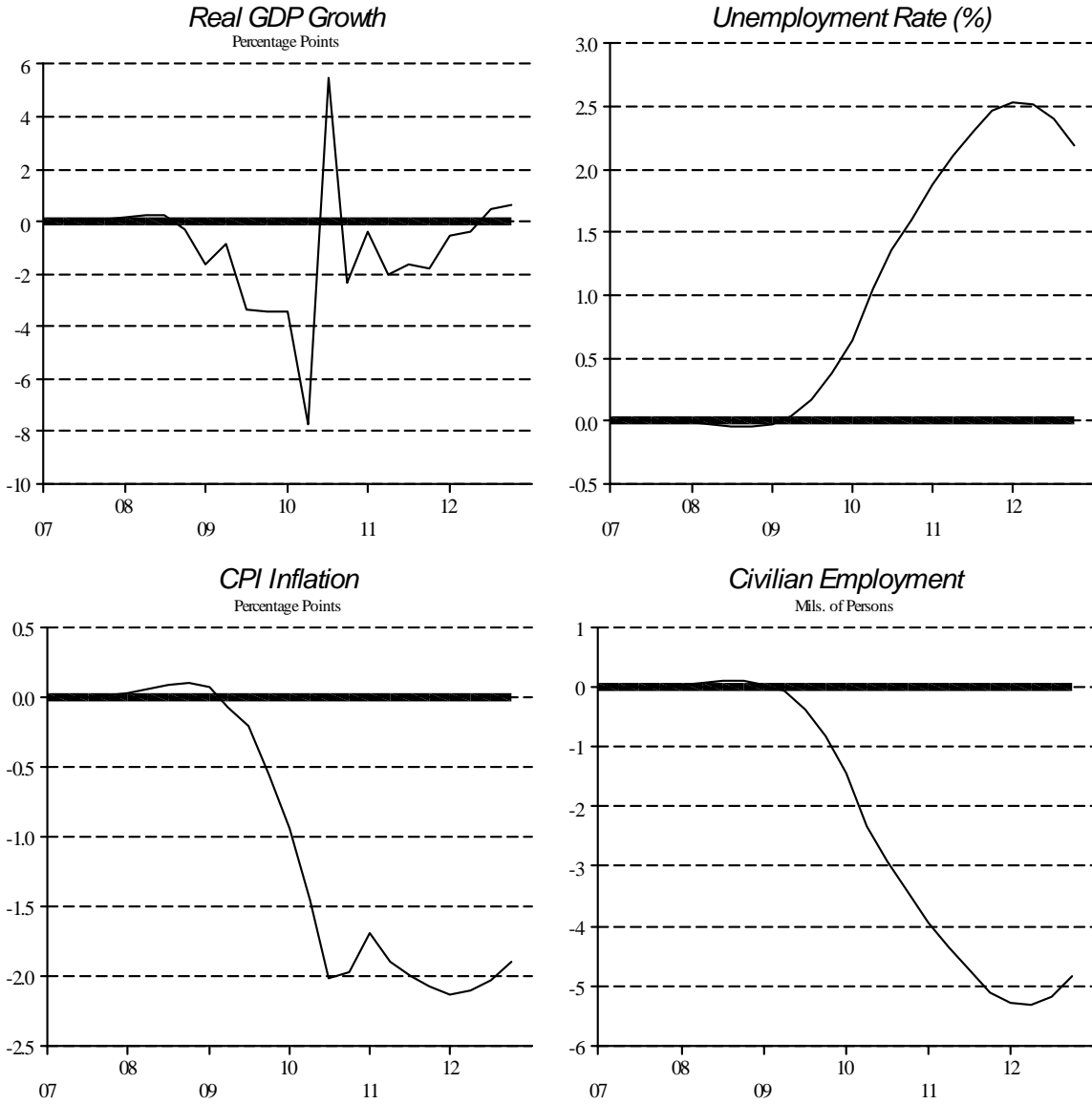
*Counterfactual simulations with the SB Macroeconometric Model of the U.S. Economy. Federal funds rate kept near 5.25%; fiscal policy unchanged.

