

# Unsteady State

## The ongoing evolution of mainstream economics

BY DOUG CAMPBELL

In the spring of 2003, a dozen economists quietly gathered in a hotel conference room in downtown St. Louis to talk about the state of their profession. They shared a general malaise. In their view, academic economics had become too narrow and too rigid, and scholarly articles too abstract, technical, and disconnected from the real world.

"We had a sense that economists were failing in an important sense to bring economic insight to bear on public understanding and public policy," recalls Dan Klein, a professor at George Mason University in Fairfax, Va., who organized the gathering.

Out of this meeting was born a new economics journal — *Econ Journal Watch*, with its premiere issue in 2004. Published three times a year and edited by Klein, the journal consists mainly of refereed "Comments" essays that critique articles in other economics journals, sometimes questioning their data, other times their premises or their logic. The stated mission is to watch "the journals for inappropriate assumptions, weak chains of argument, phony claims of relevance, and omissions of pertinent truths."

To be clear, Klein and his fellow journal organizers belong to a specific ideological strain. (And there are plenty in the profession who do not share their malaise. After all, the mainstream is still, well, "the mainstream.") Klein calls them the "Smith-Hayek-Friedmans," after Adam Smith, author of *The Wealth of Nations* and generally regarded as the founding father of economics; Friedrich Hayek, a Nobel Prize winner known for his defense of free markets and contributions to what became known as the "Austrian School" of economics; and Milton Friedman, another Nobel Prize winner whose work became synonymous with the neoclassical "Chicago School" and whose essays galvanized public interest in economic principles.

Those who follow in this tradition are pretty close to being mainstream economists, though perhaps even more free-market tilting and not as technically oriented as those who preside over the field's top journals. It is not surprising that their journal is at heart a critique of the economic orthodoxy. But it is only one of many critiques, some from the far end of the ideological spectrum and others rather close to the middle.

Klein and his cohorts want to know why more economists aren't addressing the Big Questions. Where are the plain-spoken economists of yore who helped guide public opinion? As Klein puts it: "There's this lingering question of people of my ilk — why isn't there a Milton Friedman today?"

Questions from other camps also abound. As is natural during turbulent times such as these, many questions focus on macroeconomics — the study of economy-wide phenomena. Income inequality is widening and more domestic jobs are being lost to free trade. The recent credit market turmoil provides numerous examples of borrowers and lenders making poor choices. Is economics too set in its ways to consider alternative explanations for how individuals and firms make decisions?

It's a fair question. But it would be unfair to suggest that it is going unanswered. As it is, many view the supposed failings of high-level economics as greatly exaggerated. Is macroeconomics too theoretical? Perhaps in some cases, but it's unlikely you can devise workable policy proposals without first establishing a solid theory about how people will react to those new policies. Too much math? Well, the fact is that economics is a quantitative field. Especially for the purposes of conducting macroeconomic policy, quantitative judgments are essential. Helen Tauchen, associate chair of the economics department at the University of North Carolina, Chapel Hill, says: "The inherently dynamic nature of economic decisions, the statistical difficulties in using nonlaboratory data, and the complication of handling interactions among strategic agents all require nontrivial mathematical approaches."

In this issue of *Region Focus*, we describe how economics is trying to get at the Big Questions — the way the field is embarking on a reorganization, how its members are communicating with each other and nonspecialists, and how their research focuses are shifting.

By no means is this an exhaustive exploration of the state of economics, and the following historical summary is just that — a heavily abridged and simplified review to help place these articles in historical context. We aim instead to capture the uniqueness and — most of all — the enthusiasm

that permeate the economics discipline today. In fact, debate among economists is in some ways livelier than ever, with universities experiencing a heyday in applications and enrollment; blogs providing informal venues for discourse; and exciting new research frontiers beginning to produce real results.

### A Brief History of Economic Thought

In the beginning, there was Adam Smith. The “classical model” of the economy that is attributed to Smith — as well as David Ricardo and John Stuart Mill — assumed that markets exhibited perfect competition; that people make decisions based on real, not nominal, values; and that these people are basically the same in their preferences and economic behavior. Obviously, this was an oversimplification that limited the model’s reach. For instance, in the classical model there are no business cycles — the historical boom-bust sequence of economic fluctuations. Output is determined by changes in aggregate supply, which in turn is often adversely influenced by government interference. Hence, classical economists were advocates of a “laissez-faire,” or hands-off, approach.

