Modern Intellectual History (2024), 1–26
doi:10.1017/S1479244324000337

ARTICLE

Expecting Robert Lucas: Revisiting the Relationship between American Keynesianism and Neoliberalism

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(Received 24 October 2023; revised 26 April 2024; accepted 11 May 2024)

As the paragon of Chicago school macroeconomics in the late twentieth century, Robert Lucas is closely associated with the collapse of Keynesian hegemony in the 1970s and with neoliberalism more generally. This article explores Lucas's changing political commitments using previously unexploited archival evidence. It shows that although he often articulated his views in the form of anti-Keynesian polemic, he had a deeply ambiguous relationship with the Keynesian project. Lucas upends interpretations of neoliberalism that emphasize ignorance in the face of the market, as his research program is premised on the hope that states and scholars can make the economy visible, and hence controllable, through stable policy rules. He was impressed by Keynesian successes and the technocratic worldview they made intelligible, but he remained suspicious of economists' close collaborations with government.

I

Robert Lucas was mourning the political and ideological death of American Keynesianism throughout the late 1970s, even as he did more than anyone to bury the casket. Surveying the landscape of macroeconomic theory in a series of articles, interviews, and speeches, he was disheartened by what appeared to be "total chaos." The stagflation that had ripped through Western economies over the previous decade had also done much to discredit mainstream, Keynesian theory, reducing barriers to entry for would-be successors. This made life interesting for Lucas and his colleagues—as "orthodoxy has no way of discriminating, all get a fair hearing"—and the marketplace of ideas was thick with new products, including his own. But as the second generation of the Chicago school of economics gave way to the third, the future appeared dim. As is often the case with economists, academic ferment came at the expense of national well-being. Lucas watched what he called "the end of consensus economics" with dismay as "crackpot proposals" proliferated.[1] Supply-side theorists filtered in from the right,

[1] Robert Lucas, "Rules, Discretion, and the Role of the Economic Advisor," in Stanley Fischer, ed., *Rational Expectations and Economic Policy* (Chicago, 1980), 189–210; Lucas, "The Death of Keynesian Economics," in Lucas, *Collected Papers on Monetary Theory* (Cambridge, 2013), 500–3, at 502.

Arthur Okun's baroque collage of anti-inflationary taxes and subsidies approached from the left, and price control boards were put forward by big labor, big business, and a majority of the decade's voters.[2] Even the Reagan administration wound up "turning towards fine-tuning," Lucas lamented to an interviewer in the early 1980s, "which seems insane to me."[3] The interventionist impulse, let loose from the specifically macroeconomic confines that mid-century Keynesianism had placed it in, was spreading.

In front of an audience at the University of Chicago's annual management conference, Lucas admonished his crowd, "Keynesianism *mattered*. It filled a very central ideological function. Now that it is gone, something is going to have to take its place—and we need to think about what that something is likely to be."[4] Previous generations of Chicago economists, he thought, had failed on this score. The sophisticated market philosophies of Frank Knight and F. A. Hayek were never operational enough for what Kuhn called normal science; Milton Friedman's attacks on Keynesianism were operational, but at the cost of conceding too much ground—monetarists split the field over empirical judgments rather than unifying it around a theoretical alternative.[5] Earning him a seminal place in the history of postwar economics, Lucas's project from the late 1960s on was an attempt to do better, to develop a workable, transcendental critique of mid-century Keynesianism. His objections formed a theory of state vision and economic agency that came to be known simply as "the Lucas critique."

The Lucas critique argued that the epistemological conditions of possibility for a scientific macroeconomics—which Keynesianism aspired to be—could be found only in microeconomic theory, and that this in turn required that economists confine themselves to the analysis of alternative policy *rules*. Lucas's program was an attempt to purge the state's managerial *discretion*, at least within economic theory, by promoting rules as the only conceivable mode of scientific macroeconomic policy. It aimed to make

[2]Daniel Rodgers, *Age of Fracture* (Cambridge, 2012), 49.

[3]Lucas remained scornful of supply-side economics into the 1980s; Lucas, "Rules, Discretion"; Lucas, *Collected Papers*, xxi; Lucas, "The Death of Keynesian Economics," 503. An academic line of research on tax cuts emerged that he came to terms with, but this had nothing to do with Jude Wanniski or Art Laffer—individuals he called a malignant "symptom" of the post-Keynesian world—and was more about obscure technicians Brock, Turnovsky, Chamley, and Judd. Arjo Klamer, *Conversations with Economists* (Totowa, 1984), 51, for Lucas on Reagan.

[4]Lucas, "The Death of Keynesian Economics," 502, original emphasis.

[5]Michel DeVroey, *A History of Macroeconomics from Keynes to Lucas and Beyond* (Cambridge, 2016). After a series of debates about the quantity theory of money with Keynesians in the 1960s, Friedman came to believe that both "its acceptance and its rejection have been grounded basically on judgments about empirical regularities," and so attempted to state it using Keynesian theoretical language. Milton Friedman, "A Theoretical Framework for Monetary Analysis," in Robert J. Gordon, ed., *Milton Friedman's Monetary Framework: A Debate with His Critics* (Chicago, 1971), 1–62, at 1. Eventually Friedman concluded, "It was really a waste, I think, trying to reconcile the Keynesian thinking with the monetarist thinking." Michael D. Bordo and Anna J. Schwartz, "IS-LM and Monetarism," NBER Working Paper #9713 (May 2003), 3. See also Stanley Fischer, "Recent Developments in Monetary Theory," *American Economic Review* 65/2 (1975), 157–66, at 157, who concludes, "The revolution in the significance attached to the role of monetary factors in the determination of the price level and rate of economic activity in the last twenty-five years is empirical, not theoretical. Comparison of Franco Modigliani's 1944 exposition of the Keynesian system with Milton Friedman's 1970 framework for monetary analysis reveals little change in the basic short-run macroeconomic model."

https://doi.org/10.1017/S1479244324000337 Published online by Cambridge University Press

macroeconomics useless for practical policy makers seeking advice on how to respond to an eventful economy, directing their attention instead towards the maintenance of stable, transparent, long-run policy regimes. This implied a dramatically reconfigured role for Lucas's own profession; no longer needed within government itself, economists were to be ensconced in the academy, safe to contemplate optimal, long-run rules at one remove from politics' day-to-day machinations.

The Lucas critique succeeded in containing the noise and tumult that followed the collapse of mid-century Keynesianism. For young economists chafing at older toolkits and not tied to any specific vision of how to be an economist, it offered fresh theoretical space to explore and new opportunities to attain distinction, and—in the midst of stagflation—provided an appealing alternative to the faltering Keynesian paradigm. By the early 1980s, even those skeptical of Lucas's innovations were forced to frame their objects in his terms to publish in top journals. By the new millennium, Keynesian retrospectives were striking a deferential tone. Harvard's Greg Mankiw acknowledged Lucas as "the most influential macroeconomist of the last quarter of the 20th century," while MIT's Oliver Blanchard was sufficiently content with the profession's "convergence in both vision and methodology" to declare that "the state of macro is good."[6] Lucas's effects could be seen in policy too. "The Great Moderation" was the name Ben Bernanke gave the two decades preceding 2004, since their most striking feature "has been a substantial decline in macroeconomic volatility." The cause? Better adherence to proper monetary policy rules. "A change in the monetary policy regime has pervasive effects," Bernanke explained."[7]

Lucas transformed the methodology of academic macroeconomics, and it is in this way that he was important for intellectual history and political economy. Excavating this history requires moving beyond historiographies of market philosophy, rhetoric, theory, or doctrine to grasp a series of shifts that Lucas's work precipitated at the level of *theoretical practice*, whose effects are visible in areas from central banking and growth theory to the state–academy relationship.[8] It would not be an overstatement to say that modern macroeconomics has been constructed along the lines of Lucas's methodological dicta, but it would also not be an overstatement to call Lucas a neglected figure in intellectual history.[9] The same might be said of fellow Chicago economists Gary Becker and Eugene Fama; indeed, the entire third generation at Chicago has been largely overlooked. The likely reasons for this neglect include the technical difficulty of their work, temporal proximity, and the slow decay of disciplinary history within economics. This

[6]Greg Mankiw, "Back in Demand," *Wall Street Journal*, 21 Sept. 2009; Oliver Blanchard, "The State of Macro," *Annual Review of Economics* 1/1 (2009), 209–28, at 210, 225.

[7]Remarks by Governor Ben S. Bernanke at the meetings of the Eastern Economic Association, Washington, DC, 20 Feb. 2004.

[8]On theoretical practice see Joel Isaac, "Tangled Loops: Theory, History and the Human Sciences in Modern America," *Modern Intellectual History* 6/2 (2009), 397–424; and Louis Althusser, *For Marx* (London, 1969).

[9]The major exception is Rodgers, *Age of Fracture*, 41–76. Major works on the Chicago school, such as Robert van Horn, Philip Mirowski, and Thomas A. Stapleford, eds., *Building Chicago Economics: New Perspectives on the History of America's Most Powerful Economics Program* (Cambridge, 2011), esp. Van Horn, Mirowski, and Stapleford, "Blueprints," xv–xxiv, at xvii, have explicitly set Lucas and rational expectations to the side to focus on other themes.

https://doi.org/10.1017/S1479244324000337 Published online by Cambridge University Press

history clarifies our understanding of the political evolution of Chicago after Friedman, in addition to revising our understanding of the ostensibly hostile relationship between neoliberalism and American Keynesianism.

The Lucas critique is what separates mid-century American Keynesianism from the New Keynesianism of the "neoliberal era." Keynesians who reached intellectual maturity in the age of Lucas felt compelled to respond to his critique. Coupled with Lucas's own tortured relationship with Keynesianism, this makes Lucas a uniquely powerful prism for disambiguating Keynesianism. Upon closer inspection, it turns out to have been less the coherent methodology–ideology made out in popular parlance—and largely accepted by historians—than an often contradictory set of convictions, concerns, concepts, and cultures. Lucas absorbed some of these elements while abandoning others. The New Keynesians often followed Lucas's lead on which aspects of mid-century Keynesianism to retain and accent, and which to discard.