Table 12
What If No “Fed Quantitative Easing?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)

	2007	2008	2009	2010	2011	2012	2007-12 Avg.
Economy							
Real GDP (Bils. '00 \$s)	1.3	15.6	-125.0	-457.6	-587.8	-693.5	-307.9
Real GDP Growth (Pct.)	0.0	0.1	-1.2	-2.9	-1.0	-0.8	-1.0
Real Consumption (Bils. '00 \$s)	1.0	12.6	-119.2	-457.5	-489.1	-509.8	-260.4
Unemployment and Inflation							
Unemployment Rate (%)	0.0	0.0	0.1	1.2	2.2	2.4	1.0
Civilian Employment (Mils. Persons)	0.001	0.062	-0.320	-2.527	-4.534	-5.153	-2.079
CPI-U (Pct. Chg.)	0.0	0.03	-0.02	-1.02	-1.87	-2.06	-0.82
Incomes and Profits							
Real Disposable Income (Bils. '00 \$s)	0.7	3.5	-61.4	-184.8	-244.0	-273.0	-126.5
S&P500 Operating EPS (Pct. Chg.)	0.0	0.5	-4.4	-12.3	-14.3	-16.6	-7.9
Financial Markets							
3-Mos. T-Bill Note (Pct.)	0.0	0.3	1.7	1.7	1.6	1.6	1.1
10-Year T-Note Yield (Pct.)	-0.2	-0.2	2.4	1.9	2.4	2.3	1.4
S&P500 (Pct. Chg.)	0.3	-0.2	-23.4	-45.2	-35.6	-30.7	-22.5

*Counterfactual simulations with the SB Macroeconometric Model of the U.S. Economy. Expansion of nonborrowed reserves and Federal Reserve credit removed from history; unchanged federal funds rate; fiscal policy unchanged.

Figure 9
What If No “Fed Quantitative Easing?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)



