# Was Keynesian Economics Ever Dead? If So, Has It Been Resurrected?

**Steven M. Fazzari***

**September 2019**

Paper prepared for *Review of Keynesian Economics* symposium: "Is Keynesian Economics Back from the Dead?"

Abstract:

This article reflects on rising interest in Keynesian macroeconomics in the aftermath of the Great Recession. I identify aspects of Keynesian thinking that never were completely banished from the mainstream as well threads of Keynesian macroeconomics that have become more influential since the crisis. However, the way most mainstream analysis continues to invoke the zero lower bound for short-term interest rates and the concept of the "natural" rate of interest implies that any Keynesian resurrection outside of heterodoxy remains incomplete. The future may bring broader recognition of how demand leads economic growth and of ways in which the demand side leads the supply side beyond the typical textbook "short run."

* Departments of Economics and Sociology, Washington University in St. Louis and Fellow of the Forum for Macroeconomics and Macroeconomic Policy. I am grateful to Ella Needler and Daniel Broadie for helpful comments and discussion.

## 1 INTRODUCTION: A BRIEF INTELLECTUAL HISTORY

For those of us who identify with heterodox Keynesian macroeconomics and attended graduate school from the mid 1970s through the mid 1980s, the perception of our research by the dominant mainstream of macroeconomics followed a difficult journey. In the generation that preceded us, the leaders of macroeconomics at the elite departments (Samuelson, Solow, Tobin, Friedman, …) had different perspectives from their heterodox cohort (Minsky, Davidson, Godly, Pasinetti, …). But mainstream and heterodox methods of macro analysis we were taught in graduate school overlapped to a large extent. Students in mainstream courses read the *General Theory.* And even if some leading mainstream macroeconomists of the time pushed back against Keynesian thinking (Milton Friedman is the most prominent example), they recognized a need to engage substantively with Keynesian macro.

As our graduate education proceeded, however, the new classical counter-revolution to Keynesian macroeconomics was brewing with the seminal work of Lucas, Sargent, and Prescott. The ascendant approach in mainstream macroeconomics adopted model-consistent "rational" expectations and "structural" equations that were claimed to address the Lucas Critique. The term "Keynesian" became pejorative in many research circles and identifying with Keynesian macro branded one as out of date. The new classical approach seized control of the mainstream graduate curriculum in macro. The so-called "New Keynesian" consensus, with its nominal adjustment frictions, kept John Maynard's name, but thoroughly adopted the methods of the new classical counter-revolution. New classical methods did not completely dominate, particularly at the undergraduate level and in conventional forecasting and policy analysis. Nonetheless, in the mainstream academic world a focus on demand as the driving force of macroeconomic dynamics, a perspective I have labeled "intrinsic" Keynesian macroeconomics, could have been declared dead.

This "new consensus" faced various empirical challenges. But in the neoliberal / Great Moderation era one could argue that it performed well enough. Then came the Great Recession. This kind of crisis was not supposed to happen. Although it took some time, prominent macroeconomists at top mainstream academic departments began to sound much more Keynesian and adopted that label unapologetically. It is in this context that Robert Rowthorn titled his aptly named Godley-Tobin lecture "Keynesian Economics: Back from the Dead?" at the 2019 Eastern Economics Association conference, the event that sparked the idea for this symposium.

In this article, I share my take on whether Keynesian macro actually died. My answer, rather inconsistent with the binary states of "dead" versus "alive," is that despite the new classical attempt to bury Keynes, a demand-driven view of macro was weakened, but not killed in the decades prior to the Great Recession. I then consider how the events of the Great Recession changed mainstream thinking. In my opinion, there has been a significant movement back toward the intrinsic Keynesian perspective, but it remains incomplete. The resurgence of Keynesian thinking in the mainstream is interesting and significant, but it relies too heavily on the zero lower bound (ZLB) for nominal interest rates and it has not yet abandoned the misleading concept of the natural interest rate. Much of the mainstream analysis of "secular

stagnation" seems to use the natural rate as a sufficient statistic for understanding the way in which demand drives aggregate activity. I explain why the natural rate concept is problematic, and therefore prevents recent mainstream contributions from fully resurrecting a fully Keynesian understanding of macroeconomics. The end of this essay explores how demand leads supply, a structural mechanism with both theoretical and empirical support that turns most mainstream thinking on its head in a way that would fully resurrect Keynes, should it ever spread widely out of heterodoxy.

