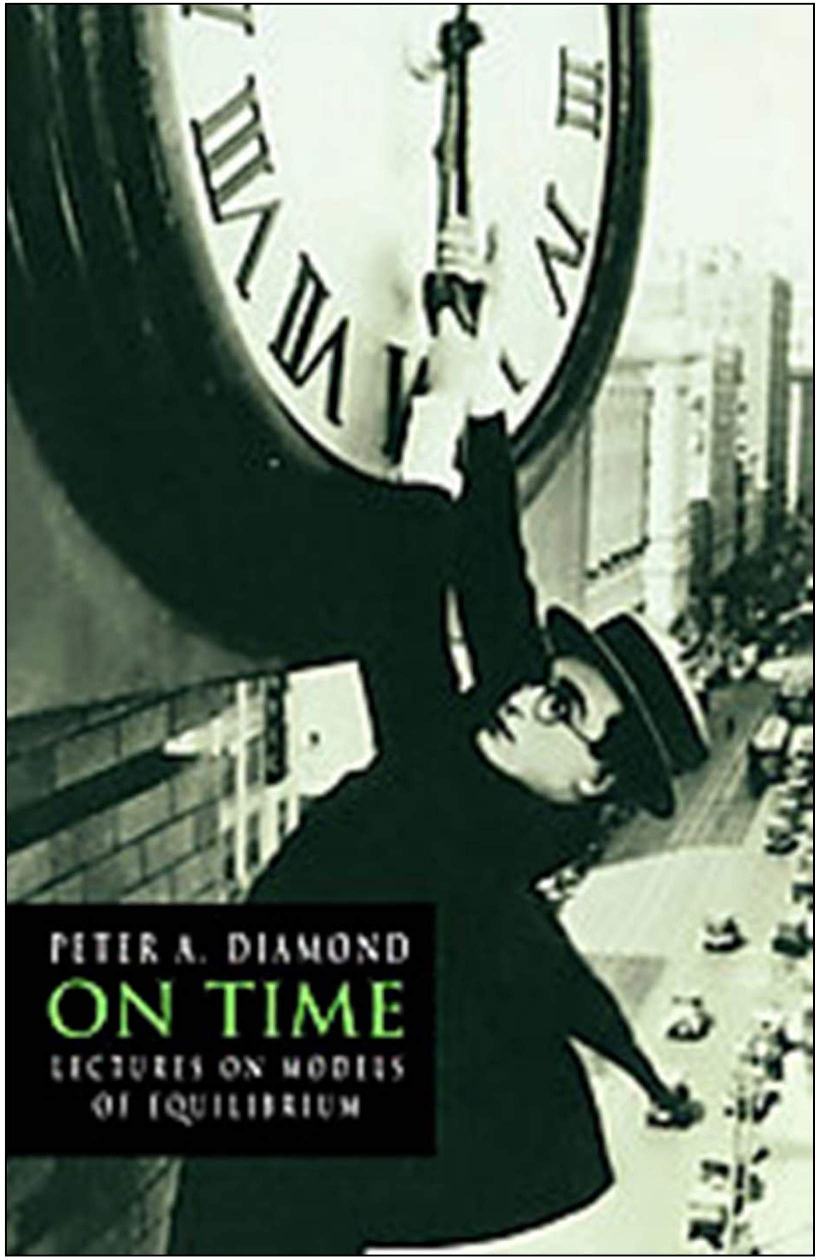
Time Matters: Micro and Macro

Peter Diamond

November 9 2011

“element of Time”… “the centre of the chief difficulty of almost every economic problem.”

Alfred Marshall, *Principles of Economics*, eighth edition. New York: The Macmillan Company, 1920/1948 p.ii.


PETER A. DIAMOND
ON TIME
LECTURES ON MODELS
OF EQUILIBRIUM

it [is] necessary for man with his limited powers to go step by step; breaking up a complex question, studying one bit at a time, and at last combining his partial solutions into a more or less complete solution of the whole riddle. ... The more the issue is thus narrowed, the more exactly can it be handled: but also the less closely does it correspond to real life. Each exact and firm handling of a narrow issue, however, helps towards treating broader issues, in which that narrow issue is contained, more exactly than would otherwise have been possible. With each step ... exact discussions can be made less abstract, realistic discussions can be made less inexact than was possible at an earlier stage.

Source: Alfred Marshall, *Principles of Economics*, eighth edition. New York: The Macmillan Company, 1948, page 366.