For instance, the conflict over whether monetary policy should be conducted according to rules or discretion arose almost immediately after the Federal Reserve Act was passed, in the wake of World War I. The farm bloc was hostile to the discretionary power that New York financiers were able to wield within the decentralized Federal Reserve system, but their structural weight within the American political economy was declining. During the New Deal, a settlement was reached to centralize discretionary power over money in Washington, DC, away from Wall Street, though farmers remained skeptical of the new middle-class experts from the urban North East that came down to staff the Board of Governors.[10] The echoes of that struggle can be heard in postwar academic policy debates, with the Chicago school taking up the midwestern preference for rules, and MIT Keynesians defending Boston's traditional insistence on the necessity for discretion. When New Keynesians like Bernanke began to sing the praises of rules-based policy, that was a concession that can ultimately be traced back to the New Keynesians' acceptance of the Lucas critique.

Some initial work in this area has been accomplished by scholars reconstructing the internal history of economics.[11] However, what is now required is the reinsertion of Lucas's work into the broader contexts of intellectual and political history. This article argues that it would be too quick simply to insert Lucas into the standard narrative of the transition to the "neoliberal era"—a moniker (not without its problems) that historians have settled on to describe the period since the 1970s.[12] Intellectual historians

[10]Elizabeth Sanders, *Roots of Reform: Farmers, Workers, and the American State, 1877–1917* (Chicago, 1999), 261–6.

[11]Kevin Hoover, *The New Classical Macroeconomics* (Oxford, 1988); and Roger Backhouse and Mauro Boianovsky, *Transforming Modern Macroeconomics: Exploring Disequilibrium Microfoundations 1956–2003* (Cambridge, 2013). Writing at the height of Lucas's influence, Hoover discusses the mathematical models of the New Classical economics, but does not discuss the significance of their influence on the New Keynesianism emerging at the same time. Backhouse and Boianovsky show how alternative, disequilibrium versions of "micro-foundations" for macroeconomics were being explored before Lucas's version of equilibrium economics displaced them.

[12]Gary Gerstle, *The Rise and Fall of the Neoliberal Order* (New York, 2022). Quinn Slobodian, *Globalists: The End of Empire and the Birth of Neoliberalism* (Cambridge, MA, 2018). Slobodian's emphasis on the attempt to "encase" markets within international institutions is broadly analogous to Lucas's attempt to bind macroeconomic activism within rules-based policy; what is notable about Lucas, however, is that he

have identified a core cast of characters surrounding the Mont Pèlerin Society (MPS) as the chief neoliberal protagonists, but the historical focus has been on their microeconomic politics.[13] One influential narrative traces the revival of market advocacy in late twentieth-century America to a vigorous public persuasion campaign, in which the University of Chicago, the MPS, and a think tank complex played defining roles. The parallel history that Lucas brings into perspective is, however, rather different. Lucas looked askance at such institutions by the early 1970s: he turned down every generously funded position offered to him by a think tank, and he never did join the MPS.[14]

Although Lucas had an elective affinity with the MPS, he pursued a different strategy. Immensely impressed with the power of academic ideas to shape technocratic opinion and practice, Lucas exited graduate school fully content with the Keynesian consensus within academia in the early 1960s. But what his work over the next two decades came to recognize and exploit was that within that consensus lay hidden contradictions—analytically, between micro and macro, and practically, between knowledge and wisdom—which ultimately undid mid-century Keynesianism as an intellectual project. While they claimed to be producing scientific knowledge about "the economy," in practice consensus economists relied as much or more on intuition

reached these conclusions through an engagement with mainstream American Keynesianism rather than the heterodox Vienna school, and then transmitted it back to that mainstream. Tim Shenk, "Taking Off the Neoliberal Lens: The Politics of the Economy, the MIT School of Economics, and the Strange Career of Lawrence Klein," *Modern Intellectual History* 20/4 (2023), 1194–1218; Shenk's position is the closest to this article's, highlighting the evolutionary, rather than revolutionary, character of late twentieth-century economic thought. Like Shenk's account of Lawrence Klein, the narrative of Robert Lucas, while focusing on an individual economist, highlights the persistence and amendments of mid-century macroeconomic tools and concerns in the neoliberal era with the ambition to document lines of continuity rather than a clean break. Shenk's article can be read as the obverse of this one: whereas Lawrence Klein was reconciled to the uncertainties and imprecisions of an active life—indeed, was paid for the value of the tacit knowledge required to navigate such "messiness"—Lucas was not, and preferred the life of the mind at Chicago. On the value of messiness in the econometric modeling business see Roger Backhouse and Beatrice Cherrier, "The Ordinary Business of Macroeconometric Modeling: Working on the Fed–MIT–Penn Model (1964–1974)," *History of Political Economy* 51/3 (2019), 425–47, at 428. Finally, a range of recent studies, most notably Elizabeth Popp Berman, *Thinking like an Economist: How Efficiency Replaced Equality in U.S. Public Policy* (Princeton, 2022); and Amy C. Offner, *Sorting Out the Mixed Economy: The Rise and Fall of Welfare and Developmental States in the Americas* (Princeton, 2019), have traced microeconomic elements of the neoliberal era back to the New Deal era; like Shenk, "Taking Off the Neoliberal Lens," this article projects lines of continuation forwards in time by focusing on macroeconomic management and model building. Finally, see Nicholas Mulder, "The Neoliberal Transition in Intellectual and Economic History," *Journal of the History of Ideas* 84/3 (2023), 559–83.

[13]Angus Burgin, *The Great Persuasion: Reinventing Free Markets since the Depression* (Cambridge, 2012); Wendy Brown, *Undoing the Demos: Neoliberalism's Stealth Revolution* (New York, 2015); Philip Mirowski and Dieter Plehwe, eds., *The Road from Mont Pèlerin: The Making of the Neoliberal Thought Collective* (Cambridge, 2016); Rodgers, *Age of Fracture*; Philip Mirowski, *Never Let a Serious Crisis Go to Waste: How Neoliberalism Survived the Financial Meltdown* (London, 2013); Mirowski, "The Political Movement That Dared Not Speak Its Own Name: The Neoliberal Thought Collective under Erasure," INET Working Paper #23 (2014); and Michel Foucault, *The Birth of Biopolitics* (New York, 2008). Mirowski and Foucault capture important features of neoliberalism by focusing on the market as inscrutably efficient, integrating economic actors' partial knowledges in a way no other human institution, especially the state, possibly could; however, Lucas's theoretical emphasis on transparency and totality run afoul of their formulations.

[14]See, for example, letter dated 27 Feb. 1978, Robert E. Lucas Papers, David M. Rubenstein Rare Book and Manuscript Library, Duke University (hereafter RLPD), Box 3, folder "1978."

https://doi.org/10.1017/S1479244324000337 Published online by Cambridge University Press

and judgment when making policy, and the economy turned out to be a disunified concept, its micro and macro levels left unmediated except by tacit understanding, a form of knowledge which mid-century Keynesianism allegedly disavowed. These contradictions were the essential coordinates which allowed Lucas to do the worst thing any new initiate can do to an ideology: he took it too seriously, turning its exoteric claims against its esoteric meaning. By pressing technocrats on their scientific credentials, and the theoretical practices which verified and constituted them, Lucas would render the ideological balancing act of mid-century Keynesianism untenable. From the fires of the old order emerged a new vision, both of economics and of what it meant to be an economist, informed by the philosophy of Robert Lucas.

II

Lucas was preoccupied with clarity for his entire life, and his changing outlook has been driven primarily by whichever system of thought seemed to promise a scientific view of society. Yet the jumble of New Deal pragmatism, Marxism, Friedman-inflected price theory, Keynesian planning, and Chomskyan geopolitics that Lucas sampled over the course of his early career makes for a muddled ecumenism.[15] The impression that emerges is certainly not of a principled engagement with the philosophical foundations of capitalism. Instead, the early Lucas appears buffeted on all sides by forces whose only unifying thread was the promise of clarity through economics, whether in history, foreign policy, or industrial management. He graduated from the University of Chicago in 1959 with a bachelor's in history, convinced by Marx and Henri Pirenne that economic forces were the real agents of progress. After a year of graduate work in history at Berkeley struggling with the language requirements, he returned to Chicago to study economics. Four years later, he had his doctorate and an assistant professorship at Carnegie Mellon University. It was there that he developed the Lucas critique, catching the eye of the Chicago Economics Department. A year later, in 1974, Lucas returned to Chicago as a full professor, and he remained there for the rest of his career.

In 1973, Lucas detailed his new vision for economics in the form of a critique of then-standard econometric practice. "The paper outlines what I think are the implications of rational expectations for econometric work," he wrote in a letter to Robert Barro. "As you can see, I think they are much more revolutionary than is generally appreciated."[16] He was careful to make it clear that he was not dissatisfied with current models' forecasting ability—which he considered decent and improving, and for which the critique "is only of occasional significance"—but rather with their use as guides for

[15]Lucas recounts his parents' New Deal politics and his early interest in Marxism in Robert Lucas, "Nobel Autobiography," available on Nobel webpage (1995) at www.nobelprize.org/prizes/economic-sciences/1995/lucas/biographical; Lucas, "Professional Memoir," mimeo (2001), Lucas, "Interview by Ian P. King," *New Zealand Economic Papers* 42/1 (2008), 1–15, Lucas, "Chicago Economics on Trial: An Interview by Holman W. Jenkins Jr.," *Wall Street Journal*, 24 Sept. 2011, at www.wsj.com/articles/SB10001424053111904194604576583382550849232. His interest in Chomsky is revealed in letters exchanged with antiwar Cowles Foundation economists—letters dated 6 Dec. 1967, 5 Jan. 1968, RLPD, Box 1, folders "1967" and "1968."