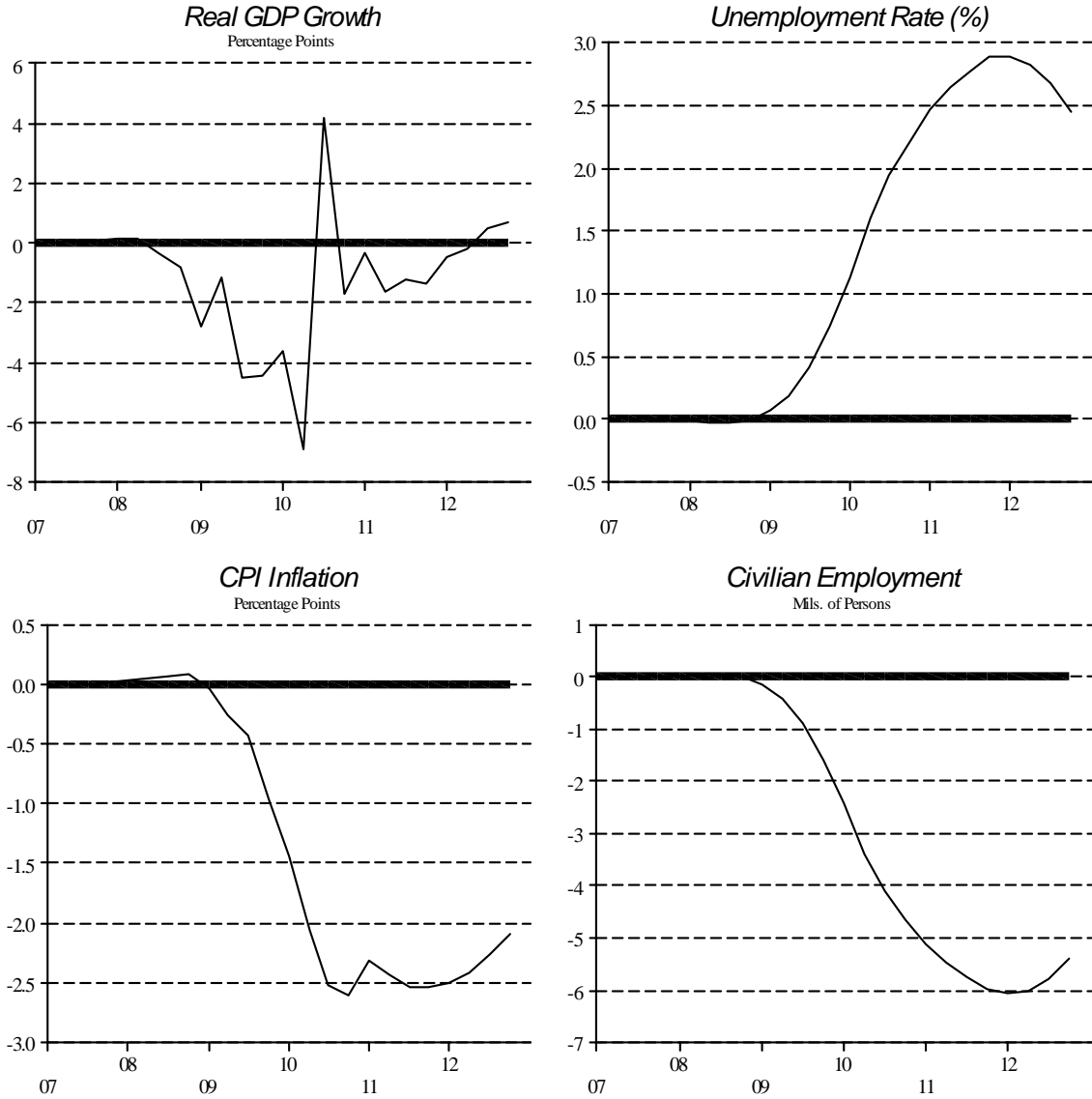
*Counterfactual simulations with the SB Macroeconomic Model of the U.S. Economy. Expansion of nonborrowed reserves and Federal Reserve credit removed from history; unchanged federal funds rate; fiscal policy unchanged.

Table 13
What If No “Monetary Policy Easing?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)

	2007	2008	2009	2010	2011	2012	2007-12 Avg.
Economy							
Real GDP (Bils. '00 \$s)	1.4	2.2	-223.3	-595.6	-710.4	-794.6	-386.69
Real GDP Growth (Pct.)	0.0	0.0	-1.9	-3.3	-0.9	-0.5	-1.1
Real Consumption (Bils. '00 \$s)	1.0	-2.7	-232.7	-588.6	-603.6	-594.4	-336.8
Unemployment and Inflation							
Unemployment Rate (%)	0.0	0.0	0.3	1.7	2.7	2.7	1.24
Civilian Employment (Mils. Persons)	0.002	0.033	-0.775	-3.647	-5.581	-5.811	-2.630
CPI-U (Pct. Chg.)	0.00	0.03	-0.14	-1.48	-2.44	-2.44	-1.08
Incomes and Profits							
Real Disposable Income (Bils. '00 \$s)	0.7	-4.8	-119.8	-234.7	-252.1	-261.6	-145.4
S&P500 Operating EPS (Pct. Chg.)	0.0	-0.1	-7.6	-15.7	-17.1	-19.4	-10.0
Financial Markets							
3-Mos. T-Bill Note (Pct.)	0.0	1.2	3.7	3.4	2.0	1.5	2.0
10-Year T-Note Yield (Pct.)	-0.2	-0.1	2.8	2.6	2.9	2.4	1.7
S&P500 (Pct. Chg.)	0.3	-4.2	-35.6	-49.8	-37.9	-31.5	-26.5

*Counterfactual simulations with the SB Macroeconometric Model of the U.S. Economy. Expansion of nonborrowed reserves and Federal Reserve credit removed from history; Federal funds rate lowered to 2.75% instead of near 0%; fiscal policy unchanged.

