Working Paper No. 900

Functional Finance:

A Comparison of the Evolution of the Positions of Hyman Minsky and Abba Lerner

L. Randall Wray*

Levy Economics Institute and Bard College

January 2018

* I thank Eric Tymoigne, as well as participants of the STOREP conference held in June 2017 in Piacenza, Italy, for comments.

The Levy Economics Institute Working Paper Collection presents research in progress by Levy Institute scholars and conference participants. The purpose of the series is to disseminate ideas to and elicit comments from academics and professionals.

Levy Economics Institute of Bard College, founded in 1986, is a nonprofit, nonpartisan, independently funded research organization devoted to public service. Through scholarship and economic research it generates viable, effective public policy responses to important economic problems that profoundly affect the quality of life in the United States and abroad.

Levy Economics Institute
P.O. Box 5000
Annandale-on-Hudson, NY 12504-5000
http://www.levyinstitute.org

Copyright © Levy Economics Institute 2018 All rights reserved

ISSN 1547-366X

ABSTRACT

This paper examines the views of Hyman Minsky and Abba Lerner on the functional finance approach to fiscal policy. It argues that the main principles of functional finance were relatively widely held in the immediate postwar period. However, with the rise of the Phillips curve, the return of the Quantity Theory, the development of the notion of a government budget constraint, and accelerating inflation at the end of the 1960s, functional finance fell out of favor. The paper compares and contrasts the evolution of the views of Minsky and Lerner over the postwar period, arguing that Lerner's transition went further, as he embraced a version of Monetarism that emphasized the use of monetary policy over fiscal policy. Minsky's views of functional finance became more nuanced, in line with his Institutionalist approach to the economy. However, Minsky never rejected his early beliefs that countercyclical government budgets must play a significant role in stabilizing the economy. Thus, in spite of some claims that Minsky should not be counted as one of the "forefathers" of Modern Money Theory (MMT), this paper argues that it is Minsky, not Lerner, whose work remains essential for the further development of MMT.

KEYWORDS: Functional Finance; Hyman Minsky; Abba Lerner; Deficit Owl; Budget Deficits; Government Budget Constraint; Phillips Curve; Sovereign Currency; Modern Money Theory

JEL CLASSIFICATIONS: B10; B15; B22; B25; B31; B5; E12; E14; E32; E34; E62; H62

INTRODUCTION

In recent years an approach to macroeconomics called Modern Money Theory (MMT) has been developed. In my view, it is a synthesis of several strands of heterodox—largely Post Keynesian—thought. It draws heavily on the work of Georg Friedrich Knapp, A. Mitchell Innes, John Maynard Keynes, Abba Lerner, Hyman Minsky, and Wynne Godley, to integrate the state theory of money, endogenous money, functional finance, financial instability hypothesis, and sectoral balance approaches. I would characterize it the way that Minsky (1977) characterized his own attempt at a synthesis: it "stands on the shoulders of giants."

In this contribution, I will not detail the propositions of the synthesis. It is only necessary to recount the main conclusion: a sovereign government that issues its own currency can never "run out of money"—it can never be forced into involuntary default and it can always make all payments as they come due. As such, it can adopt what Lerner called a "functional finance" approach to budgeting. What Lerner meant is that the policymaker's focus should be on the "functional" outcome of the policy rather than on the budgetary impact. So far as I remember, it was Mat Forstater who brought Lerner's functional finance to MMT.[1] Coincidentally, Lerner had been at the University of Missouri–Kansas City (UMKC)[2] in the 1940s when he was developing his approach. Lerner's contributions include the two principles of functional finance, the metaphor of the government guiding the economy with a steering wheel, and his version of Knapp's "state money," which Lerner (1941) called "money as a creature of the state."

When we began creating what came to be called MMT, Lerner's contributions were surprising and controversial, even among our heterodox colleagues. However, as I'll discuss, these ideas were not uncommon in the immediate postwar period. The Chairman of the Federal Reserve Bank of New York, Beardsley Ruml (1946), held a position similar to Lerner's when he argued that "taxes for revenue are obsolete"; and even Milton Friedman (1948) presented a proposal with ramifications quite similar to those of Lerner in his "A Monetary and Fiscal Framework for

[1] See, for example, Forstater (1998).
[2] Actually, Lerner was at the private college that became UMKC later, which played a major role in developing MMT from 1999.