While the next 200 years were eventful, the classical model maintained its dominance. But with the Great Depression came great change in the prevailing economic paradigm. In 1936, John Maynard Keynes published *The General Theory of Employment, Interest, and Money*. Few works have so shaken up their disciplines. Among the differences between Keynes and his predecessors was that he provided a model which encompassed both the macroeconomy — an aggregate description of how the economy works — and the microeconomy. He also put short-term conditions at the forefront, famously remarking, “In the long run we are all dead.”

The key to what became known as the Keynesian model was aggregate demand. (Over the years, you see some clear differences in beliefs between Keynes and the practitioners who call themselves Keynesians.) Keynesians relied on the so-called IS-LM model, which showed how demand was impacted by changes in investment and savings (IS) and changes in liquidity and money (LM). In this model, shifts in consumption levels as well as investment can have an effect on demand.

Keynes himself thought people formed their expectations based on “animal spirits” and not economic fundamentals. As a result, aggregate demand tended to move erratically along with the mood of the marketplace.

Keynesians also believed policymakers had several key tools with which to bring about changes in consumption and, by extension, aggregate demand. Fiscal policy — raising or cutting taxes — is one way that Keynesians believed the economy could be fine-tuned.

Keynes also provided an answer to why the Great Depression occurred: High expectations about the future occurred in the midst of a stock market bubble and the economy’s general overproduction of goods. This in turn

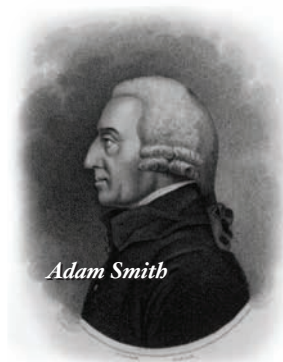
reduced investment and popped the stock market bubble. Wall Street’s crash lowered wealth and spurred low expectations about the future of the economy, both of which had the effect of further reducing investment and consumption. In sum, aggregate demand collapsed. To reverse the situation, Keynesians advocated stimulating demand via government spending.

Keynesians ruled the policy world for at least two decades after World War II. But then the monetarists, led by Milton Friedman, entered the picture. The monetarists from the University of Chicago held that changes in the money supply were the real driver of business cycles because of their ability to change aggregate demand.

Where Keynesians believed that prices and wages were somewhat “sticky” because markets were not perfectly competitive, monetarists believed that expectations about the future were stickier. These “sticky expectations” were the main culprit in upsetting the process of getting supply and demand back into equilibrium. It was this backward-looking nature of expectations that allowed a loosening of monetary policy to have (temporary) stimulative effects on real production and consumption in the economy. But that effect would wear off as expectations eventually caught up with increases in realized inflation. Thus, the central bank’s main job should be to avoid causing inflation by tightly controlling the money supply. From monetarists came the maxim: “Inflation is always and everywhere a monetary phenomenon.”

In the mid-1970s Robert Lucas articulated his “rational expectations” hypothesis, which has endured as arguably the most influential contribution to macroeconomic theory ever since then. Lucas tended to agree with monetarists, but he added the notion that people form their expectations of the future by using all available information — they are forward-looking more often than they are backward-looking. He also suggested that they are unlikely to make predictable, systematic errors. While a monetarist would have assumed people would react to inflation only upon experiencing it, a disciple of rational expectations believes people will see that expansionary monetary policy could lead to higher inflation, and thus immediately incorporate that information into their financial behavior.

The famous example is a football game — data show that throwing passes leads to more touchdowns than simply running the



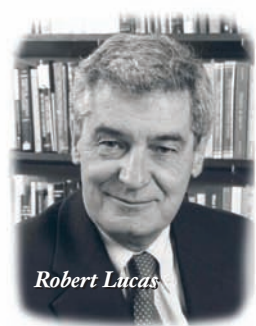
Adam Smith



John Maynard Keynes



Milton Friedman



Robert Lucas

ball. So should a team simply throw the ball all the time? Of course not, because the defense would respond with new formations to quash a pass-only offense. The Lucas critique at heart pointed out what should have been obvious: People's behavior will change as policy changes.