"The test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function."

Source: F. Scott Fitzgerald, "The Crack-Up", Esquire Magazine (February 1936).

Stagflation of the 1970s

Collapse of communism

Global Financial Crisis

Now what happened is that this statistical way of thinking about dynamics failed. It got replaced by the Arrow-Debreu model, which shows how you can take what seems to be a static general equilibrium model and talk about markets for contingent claims, talk about any kind of dynamics you'd like, coming right out of the economics. … It has completely succeeded in taking over growth theory, most of public finance, financial economics. Now it's coming in use in macroeconomics with real business cycle theory; certain kinds of monetary variations have been introduced with success.

Lucas, Robert E., Jr. Keynote Address to the 2003 *HOPE* Conference: My Keynesian Education *History of Political Economy (2004) 36(Suppl 1):* P. 22-23.

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Source: Bureau of Labor Statistics Current Population Survey.

"There are some ideas so wrong that only a very intelligent person could believe in them."

Source: George Orwell

Dynamic Stochastic General Equilibrium

"It is difficult to think of words other than perhaps “struggle” which are more of an incitement to idle chatter than is the word “dynamic.”

… to claim your theory to be dynamic often allows you to get away with murder. ."

Frank Hahn, Equilibrium and Macroeconomics, 1984, p.52.

The impact of any macroeconomic shock can be divided into two components.

One component is the effect of the natural demand and supply adjustments that would occur if prices and their expectations were to adjust continuously. Monetary policy cannot be used to offset this natural consequence of the shock without the risk of inflation being too high or too low.

The other component is the consequence of what economists call nominal rigidities. Monetary policy can be used to offset this latter component without creating undue pressures on inflation.

The challenge for monetary policymakers is to figure out how to divide the observed movements in the unemployment rate into these two components.

Source: “Labor Markets and Monetary Policy”, Narayana Kocherlakota, pg 10.

The problem is that the new theories, the theories embedded in general equilibrium dynamics of the sort that we know how to use pretty well now—there's a residue of things they don't let us think about. They don't let us think about the U.S. experience in the 1930s or about financial crises and their real consequences in Asia and Latin America. They don't let us think, I don't think, very well about Japan in the 1990s. We may be disillusioned with the Keynesian apparatus for thinking about these things, but it doesn't mean that this replacement apparatus can do it either. It can't.

Lucas, Robert E., Jr. Keynote Address to the 2003 *HOPE* Conference: My Keynesian Education *History of Political Economy (2004) 36(Suppl 1):* P. 23