[16]Letter dated 6 July 1973, RLPD, Box 2, folder "1973." Unless otherwise stated, quotes from this section are taken from Robert Lucas, "Econometric Policy Evaluation: A Critique," *Carnegie–Rochester Conference Series on Public Policy* 1/1 (1976), 19–46.

https://doi.org/10.1017/S1479244324000337 Published online by Cambridge University Press

policy. As befits a revolutionary, he set out to maximize the number of seminar rooms to which he could proselytize. "'Econometric Policy Evaluation: A Critique' is about half polemical … I have a kind of missionary interest in discussing it."[17]

What was the content of this critique? In Lucas's view, it was necessary to do two things that current econometric models did not. First, economic agents had to be modeled as maximizing their utility in a risky, dynamic environment which they understood in its totality—this was the rational-expectations hypothesis. Second, he argued that government policy had to be modeled by specifying a mathematical rule stating which policy action would be chosen under every possible contingency. Lucas cited Knight, but did not explicitly draw on his risk/uncertainty distinction; however, to understand Lucas's point it is helpful to frame it in those terms. The essential difference is that risk can be calculated—it comes with some probability distribution that describes the relative probabilities of different events—whereas Knightian uncertainty is radically inscrutable.

Failing these two dicta, econometric models would fail to capture the *intentionality* behind agents' actions, and hence fail to predict their behavior in novel situations like alternative policy regimes. An equation describing investment patterns implicitly contained parameters describing the choices being made by investors, as well as parameters describing what investors believed to be true about their environment. Given a clear maximand in the form of a utility function and an environment with well-specified risks, economic agents had equally clear and well-specified optimal plans, rendering them predictable to econometricians. These optimal plans were contingency plans, specifying what course of action the agent would take as it moved through time and the various risky events came to pass. But if part of their environment was shrouded in Knightian uncertainty—because, say, policy was being made by the inscrutable whim of obscure technocrats—then traditional models of neoclassical optimization failed, since there was no mathematical traction that would allow agents to calculate utility-optimizing plans. Empirical estimation would fail to reveal the "deep parameters" of agents' decision making. To the extent that government policy changed over time—perhaps in response to randomly occurring events like the business cycle—then its changes needed to present economic agents with Knightian risks, and hence provide mathematically specified, rule-based contingency plans. Otherwise government policy would produce Knightian uncertainty and deny economic actors the capacity for rational agency, rendering them unpredictable to econometricians, and hence undo the scientific character of academic economics to which Lucas was so committed. Yet that was precisely what the *activist, discretionary* policy recommendations of mid-century Keynesianism, in which he was trained, did. Working his way into, and then out of, this critical impasse was the labor of more than a decade.

III

Lucas's first encounter with consensus economics came in the summer before his first return to Chicago for graduate school, when he found an appealing, technocratic

[17] Letter dated 13 Nov. 1973, RLPD, Box 2, folder "1973." At this point he was not calling them "Keynesian" models, just "econometric" models.

aesthetic in the work of MIT economist Paul Samuelson. Mid-century Keynesianism emphasized mathematical rigor on the one hand, and expert discretion on the other. Understanding that intellectual formation, with its charisma and contradictions, is necessary for an appreciation for the origins and significance of the Lucas critique.

With the end of World War II, American economics had undergone a sea change; a wave of neoclassicism had swept away a landscape of competing methodologies—institutionalism, historicism, Marxism—and at its crest was Samuelson.[18] Youthful and brash, with a tone that overawed young Lucas, Samuelson dismissed the economics of previous generations as merely "literary"—intuitive, unscientific, moralizing. He pursued instead two parallel strands of mathematical economics: neoclassicism and Keynesianism. Samuelson combined these two traditions in his 1947 textbook *Foundations of Economic Analysis*, and its undergraduate companion *Economics*, which dominated the academy for decades and laid the foundations for the "consensus economics" that Lucas later pronounced dead at the end of the 1970s.[19] For Samuelson, microeconomics and macroeconomics were mathematically and conceptually distinct, linked only by the intuition that the validity of neoclassical microeconomics depended on the successful interventions of Keynesian macroeconomics. Samuelson argued that it was only within a stable environment characterized by full employment that the assumptions and liberal policy conclusions of orthodox neoclassicism were true. The middle-of-the-road politics of the neoclassical synthesis were widely viewed as centrist, and the scientific cast of Samuelson's theory appeared to many, including Lucas, as an end to ideological economics. Samuelson accepted activist interventionism—but he confined it to the macroeconomy.

In Lucas's reading of *Foundations*, Samuelson naturalized rule by experts with a tone of disciplinary cliquishness. Throwaway lines about policy being too important to leave to economists aside, Lucas took Samuelson's message to be that mathematics was a shibboleth that could make him an "insider in a complex culture" of expertise which, by virtue of its unique skill set, had the sole right to exercise discretion in economic disputes.[20] As Samuelson put it, although he would "rather have Bob Solow with

[18]Rodgers, *Age of Fracture*, 45–7; Mary Morgan and Malcolm Rutherford, eds., *From Interwar Pluralism to Postwar Neoclassicism* (Durham, NC, 1998); E. Roy Weintraub, *How Economics Became a Mathematical Science* (Durham, NC, 2002). See also Roger E. Backhouse, *Founder of Modern Economics: Paul A. Samuelson*, vol. 1, *Becoming Samuelson, 1915–1948* (Oxford, 2017).

[19]For his part, Samuelson was clear that the consensus was academic. "In recent years 90 per cent of American economists have stopped being "Keynesian economists" or "anti-Keynesian economists." Instead they have worked toward a synthesis … The result might be called neoclassical economics and is accepted in its broad outlines by all but 5 per cent of extreme left-wing and right-wing writers." Paul A. Samuelson, *Economics: An Introductory Analysis* (New York, 1955), 212, 220. Politicians and policy were another matter altogether: "when I say we I mean the Democratic Opposition. Many of the Republican old guard are incapable of learning anything … it is the vigorous and militant Democratic Opposition which hangs a sword over the Eisenhower Administration, that has been the primary force making them do what they did grudgingly do to control the recession of 1953–4 … without the chastening fear of the vigilant Democratic Opposition, the differences in economic program would become immense." Samuelson to Adlai Stevenson, letter dated 24 July 1956, Paul A. Samuelson Papers, David M. Rubenstein Rare Book and Manuscript Library, Duke University, Box 70, folder "Stevenson, Adlai."

[20]Lucas, "Professional Memoir."

an econometric model than without one," if forced to choose he would "rather have Bob Solow than an econometric model."[21] The mathematical work was important, but less for its own sake than for the subjective effects it had upon the knowledge producers themselves. It was a guild ethos that was flattering to students who were talented enough to earn initiation, and Lucas looked on in wonder at economists in government wielding the prestige of the new mathematical economics.

Beyond Samuelson's textbooks, Keynesian technologies were deeply embedded in a postwar governance structure that relied more than ever on economic experts by the 1960s, and a small collection of extra-state contract research institutions played an increasingly vital role in managing the nation via the collective wisdom of its complex culture. America had relied on outside experts to staff its institutions since at least the Progressive Era, but in the postwar decades these relationships solidified into elite institutions that performed routine work on a more sustained basis. Organizations like the National Bureau of Economic Research (NBER), the RAND Corporation, and the Brookings Institution supplemented the official bureaucracy, providing a range of services from program administration to conference organizing and data collection. The network they formed created a common space for working out the details of an establishment consensus—a complex culture—where conversations happened largely out of view of the public eye. Experts paid little attention to developing popular constituencies for their programs. Instead, they thought of their primary audience as legislators, bureaucrats, and one another.[22]

The picture revealed by scientific economic theory was assumed to operate independently of the masses' consent—and certainly independently of their knowledge—as were the various policy levers used to influence the economy. Indeed, some discretionary policies were even thought to work *better* when hidden from the public. Conventional wisdom in central banking circles, for instance, was that the stance of monetary policy should be ambiguous, and markets ought to be left guessing about the future path of interest rates. This would foster a variety of forecasts, and as each market participant tried to outguess the next there would always be a willing agent on the other side of any trade. Such a "thick" market would increase financial liquidity and buoy the system against unexpected shocks. It was precisely this practice that Lucas would later single out as the main cause of economic uncertainty and the business cycle.[23]

A second major vector for importing mathematical Keynesianism to America was the Cowles Commission. Founded in 1932 with a grant from Alfred Cowles, by 1939 it had moved into the Social Sciences building at the University of Chicago, where it shared space and resources, including faculty, with the Economics Department. By the mid-1940s, Cowles was home to a clutch of socialists and left liberals devoted

[21] Quoted in Stanley Fischer, speech to Warwick Economics Summit, Coventry, United Kingdom, 11 Feb. 2017, available on the Federal Reserve website at www.federalreserve.gov/newsevents/speech/fischer20170211a.htm.

[22] James Smith, *The Idea Brokers: Think Tanks and the Rise of the New Policy Elite* (New York, 1993); Thomas Medvetz, *Think Tanks in America* (Chicago, 2012).

[23] Alan Greenspan, "Transparency in Monetary Policy," *Economic Policy Conference*, 11 Oct. 2001. Robert Lucas, "Expectations and the Neutrality of Money," *Journal of Economic Theory* 4/2 (1972), 103–24.

to sharpening economic techniques for social engineering.[24] Several members of the commission were early mentors for Lucas, and their influence—in particular their emphasis on scientific planning, totality, and econometrics—more than anything differentiated him from the second generation at Chicago, and their frustrated attempts to assimilate Keynesianism foreshadowed Lucas's later critique.