## 2. WAS KEYNESIAN MACROECONOMICS EVER REALLY "DEAD?"

A necessary condition for a set of ideas to be "back from the dead," would be that the ideas had been banished from conventional thinking at some earlier date. The most obvious evidence for this kind of intellectual death of Keynesian macroeconomics is the way in which the methods of new classical counter-revolution became viewed as the proper way to do macroeconomics in the mainstream. But did the ascendance of new classical methods really "kill" Keynesian macro? I argue the answer is no in two respects, one in the world of macro theory, in which some parts of Keynesian thinking persisted and the other in practical forecasting and policy analysis, in which Keynesian ideas remained largely dominant.

The theoretical thread of Keynesian macro that survived the post-Lucas methodological revolution is the use of nominal rigidity in models to generate monetary non-neutrality. Not long after the first new classical papers emerged, the new paradigm faced an important empirical test. The models of Lucas, Sargent, and Wallace, armed with model-consistent, so-called "rational," expectations, led to the strong prediction that systematic and anticipated monetary policy would have no real effects. By the early 1980s, econometric research and the painful recession following the Volcker experiment of fully announced tight money strongly implied this predication failed. The "new" Keynesian response was to introduce some kind of nominal rigidity into otherwise new classical models.

These models play by the new classical methodological rules, but they also deliver responses of real output and employment to demand shocks, most obviously changes in monetary policy (Christiano, Eichenbaum, and Evans, 2005 provides a benchmark example). This result is Keynesian, at least on the surface, and the models lead to discussion of appropriate monetary policy (and possibly even fiscal policy) to stabilize an economy buffeted by demand shocks. The mechanisms by which demand has real effects, however, are remarkably indirect and have little to do with a direct produce-less-when-sales-fall channel of causation. The various rigidities and frictions in the models make it optimal for firms to produce less and workers to work less in the face of a negative demand shock because of complicated changes in relative prices induced by the imposed nominal rigidities. Unemployment in these models seems largely voluntary.

The storyline is different in the practical, real-world analysis of economic events, forecasting, and policy discussions. The new classical academic revolution seems to have had little impact on how forecasters and policy makers understand the evolution of modern economies. If one reads the *Wall Street Journal* daily for the past three and a half decades (as I

have) one sees basic Keynesian explanations for macroeconomic developments popping out regularly in the news analysis (even though Keynesians are regularly denigrated on the *Journal'*s editorial pages!) Monetary policy matters because it affects interest rates and interest rates matter for the spending of households and businesses. High consumption stimulates demand and because firms sell more, they will ramp up production and employment. Higher government spending contributes to growth. And these effects do not work through the tortured channels of rigidities from new Keynesian DSGE models. The proposed causal links are straightforward: demand drives sales and sales drive production and employment.

I do not have personal experience in the hallowed halls of policy making. I am sure the staff economists at the Fed and ECB, meticulously trained in the modern macro of the past few decades, run their DSGE models and try to replicate real-world outcomes. (This is clearly what many of them do when they submit their work to academic journals.) But I see no evidence that the subtleties of these models much affect actual decisions about setting interest rates or predicting the effects of fiscal policy changes. It is likely that policymakers consider the academic models as providing a broad conceptual framework for their thinking. For example, a modern, mainstream-trained Fed economist might assert that "new Keynesian DSGE models with adequate frictions and monetary policy rules can reproduce the basic features of the US economy; therefore we have a foundation for the view that monetary policy is an effective tool to stabilize the US economy." But do the specific results of these models inform the specific timing or size of interest rate changes? Based on public explanations for policy moves, my answer is no. Instead, policy seems driven by basic Keynesian ideas along the lines of the short-run IS-LM models I was taught as an undergraduate and first-year graduate student in the 1970s.[1]

If a textbook Keynesian theory is central to mainstream, practical analysis of economic activity and associated policy debates, I claim Keynesian macro was never really dead despite the new classical victory in highly ranked Ph.D. programs and journal editorial boards. If you were never dead, you can't really come back from the dead. But there have been important changes in macroeconomic perspectives since the Great Recession that have moved the intellectual needle toward a more fundamental, intrinsic integration of Keynesian analysis. Perhaps the right metaphor is not the binary "dead" or "alive," but rather a more continuous scale that measures the reach of Keynesian thinking in prominent macroeconomic debates.

## 3. PRICES, WAGES, AND MONETARY POLICY: CONVENTIONAL WISDOM IN 2007

The foundation of mainstream macroeconomic thinking in the 1970s, before new classical material took over, was Samuelson's neoclassical synthesis: Keynesian demand effects drive short-run fluctuations but the classical supply side rules the long run. The bridge between the horizons is the time it takes nominal wages and prices to adjust. This perspective still seems popular in textbooks with their downward-sloping aggregate demand curves. And practical

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[1] See Blinder (1997) for a balanced perspective on the interaction between academic monetary research and actual policymaking by the Federal Reserve.

descriptions of Keynesian results are still often prefaced with something like "because nominal wages and prices do not adjust instantaneously …."