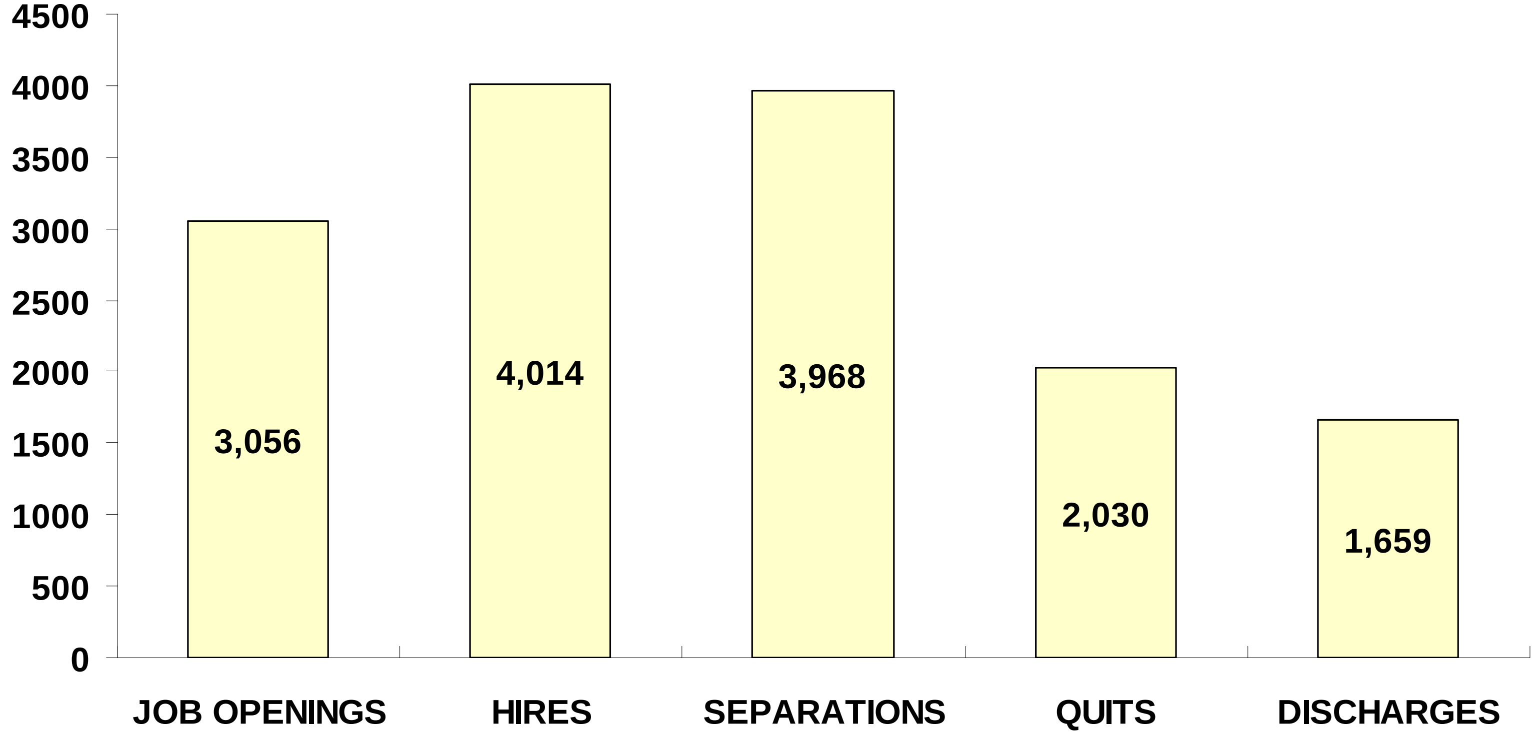
The analysis presented here indicates that the 2007-2009 recession is not well-understood within current classes of economic models, including both standard real business cycle models and, perhaps surprisingly, also including models in which financial distress reduces economic activity. Specifically, the 2007-2009 U.S. recession and its aftermath requires-much like understanding the Great Depression-a theory for why the marginal rate of substitution between consumption and leisure was so low relative to the marginal product of labor.

Lee E. Ohanian, The Economic Crisis from a Neoclassical Perspective, *Journal of Economic Perspectives—Volume 24, Number 4—Fall 2010—P 45.*

Job Openings and Labor Turnover

August 2011 (preliminary)