The major plank that Lucas and Cowles shared was Walrasianism, a distinct brand of neoclassicism that approached the economy as a simultaneous whole, emphasizing cross-market linkages, rather than singling out one market at a time for analysis. Cowles was enthusiastic about an interpretation of Walrasianism due to Oskar Lange, their colleague at the University of Chicago, which claimed that Walrasian models could provide a road map for central planning. Policy could become purely mechanical, a matter of grinding out the equations and following their rule, once the true "structure" of the economy had been revealed in its totality. Cowles combined what had hitherto been the austere abstractions of Walrasian theory with econometrics, which integrated economic and statistical theory for empirical research, and Keynesianism, whose strengths compensated for Walrasian limitations. The single national unit that was the object of Keynesian theory was measurable in a way that the scattered and innumerable series of interconnected, Walrasian markets were not—aggregation would provide the necessary stepping-stone from theory to empirics. Cowles intended to use Keynesian macroeconometrics to bolster its project for Walrasian state planning. The relationship between Walrasianism, Keynes, and econometrics was not symmetric, however. The Cowles commitment to Walrasian theory was overdetermining, as Lucas's later would be, and any conflicts with Keynes or econometric results were decided in the former's favor. By the early 1950s, a sufficiency of such verdicts had been reached, and the attempted fusion was deemed an impasse, leading Cowles to what Philip Mirowski calls an "ambivalent critique of Keynes," a position Lucas would later reproduce and popularize.[25] The intentions were grand, but the results were so abstruse as to preclude all hope of empirical analysis, and so arid as to be of little interest beyond Cowles. In the face of disappointing empirical and theoretical fusions, Cowles retreated into pure Walrasian theory. It would be another generation before the attempt at synthesizing Keynesian macro, Walrasian theory, and econometrics would be picked up again, this time by Lucas, but the intervening history gave this second experiment a different cast.

IV

The Cowles retreat to high theory was accelerated by their growing enmity with the second generation of the Chicago school, whose space they shared. Open warfare between the two erupted with the arrival of Friedman on campus in 1946. Friedman was a happy

[24]Till Düppe and E. Roy Weintraub, *Finding Equilibrium: Arrow, Debreu, McKenzie and the Problem of Scientific Credit* (Princeton, 2014); Timothy Shenk, "Inventing the American Economy," Columbia University ProQuest Dissertations and Theses, 2016, at www.proquest.com/pqdtglobal/docview/1792636685/abstract/B2AD849A380F4.

[25]Philip Mirowski, "The Cowles Commission as anti-Keynesian Stronghold," in Pedro Duarte and Gilberto Lima, eds., *Microfoundations Reconsidered: The Relationship of Micro and Macroeconomics in Historical Perspective* (Northampton, 2012), 131–67, at 141. Shenk, *Inventing the American Economy.*

warrior, and he regularly made the trek up to the Cowles seminar room to antagonize them. He was uncompromising in his assessment of their project: "the construction of a model for the economy as a whole is bound to be almost a complete groping in the dark."[26] Despite their best efforts, Keynesians had not rendered the economy visible. For Friedman, the abstraction and totality of Walrasian theory were distractions at best and dangerous at worst. The primary justification for each had been given by his colleague Oskar Lange, and Friedman attacked Lange's Walrasian socialism as vigorously as he attacked Marxism and Keynesianism.[27] This high Cold War drama would not survive into the third generation of Chicago economics, however, and Lucas's embrace of totalizing theory would mark a sharp rift between him and Friedman. Understanding Lucas's ambiguous relationship with Chicago and debt to Cowles is the second necessary step for a full appreciation of the origins and significance of his critique.

Friedman believed that market advocates should represent their views as simple in concept, empirical in methodology, and populist in tone.[28] Friedman's theoretical abilities were formidable, but he eschewed the first-principle derivations associated with Walrasianism. Instead he deduced his formulas with loose intuitive reasoning in prose. For Friedman, neoclassical mathematics was useful only insofar as it provided the intuition necessary to pursue clearly stated empirical hypotheses; it was not an end in itself. The validity of a theory for Friedman was instrumental in nature: the ultimate test was whether it produced useful hypotheses, regardless of the apparent "realism" of its assumptions or its logical completeness.[29] Friedman was a master of shifting the discussion from whether a theory was "true" to whether or not it "worked." Although useful in wrongfooting his opponents, this epistemological maneuver arguably surrendered too much terrain, as it left consensus macroeconomics' methodology unharmed. It would take a full theoretical critique, and more than mere empirical objection, to penetrate those defenses.

The rhetorical effort Friedman put into his economics paid off in his pedagogy. Lucas's first courses upon his return to Chicago were remedial, but after a semester he enrolled in Friedman's course on price theory. It was a transformative experience that challenged Lucas's political commitments. But the ideological changes it precipitated would take almost a decade to mature, by which time other influences had also shaped his thought. Lucas recalls that after every class, he "tried to translate what Friedman had done into the mathematics I had learned from Samuelson."[30] Lucas wrestled with Friedman's contempt for government bureaucrats, eventually internalizing a libertarian's distrust of microeconomic interventions, and he learned to accept an instrumentalist attitude toward the realism of assumptions. But ultimately

[26]Friedman quoted in Mirowski, "The Cowles Commission as Anti-Keynesian Stronghold," 156.

[27]Hoover, *The New Classical Macroeconomics*; Dieter Plehwe and Philip Mirowski, "Preface," in Mirowski and Plehwe, *The Road from Mont Pèlerin*, ix–xxiii, at xiii; Johanna Bockman, *Markets in the Name of Socialism: The Left-Wing Origins of Neoliberalism* (Stanford, 2011).

[28]Angus Burgin, "Age of Certainty: Galbraith, Friedman, and the Public Life of Economic Ideas," *History of Political Economy* 41 (supplement) (2013), 191–219, esp. 215.

[29]Marion Fourcade, *Economists and Societies: Discipline and Profession in the United States, Britain, and France, 1890s to 1990s* (Princeton, 2009), 93–6.

[30]Lucas, "Nobel Autobiography."

Friedman's fights were not Lucas's. This was in part because Lucas was excluded from the Friedman affinity group in graduate school, a club he somewhat bitterly remembered in a speech decades later as "an invitation-only thing."[31] Even when Lucas began receiving sustained attention from the profession as a mathematical sophisticate in the early 1970s, the few letters the two exchanged were formal and emotionally frigid.[32] Friedman controversially alleged that an oral tradition had organically connected the first and second generations of Chicago monetary theorists.[33] If so, it simply did not recur in the transition to Lucas's era.

Lucas's first steps towards the Lucas critique were taken through "the back door, through labor economics," in the shadow of his thesis adviser, Gregg Lewis.[34] Lewis is remembered by peers as the "father of labor economics," but when memories move beyond this epithet they become vague. This is likely a result of his tendency to give his best ideas away, or to never write them down in the first place, a result of significant confidence problems.[35] His life's work was the empirical application of price theory to labor markets, which he conducted as a professor at Chicago and a research associate at Cowles. Labor was the last holdout for the institutionalist view of economics, which treated it as a sociological phenomenon that needed thick description as well as statistical analysis. Lewis brushed this tradition aside and approached labor markets as if they were inhabited by the rational actors of neoclassical theory. By the mid-1960s this methodology had become more widely practiced, but in the 1940s the procedure appeared radical and potentially quixotic to peers and students, who

[31]Robert E. Lucas, "Keynote Address to the 2003 HOPE Conference: My Keynesian Education," *History of Political Economy* (2004) 36 (supplement), 12–24, at 19.

[32]Compare, for example, the letters Lucas sent to Phelps and Friedman after writing his first rational-expectations model. Letters both dated 7 Nov. 1969, RLPD, Box 1, folder "1969." The former is many pages long, detailing the motivation, strengths, and weaknesses of the paper, contextualizing it in the literature—and explicitly saying that it was directly motivated by comments that Phelps had made to Lucas. The latter is one sentence, asking for comments. Or the letter which Friedman sent to Lucas that begins, "We must be wary of forming a mutual admiration society," dated 13 Nov., RLPD, Box 3, folder "1978." Or the letter dated 14 Aug. 1979, which Lucas sent to Friedman, carefully explaining, with overly strained patience, that "really, no one 'working on rational expectations' claims that 'all predicted effects' of policies would be 'rendered nugatory'. This 'idea' is due to Lindlay Clark or some other journalist." Interior quotes are Lucas quoting Friedman. This basic misunderstanding survived their overlap at Chicago, and was the canard that irked Lucas most about his work. The misimpression stems from Thomas Sargent and Neil Wallace, "'Rational' Expectations, the Optimal Monetary Instrument, and the Optimal Money Supply Rule," *Journal of Political Economy* 83/2 (1975), 241–54, playing devil's advocate, showing how standard Keynesian models, modified slightly by rational expectations, produced the conclusion that Friedman apparently took to be the main claim of rational expectations *tout court*.

[33]A robust debate followed, for which see the footnotes in Burgin, *The Great Persuasion*. Noteworthy in the back-and-forth is that Paul Samuelson, "Jacob Viner," in Edward Shils, ed., *Remembering the University of Chicago* (Chicago, 1991), 533–47, endorses the existence of not two but three Chicago schools, centered on Knight, Friedman, and Lucas. For Lucas's part, he once mused to an interviewer, "No one would describe the younger faculty here [Chicago] as 'followers' of Becker, Rosen and me, but I don't know if we could be described as followers of people like Milton Friedman and George Stigler, or they of Frank Knight and Jacob Viner." Robert Lucas, "Interview with David Levy," *The Region*, June 1993, at www.minneapolisfed.org/article/1993/interview-with-robert-e-lucas-jr. Becker, Rosen, and Lucas *were*, however, all students of Gregg Lewis.

[34]Lucas, "Professional Memoir."