Figure 10
What If No “Monetary Policy Easing?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)



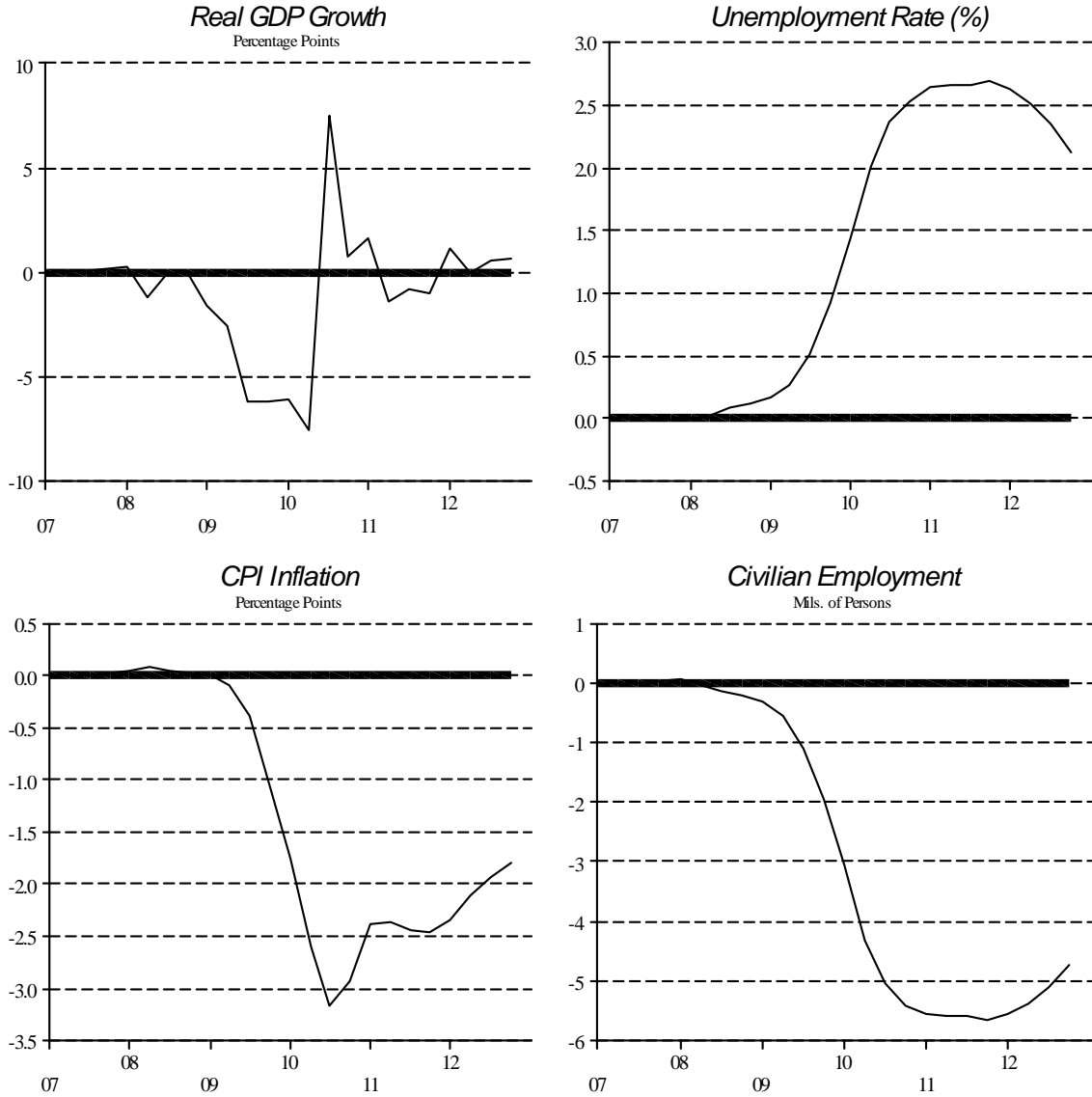
*Counterfactual simulations with the SB Macroeconometric Model of the U.S. Economy. Expansion of nonborrowed reserves and Federal Reserve credit removed from history; Federal funds rate lowered to 2.75% instead of near 0%; fiscal policy unchanged.