Nonfarm sector, Seasonally adjusted

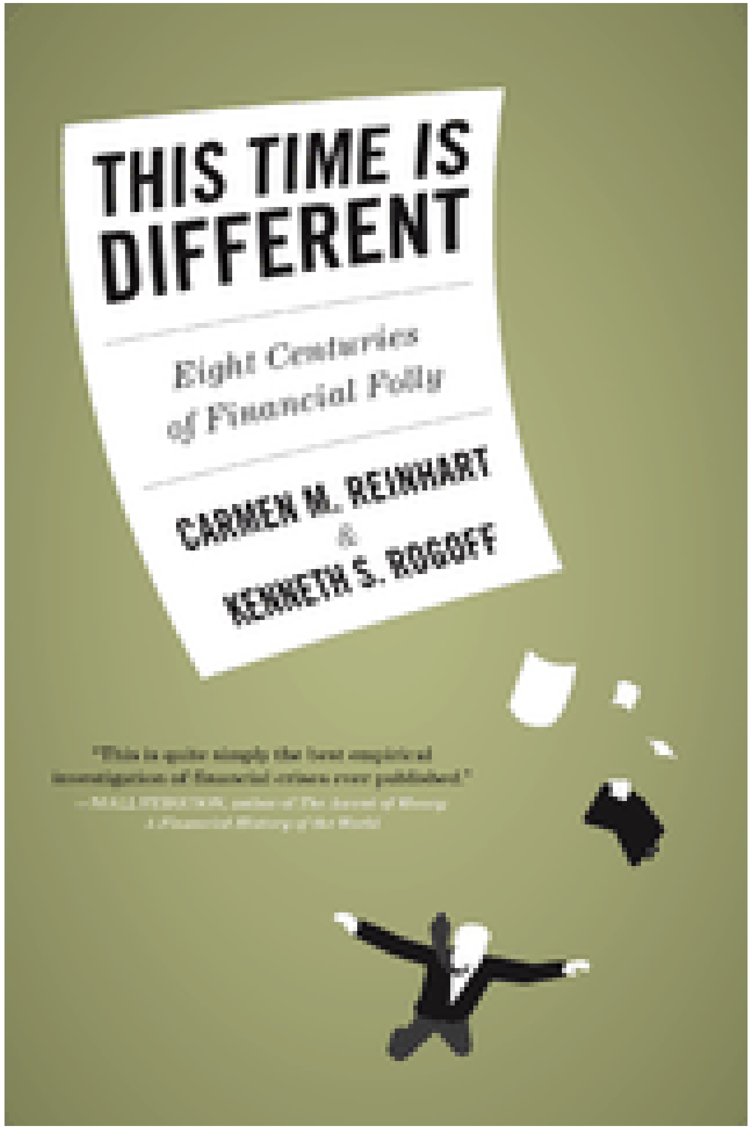


Notes: Preliminary
Numbers are in thousands

Source: Bureau of Labor Statistics
Job Openings and Labor Turnover News Release, October 12, 2011

What he [Keynes] hits on is that the government should take some new responsibilities, but the responsibilities are for stabilizing overall spending flows. You don’t have to plan the economy in detail in order to meet this objective. And in that sense, I think for everybody in the postwar period—I’m talking about Keynesians and monetarists both—that’s the agreed-upon view: We should stabilize spending flows, and the question is really one of the details about how best to do it. Friedman’s approach involved slightly less government involvement than a Keynesian approach, but I say slightly.

Lucas, Robert E., Jr. Keynote Address to the 2003 *HOPE* Conference: My Keynesian Education *History of Political Economy (2004) 36(Suppl 1):* P. 24.


THIS TIME IS DIFFERENT
Eight Centuries of Financial Folly
CARMEN M. REINHART
&
KENNETH S. ROGOFF
"This is quite simply the best empirical investigation of financial crises ever published."

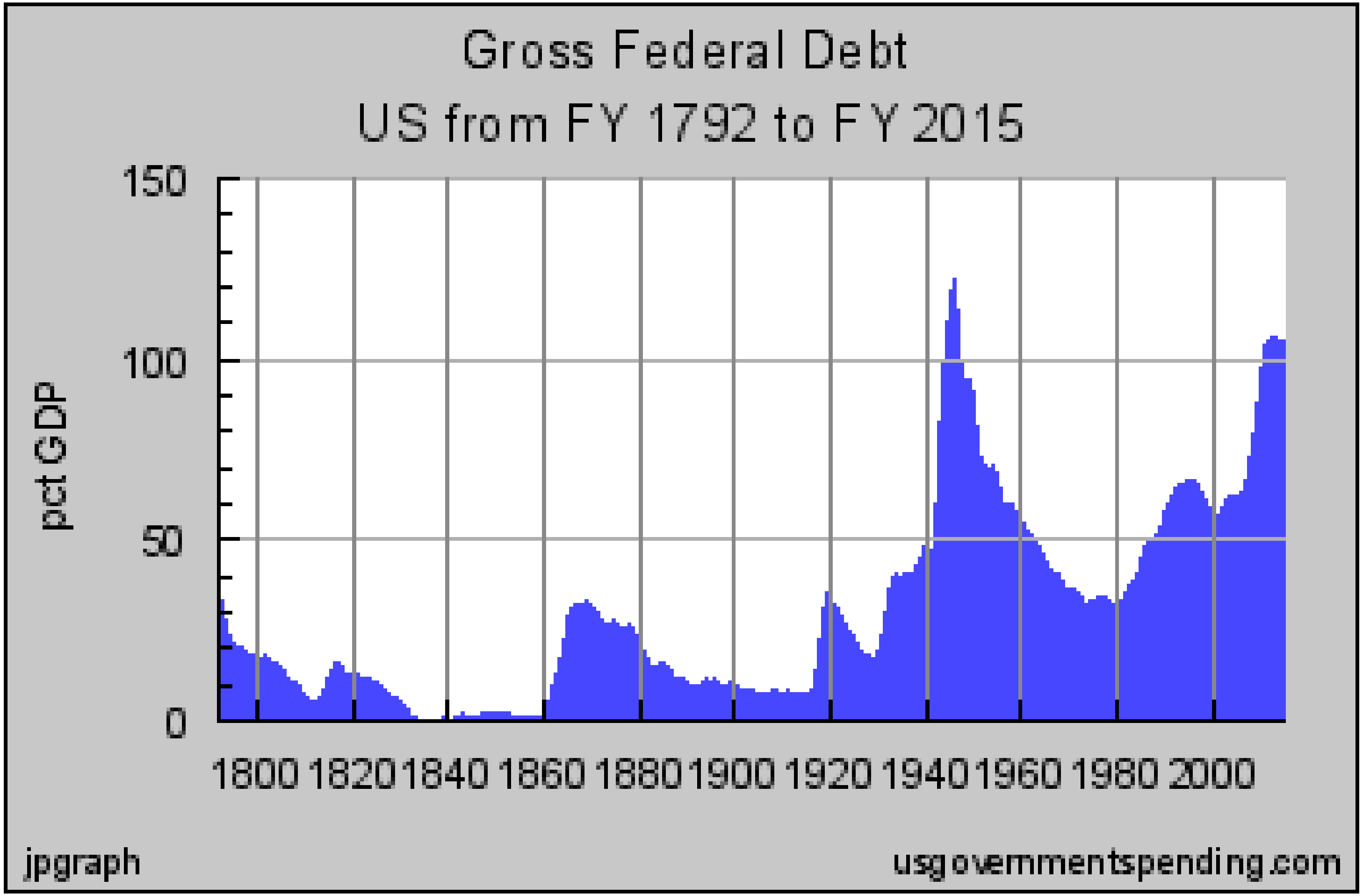
[On a] streetcorner outside Fenway Park … [t]here are buyers and sellers, neither of whom is willing to budge. The scene is something of a capitalist staring contest, an exercise in supply and demand. … The game has started but his price remains fixed. …