[35]Orley Ashenfelter, ed., "H. Gregg Lewis Memorial Comments," *Journal of Labor Economics* 12/1 (1994), 138–54.

https://doi.org/10.1017/S1479244324000337 Published online by Cambridge University Press

were more accustomed to thinking about labor qualitatively. Lewis was meticulous and encyclopedic, and he preferred to let numerical tables do the talking for him. This soporific exposition assured him virtual anonymity beyond specialist circles, as did his habit of seeking out obscure, foreign-language journals to publish his work. But in closed settings his language was uncompromising, with a clear political edge. The "labor monopoly" caused inflation and unemployment, and incubated discrimination and racketeering. Lewis advocated for the repeal of every New Deal labor law to facilitate labor market liberalization. All of Lewis's students became well acquainted with these views, including Robert Lucas and Gary Becker. The result of Lewis's aggressive advocacy on behalf of neoclassical theory, in a field where it had encountered more resistance than most, was his students' faith in its universal relevance. Thus Lewis became a major, if underacknowledged, wellspring for economic imperialism in the latter half of the twentieth century.

Lucas never became concerned with unions, and his quantity-theoretic writings on inflation diametrically opposed Lewis's. Nevertheless, Lucas's first macroeconomic paper—coauthored with fellow Lewis student Leonard Rapping at the end of the 1960s—was a Lewis-style study of labor. Ever since the Cowles attempts at econometric planning, neoclassical theory had been applied to each macroeconomic sector in turn—Dale Jorgenson worked on investment, Friedman and Franco Modigliani worked on consumption, Modigliani and Merton Miller worked on finance. Providing neoclassical microfoundations for Keynesian macroeconometrics was the mainstream research program in the postwar period. But along with the Phillips curve, the labor market was the last sector to resist this treatment. Following Lewis, Lucas and Rapping made the case for the labor market's neoclassical intelligibility, and alleged that unemployment was "voluntary." The unemployed were simply forgoing the current wage rate due to their skewed perception of what constituted a "normal" wage; their expectations needed adjustment. Just a year later, Lucas rejected this theory in favor of the rational-expectations hypothesis, which ruled out agents making systematic errors predicting markets—but, then, whence unemployment? The answer that Lucas settled on was that it was agents' inability to forecast government policy, not the market, which confused their expectations about remuneration. Erratic monetary policy produced erratic inflation, which muddled the market's ability to send proper price signals, leading to agents with unclear views of the future.

But this is getting ahead of our story. In the 1960s, Lucas was simply not a part of Friedman's clique. At a more fundamental level, however, Lucas's separation from Friedman was due to Lucas's faith in scientific advising and his sense of ease with government by macroeconometrician. Despite its reputation for having a strained relationship with Keynes, even Chicago had been unable to resist turning its monetary economics curriculum in a more Keynesian direction in the postwar period. Lucas's macroeconomics courses were taught by Carl Christ and his student Martin J. Bailey. Lucas's professors assigned all the mid-century Keynesian classics from Lawrence Klein to Don Patinkin. And his closest correspondents after graduating were the mainstream economists Dale Jorgenson and Edmund Phelps—all consensus stalwarts.[36] Lucas

[36]The correspondence with Jorgenson and Phelps are found in various letters, RLPD, Box 1, folders "1963" through "1971." Lucas, "My Keynesian Education"; Klamer, *Conversations*.

https://doi.org/10.1017/S1479244324000337 Published online by Cambridge University Press

spent most of the 1960s working on microeconomic topics, but when he did turn to macroeconomics at the end of the decade he did so as a contributor to the Keynesian macroeconometric project. His work with Rapping supplemented the mainstream macroeconometric models without really challenging them. Their model of the labor market snapped comfortably into the paradigmatic large-scale planning architectures, and was meant to do so.[37] In the long postwar boom, the system simply seemed to be working: inflation was low, growth was high, and the models' predictions were reliable. Lucas was sympathetic to Friedman's "libertarian-conservative worldview," but by all appearances the techniques economists had mastered and the discursive communities they had built around governments were delivering on all they promised.[38]

In the 1970s, Lucas's distance from the Keynesian intellectual formation grew, leading to a more complex relationship with Friedman.[39] Friedman saw the Lucas critique as a weapon that could destabilize the Keynesian econometric advising program, while Lucas saw Friedman—especially after his 1976 Nobel Prize—as a symbol of intellectual authority that, if appropriated, would enhance his own standing. They were careful to be conciliatory in their public writing, but Friedman's language tended to betray unfamiliarity with Lucas's methodological arguments. Friedman never discussed the Lucas critique in detail and his mentions reduced it to a hypothesis much like one of his own—theoretically intuitive, empirically validated, and simple—rather than an entirely new approach to political economy. In private letters, Friedman criticized Lucas for failing to live up to his standards for market advocates, writing that Lucas's work was not sufficiently "accessible," and was filled with "excessive terseness" and "implicit references."[40]

Lucas took the inverse view of Friedman. Lucas saw "the progressive element in economics as entirely technical"; an economist's legacy was entirely methodological—doctrine, ideology, and policy were ephemeral.[41] As such, he regretted what he saw as Friedman's oscillation between two personalities—one scientific, the other popular—in a cycle that ought to have been smoothed. Lucas praised the half of Friedman's work that was "written for economists," but thought that in Friedman's popular writings their author became "careless about a lot of points."[42] Friedman's rhetoric, persuasive to so many, appeared unevenly nuanced to Lucas, who rejected Friedman's powerful simplifications and insisted that neoclassical economics was "a reformist line of thought," that its politics had to be taken "issue by issue."[43] After his final return to the University of Chicago, Lucas explained to an interviewer, "I thought I was [a conservative] at Carnegie, but around here I don't know."[44]

[37]Klamer, *Conversations*, 36. Robert Lucas and Leonard Rapping, "Price Expectations and the Phillips Curve," *American Economic Review* 59/3 (1969), 342–50.

[38]Lucas, "Nobel Autobiography." Friedman never liked either libertarian or conservative as a label; Burgin, *The Great Persuasion*, 175–6.

[39]Jennifer Burns, *Milton Friedman: The Last Conservative* (New York, 2023), Ch. 12, discusses the view from the other side of this relationship.

[40]Letter dated Nov. 13, RLPD, Box 3, folder "1978."

[41]Lucas, "My Keynesian Education," 22.

[42]Klamer, *Conversations*, 52.

[43]Lucas, "Interview with David Levy."

[44]Klamer, *Conversations*, 51.

https://doi.org/10.1017/S1479244324000337 Published online by Cambridge University Press

When Lucas graduated from Chicago, he was a Keynesian in macroeconomics, and not a Friedmanite. One of the downstream implications of the Cowles "ambivalent critique" of Keynes, however, was that "Keynesian" was never a precise identifier in America. American Keynesianism was certainly not the economics of Keynes—Keynes attacked both Klein and Cowles-style econometrics. Yet in America, Samuelson, Cowles, and Klein were the major interpreters of his doctrine. What was American Keynesianism, then? Lucas wandered through at least four distinct answers.

In the mid-1970s, Lucas ironically suggested that "Keynesian" was often used to mean any theory "consistent with the observed behavior of economic time series."[45] It was an exaggeration for emphasis, so he cited no examples. But it has some validity given the co-integration of Keynesianism and econometrics. In America, nearly every macroeconometric model—and certainly every large-scale model—from the 1940s on was constructed using Keynesian theory. The major exception occurred at Cowles, though even there researchers tried to make some use of Keynes, and when he was abandoned at the turn of the 1950s, so too was macroeconometrics. Thus for Lucas, the project to predict and guide government intervention in the economy with scientific, large-scale econometric models was a Keynesian program which he accepted.

A second definition equates Keynesianism with countercyclical stabilization policy. When Lucas left Chicago in 1963, he was fully on board with this plank of the Keynesian program. Around the time he developed the Lucas critique, he came to the position that Keynesians had overestimated the role of fiscal policy vis-à-vis monetary policy, and underestimated the power of expectations. He argued that fluctuations in output and employment were caused mainly by unpredictable changes in monetary policy, and that making monetary policy more predictable was the best method for dampening the cycle. But countercyclical fiscal stabilization was also compatible with Lucas's views, so long as it was not *activist* policy; rule-based fiscal policy could still find a justification.

However, Keynesianism might also refer to a specific vocabulary. The theoretical field of Keynesianism was inhabited by economic aggregates: "full employment" defined the standard objective; "involuntary unemployment" measured the distance from that target; "potential output" signified the level of GDP that could be achieved if the economy operated at full employment; and the "fiscal multiplier" predicted the effect on GDP of an extra dollar of government spending. When Lucas left Chicago in the early 1960s, his macroeconomic vocabulary was aggregative. By the early 1970s Lucas viewed these concepts as incoherent. He advocated jettisoning the models built on them, and to the extent that they informed the econometrics and the activist nature of countercyclical policies, those too needed to change. Yet Lucas initially thought that altering the conceptual mediation between econometric advising and demand management was a progressive move within Keynesianism, not a rejection of that paradigm.

A fourth conceptualization only suggested itself after Lucas spent a decade at Carnegie Mellon University. Lucas's closest friend at Carnegie, Leonard Rapping, was

[45]Robert Lucas, "A Report to the OECD by a Group of Independent Experts: A Review," *Carnegie–Rochester Conference Series on Public Policy* 11/1 (1979), 161–8, at 164.

steeped in the think tank advising milieu, actively consulting for over a dozen different agencies. He tried to engage Lucas in this world and relentlessly promoted Lucas to his employers. They were impressed by what they heard, and Lucas received several requests to act as an adviser in the late 1960s.[46] He did occasionally give in to Rapping's pressure and admit to the odd consulting job, but never for long and always for a hefty fee.[47] Despite his faith in its potential, his forays out into that wider world were cautious. He guarded himself against its encroachment on his academic success—but perhaps more importantly on his self-image as an economist. From his early days as an undergraduate, Lucas thought of himself as a social logician, dealing with the sketchy world of data only insofar as it was an input for theory and ignoring empirical irregularities that could not be explained in a deductive mode.[48] He found to his great disappointment that, up close, the unruly world of policy work was not as appealing as it appeared from afar—he regularly referred to his consulting results in private letters as "imprecise," "very rough," and even "largely pure guesswork."[49] Even though a Samuelsonian tacit-knowledge technocracy would allow for such results, for Lucas it was too inelegant to bear. He grew more cautious with his views and more protective of his time, and as the years wore on the consulting jobs became less and less satisfying. The skepticism of activist intellectuals that Friedman had tried to inculcate in his students began to take a more visceral hold of his politics.