But despite the widespread invocation of nominal stickiness as the source of Keynesian disease, practical macroeconomists do not seem to really believe the cure to insufficient demand is faster wage and price adjustment. Modern *practical* macro seems to agree with decades of research and evidence that identify the dangers of deflation (even disinflation) for aggregate demand. Despite the stories told to generations of economics students, declining wages and prices do not restore economies back to full employment.

In practice since the end of the Volcker experiment with monetarism in the early 1980s, and in academic work since at least since the 1990s emergence of "new consensus" macro, the practical solution to insufficient aggregate demand has been, not disinflation/deflation, but wise monetary policy. If aggregate demand falls short of optimal levels, wise people (to date, the vast majority male) are supposed to guide interest rates to the "natural" level that will restore full employment. Many academics argue this wisdom can and should be implemented through some kind of Taylor Rule or inflation-targeting regime, but it seems evident that the real mechanism is supposed to be the good judgement of policymakers.[2]

The new consensus dominated most conventional thinking about how market economies work (at least up until the discipline had to come to terms with the 2008-09 financial crisis and the Great Recession). The perspective had clear Keynesian roots. Demand shocks can push the economy off the supply-driven potential output path. Monetary policy has real effects. But the full faith placed in the effectiveness of monetary policy in controlling demand, and the wise leaders pulling the monetary levers, largely seemed to restore a new version of the neoclassical synthesis. The story remains: Keynesian short run and supply-driven, classical long run. The change is just that the mechanism bridging the short and long horizons becomes monetary policy rather than unrealistic, counter-factual deflation or disinflation.[3]

Straightforward U.S. historical evidence from the mid 1980s to 2007 could plausibly be viewed as supporting the new consensus. Monetary policy actively responded to recessions and sluggish periods of growth. The policy seemed to work reasonably well. After recessions, the economy returned to its growth trend, supposedly entirely supply driven. There was some discussion of unemployment hysteresis, but focused primarily on Europe (Blanchard and Summers, 1988, for example). The so-called "Great Moderation" era of reasonably shallow recessions and reasonably steady growth had emerged and could be interpreted to justify new consensus macroeconomics.

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[2] For a recent example, consider the rather remarkable cuts of the federal funds rate in July and September 2019 in response to fears about trade wars and global weakening, but with a historically low US unemployment rate.

[3] See Summers (2019) who writes "[t]he central feature of New Keynesian models is an idea that economies have an equilibrium to which they naturally revert independent of policies pursued. Good central bank policy achieves a desired inflation target (assumed to be feasible) while minimizing the amplitude of fluctuations around that equilibrium."

Some parts of Keynesian macroeconomics were alive, and perhaps almost well. But much, perhaps most, of what heterodox Keynesians explored in outlets such as the *Cambridge Journal of Economics* and the *Journal of Post Keynesian Economics* (among others) was effectively dead in the mainstream.

Then came the Great Recession …

## 4. CRISIS MEETS THE ZERO LOWER BOUND

Readers of this article in this journal will accept at face value the claim that the Great Recession was both historically severe and that this severity caught virtually the entire mainstream macroeconomic establishment by utter surprise. While there have been some attempts to explain the Great Recession without Keynesian demand effects (see Ohanian, 2010, and Mulligan, 2012, for example), these efforts represent a small minority view. There is near consensus, even in the mainstream, that the Great Recession was caused by a really big demand shock. Furthermore, the really big demand shock was triggered by the failure of financial excesses in housing markets and subsequent financial contagion, putting a more heterodox patina on the Keynesian interpretation. Many Wall Street economists, and a number of prominent mainstream academics, invoked not just Keynes, but Minsky as well. Basic Keynesian macro had become almost invisible in the academic DSGE models, perhaps largely left for dead. But by late 2008, a majority of the mainstream seemed to recognize we were in a deep crisis explained by basic Keynesian principles.

On the policy front, the leaders of Minsky's "Big Bank" and "Big Government" desperately worked to place a floor under the crisis. The U.S. Federal Reserve rapidly drove short-term interest rates to zero and fired up the lender of last resort. Even though fiscal policy was slower to respond and responded too weakly, automatic fiscal stabilizers and the discretionary American Reinvestment and Recovery Act (the "Obama stimulus") were big by historical standards; the ratio of the U.S. federal deficit to GDP in 2009 was the highest in the postwar period, 71 percent above the second highest figure in 1983.