To a casual onlooker, the solution seems simple. Drop the price. But when the idea is brought up, the man in the gray cotton T-shirt quickly shoots it down. … “If you owned a store, and you sold milk, and all your milk was about to go bad, and everyone held out until the last minute to buy your milk, and you dropped the price, what would happen?’’ … He explains that no one would be willing to buy milk at full price. The integrity of the product would be compromised.

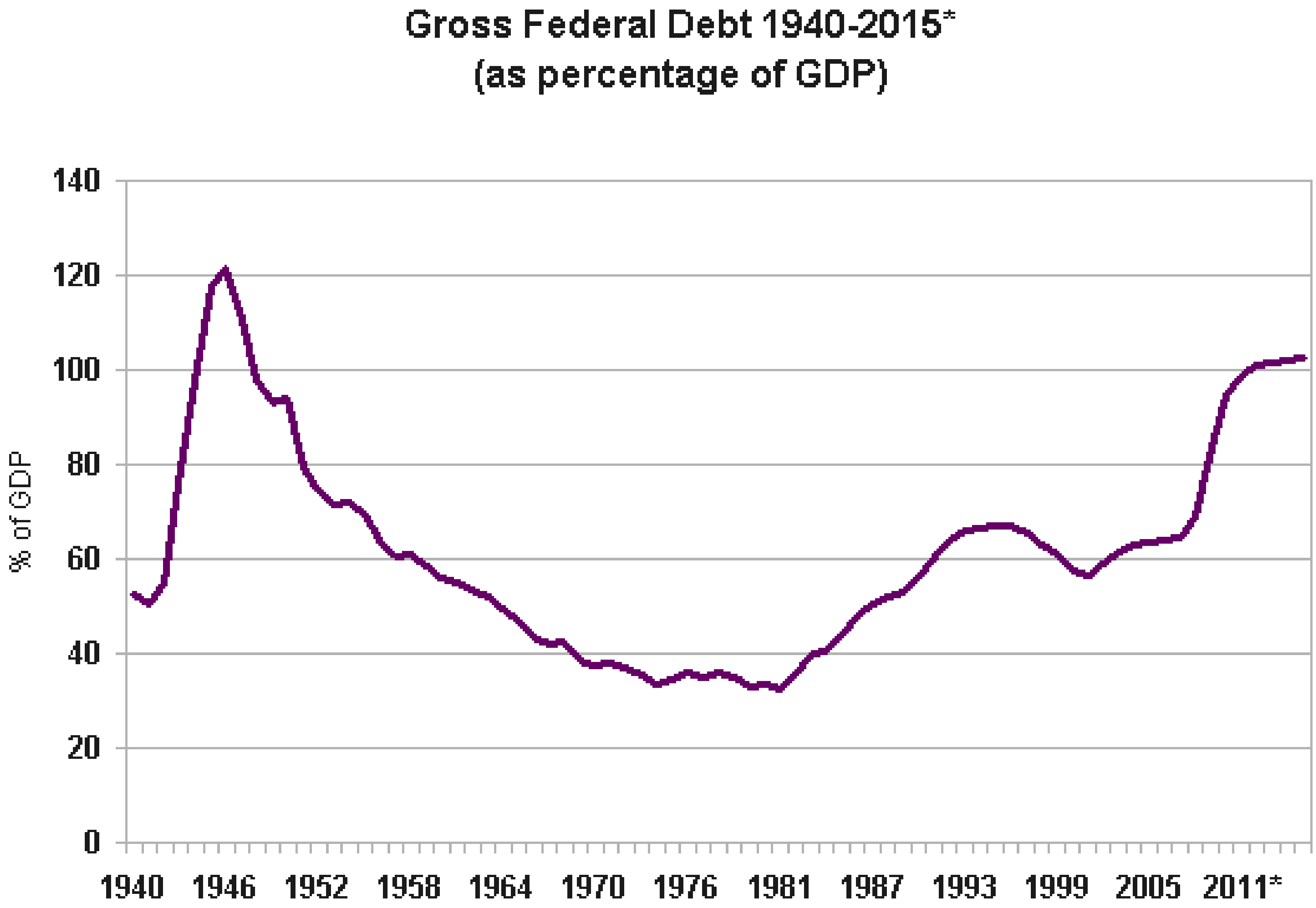
Robert Mays, Globe Correspondent, Losses are piling up for scalpers, August 17, 2010

