COMMITTEE ON SCIENCE AND TECHNOLOGY

SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

U.S. HOUSE OF REPRESENTATIVES

HEARING CHARTER

Building a Science of Economics for the Real World

Tuesday, July 20, 2010

10 a.m.to 12 p.m.

2318 Rayburn House Office Building

Purpose

The Subcommittee on Investigations and Oversight will hold a hearing on July 20, 2010, to examine the promise and limits of modern macroeconomic theory in light of the current economic crisis. The Subcommittee has previously looked at how the global financial meltdown of 2008 may have been caused or abetted by financial risk models, many of which are rooted in the same assumptions upon which today's mainstream macroeconomic models are based.[1] But the insights of economics, a field that aspires to be a science and for which the National Science Foundation (NSF) is the major funding resource in the Federal government, shape far more than what takes place on Wall Street. Economic analysis is used to inform virtually every aspect of

[1] Hearing of the Subcommittee on Investigations and Oversight of the House Committee on Science and Technology on "The Risks of Financial Modeling: VaR and the Economic Meltdown," September 10, 2009, serial no. 111-48.

domestic policy. If the generally accepted economic models inclined the Nation's policy makers to dismiss the notion that a crisis was possible, and then led them toward measures that may have been less than optimal in addressing it, it seems appropriate to ask why the economics profession cannot provide better policy guidance. Further, in an effort to improve the quality of economic science, should the Federal government consider supporting new avenues of research through the NSF?

Background

The implosion of the subprime mortgage market came as almost a total surprise to most mainstream economists. Five weeks after the investment house Lehman Brothers had filed for bankruptcy protection, former Federal Reserve Board Chairman Alan Greenspan called the financial crisis "much broader than anything [he] could have imagined."[2] The chief steward of the U.S. economy from 1987 to 2006 said he was in a state of "shocked disbelief" because he had "found a flaw in the model that [he] perceived [to be] the critical functioning structure that defines how the world works."[3] Adherence to this model had prevented him from envisioning a critical eventuality: that the "modern risk management paradigm," seen by Greenspan as "a critical pillar to market competition and free markets," could "break down."[4]

[2] Hearing of the House Committee on Oversight and Government Reform, "The Financial Crisis and the Role of Federal Regulators," Oct. 23, 2008, preliminary transcript, p. 16, http://oversight.house.gov/images/stories/documents/20081024163819.pdf (last visited on July 14, 2010).

[3] *Ibid.,* p. 37.

[4] *Ibid.,* p. 18 and p. 34 respectively.

Greenspan's crumbled "intellectual edifice" depends on the "efficient market hypothesis" and the assumptions that underlie it.[5] This hypothesis holds that the price of a financial asset traded on an exchange must indicate its true value because the market's efficiency is such that the price at any given moment reflects all pertinent information about the asset.[6] It assumes that those trading on the market are considered to have rational expectations, which means that each possesses all available information about the market – indeed, all available information about the world – and makes optimal use of it. The basis for the efficient market hypothesis, the "rational expectations hypothesis," is a standard feature of modern macroeconomic models, which are concerned with the overall economy and its most important forces: growth, unemployment, inflation, monetary and fiscal policy, and the business cycle. "Whether we are talking about models of financial markets or of the real economy, our models are based on the same fundamental building blocks," writes the economist Alan Kirman.[7]

The dominant macro model has for some time been the Dynamic Stochastic General Equilibrium model, or DSGE, whose name points to some of its outstanding characteristics. "General" indicates that the model includes all markets in the economy. "Equilibrium" points to the assumptions that supply and demand balance out rapidly and unfailingly, and that competition reigns in markets that are undisturbed by shortages, surpluses, or involuntary unemployment. "Dynamic" means that the model looks at the economy over time rather than at

[5] *Ibid.,* p. 18.

[6] This assumption, it will be noted, would rule out the possibility of a price bubble on the exchange. The Subcommittee held a hearing on asset valuation issues in the wake of the Wall Street meltdown and the subsequent rescue packages. That hearing, held May 19, 2009, was titled "The Science of Insolvency," serial no. 111-27.