When Lucas proposed his critique in the early 1970s, he encountered massive resistance from the Keynesian policy network. This was somewhat surprising, given the Lucas critique's technical nature and its framing as an attempt to improve econometric methods of policy analysis. While at Carnegie, where the Keynesian/anti-Keynesian divide was sharper than usual, Lucas realized that there was much more at stake in the Keynesian worldview than the first three characterizations would suggest. Keynesianism was an entire "complex culture" of advising and policy making, which by its nature was wedded to the view that it alone ought to wield discretion in economic policy. Keynesianism was an *activist policy formation process*, with an ideological–institutional substrate, spanning from the "consensus economics" of the neoclassical synthesis, to the Council of Economic Advisers, to the think tanks. It was in this sense that Lucas's critique of econometric policy advising was anti-Keynesian. This complex would resist his critique, he realized, regardless of its validity. The marketplace of ideas could not be trusted.

V

Observing Lucas as an intellectual in the making brings out the differences between succeeding generations of the Chicago school. The first generation—Knight, Viner,

[46] Bruce Lambert, "Leonard Rapping Obituary," *New York Times*, 4 Oct. 1991. For requests that Lucas serve as a consultant, there are various letters: RLPD, Box 1, folders "1966" through "1969."

[47] The longest he seems to have worked as a consultant was while analyzing optimal naval transportation routes for the Center for Naval Analysis. Speculating, it may have lasted anywhere between a week and two months, although the contract lasted a full year. There is no evidence that he even had to leave campus to complete the report.

[48] Lucas, "Professional Memoir."

[49] Letters dated 13 June, 18 June, and 13 Feb. 1967, RLPD, Box 1, folder "1967."

https://doi.org/10.1017/S1479244324000337 Published online by Cambridge University Press

and Simons—cohere as a unit only insofar as their nuanced response to the Great Depression appeared to their students like a radically liberal position. Their sense of isolation as free-market advocates during the Depression led them to couple a robust defense of the price mechanism with tactical concessions to intervention. By contrast, the second generation led by Friedman was united by a transnational network around a more aggressive advocacy. They drew rhetorical and theoretical power from the abdication of nuance, preferring state–market binaries informed by explicit contrasts with global communism.[50] Lucas was also shaped by his early politico-economic context, but it was not the threat of economic collapse or the Soviets that dominated his horizons. It was the impression of an end to ideological economics in the neoclassical synthesis, along with the long postwar boom that validated this impression, and a newly prominent role for economists in government which captured his imagination. Lucas was neither a lonely champion nor an embattled, great persuader—he was a member of the consensus, and like most adherents to a consensus he let the prevailing discourse do the thinking for him, living its contradictions rather than resolving them. The neoclassical synthesis rested on heterogeneous explanatory principles—the hydraulic interplay of composite statistics for macro, careful and calculating individuals for micro—and so required some degree of cognitive dissonance from scholars in order to function. It also by and large came with ambiguous political commitments, advising government intervention in the macroeconomy and a relatively laissez-faire orientation towards individual markets. Institutions within the state, like the Council of Economic Advisers or the Fed, and parallel to it, like the think tank complex or sprawling financial journalism, gave economists a more clearly defined professional trajectory than ever before. Lucas functioned within this framework all throughout the 1960s, and took for granted that the purpose of macroeconomics was to provide policy makers with activist tools for preventing a recurrence of the Great Depression. It was only at the end of the decade that Lucas began to take aim at economists' psychological unease with multiple modes of explanation, and to return to the Cowles vision of a fully microfounded macroeconomics based on perfectly competitive, neoclassical supply and demand for planning. This return ultimately brought him to the heart of neoliberalism's macroeconomic problematic, monetary policy, in a way which was quite distinct from earlier attempts to ground an argument for rule-based policy in economic theory.

As with many aspects of MPS doctrine, the emphasis on monetary rules began with Hayek. Hayek's theory of rules was psychological. He downgraded the role of conscious theorizing by individuals, instead emphasizing the role of tacit knowledge in economic life and extolling the importance of unreflective habit in complex societies, which he saw as the driving force for human behavior. Social actors, he argued, were best conceived as a bundle of open-ended rules that evolved over time, selected for by the market mechanism. Monetary rules were the natural complement to this psychology, as they provided individuals a stable framework within which market-evolutionary forces could operate most effectively. This Hayekian conception of political economy was the precise opposite of the Cowles rationalist, Walrasian planning vision to which Lucas was attracted.

[50]Burgin, *The Great Persuasion*.

https://doi.org/10.1017/S1479244324000337 Published online by Cambridge University Press

Monetary rules first jumped from Hayek to Chicago through Henry Simons, who viewed Hayek as a model and mentor.[51] Beset on all sides by government intervention in the 1930s, Simons was willing to admit that his liberal creed required recension, and that all too often liberals had focused on what their doctrine proscribed. His pamphlet "A Positive Program for Laissez Faire" was just that—it argued the importance of a strong state for maintaining competition as "an agency of control," listing numerous interventions for liberals to embrace on the market's behalf.[52] Among them was the control of money, which the state relinquished whenever banks issued credit. For Simons, currency and credit were near equivalents, yet due to the "unfortunate habit of distinguishing too sharply between currency and banking problems," banks had been allowed too much autonomy. Simons believed that fluctuations in the money supply amplified business cycles, yet he was no advocate of a "managed" currency. Instead, he proposed to abolish fractional reserve banking and impose a simple, inactive rule fixing the money supply. This had the advantage of promoting the rule of law and avoiding "reliance on discretionary (dictatorial, arbitrary) action." It removed a source of uncertainty, preventing finance from degenerating into speculation on monetary policy.[53] The rule's simplicity would also serve as the "basis for a new 'religion of money,' around which might be regimented strong sentiments against tinkering with the currency." Finally, it required "little or no judgment in its administration," as it defined policy "in terms of means not merely in terms of ends." Simons's preference for rules over authority was premised on what he saw as their political virtues, resisting tampering by bankers and technocrats, at least as much as it was on purely economic considerations about the value of an invariant money supply.

Simons's diagnosis of rules' salutary political economy largely survived into the postwar Chicago school in Friedman's monetarism. Friedman wanted to shield monetary policy from politicians, who would inevitably pressure any economic manager that had discretion, potentially swaying them to stimulate the economy for political purposes, regardless of the economic consequences. Further, he emphasized economists' ignorance, arguing that even a politically independent central bank did not know enough, empirically or theoretically, to craft discretionary policy well. Friedman claimed that reactive policies contained too many lags—in recognition, decision making, implementation, and ultimate effect—to react to cycles promptly.[54] Activist policies would therefore be mistimed, potentially amplifying the cycle. Friedman was not as restrictive as Simons, however, since nonreactive is not equivalent to inactive. As the economy expanded every year, it required additional credit, so Friedman acknowledged the need to grease the wheels of commerce with continual, automatic increases in the money supply. This would avoid rapid falls, which Friedman blamed for the

[51] Ibid., 51.

[52] Henry Simons, "A Positive Program for Laissez Faire: Some Proposals for a Liberal Economic Policy," reprinted in Simons, *Economic Policy for a Free Society* (Chicago, 1948), 40–77, at 42, all other quotes in this paragraph at 162–4. Proposed interventions included a progressive income tax, railroad nationalization, and securities regulation.

[53] Note the contrast here with the Fed policy described above.

[54] Milton Friedman, "A Monetary and Fiscal Framework for Economic Stability," *American Economic Review* 38/3 (1948), 245–64.

Great Depression, and rapid increases, which he blamed for inflation. More than this, however, would amount to fine-tuning.

For Lucas the technocrat, it was the attempt to improve macroeconometric models that led to a preference for rules; his technical arguments then expanded into a vision for political economy. The econometric dream he had had in his youth—the dream that econometricians, suitably inducted into the "complex culture" of expertise, could provide robust and quantitative advice on government policy—was still alive, but it had been transformed. No longer were econometric models prostheses for experts to use when conducting activist countercyclical policies:

> The preference for "rules versus authority" in economic policy making suggested by this point of view, is not, as I hope is clear, based on any demonstrable optimality properties of rules-in-general (whatever that might mean) … The point is rather that this possibility cannot *in principle* be substantiated empirically. The only *scientific* quantitative policy evaluations available to us are comparisons of the consequences of alternative policy rules [original emphasis].

Thus the Lucas critique invalidated traditional Keynesian modes of policy analysis, which relied as much on the discretion and tacit knowledge of expert culture as on formal modeling. According to Lucas, only rules derived from formal models were usable.