If trade is brisk all energies are strained to their utmost, overtime is worked, and then the limit to production is given by want of power rather than by want of will to go further or faster. But if trade is slack every producer has to make up his mind how near to prime cost it is worth his while to take fresh orders. And here there is no definite law, the chief operative force is the fear of spoiling the market; and that acts in different ways and with different strengths on different individuals and different industrial groups.

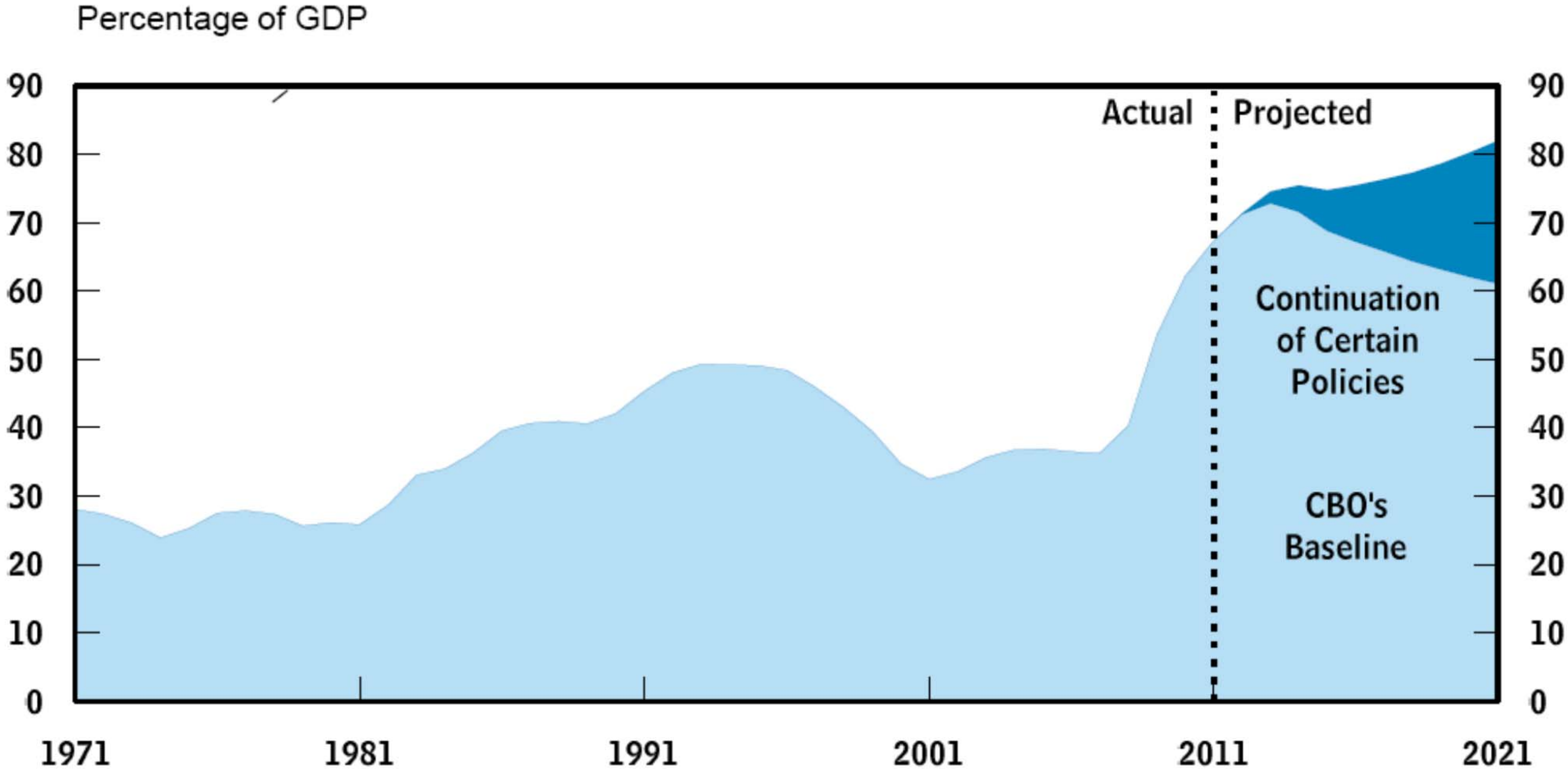
Marshall, 1948, p. 498.