From the perspective that markets contain much imperfect information or firms and people face constraints on their borrowing, for example, the rational expectations theory provides a useful framework for understanding the economy. More to the point, it remedies the main problem with previous economic theories.

Closely associated with the rational expectations approach is "real business cycle" theory, developed by eventual Nobel Prize winners Finn Kydland and Edward C. Prescott, and which held much sway during the 1980s. So-called RBC models emphasized the importance of the supply side of the economy in determining output. They also drew heavily from microeconomic principles — the rational individual responding to incentives who tries to maximize the "utility" of his marginal decisions over time as well as the tendency of markets to move toward equilibrium. In RBC models, prices and wages change rapidly.

The New Keynesians arrived in force by the late 1980s to build upon the neoclassical/rational expectations/RBC approaches. New Keynesians come in several forms, but in general they believe that sticky (or slow-changing) prices and wages are the key to understanding the effects of monetary policy, which in turn is central to economic output. New Keynesian models also take into account the possibility of both demand- and supply-driven recessions.

### Where Are We Now?

For macroeconomists, a leading notion is that they have achieved a "new neoclassical synthesis," a term coined in a 1997 paper by former Richmond Fed economist Marvin Goodfriend and Robert King, a Richmond Fed visiting scholar. In the 1960s, Goodfriend and King argued, the original synthesis included the acceptance of the common optimization tools of microeconomics, a belief in the power of sticky prices, and the need to provide useful macroeconomic policy advice.

The new synthesis marries Keynesian short-run demand policies with classical let-the-market-decide microeconomic policies. It combines the most compelling parts of Keynesian and classical models with rational expectations, monetarist, RBC, and New Keynesian theories. "There are new dynamic microeconomic foundations for macroeconomics," Goodfriend and King wrote. "These common methodological ideas are implemented in models that range from the flexible, small models of academic research to the new rational-expectations policy model of the Federal Reserve Board."

One thing that should be clear at this point is that the dominant economic paradigm has shifted significantly over the years, sometimes abruptly, and that at any given time many economists disagree with the prevailing economic paradigm.

The economy is, at this writing, experiencing a downturn of, as yet, an undetermined length and magnitude. Macroeconomic models may do very well at theoretically evaluating the effects of various policies, but how confident is anyone, including the people who build the most widely used models, that they can really help forecast or understand the economy?

At a more fundamental level, today's questions have centered on the perceived rigidity of the economic orthodoxy. Last year, the *New York Times* looked at how some economists felt like outcasts after raising doubts about the uniform virtues of free markets. Alan Blinder, a former Federal Reserve Board governor, was quoted as saying that "there is too much ideology" and that economics was too often "a triumph of theory over fact." Economics blogs spent weeks debating an article in *The Nation* that spotlighted the "heterodox" wing of economics and described the mainstream as smug and inflexible to new, possibly better ideas. In an April op-ed piece in the *Boston Globe*, economist Richard Thaler and legal scholar Cass Sunstein used the mortgage crisis as an example of the failure of economic orthodoxy. After the fact, it's clear that credit was extended to all sorts of people who shouldn't have received any. In response, Thaler and Sunstein favor the emerging field of "behavioral economics," in which "the robot-like creatures who populate standard economic theories are replaced with real human beings."

Some of the criticism is to be expected, both in terms of its timing (accompanying the downturn) and from its sources. For example, John Willoughby, chairman of the economics department at American University in Washington, D.C., wonders why so many economists seem to ignore growing bodies of research. "The rational expectations, dynamic programming models seem to me to bear very little connection to what economists actually do when trying to stabilize the economy," Willoughby says. "There are a lot of interesting things being done in behavioral and experimental and game theory that challenge the notion that there's one sort of steady state to which the economy is heading — not that most economists strictly believed that but even as a theoretical framework I think that's breaking down."

On the other hand, someone like Alan Blinder is hardly out of the mainstream. Nor is Thomas Nechyba, chairman of Duke University's economics department, who worries that macroeconomics in particular has become too theoretical. "There is a new paradigm in the more micro-based way we are doing macro. But if it can't succeed in explaining actual data, the stylized facts that are out there, and do it in more than a calibrated model with replicated facts — I think it's going to be in trouble."