Perhaps mainstream analysis of the crisis continued to pay some lip service to sticky wages or prices as the reason the demand shock had real effects. But the policy establishment and the vast majority of prominent academic commentary argued strongly that policy should do *everything possible to avoid deflation.* Again, despite the textbook story that downward nominal rigidity is the source of Keynesian problems, virtually no practical economists seemed to believe it would be helpful for wages or prices to decline faster in the worst Keynesian crisis in three quarters of a century. At least implicitly, mainstream analysis seemed to incorporate the lessons from chapter 19 of the *General Theory*.

Despite some Keynesian resurrection, however, a central tenet of the pre-crisis new consensus quickly emerged in the mainstream view: the persistence and depth of real effects from a demand shock were the result of limitations on monetary policy. The "natural" real rate of interest required to restore aggregate demand to the full-employment level had been driven too far negative for conventional monetary policy to do its job, particularly with low inflation. New-consensus monetary policy was constrained, in the face of a really big negative demand shock,

by the ZLB on nominal interest rates. [4] In Paul Krugman's words, economic times were not "normal" in the sense that stabilization could be achieved by the wise execution of monetary policy.[5] It became widely acceptable in mainstream circles to call for aggressive (but temporary) fiscal stimulus to grow aggregate demand. This view represented a major shift from the pre-crisis consensus that fiscal policy should focus solely on long-run "sound finance." But the analysis remained connected to the natural rate of interest concept and the view that monetary policy should be able to deliver reasonably quick convergence to the classical benchmark, determined entirely by conditions of supply, most of the time.

In light of these developments, where did the mainstream stand on Keynesian macro in the first few years after the 2008-09 crisis? First, demand shocks can have real effects. Second, big demand shocks can have severe, deeply troubling effects. Third, because demand shocks can be big, the ZLB implies that fiscal stimulus may be necessary and desirable in "abnormal" times.[6] Although mainstream macroeconomists might claim they understood the second and third points all along, the shift in thinking after the Great Recession is perceptible compared to conventional wisdom during the Great Moderation periods when new consensus models emerged. As Mason (2019, page 12) writes, "[b]efore 2008, both academic macroeconomics and macroeconomic policy were strongly committed to the notion that conventional monetary policy, operating through a single overnight interest rate, was fully sufficient to offset any fluctuations in aggregate demand." After the crisis, things changed. But while this change represented some resurgence of Keynesian macro, the new consensus remained the dominant view in "normal" times and a return to "normal" was expected, even if such a return might take somewhat longer after a deep recession triggered by a financial crisis. Demand effects on the economy, although possibly severe, were still viewed by the mainstream as temporary.

But the recovery was weaker than expected … secular stagnation?

## 5. DEMAND BEYOND THE SHORT RUN

The U.S. economy has not bounced back from the Great Recession to recover its pre-recession trend in the way conventional wisdom expected and predicted:

> When the crisis started, the GDP forecasts suggested a progressive return towards previous trends, as it would be expected from a standard recovery phase. But that return never happened (Fatás and Summers, 2017, page 2).
>
> Historically, every time a recession has reduced per-capita GDP relative to the long-run trend, it has been followed by a period of faster than usual growth. …

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[4] Subsequent negative nominal interest rates suggest the lower bound is fuzzier than simply "zero." But some limit on how low nominal rates can go, probably not far from zero, likely prevails. See Pressman (2019).

[5] Krugman emphasized the distinction between "normal" times, basically associated with interest rates above the ZLB, and "abnormal" times regularly in his columns and blog posts for the *New York Times*. A recent example appears in his September 16, 2018 post "What Do We Actually Know About the Economy."

[6] In addition, there was a general perception, at least outside of central banks, that other monetary policy tools (quantitative easing, forward guidance, etc.) probably are just minimally effective when the natural interest rate is significantly negative.

Since 2007, however, there has been no tendency to make up the ground that was lost during the recession (Mason, 2017, page 22).

While there are a variety of ways to support these assessments, perhaps the most compelling is the dramatic reduction in potential output estimates by the Congressional Budget Office (CBO). The way in which the official view of the economy's potential was "dumbed down" has been recognized at least since Summers (2014). While contemporaneous official estimates suggest the economy operated nearly one percent above potential in the first quarter of 2019, the gap between actual output in 2017 and beyond, relative to *pre-crisis* forecasts of potential ten years or more out, could well exceed 10 percent, over $2 trillion (see Coibion et al., 2017 and Mason, 2017, sections 1.1 and 1.2). Of course, the competent analysts at the CBO were well aware of the ageing of baby boomers when they made their pre-crisis projections, so this discrepancy is not about demographics. Something unanticipated by the mainstream happened, and it was really big.