Source: usgovernmentspending.com


Gross Federal Debt 1940-2015*
(as percentage of GDP)
% of GDP
140
120
100
80
60
40
20
0
1940
1946
1952
1958
1964
1970
1976
1981
1987
1993
1999
2005
2011*

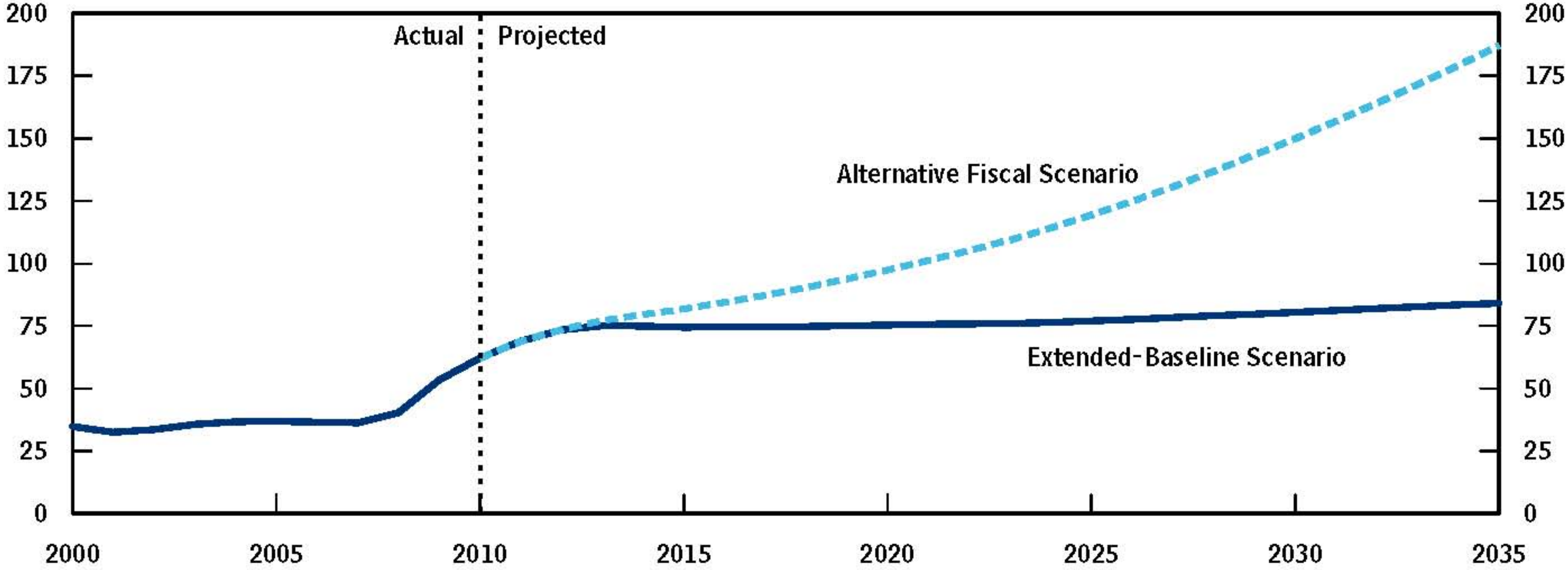
Federal Debt Held by the Public



Source: “Confronting the Nation’s Fiscal Policy Challenges”, Douglas Elmendorf, Congressional Budget Office, September 13, 2011.