Economic Stability"—where he argued that all government spending should be financed by issuing money, with tax payments removing the money from circulation.[3]

However, two postwar developments seem to have changed the discourse and thinking about national government budgeting. The first was the extension of the consumer budget constraint to the government. Like a household, government's spending is said to be constrained by financial wherewithal. In the case of a household, spending depends on income plus access to credit. However, the government's spending is said to be financed by tax revenue, "borrowing" (bond sales), and the printing of money. That final source of finance is of course not available to the household, and came to be seen as something to be avoided. The main problem is that unconstrained money printing would cause inflation. Surprisingly, Friedman played a big role in stoking that fear, even though it had been his policy recommendation in the 1948 paper. However, by the 1960s Friedman had resurrected the quantity theory relationship between money and inflation—so now this could be turned against "money financed" government spending and its inherently inflationary bias.

The second development was the rise of inflationary pressures in real-world economies after the mid-1960s, apparently coinciding with the embrace of "Keynesian" policies to keep aggregate demand high. That, of course, had many implications for the development of economic theory and policymaking. While it need not have led to abandonment of the insights that led to the key papers written in the 1940s by Lerner, Ruml, and Friedman, it did in fact seem to discredit the use of fiscal policy to pursue full employment.

As we will see below, in the 1940s Lerner had thought it possible to use "Keynesian" aggregate demand management to simultaneously pursue both full employment and low inflation. This was already called into question by the early 1960s as the theory of a Phillips curve trade-off gained acceptance. As Friedman cleverly explained in 1968, things are even worse than a trade-off because trying to hold down unemployment leads to *accelerating* inflation. By the late 1960s Lerner, too, was worried about inflation and began having second thoughts about his own

---

[3] Net deficits, then, would add money to the economy; surpluses would drain it. Rather than seeing deficits as a problem, countercyclical deficits were seen as a powerful stabilizer—combining the effects of fiscal (spending) and monetary (money emission) policy.

functional finance theory. Below we will examine his abandonment of functional finance in favor of a version of Monetarism—not because he worried about government solvency but because of his fear that reliance on fiscal policy would generate stagflation.

Thus, the development of the theory of the government budget constraint and the rise of real-world inflation seem to have banished functional finance so thoroughly that even heterodoxy dropped it. It was revived only in the late 1990s with the development of MMT (Wray 1998).

Below I will examine the evolution of Minsky's position on this issue from 1960 through the mid-1990s, as it also seems to have changed from an explicit embrace of the argument that a sovereign government does not face an affordability issue, toward a view that Reaganomics had tilted the US federal government's budget toward dangerously large deficits. From the mid-1980s to his death in 1996, Minsky warned that the fiscal stance needs to be tightened to ensure that government debt could be "validated." Because Minsky often used the term "validate" with respect to the necessity of an economic unit to obtain external funds to service debt (paying interest and principle), this seems to violate Lerner's principles of functional finance. Did he mean that government needs more tax revenue or more borrowed funds to service its debt? If so, that would appear to be a rejection of his (and Lerner's) earlier belief that the sovereign currency issuer cannot run out of its own money.

In November 2016, a video[4] of a lecture that Minsky gave at Westminster College on October 30, 1991 was made available. Although the Levy Economics Institute of Bard College has some audio of Minsky's presentations, this is apparently the only video of a lecture by Minsky. The audio of this one is not great, but it provides some flavor of his style. In truth, it was always a bit hard to follow his presentations, as he had a tendency to lower his voice and mumble near the end of sentences as his mind raced ahead to the next point. He usually did not script his talks (he walked into many of his university lectures with nothing more than a copy of the *Wall Street Journal*), but often he would read some brief sections of his papers—while riffing the rest—and it appears that this is what he was doing that evening in the fall of 1991.

[4] Available at: https://www.youtube.com/watch?v=FLi2wdSA66A&t=2895s.