The mainstream interpretation of this outcome is decidedly un-Keynesian. Reasoning backwards from the new consensus (or the old neoclassical synthesis), if output is more than 10 percent below its pre-crisis trend more than 11 years past the pre-crisis peak the explanation must come from the supply side.[7] The new-consensus model does not admit *long-run* stagnation as the result of weak demand. As Mason and Jayadev (2013, page 105) write, "while demand matters in the short run in New Keynesian models, it can have no effect in the long run; no matter what, the economy always returns to its full-employment growth path." Indeed, given that the Fed raised interest rates significantly between late 2015 and late 2018, the ZLB in short-term interest rates no longer binds and one might infer "normal times" had returned.

The policy implications of this outcome are illuminating. The conservative policy establishment, during a Democratic presidency, was only too happy to fully recognize the slow recovery, predictably blaming it on Obama policies that constrained the supply side. Much of mainstream academic analysis discounts such large effects of Obama's tax and regulatory policies, but still asserts the supply side is to blame. Gordon (2014, page 191) writes "[t]he U.S. is riding on a slow-moving turtle" and "there is little politicians can do about it."

In contrast to this conventional wisdom, a more intrinsic Keynesian demand-side explanation for the past decade of slow growth has emerged and gained surprising prominence among *some* mainstream economists. In a famous November 2013 speech at the International Monetary Fund, Lawrence Summers resurrected Alvin Hansen's concept of "secular stagnation" caused by weak aggregate demand (see Summers, 2014). There are clear elements of heterodox Keynesian theory in this perspective. Summers identifies several dynamic forces that compromise demand generation, implying that the economy can function well only when unsustainable bubbles (technology stock prices, house prices, etc.) boost demand growth. Furthermore, technological and demographic changes that reduce capital investment can lead to a chronic shortfall of demand. Echoing decades of heterodox demand-led growth models, Summers also discusses how rising income inequality and increasing capital income shares

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[7] Storm (2017, pages 4-7) criticizes this perspective but provides a helpful survey of various mainstream arguments.

reduce consumption and contribute to stagnation. Although citation to heterodox research is rare in the mainstream discussion of secular stagnation, this recent blog quote from Summers (2019) is interesting: "[t]his is an argument much more in the spirit of Keynes, the early Keynesians, and today's Post-Keynesians than the New Keynesians who have set the terms for much of contemporary macroeconomic discourse both in academia and in the world's central banks." While Summers and his co-authors are the leading mainstream voices arguing that demand can constrain an economy beyond the short run, this view has been taken up to some extent by other prominent mainstream economists, including Olivier Blanchard, Paul Krugman, and Joseph Stiglitz.

This change of perspective in a small but important subset of mainstream thought leaders is perhaps the best evidence that a kind of Keynesian economics, deeper and more fundamental than the nominal rigidity version of textbook IS/LM models or new Keynesian DSGE models, is indeed back from the dead. While the idea that demand constraints on modern economies beyond the short run is hardly a majority view among orthodox macroeconomists,[8] it is being discussed seriously in mainstream venues for the first time in decades. But these discussions usually retain a central feature of the not-so-Keynesian pre-crisis macroeconomics: they continuously reference that hallowed "natural" rate of interest.

## 6. KEYNESIAN MACRO WITHOUT THE NATURAL RATE: STILL "DEAD?"

In the most prominent mainstream discussions of how a more fundamental Keynesian perspective has been resurrected following the Great Recession, the key challenge posed is to get the economy to Wicksellian natural rate of interest, or in more modern discussions of monetary policy, the "neutral" rate. This rate supposedly balances investment with desired saving forthcoming when the economy operates at potential output (appropriately defined to include international capital flows and government fiscal balance).

In my opinion, among the most insightful parts of the *General Theory* is chapter 14, "The Classical Theory of the Rate of Interest." Keynes argues that the loanable funds theory of the interest rate, the foundation of the natural rate concept, commits "a formal error" and results in "nonsense." The problem arises from incorrectly treating the actual saving function as independent of income and employment. Therefore, one might simply assert that all the emphasis on the natural rate in mainstream macro is inconsistent with the most basic understanding of Keynesian theory.