Table 14
What If No “Fiscal or Monetary Policy Stimulus?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)

	2007	2008	2009	2010	2011	2012	2007-12 Avg.
Economy							
Real GDP (Bils. '00 \$s)	3.3	-12.2	-256.2	-728.7	-692.4	-715.8	-400.3
Real GDP Growth (Pct.)	0.0	-0.1	-2.1	-4.2	0.5	-0.0	-1.0
Real Consumption (Bils. '00 \$s)	2.2	-21.2	-219.8	-658.9	-625.3	-580.5	-350.6
Unemployment and Inflation							
Unemployment Rate (%)	0.0	0.1	0.5	2.1	2.7	2.4	1.3
Civilian Employment (Mils. Persons)	0.007	-0.086	-0.982	-4.460	-5.592	-5.194	-2.718
CPI-U (Pct. Chg.)	0.00	0.04	-0.12	-1.77	-2.61	-2.25	-1.12
Incomes and Profits							
Real Disposable Income (Bils. '00 \$s)	1.5	-89.1	-208.2	-457.5	-329.5	-287.2	-228.3
S&P500 Operating EPS (Pct. Chg.)	0.1	-0.4	-6.4	-15.0	-15.7	-17.8	-9.2
Financial Markets							
3-Mos. T-Bill Note (Pct.)	0.0	0.5	2.8	2.5	1.7	1.6	1.5
10-Year T-Note Yield (Pct.)	-0.4	-0.7	-1.9	1.7	2.4	2.1	1.2
S&P500 (Pct. Chg.)	0.4	1.2	-25.5	-43.2	-34.4	-29.8	-21.9

*Counterfactual simulations with the SB Macroeconometric Model of the U.S. Economy. Government outlays and tax fiscal stimulus of the 2008 and 2009 programs removed from history; Federal funds rate lowered to 1.75% instead of near 0%; no expansion in Fed balance sheet.

Figure 11
What If No “Fiscal or Monetary Policy Stimulus?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)