[7] Alan Kirman, "The Economic Crisis is a Crisis for Economic Theory," February 2010 version, p. 2, http://www.econ.ed.ac.uk/papers/A_Kirman.pdf (last visited on July 14, 2010).

an isolated moment. "Stochastic" corresponds to a specific type of manageable randomness built into the model that allows for unexpected events, such as oil shocks or technological changes, but assumes that the model's agents can assign a correct mathematical probability to such events, thereby making them insurable. Events to which one cannot assign a probability, and that are thus truly uncertain, are ruled out.

The agents populating DSGE models, functioning as individuals or firms, are endowed with a kind of clairvoyance. Immortal, they see to the end of time and are aware of anything that might possibly ever occur, as well as the likelihood of its occurring; their decisions are always instantaneous yet never in error, and no decision depends on a previous decision or influences a subsequent decision. Also assumed in the core DSGE model is that all agents of the same type – that is, individuals or firms – have identical needs and identical tastes, which, as "optimizers," they pursue with unbounded self-interest and full knowledge of what their wants are. By employing what is called the "representative agent" and assigning it these standardized features, the DSGE model excludes from the model economy almost all consequential diversity and uncertainty – characteristics that in many ways make the actual economy what it is. The DSGE universe makes no distinction between system equilibrium, in which balancing agent-level disequilibrium forces maintains the macroeconomy in equilibrium, and full agent equilibrium, in which every individual in the economy is in equilibrium. In so doing, it assumes away phenomena that are commonplace in the economy: involuntary unemployment and the failure of prices or wages to adjust instantaneously to changes in the relation of supply and demand. These phenomena are seen as exceptional and call for special explanation.

To what extent is this model, a highly theoretical construct that appears to bear little resemblance to everyday life, used in shaping policy that affects people and events in the real

world? Prominent economists disagree. As long as a decade ago, John Taylor stated that it had migrated beyond the walls of the academy: "[A]t the practical level, a common view of macroeconomics is now pervasive in policy research projects at universities and central banks around the world. This view evolved gradually since the rational expectations revolution of the 1970s and has solidified during the 1990s. It differs from past views, and it explains the growth and fluctuations of the modern economy; it can thus be said to represent a modern view of macroeconomics."[8] In 2006 V.V. Chari and Patrick Kehoe, academic economists who are advisers to the Federal Reserve Bank of Minneapolis, echoed Taylor's claim in an article titled "Modern Macroeconomics in Practice: How Theory is Shaping Policy."[9]

Similarly, Michael Woodford argued in 2008 that there had been a convergence in the macro models used in the academic and policy spheres. He cited a number of central banks in the industrialized world that were using "fully coherent DSGE models reflecting the current methodological consensus," adding that, in the cases of Canada and New Zealand, "these were not mere research projects, but models routinely used for practical policy deliberations."[10] The Federal Reserve Board's main policy model, FRB/US, was developed before the recent trend toward DSGE, but the Fed had "departed sharply from [its] previous generation" of models and had incorporated numerous assumptions and features consistent with DSGE.[11]

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[8] John B. Taylor, "Teaching Modern Macroeconomics at the Principles Level," p. 1, from a speech delivered Jan. 7, 2000, http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.88.7891 (last visited on July 14, 2010).

[9] *Journal of Economic Perspectives*, Vol. 20, No. 4 (Fall 2006), Pp. 3-28.

[10] Michael Woodford, "Convergence in Macroeconomics: Elements of the New Synthesis," p. 17, from a speech delivered on Jan. 4, 2008, http://www.aeaweb.org/articles.php?doi=10.1257/mac.1.1.267 (last visited on July 14, 2010).

[11] *Ibid.,* p. 16.