But such a dismissal would be too easy. Practical mainstream economists do not believe the loanable funds theory actually explains interest rate movements from month to month, or even year to year. They at least implicitly accept an asset market equilibrium (liquidity preference) theory explains interest rates at any point in time. The natural rate concept is a *target for policy* rather than a theory of actual interest rate equilibrium. Monetary policy should strive to reach the natural rate target. If a lower bound on nominal interest rates is binding, fiscal policy

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[8] Mason (2017, page 19) identifies the view that changes in demand have permanent effects on output a "radical position," although one he supports.

should aim to raise the natural rate to a level that monetary policy can feasibly target. This perspective is nicely summarized in a blog post from Simon Wren-Lewis (quoted in Mason and Jayadev, 2013, page 106): "if real interest rates are at their natural level, we do not need to think about demand when calculating output. In most cases, it is the job of monetary policy to try and get the economy back to this natural real interest rate." Our questions in this section are two. First, does a natural rate target even exist? Second, even if it might exist in principle, is it a practical guide for macro policy?

If one assumes aggregate demand is an unbounded negative function of the real interest rate it follows that a sufficiently low real interest rate, possibly massively negative, would boost aggregate demand to any given target level. Whether the interest elasticity of aggregate spending might become zero, or even positive, at some low level of real interest rates seems like a complicated theoretical question. The answer would turn on the minimum needs to save for retirement, the effect of low interest income on the spending of savers, the nature of capital and business investment, and the complexities of international responses to changes in the value of the domestic currency, likely among other things. I will not try to take on this question, in large part because I do not believe the answer to it is of much practical relevance. Despite some doubts, let us assume here there is a real interest rate, possibly negative, that induces full employment aggregate demand.[9]

Even with this assumption, I am very skeptical this interest rate is a useful practical guide to policy for three reasons. The first is "elasticity skepticism." Conventional intertemporal substitution elasticities are most likely quite low. Despite the fact that the intertemporal substitution in consumption is the foundation of interest elasticities of demand in mainstream DSGE models, there is virtually no evidence that aggregate consumption or saving responds very much to changes in real interest rates. Most economists would probably put more faith in the interest elasticity of business investment. But relying on capital spending as the key channel for the monetary policy transmission mechanism is also problematic. Business investment is less than 14 percent of GDP and its leverage on the aggregate economy is therefore limited. Also, empirical research finds that business investment is not all that sensitive to interest rates. Investment responds much more strongly to the state of the economy. If demand is weak, it will be difficult to encourage investment regardless of how low interest rates go (also see Palley, 2019). If the effect of lower interest rates on consumption and investment is weak, the natural rate could be so low as to be irrelevant in a situation of stagnant demand, such as the deviation from trend of more than 10 percent discussed earlier.[10]

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[9] Palley (2019) describes an interesting set of conditions under which the IS curve effectively becomes vertical, or even positively sloped at very low interest rates. In this case, no natural rate exists.

[10] For example, if consumption is insensitive to interest rates, output is 10 percent below target, and the multiplier is 1.5 business investment would have to rise 6.7 percent of GDP to restore output to trend. Since investment is now 13.6 percent of GDP, it would need to rise by about 50 percent, permanently. What decline of interest rates could make that happen? This problem is further magnified by the fact that real interest costs are a relatively small part of the cost of capital (depreciation rates average between 8 and 9 percent and one expects risk premia and adjustment costs to add to the cost of capital). Also, according to basic neoclassical capital theory, it is the *level* of the capital

The second challenge follows from elasticity skepticism. If the natural rate exists at all, it is likely highly volatile. Consider a textbook loanable funds diagram with a downward sloping investment demand curve and upward sloping saving supply curve conditional on full-employment income. Then imagine that both curves are nearly vertical (elasticity skepticism). Small horizontal shifts in either curve will generate massive movements in the natural rate. This outcome makes the natural rate, even if it exists, a poor guide for policy.

The third criticism of the practical usefulness of natural rate targeting arises from the dynamics of financial instability. When lower interest rates actually manage to stimulate substantial demand, they likely work not through sustainable intertemporal substitution channels or technological substitution in production. Instead, they work by encouraging borrowing. The decades prior to the Great Recession provide a classic example. When the U.S. economic growth faltered in the 1980s, 1990s, and early 2000s, interest rates fell a lot and lower rates in this era likely did help restore demand to its previous growth trend by encouraging mortgage refinancing (often with cash-out equity withdrawal), a house price bubble, and a leverage-driven boom in residential construction. These sources of demand helped stabilize and grow U.S. aggregate demand for more than two decades. And this "Great Moderation" period, not coincidentally, spawned the new consensus macroeconomics with its great faith in monetary policy. Looking back, however, it is clear that much of the demand growth was financed unsustainably.[11] The period fits well into Minsky's financial instability theory when one translates the locus of instability from the business sector to the household sector (see Cynamon and Fazzari, 2008, 2013). Stability, created by debt-financed demand and unsustainable house price inflation, was ultimately destabilizing, as we learned in 2008 and 2009. Similarly, Summers (2014) argues that the U.S. economy could generate acceptable aggregate demand growth in these years only when financial bubbles propelled spending; bubbles that ultimately burst, as the bubble metaphor suggests they must. In this context, if a "natural interest rate" at some point in time creates enough demand, it may do so only by contributing to unstable financial dynamics that cause a future natural rate to dive so far into negative territory it becomes irrelevant, again, if it exists at all.