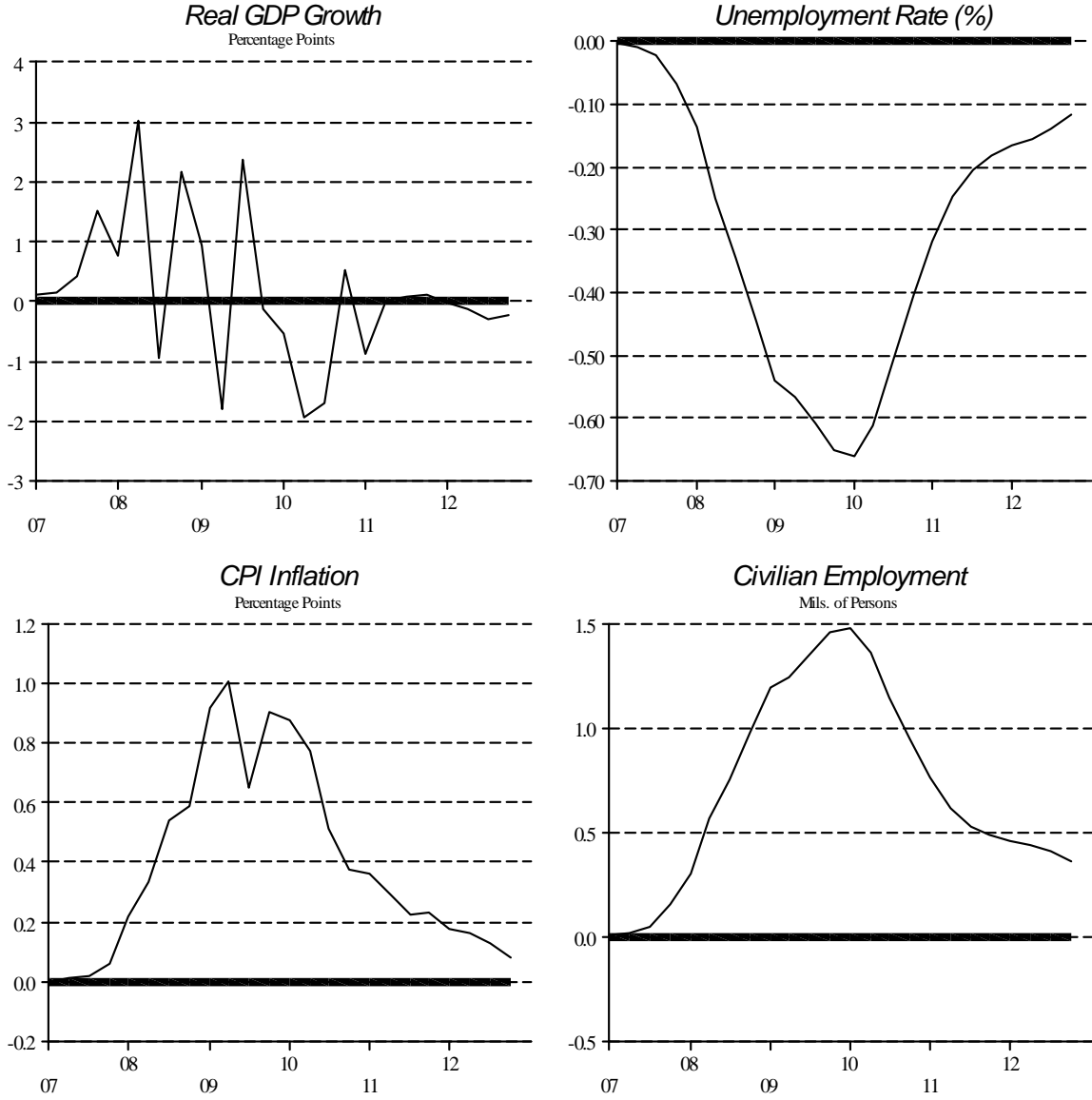
*Counterfactual simulations with the SB Macroeconometric Model of the U.S. Economy. Government outlays and tax fiscal stimulus of the 2008 and 2009 programs removed from history; Federal funds rate lowered to 1.75% instead of near 0%; no expansion in Fed balance sheet.

Table 15
What If No “Household Balance Sheet Contraction?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)

	2007	2008	2009	2010	2011	2012	2007-12 Avg.
Economy							
Real GDP (Bils. '00 \$s)	23.7	153.1	226.9	172.9	126.4	124.3	137.9
Real GDP Growth (Pct.)	0.2	1.1	0.7	-0.5	-0.4	-0.1	0.2
Real Consumption (Bils. '00 \$s)	23.3	190.2	314.5	266.5	212.1	214.3	203.5
Unemployment and Inflation							
Unemployment Rate (%)	0.0	-0.3	-0.6	-0.5	-0.2	-0.1	-0.3
Civilian Employment (Mils. Persons)	0.059	0.650	1.310	1.233	0.598	0.416	0.711
CPI-U (Pct. Chg.)	0.01	0.24	0.76	0.77	0.37	0.19	0.39
Incomes and Profits							
Real Disposable Income (Bils. '00 \$s)	6.4	40.0	43.2	10.0	2.5	10.0	18.7
S&P500 Operating EPS (Pct. Chg.)	0.6	4.6	5.5	3.2	2.8	3.2	3.3
Financial Markets							
3-Mos. T-Bill Note (Pct.)	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
10-Year T-Note Yield (Pct.)	-0.1	-0.4	0.1	0.3	0.6	0.6	0.2
S&P500 (Pct. Chg.)	0.2	8.8	38.3	18.8	11.9	8.1	14.3

*Counterfactual simulations with the SB Macroeconometric Model of the U.S. Economy. Fiscal and monetary policies remain as in history. Sharp declines in stock prices, home prices, gross cashouts, individual capital gains realizations, and consumer confidence removed from history.