Tom Humphrey, who retired from the Richmond Fed in 2004, is a historian of economics who remains engaged in the profession. Humphrey says he takes a relatively optimistic view. By no means is economics in crisis, he says, and one should not be overly restrictive in defining what a "main-

stream” economist thinks. Even a diehard neoclassical economist might agree that in the short run people can behave irrationally and make mistakes.

### Watchdogs

One of the traditional mechanisms that defines the intellectual currents in economics are the journals. As in other academic disciplines, article submissions are vetted by other economists before acceptance. The big journals — *American*

*Economic Review*, *Journal of Political Economy*, *Quarterly Journal of Economics*, and *Econometrica* to name a few — naturally tend to accept papers that agree with the worldview of the referees. That’s not an easy thing to change so it may take awhile for generally accepted paradigms to shift as well.

But what can accelerate the shift is an open, intellectual exchange of the ideas, theories, and methods that appear in the leading economics journals. At least that is what Klein and his cohorts at *Econ Journal Watch* hope. Klein does not

## Q&A: General Equilibrium Models

General equilibrium models are the preferred tool of many macroeconomists today. To get a better understanding of these models, we asked Richmond Fed economist Kartik Athreya to explain.

### What’s a standard general equilibrium model?

General equilibrium refers to situations in which the desires of consumers and producers for all commodities under study are simultaneously reconciled. A standard general equilibrium model is the “competitive” one, where consumers and producers meet in markets in which both parties assume that the prices of goods are beyond their control. A competitive general equilibrium occurs when we’ve found a set of prices that leads households to demand precisely the amount that firms wish to produce at those prices.

At its heart, a general equilibrium model is a collection of two objects: One is a set of assumptions about the behaviors of households and firms, and the other is an “equilibrating” institution, which is how the actions of individual actors restrict each other. The behavior assumed for households is that they are utility maximizing — they make themselves as well-off as possible given their constraints. For firms, it’s profit maximization. All general equilibrium models are going to have these two ingredients. The big achievement of competitive equilibrium theory was to show that “usually” — if households and firms took prices as given when optimizing and paid no attention to anything but these prices — supply would equal demand in all markets.

### What’s a dynamic stochastic general equilibrium (DSGE) model?

It’s any general equilibrium model in which the actors must make decisions over time in an uncertain environment. Firms look forward to the future and households think about retirement — that’s the dynamic part of the model. “Stochastic” refers to the fact that economic actors in the model face uncertainty. And equilibrium in this case refers to the presumption that supply equals demand in markets for goods traded both in the present as well as in the future. In models where prices equilibrate competing interests, people’s expectations of the future values of prices must be specified. In standard DSGE models, these expectations are

assumed to be correct — not always, but on average.

In the context of monetary policy, people have started employing these models because they think expectations of future inflation are something important to guide the behavior of actors. These models take a big step toward escaping the Lucas critique (which states that relying on historical data is misleading because people will change their behavior based on changes in policy) because the actors are modeled as always reacting optimally to policy changes.

### What do you feed into these models?

In the model, the attitudes of households and the capabilities of firms will be given mathematical representations that are summarized in a set of numbers that we call “parameters.” For example, the way that people value future consumption relative to current consumption, or how averse to risk households are. In assigning numerical values to parameters, we let agents operate under current policies and then ask, “What numbers must be chosen for the parameters such that the equilibrium behavior of the model matches what we see in the real world?” This strategy is called calibration.

### What do you get out of these models?

You predict outcomes for all the objects that the actors in the model care about. For households, the goal of the model is to deliver predictions of how much people will consume and work at different dates and under different circumstances, and what prices they will face. For firms, it’s often how much they will produce and invest.