Federal Debt Held by the Public Under CBO's Long-Term Budget Scenarios

(Percentage of gross domestic product)

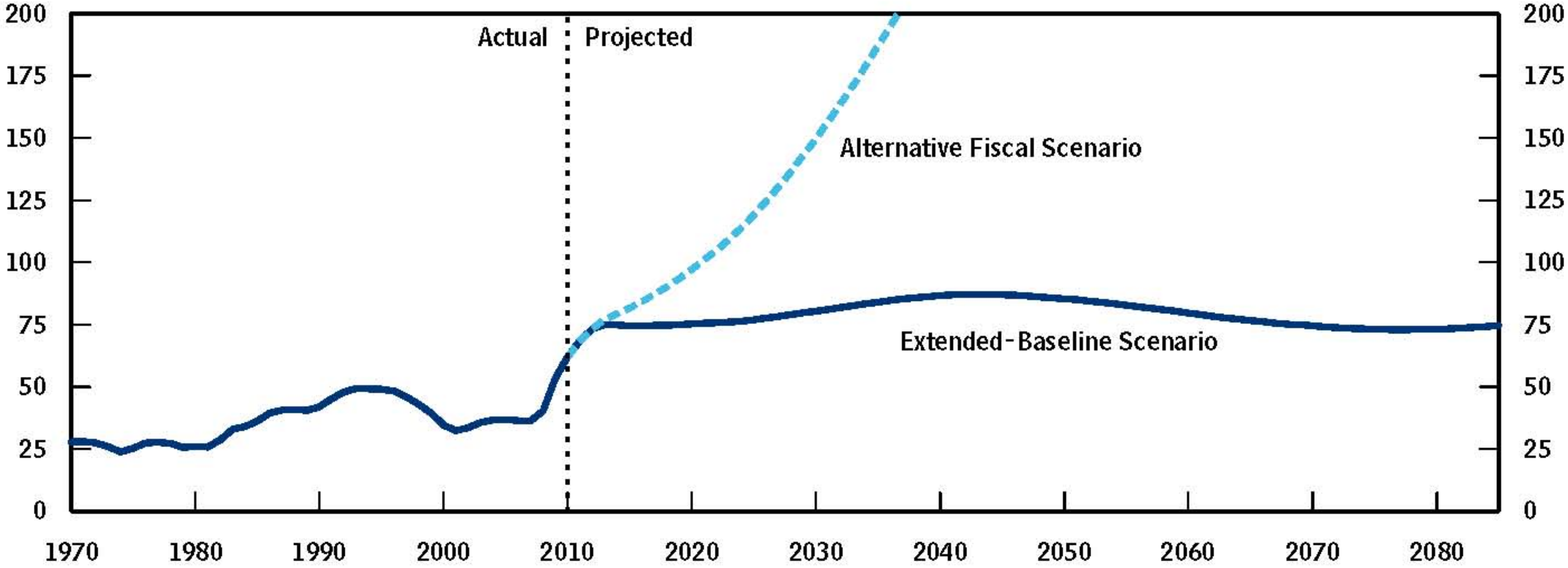


Source: Congressional Budget Office.

Note: The extended-baseline scenario adheres closely to current law, following CBO's 10-year baseline budget projections through 2021 and then extending the baseline concept for the rest of the long-term projection period. The alternative fiscal scenario incorporates several changes to current law that are widely expected to occur or that would modify some provisions that might be difficult to sustain for a long period. (For details, see Table 1-1 on page 4.)

Federal Debt Held by the Public Under CBO's Long-Term Budget Scenarios Through 2085

(Percentage of gross domestic product)



Source: Congressional Budget Office.

Note: The extended-baseline scenario adheres closely to current law, following CBO's 10-year baseline budget projections through 2021 and then extending the baseline concept for the rest of the long-term projection period. The alternative fiscal scenario incorporates several changes to current law that are widely expected to occur or that would modify some provisions that might be difficult to sustain for a long period. (For details, see Table 1-1 on page 4.)