Figure 12
What If No “Household Balance Sheet Contraction?”*
(Changes Relative to Baseline, Unless Otherwise Indicated)



*Counterfactual simulations with the SB Macroeconometric Model of the U.S. Economy. Fiscal and monetary policies remain as in history. Sharp declines in stock prices, home prices, gross cashouts, individual capital gains realizations, and consumer confidence removed from history.

Table 16
Comparative Counterfactual Simulations*: 2007-2012
Real GDP Growth (Pct.)—Changes Relative to Baseline

What if No...	2007	2008	2009	2010	2011	2012	2007-12 Avg.
Economic Recovery Act of 2008	0.0	-0.1	0.3	-0.2	-0.2	-0.2	-0.1
American Recovery and Reinvestment Act of 2009	0.0	0.2	-0.5	-1.3	0.9	0.4	-0.1
Fiscal Policy Stimulus	0.0	-0.1	-0.4	-1.3	1.1	0.4	0.0
Fed Interest Rate Cuts	0.0	-0.5	-1.7	-1.5	-0.2	0.2	-0.6
Fed Quantitative Easing	0.0	0.1	-1.2	-2.9	-1.0	-0.8	-1.0
Monetary Policy Easing	0.0	0.0	-1.9	-3.3	-0.9	-0.5	-1.1
Fiscal or Monetary Policy Stimulus	0.0	-0.1	-2.1	-4.2	0.5	-0.0	-1.0
Household Balance Sheet Contraction	0.2	1.1	0.7	-0.5	-0.4	-0.1	0.2

*Counterfactual simulations with the SB Macroeconometric Model of the U.S. Economy.

Figure 13
Comparative Counterfactual Simulations*: 2007-2012
Real GDP Growth (Pct.)—Changes Relative to Baseline