A different view of the influence of the DSGE model outside academia has been put forward by Gregory Mankiw, who was chairman of the President's Council of Economic Advisers from 2003 to 2005. "The sad truth is that macroeconomic research of the past three decades has had only minor impact on the practical analysis of monetary or fiscal policy," he wrote in 2006. Still, despite this apparent expression of regret, he added: "The fact that modern macroeconomic research is not widely used in practical policymaking is *prima facie* evidence that it is of little use for this purpose."[12]

What, then, are the opportunities in the U.S. for realistic macroeconomic policy guidance at this precarious time in the history of the national economy? Kirman, who is among the critics of modern macro models, suggests: "If the DSGE proponents have got it right, then they should be able to explain why their models do not allow for the possibility of a crisis of the sort that we are currently facing. Indeed this applies to all macroeconomic models, for if major crises are a recurrent feature of the economy then our models should incorporate this possibility."[13]

Questions

Today's troubled economic landscape is overflowing with ready tests of any model's relevance to the real world.

- Last month's G20 summit in Toronto produced a broad policy consensus behind "austerity" plans designed to reduce public debt. Practically speaking, that means

[12] Gregory Mankiw, "The Macroeconomist as Scientist and Engineer," May 2006, p. 19, http://www.economics.harvard.edu/files/faculty/40_Macroeconomist_as_Scientist.pdfm (last visited on July 14, 2010).

[13] Kirman, *op. cit.*, p. 2.

governments made commitments to slash their public spending. The recovery is still shaky, and the possibility of a double-dip recession looms on the horizon. What might be the consequences of cutting government spending now? How can we determine when austerity policies make economic sense?

- The basic unemployment rate in the United States has been hovering at just below 10 percent. Adding in the long-term unemployed who have become too discouraged to continue looking for work, as well as those who are working part time but would like to work full time, pushes the percentage of unemployed above 16 percent.[14] Yet not so long ago the consensus figure among economists for the U.S. "natural rate of unemployment" was stable at between 4 and 5 percent. How do economists explain this high and lingering unemployment rate? What can and should be done about it?
- It has been suggested that one reason so many are staying unemployed is that they are lazy and enjoy receiving unemployment benefits. What can economics tell us about whether unemployment benefits have a large perverse effect of increasing the unemployment rate? If that is so, why was the "natural rate" of unemployment thought to be closer to 4 percent just a few years ago?
- Japan has been stuck in a deflationary spiral for almost 20 years. Relatively high unemployment, weak productivity gains and slack demand appear to have become permanent features of its economy. Some observers point to signs that a similar condition could await the United States. How do macroeconomists explain Japan's lingering deflationary situation? Is the U.S. in danger of falling into a similar trap, and what might be done to avoid it?

[14] U.S. Bureau of Labor Statistics, Household Data Table A-15 "Alternative measures of labor underutilization, http://data.bls.gov/cgi-bin/print.pl/news.release/empsit.t15.htm (last visited on July 15, 2010).

- The mortgage housing bubble that expanded throughout the first years of this century was anything but inconspicuous. Why weren't more economists able to identify it and to recognize its potential for doing broad damage to the U.S. and world economies? If economics cannot currently identify emerging conditions that could threaten the Nation's economic well-being, what kind of work do we need to fund to receive such insights.

Policy makers wrestle with these issues every day. Does the current state of economic research offer reliable, robust answers? Is the reigning macroeconomic model trustworthy for policy-making purposes? If not, should the government consider funding different kinds of research that may provide more useful insights to real economic outcomes?

Witnesses

Dr. Robert M. Solow, *Professor Emeritus, Department of Economics, MIT*

Dr. Sidney G. Winter, *Deloitte and Touche Professor Emeritus of Management, The Wharton School of the University of Pennsylvania*

Dr. Scott E. Page, *Leonid Hurwicz Collegiate Professor of Complex Systems, Political Science, and Economics, University of Michigan*

Dr. David C. Colander, *Christian A. Johnson Distinguished Professor of Economics, Middlebury College*

Dr. V.V. Chari, *Paul W. Frenzel Land Grant Professor of Liberal Arts, University of Minnesota*