The Lucas critique was the most important contribution to postwar macroeconomics because it changed the way economists handled both theory and data—and it took the profession by storm. As rumors of Lucas's gospel spread, he received an escalating number of requests for copies of the unpublished article. Interested parties included, of course, academics, but Lucas also received letters from the media, banks, and even the military.[55] By 1975 a professor at Brown was complaining to Lucas, "my copy of your 'Econometric Policy Evaluation: A Critique' is wearing out from people reading it, unstapling it, Xeroxing it, and restapling it; I haven't seen it in print yet, and, having rational expectations about … publication lags, thought I should ask you for another."[56]

The immediate reaction to Lucas's work was perplexity. His first few presentations on the rational-expectations hypothesis were "highly chaotic," he wrote to a coauthor, because "at first no one believed it and I tried to explain why various objections weren't valid." One of the major problems was the level of rigor and abstraction—"no one seems to have heard of Blackwell's paper"—which were beyond his audiences, and so a significant amount of time was spent explaining optimization theory. This would become a persistent problem for the rest of Lucas's career. However, not all of the push-back was on mathematics. Lucas's insistence that methodological assumptions had settled the rules-versus-discretion debate, not empirical evidence, appeared to beg the question. "The rest of the time was spent on the assumption of rational expectations: what does it mean, is it reasonable, and so on … most people felt it was an

[55]RLPD, Box 2, folders "1973" through "1978."

[56]RLPD, Box 2, folder "1975."

https://doi.org/10.1017/S1479244324000337 Published online by Cambridge University Press

unreasonable assumption—and that we somehow 'cheated.'"[57] When Lucas submitted his first rational-expectations model to the *American Economic Review*, its editor complained that if the paper "has a clear result, it is hidden by the exposition," while the referee spat, "I find the paper exceedingly formal and I am not sure I fully understand the economics of the theorems Lucas presents … Lucas' exposition is pitched at what I think is a distressingly arid level."[58] Older economists were especially hostile to what appeared to them as an elevation of form over substance, to pyrotechnic proof techniques that obscured an absurd content. Robert Gordon expressed the commonly held view that whatever the validity of the Lucas critique in theory, Lucas "overstates the impossibility of remedy" within the old Keynesian econometric framework.[59] This marked an ironic reversal of precedent. In earlier generations, it had been right-wing economists like Hayek and Friedman decrying economics' formalization, excoriating Walrasian socialists' mathematical pretentions. Now that Lucas had captured Walrasian formalisms, liberal Keynesians were on the defensive.

After the shock of the new had worn off, however, Lucas quickly found common ground with scholars across the country. Some, like Robert Barro, were unexpected allies. Barro had spent his early career working on "disequilibrium" macroeconomics, which tried to explain fluctuations in economic activity as the result of market imperfections, but he turned out to be one of Lucas's most fearsome, polemical students. The truly important converts, however, were the less aggressive and more compromising generation of New Keynesians. Scholars like Stanley Fischer, Gregory Mankiw, Laurence Summers, Paul Krugman, and Ben Bernanke built their careers around Lucas-style modeling, complete with rational expectations, market equilibrium assumptions, and rule-based policy, while still making room for a few ad hoc devices to generate Keynesian policy conclusions. This cohort quickly took over the Keynesian wing of the profession at its cutting edge, and by the early 1980s the New Keynesians were regularly hosting conferences on rational expectations and their policy implications.[60] As the decade wore on, no major journal would publish an article that failed to address the Lucas critique in some fashion.

The alterations in economists' theoretical practice suggested by the Lucas critique had implications beyond the academy. Lucas addressed himself directly to policy makers: "it appears that policy makers, if they wish to forecast the response of citizens, must take the latter into their confidence. This conclusion, if ill-suited to current econometric practice, seems to accord well with a preference for democratic decision making." This seemingly out-of-place ethical injunction appears at the end of a rather dry technical critique, underlining the extent to which Lucas began imbuing his formalisms with political significance. In the 1960s, Lucas had been content to confine himself to a politically neutral, mathematical economics, contributing to the ostensibly unideological neoclassical synthesis without contesting it. But with the

[57]Letters dated 22 March and 2 Dec. 1968, RLPD, Box 1, folder "1968."

[58]J. S. Gans and G. B. Shepherd, "How Are the Mighty Fallen: Rejected Classic Articles by Leading Economists," *Journal of Economic Perspectives* 8/1 (1994), 165–79, at 172.

[59]Robert Gordon, "Can Econometric Policy Evaluations Be Salvaged? A Comment," *Carnegie–Rochester Conference Series on Public Policy* 1/1 (1976), 47–61, at 47.

[60]NBER Conference Series (1980).

https://doi.org/10.1017/S1479244324000337 Published online by Cambridge University Press

Lucas critique firmly in view, the conditions of possibility for scientific economics became the performance of a very particular kind of political economy, which Lucas viewed as anti-Keynesian. Virtues which were otherwise political—the accountability of experts to popular democracy, access to state knowledge, stability and order in governmental policy—were now put forward as a scientific standard. Scientific central banking was only possible to the extent that policy makers had used the "deep parameters" of agent's decision making to craft policy. Those "deep parameters" were in turn only available to the extent that economic agents were responding to risks rather than to uncertainty. To eliminate as much uncertainty from the economic environment as possible, Lucas argued, policy had to be conducted according to pre-announced rules which would specify in advance what policy was likely to be under all possible future scenarios. That accomplished, neoclassical microeconomic rationality rendered all other prices and quantities in the economy fully determinate, and hence predictable.[61]

Friedman had argued that economists were too ignorant to craft discretionary policy. Lucas insisted that this gap in knowledge was a *necessary* ignorance—the only scientific economics was one that considered alternative policy regimes. But the end goal of his program was the transformation of the sovereign's economic management through transparency, not the end of management itself. His project was founded on the prospect that an economic sovereign was possible, under the correct circumstances. The Lucas critique asserted that "agents' responses become predictable to outside observers only when there can be some confidence that agents and observers share a common view" of the economy.[62] The state's form of management may or may not be extremely reactive to economic developments. The only essential facet for Lucas was that policy be reliably predictable. This left Lucas open to the Keynesian legacies of demand management and econometrics, and indeed one pitch he made for the rational-expectations method was that it was the salvation of Keynesianism's best features. In his polemic with Tom Sargent, "After Keynesian Economics," he asserted that his objectives were "taken, *without modification*, from the goal which motivated the construction of the Keynesian macroeconometric models: to provide a scientifically based means of assessing, quantitatively, the likely effects of alternative economic policies."[63] He was pleased to see the New Keynesians adopt the language of rational expectations, and their later success in pushing Bill Clinton toward the center on economic policy impressed him, though he remained skeptical about their tendency to introduce "ad hoc" assumptions into the model to generate their preferred policy

[61]For alternative views on the sources of uncertainty in economic life see John Keynes, *The General Theory of Employment, Interest and Money* (London, 1936), Ch. 12; Frank Knight, *Risk, Uncertainty and Profit* (Boston, 1921), Ch. 1; Joseph Schumpeter, *Theory of Economic Development* (Cambridge, MA, 1934), Ch. 2.

[62]Robert Lucas, "Econometric Policy Evaluation: A Critique," *Carnegie–Rocheseter Conference Series on Public Policy* 1/1 (1976), 19–46, at 41.

[63]Robert E. Lucas and Thomas J. Sargent, "After Keynesian Macroeconomics", in *After the Phillips Curve: Persistence of High Inflation and High Unemployment* (Boston 1978), 49–72.

conclusions. Lucas held out high hopes for Barack Obama's technocratic approach to politics, and voted for him in 2008, even praising the 2009 stimulus bill.[64]

Lucas's technocratic appeals to the average economic actors' intelligence obtained their vigor from the tension between his growing disillusionment with econometrics and his progressive program for its reform. Lucas's economic science was first and foremost concerned with agency and intentionality—capturing the purposeful behavior of agents and using that to provide principles on which to build governmental policy. Further, his conception of agency required the ontology of a government-of-rules, because it was only in that context that agents could formulate optimal plans and hence act deliberately. An economic agent must be surrounded by stable policy rules to even exist. And the Lucas critique was part of Lucas's project to bring that agent into being by systematically eliminating the possibility of non-rules-based policy within economic discourse.

VI

As the 1980s progressed, it became increasingly clear that rational expectations would replace mid-century Keynesianism as the new consensus economics. As a genuine paradigm shift, complete with new objects of analysis and new mathematical methods, it was accompanied by a shift in the questions addressed. Optimal monetary rules, as this article has emphasized, were a major difference in problematic. As the turbulent 1970s receded, Lucas turned his attention away from stabilization, which he increasingly viewed as a low-value-added area of scholarship.[65] He admitted that there was a "residue" of events that moved too rapidly and occurred too infrequently for rational-expectations analysis to gain traction, such as the Great Depression.[66] But his laments were academic, not practical. The damage that residue-type events might cause was large, Lucas admitted, but economists since Keynes knew how to prevent them, if not analyze them. Lucas expected a much larger return from the analysis of growth.

The tools of rational expectations were designed to analyze long-run rules, so the transition from an analysis of short-run fluctuations to growth was smooth. The technical difficulty of rational-expectations modeling was extreme, and the math kludgey. One of the only tractable modeling strategies was to assume that a single agent was simultaneously the macroeconomy's sole consumer–saver–worker–owner–lender–borrower. This "representative agent" injected *homo oeconomicus* into macroeconomics, ejecting finance and sidelining distributive questions in the process. If one agent owned every asset, the model could have no equity or credit markets. The momentous divorce of finance and macroeconomics was supported by the efficient-market hypothesis (EMH), another third-generation Chicago invention that built on work done at the Cowles Comission.[67] Eugene Fama popularized the EMH at the same time as Lucas was developing the rational-expectations hypothesis. The EMH assured economists that financial markets worked smoothly and

[64]Lucas, "Chicago Economics on Trial"; Lucas, "Interview with David Levy."

[65]Robert Lucas, "Macroeconomic Priorities," *American Economic Review* 93/1 (2003), 1–14, at 1.

[66]Robert Lucas, "My Keynesian Education."