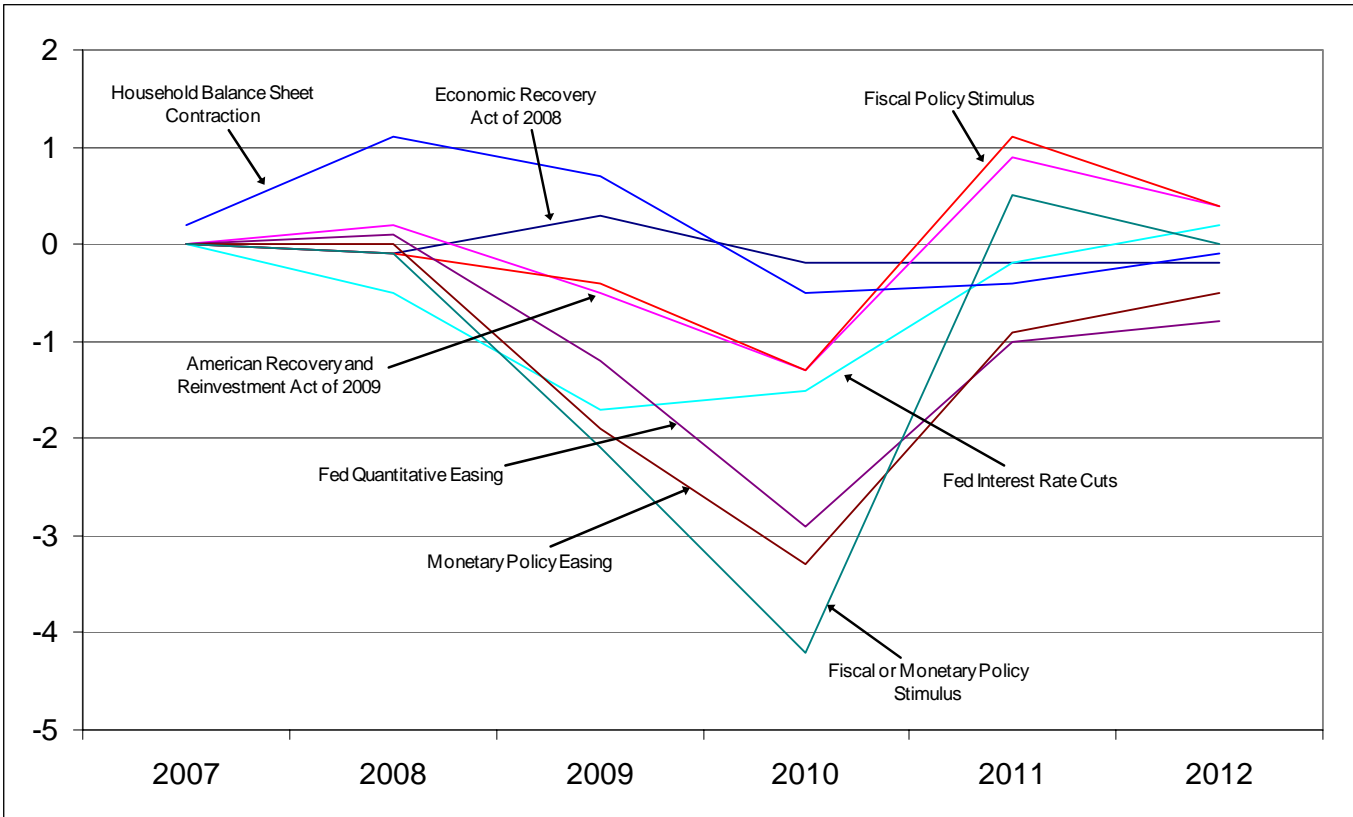


Table 17
Legacies of the Great Recession and Macro Policy Response
on the Federal Budget and Deficit (2009-2015)
(Bils. \$s, Fiscal Years)

	2009	2010F	2011F	2012F	2013F	2014F	2015F
Unified Budget Deficit	-1417	-1346	-1273	-1169	-1131	-1159	-1282
Percent of GDP	-10.1	-9.2	-8.3	-7.3	-6.8	-6.6	-7.0
Gross Federal Debt	11910	13281	14600	15811	16989	18191	19498
Percent of GDP	84.7	90.6	95.3	98.8	101.6	104.1	106.8

Source: Congressional Budget Office, Office of Management and Budget, Decision Economics, Inc. (DE).
 F—Decision Economics, Inc. forecast.

Table 18
Legacies of the Great Recession and Macro Policy Response
on the U.S. Labor Market (2009-2015)

	2009F	2010F	2011F	2012F	2013F	2014F	2015F
Nonfarm Payroll Employment Growth (Pct. Chg.)	-3.9	-0.5	1.1	1.6	2.1	2.3	1.6
Unemployment Rate (%)	9.4	9.8	9.3	8.6	7.8	7.4	7.0

Source: Bureau of Labor Statistics, Decision Economics, Inc. (DE).
 F—Decision Economics, Inc. forecast; includes only one-time Census worker effect.

Table 19
Legacies of the Great Recession and Macro Policy Response
on the U.S. Labor Market (2009-2015)

	2009F	2010F	2011F	2012F	2013F	2014F	2015F
Nonfarm Payroll Employment (Mils. Jobs)	132.0	131.4	132.8	134.9	137.8	141.0	143.2
Civilian Employment (Mils. Persons)	140.0	141.0	144.0	147.5	150.3	153.6	156.0

Source: Bureau of Labor Statistics, Decision Economics, Inc. (DE).
 F—Decision Economics, Inc. forecast; includes only one-time Census worker effect.