### How big is a typical DSGE model?

They’re small in the sense that I can describe a model to you in five or six equations. For most models, a single page would summarize them, and their solutions can be obtained in minutes, if not seconds, on many computers. They’re big in the sense that they presume that individual actors are acting as if they perform fantastically complicated computations. The old “non-equilibrium” models were actually much bigger. The internal consistency required of the current models makes their computation grow rapidly more demanding as they get “larger” and has so far prevented most of them from getting too big.

think his publication has spurred the leading journal editors to reexamine their product. What he thinks is that his journal's very existence and continued financial and intellectual support is testament to the willingness of the economics discipline to embrace new and improved ideas. And while the field of economics in 2008 may not have its own Milton Friedman, Klein thinks it's a good sign that more people are at least talking about the absence of such a figure.

He says: "Clearly today there is more empirical work going on, and I think model building has come down a notch; so-called theory is continuing to come down in prestige and that's a good thing ... so I think that I'm ready to believe that things are getting better. I sure hope so."

If economics is itself a market, then the best models should rise to the top. Today, there are more ways to percolate new ideas than ever — from a widening array of journals, to blogs, to curricula in college classrooms, and to a surprising run of *New York Times* best-selling economics books. Then again, the process of rising can take some time. In 1970, it would have been difficult to find an economist

who believed the Keynesian paradigm would be dead 10 years later. As for today's paradigm? Perhaps we'll know in 10 more years.

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$$\begin{aligned}\frac{1}{h} \int_{-\infty}^{\infty} \hat{f}(x) dx &= \frac{1}{nh} \sum_{i=1}^n \int_{-\infty}^{\infty} \mathbf{I}(|\frac{x-x_i}{h}| < \frac{1}{2}) dx \\ &= \frac{1}{n} \sum_{i=1}^n \int_{-\infty}^{\infty} \mathbf{I}(|\frac{x-x_i}{h}| < \frac{1}{2}) d\psi \\ &= 1.\end{aligned}$$

$$\begin{aligned}\theta(1-r(\theta)) - a(\theta) \\ \geq (1-\pi) [\theta(1-r(\theta')) - a(\theta')] \\ + \pi [\theta(1-r(\theta)) - a(\theta) - \tilde{P}], \quad \forall \theta, \theta' .\end{aligned}$$

$$\begin{aligned}\hat{f}(x) &= \frac{1}{n} \sum_{i=1}^n \mathbf{I}(x - \frac{h}{2} < x_i < x + \frac{h}{2}) \\ &= \frac{1}{n} \sum_{i=1}^n \mathbf{I}(|\frac{x-x_i}{h}| < \frac{1}{2}) \\ &= \frac{1}{n} \sum_{i=1}^n \mathbf{I}(|\psi(x_i)| < \frac{1}{2})\end{aligned}$$

## Economist, Study Thyself

The way economists are trained has come a long way in the past 20 years. Has it come far enough?

BY DOUG CAMPBELL

A major in economics, once as popular as an 8 a.m. lecture, lately finds itself in high demand. Universities across the nation report a growing number of undergraduates entering their programs in economics. At the graduate level, competition for admission to the top schools is just plain brutal.

Let's turn to the empirical evidence: According to the Digest of Education Statistics, the number of economics majors at U.S. universities jumped 22.5 percent between 2001 and 2006; the number of master's students was up 37.5, while the number of doctorates grew by a much tamer but still strong 9.3 percent. To be sure, an economics degree is by no means dominant on most campuses — it still represents only about 1.6 percent of all bachelor degrees conferred in the United States. On the other hand, growth in an economics degree is almost 4 percentage points higher than total degrees. And the popularity of economics appears to have come at the expense of some other traditionally popular

degrees — the number of sociology bachelors, for example, actually dropped 5.7 percent between 2001 and 2006.

And now, in the parlance of the discipline, some stylized facts from the Fifth Federal Reserve District, which reaches from South Carolina to Maryland: At Duke University, one in four undergraduates majors in economics. At George Mason University, applications skyrocketed after faculty member Vernon Smith won the Nobel Prize in economics. Clemson's pool of economics majors has increased 65 percent in the past four years alone; Wake Forest University's doubled in just the past year.

But don't get carried away. For while it's true that economics is enjoying a period of perhaps unsurpassed popularity on college campuses, there is no shortage of questions about its direction. Chiefly, some faculty members worry that the core curriculum — particularly at the graduate level — is becoming too technical, too theoretical, and fails to address relevant policy questions. A Ph.D. program