These comments imply that a full resurrection of Keynesian macroeconomics requires abandoning the natural rate of interest as a kind of sufficient statistic for policy. Instead, both the understanding of macroeconomic conditions and associated policy recommendations need to focus on the fundamentals of demand generation itself. As Fontanari, et al. (2019) write, the "more promising theoretical perspective to address these questions is to be found in the theory of demand-led growth, according to which aggregate demand is the main constraint both on the level of production and its growth over time." This kind of analysis explores the structural forces

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stock, not its rate of change, that depends on the cost of capital. Therefore, any effect of interest rates on net investment would be transitory.

[11] Note that to argue demand was *financed* unsustainably does not imply the levels of output or employment themselves were unsustainable. There is no evidence that real economic activity prior to the Great Recession was excessive. Inflation, wage growth, and interest rates were all low and output growth was mediocre. See Mason (2017) for further discussion.

that propel demand through time. Extensive heterodox research on demand-led growth, both theoretical and empirical, fits this objective.[12] A more specific example, of significant recent interest, is the rapidly growing body of work linking household financial conditions and income distribution to the growth of household demand.[13]

From this point of view, interest rates are just one of many economic factors that determine the demand generating process, and likely not the most important one. The mainstream focus on the natural rate and the ZLB is part of a resurrected Keynesian understanding of macro conditions in the early 21st century, but it is a narrow perspective.

## 7. DEMAND LEADS SUPPLY

A more important problem with the natural rate concept is the implicit assumption in its definition that there is some given full employment or potential level of output that is independent from the state of demand. Of course, this idea is fully consistent with a neoclassical synthesis or new consensus view that Keynesian demand effects matter only in the short run with the supply side ruling long-run macro dynamics. But a more intrinsic perspective on Keynesian economics implies that demand drives the economy beyond the short run. Furthermore, this perspective clearly implies demand will lead supply and therefore *there is no demand-independent level of potential output* to use in trying to define the natural rate.

The link between the dynamics of demand and the evolution of supply is well established in heterodox Keynesian research. The idea goes back at least to Young (1928) and the concept of dynamic increasing returns to scale that connect the expansion of demand and the size of markets. Robinson (1962) and Kaldor (1978) make similar arguments. A subset of more recent papers that link labor productivity growth or labor force growth to the state of the economy include Palley (1996), Setterfield (1997), McCombie (2002), Dutt (2006), and Storm (2017). Storm (2018, page 527) writes "[d]emand matters for long-run (potential) growth through its impact on accumulation and production capacity, and through a deepening of the division of labour, specialization and increasing returns to scale."

In Fazzari, et al. (2019) we present a demand-led growth model with accommodating supply. In full Keynesian fashion, demand drives both the level and growth rate of output over any horizon. The real expansion of output at any point in time may be constrained by the supply of labor in what Peter Skott (2010, among other places) labels a "mature economy." But the ability of the economy's supply side to produce output is endogenously linked to demand. In a "high pressure" economy created by strong demand, low unemployment rates raise the growth rate of the labor force and increase the rate of labor productivity growth. Symmetrically, weak demand leads to high unemployment causing the supply side to stagnate. If the demand side is

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[12] Several recent books provide excellent surveys. See Foley, et al. (2019), Hein (2014), Lavoie (2014), and Setterfield (2010).

[13] Kim (2020) provides a clear and extensive survey.

dynamically stable, the model delivers strong convergence of supply to the dynamic path of demand growth.[14] In the simplest of possible terms: demand leads supply.