[67]Donald Mackenzie, *An Engine Not a Camera* (Cambridge, 2006).

that macroeconomists were not missing anything by their loss. There was a deep isomorphism between the two theories of market rationality—both asserted that market participants were making optimal predictions about the future and that competitively produced market signals were accurate reflections of underlying economic realities. As the EMH became more deeply entrenched in financial economics, the separation of macroeconomics and finance appeared less momentous. Similarly, inequality was rendered unintelligible by the representative agent, a turn of events that Lucas encouraged, writing, "of the tendencies that are harmful to sound economics, the most seductive, and in my opinion the most poisonous, is to focus on questions of distribution."[68]

Better to focus on tides that lift all boats. The 1980s saw a quiescent economy as America entered what New Keynesian Ben Bernanke eventually called "the Great Moderation." Central banks accepted the necessity for a rules-based policy, and the volatility of inflation and output declined.[69] In that stable environment, Lucas's sights turned to the long-term growth process.[70]

The central question posed by growth was still its origins. Ever since Robert Solow's work in the 1950s, neoclassical theory had stalled on that point. Solow's "exogenous growth model" ruled out capital accumulation and demographic expansion, instead singling out a mysterious residual variable, which Solow labeled "technology" and which grew for reasons unexplained by the model.

Bibliometric studies show that as late as the late 1980s, the most prominent explanations for growth cited in the literature came from the Keynesian-inspired development theory of the immediate postwar period.[71] Albert Hirschman's classic 1958 manifesto *Strategy of Economic Development* remained the number one citation well into the early 1980s, and historical approaches like W. W. Rostow's *Stages of Economic Growth* were among the list of top citations. Hirschman had argued that what held growth back in undeveloped countries was not lack of capital, technology, or entrepreneurial spirit, but the capacity for sustained executive decision making. He argued that state planners should take up the burden, strategizing about which industries would be best to promote. Hirschman was skeptical about the importance of formal modeling, but his defense of the developmental state's discretion was of a piece with mid-century Keynesianism's ethos.

The latter half of the decade witnessed a bibliometric sea change. Development economics and a historical approach to growth were wiped off the map and replaced by a neoclassical canon. Lucas and his students had introduced a tractable, neoclassical explanation for growth which was "endogenous"; that is, the result of choices made that are explained by the model itself, and which passed the Lucas critique. In his 1985 Marshall Lectures at Cambridge University, Lucas proposed to endogenize growth with human-capital theory, the idea that investment in education and

[68]Robert Lucas, "The Industrial Revolution: Past and Future," *Annual Report, Federal Reserve Bank of Minneapolis* 18 (2004), 5–20, at 20.

[69]Ben Bernanke, "The Great Moderation," FRB, 20 Feb. 2004.

[70]Robert Lucas, "On the Mechanics of Economic Development," *Journal of Monetary Economics* 22 (1988), 3–42.

[71]François Claveau and Yves Gingras, "Macrodynamics of Economics: A Bibliometric History," *History of Political Economy* 48/4 (2016), 551–92.

https://doi.org/10.1017/S1479244324000337 Published online by Cambridge University Press

research makes workers more productive. Ironically, just as finance capital was being ejected from macroeconomics, Lucas was importing human capital to explain growth. This was the first contact between macroeconomics and human capital. Lucas resolved long-standing problems with a familiar formalism, and a literature on "endogenous growth" quickly took off.[72]

The ideological shifts that this precipitated at the macroeconomic level paralleled those at the microeconomic level.[73] Lucas believed that human capital determined a nation's place in the international commercial order; the imperative to "entrepreneurialize" was thus extended from the individual to the state. Lucas's ideal entrepreneurial state was quite distinct from the developmental state. Rather than planning public investment in key sectors, the most obvious entrepreneurial policy for Lucas was subsidizing education, but he argued that macroeconomic human capital bolstered the case for free trade as well—the most effective modes of accumulation were imitation, learning by doing, and international technology diffusion, which could only take place if producers were forced to compete internationally. The old world of Ricardian trade, where nations exchanged goods according to comparative advantage, was gone, replaced by the nation as human capital in competition with others. Neoclassical theory had thus grown to encompass all of macroeconomics, from stabilization, to growth, to trade, to inequality. By the 1990s, the future for the third Chicago school no longer looked so dim.

VII

A common refrain emerged that modern macroeconomics was not particularly influential outside the academy, leading to jibes that if it was not useful for banks or businesses then it had failed the market test. As Larry Meyer, head of the influential consulting firm Macro Advisors, said, "In our firm, we always thanked Robert Lucas for giving us a virtual monopoly. Because of Lucas and others, for two decades no graduate students are trained who were capable of competing with us by building econometric models that had a hope of explaining short-run output and price dynamics."[74] Its absence from the policy maker's daily routine was even more keenly felt amidst financial crises, beginning with the late 1990s East Asian financial crisis.[75] The list of similar complaints has only extended since 2008.

The one exception to this trend has been the extremely perceptive Narayana Kocherlakota, former president of the Minneapolis Fed and chair of the economics department at the University of Minnesota. What these complaints characteristically missed, Kocherlakota wrote, was that academic macroeconomics was "specifically *designed* to be of limited use to policymakers."[76] Indeed, Lucas hoped that reorienting the discipline around long-run rules would allow economists to back away from

[72] Ibid.

[73] Brown, *Undoing the Demos*; Foucault, *The Birth of Biopolitics*; Pierre Dardot and Christian Laval, *The New Way of the World: On Neoliberal Society* (London, 2014).

[74] John Cassidy, "The Decline of Economics," *New Yorker*, 24 Nov. 1996, 51.

[75] Paul Krugman, *The Return of Depression Economics* (New York, 1999).

[76] Narayana Kocherlakota, "Academic Macroeconomics and Policymaking," personal weblog, 2016, at https://sites.google.com/site/kocherlakota009/policy/thoughts-on-policy/6-12-16, original emphasis.

being used to make discretionary policy, enabling them to assert autonomous demands for transparency, stability, and free markets to their government sponsors. Apparent worthlessness to state actors facing a novel situation, especially a crisis, was the surest sign of success—rules do not change just because policy makers are startled.

But over the long run Lucas's work has been influential at central banks around the world, each of whom either has or wants a model that passes the Lucas critique. By the late 1990s, transparency had become standard, central banks had clarified their policy regimes for the public, and arguments about the value of commitment in monetary policy were the driving force behind central-bank independence. Like Kocherlakota, by the mid-1990s all of the Fed's advisory staff were intimately familiar with the arguments for policy choice as regime choice, having been trained in the by-then dominant Lucas paradigm in graduate school. Older Keynesian models were still maintained, but they were increasingly supplemented with rational-expectations options, and knowledge of how to use them was no longer part of university initiation into the "complex culture" of policy advising. Thinking through an ontology of rules became second nature. Discussions at the Fed were increasingly filtered through the lens of "credibility," as policy makers became intensely aware of how their day-to-day actions fit within long-run policy regimes.[77]

Lucas was an MPS fellow traveler, but his political interventions were inspired by something distinct from the MPS's concerns and took a different form. The MPS project was organized in the lonely days after World War II when planning seemed like the norm across the Atlantic world and market advocates felt the need to regroup and reexamine the foundations of their shared commitments. As time passed and the society moved away from philosophical contemplation toward worldly engagement, organizing an elaborate network of philanthropic foundations, think tanks, and journals, the sights nevertheless remained fixed on shaking off national planning schemes and destabilizing the social liberal–Keynesian establishment. The historiographical focus on the MPS has led to an image of neoliberalism overdetermined by Keynes as its main "doctrinal adversary," the "common enemy" linking the otherwise divergent European and American wings, and one of the movement's "invariant ideological others."[78] For Lucas, it was American Keynesianism's destabilization that proved so upsetting, as it left the orthodox profession unable to repel demands for market interference. Further, it was his impression of an autonomous, prelapsarian Keynesian science that motivated him to find new ways of rehabilitating the econometric advising tradition that MPS excoriated. Lucas's quarrels with American Keynesianism were more about form than about content. The econometric dream of expert advising, which pits neoclassical economists' projections against the market's own calculations, could be salvaged—but only if economists were willing to limit themselves to the analysis of policy regimes, which could be done well outside the state. This having been accomplished by reintroducing microeconomic intentionality into macroeconomics,

[77] Peter Conti-Brown, *The Power and Independence of the Federal Reserve* (Princeton, 2016); Gretta Krippner, "The Making of US Monetary Policy: Central Bank Transparency and the Neoliberal Dilemma," *Theory and Society* 36/6 (2007), 477–513; Greenspan, "Transparency in Monetary Policy."

[78] Foucault, *Birth of Biopolitics*, 79; Jamie Peck, *Constructions of Neoliberal Reason* (Oxford, 2010), 17.

economists could reorient the form of their relationship to the state, extricating themselves from its demands and instead lobbing advice from afar.

Lucas was neither a patient institution builder nor a happy warrior plunging into public intellectual combat on behalf of the market. Lucas was an intellectual, with an unshakable faith in the progress of technocratic knowledge and its ability to shape political economies from afar. His brand of neoliberalism is crucial to think with, as it showcases a more ambiguous relationship with American Keynesianism than mere opposition, and directs attention to the ways in which the neoliberal imaginary has inspired even its allegedly unloved others. The Lucas critique informed an entire generation of macroeconomic scholarship, enthroning the long-run policy rule as the only thinkable mode of governmental policy in academic theory. It should come as no surprise, then, that academic macroeconomics has proven so unwieldy in moments of crisis—it was written that way by design.

Acknowledgments. Thank you to Angus Burgin for guiding this project, to the University of Chicago History and Theory of Capitalism workshop for insightful feedback, and to all the people at the Duke University Center for the History of Political Economy. Thank you also to Jaye Cho, Mihai Olteanu, Robert Kaminski, Matthew Lowenstein, Jonathan Levy, and Joel Isaac.

Cite this article: Nic Johnson, "Expecting Robert Lucas: Revisiting the Relationship between American Keynesianism and Neoliberalism," *Modern Intellectual History* (2024), 1–26. https://doi.org/10.1017/S1479244324000337