While these theoretical results are interesting, what may be most important are the empirical implications of this kind of model. Calibration of the model with realistic parameters for the U.S. imply that an acceleration of autonomous demand growth above 3 percent annually, perhaps as high as 4 percent annually, could be accommodated by supply growth. Furthermore, slow demand, such as the drop off in household spending growth after the Great Recession or fiscal austerity, not only leads to mediocre growth, it also pulls the supply side along with it. This outcome would lead mainstream analysts, who confine Keynesian results to the short run by assumption, to conclude stagnation is the best we can do since we appear to be at "potential output." (Again, consider the remarkable reduction in CBO potential output forecasts in the aftermath of the Great Recession.) It also invalidates the concept of a "natural" rate of interest as a sufficient statistic for the state of demand because the supply-side concept of potential output depends on the state of demand.

The possibility that weak demand drags down supply, and vice versa, connects with the important, but far from dominant, mainstream analysis of hysteresis. DeLong and Summers (2012) and Ball (2015) are leading recent examples. But despite research that identifies hysteresis effects both theoretically and empirically, the vast majority of the mainstream has certainly not come to the view that demand growth is the proximate engine of economic progress over horizons beyond a couple of years and that policy needs to focus first and foremost on assuring strong *secular* demand growth to deliver good social results. The unfortunate result can be that standards of living and the bargaining power of workers stagnate because basic intrinsic Keynesian understanding of macroeconomics is not fully "back from the dead" in the mainstream.[15]

## 8. CONCLUSION

As discussed at the beginning of this article, perhaps the question "is Keynesian economics back from the dead?' is somewhat misconstrued. "Dead" or "alive" is obviously dichotomous, too much so for this topic. A more continuous health-related metaphor probably works better. In the heyday of new consensus macro thinking prior to the Great Recession, Keynesian economics was not dead in the mainstream, but perhaps was on life support (especially in the academic world). In the aftermath of the crisis, the mainstream view of intrinsic Keynesian analysis, the focus of heterodoxy for decades, seems as if it is discharged from the hospital and seems to be doing reasonably well in rehab. But with the natural rate and ZLB concepts still driving much of the discussion outside of heterodox journals and conferences, a full recovery seems some distance away.

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[14] The demand side may be dynamically unstable if multiplier and accelerator effects are especially strong or if expectations and target capital-output ratios respond quickly to short-term fluctuations. Empirical calibration of the model with U.S. data, however, implies that the stable case is likely realistic.

[15] See Dantas and Wray (2017) and Mason (2019) for an analysis of how the U.S. economy has substantial slack in the labor market despite low headline unemployment rates.

Where are we headed? There is widespread recognition that many large economies have never really recovered from the Great Recession. In the late summer of 2019, the world economy seems to be slowing and recession probabilities are rising despite remarkably low interest rates and large U.S. fiscal deficits that would have seemed like aggressive stimulus prior to 2007. Extended stagnation, if not a deep collapse, seems likely. There is still the strong tendency in the mainstream to fall back on the story that if stagnation persists it must be viewed through the lens of the "classical" long run and therefore comes from some kind of unfavorable supply phenomena independent of demand dynamics. This interpretation persists despite the fact that there seems to be no obvious real-world supply "shock" that could explain such a significant shift of the potential output trend. And it persists despite the fact that interest rates and inflation remain historically *low*, the opposite of what supply-driven stagnation would predict (Mason, 2017). In contrast, demand-side explanations are easy to identify and substantiate empirically (see Cynamon and Fazzari, 2015 and Mason, 2017, for example). Continued stagnation is sadly unfortunate for human welfare, but it may keep turning the massive ship of mainstream macro thinking more in the direction of a heterodox, intrinsic Keynesian understanding of the world in which we live.

A recent op-ed by Lawrence Summers and his Harvard student Anna Stansbury (2019) suggests change in this direction continues to proceed:

> Conventional policy discussions are rooted in the (by now old) New Keynesian tradition of viewing macroeconomic problems as a reflection of frictions that slow convergence to a classical market-clearing equilibrium. … According to this view, anything that can be done to reduce real interest rates is constructive, and with sufficient interest-rate flexibility, secular stagnation can be overcome. … We are increasingly skeptical that matters are so straightforward. … These considerations suggest that reducing interest rates may not be merely insufficient, but actually counterproductive, as a response to secular stagnation. This formulation of the secular stagnation view is closely related to the economist Thomas Palley's [2019] recent critique of "zero lower bound economics": negative interest rates may not remedy Keynesian unemployment. More generally, in moving toward the secular stagnation view, we have come to agree with the point long stressed by writers in the post-Keynesian (or, perhaps more accurately, original Keynesian) tradition: the role of particular frictions and rigidities in underpinning economic fluctuations should be de-emphasized relative to a more fundamental lack of aggregate demand.

That these views come from Harvard seems significant. The mainstream health of the Keynesian patient continues to improve; and the patient seems well back from death's doorstep.

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