During the period 1991–93, Minsky was preparing a new book manuscript. After arriving at Levy in 1990 he had started to heavily revise his 1986 book, *Stabilizing an Unstable Economy*, but shifted gears and instead was revamping more-recent Levy working papers as chapters for an entirely new book. I suspect that this speech was based on one or more of those papers.[5] After viewing Minsky's talk, some have concluded that Minsky's views are not consistent with MMT—and have even argued that Minsky was not a forefather.[6]

I would argue that cannot be correct for the following (I think indisputable) reason: UMKC has played a major role in the creation and dissemination of MMT. Minsky's influence on all of those at UMKC who contributed to MMT was significant, indeed, critical. While I had read (and appreciated) Keynes before I went to study with Minsky, in truth I probably would have studied political economy and labor economics if I had not studied with him. And it was Minsky who introduced me to the main components of what became MMT: government cannot go broke in its own currency, taxes create a demand for the government's currency, the sectoral balances approach, the Kalecki profits equation, the employer of last resort proposal, the benefits of floating exchange rates, the benefits to the private sector from government deficits and debt, and—yes—the financial instability hypothesis. While it is true that Minsky did not assemble them in the same way that MMT has done, without Minsky, it is highly unlikely that I would have been open to these fundamental building blocks when I later met Warren Mosler and Bill Mitchell. I do not want to speak for the others associated with the "Kansas City Approach," but most of them were my students, either formally or informally. To deny Minsky is also to deny the role played by UMKC in the development of MMT.

Now, to the specific complaint that Minsky appears to abandon functional finance and to adopt the deficit dove (or even deficit hawk) approach,[7] I admit that Minsky says some puzzling things in the video. Indeed, some of his post-Reaganomics writing has puzzled me and my students every time I teach a course on Minsky (first at Denver University in the 1980s, then at UMKC, and now at Levy and Bard College). It appears that his views shifted and he took a harder line

---

[5] At the Levy Institute we have been editing his unfinished book manuscript for (I hope) eventual publication.
[6] See, for example, Mitchell (2016).
[7] Deficit hawks want balanced budgets (or even budget surpluses); deficit doves accept budget deficits in recession but want these balanced against surpluses in the upswing (the terminology is credited to Stephanie Kelton). By contrast, deficit owls adopt the functional finance approach.

against big deficits. It is hard to reconcile this later writing with his earlier writing—which was clear on the topic. I will examine these new positions in the context of the arguments made in his post-Reagan writings. I will conclude that while there was some transformation over the period, there was no radical change, nor any significant repudiation of his early views on government finance. Minsky did not violate the principles of functional finance, although he had already modified his interpretation of them by the 1960s.

I do not recall Minsky ever discussing functional finance inside or outside the classroom. I've only found one use of it in his work—in a 1960 paper discussed below. On one hand, this seems strange—given Minsky's views on deficits and debts as well as his close relationship to Lerner (whom he always claimed as one of his major influences).[8] On the other hand—as I'll argue—Minsky must have seen both the functional finance approach as well as Lerner's "steering wheel" arguments (mentioned in the video) as too mechanistic. I think he would have rejected simplified versions of both of these in the same way that he rejected Alvin Hansen's interpretation of Keynes—as devoid of institutional realities. (While Minsky was Hansen's teaching assistant, Minsky said he chose not to work with Hansen because of his "mechanical" approach to Keynes—Minsky chose Schumpeter instead.) From the early 1960s, Minsky had a more nuanced version of functional finance and for that reason (I suppose) he did not use the term (Papadimitriou and Wray 1988).

Finally, I will note that Lerner also abandoned his simpler functional finance approach in his later work—I think for much the same reason that Minsky had a decade earlier. Lerner came to see that it ignored institutional realities, formulating policy aimed exclusively at the macro level while ignoring what he saw as micro or market analysis. Minsky had been trained in the Chicago version of Institutionalism—so he was quicker to realize the problem with taking functional finance and the "steering wheel" too literally.

[8] Minsky even gave credit to Lerner for the most famous quote often attributed to Minsky: "stability is destabilizing."

MINSKY'S EARLY BELIEFS

Minsky's early views on the proper role of government were influenced by the developing postwar Keynesianism that emphasized demand gaps and the need for countercyclical budgets. Furthermore, and of perhaps even greater importance, "war finance" had demonstrated that fiscal capacity was not constrained by tax revenue. As Ruml (1946) put it in the title of his article: "Taxes for Revenue are Obsolete." He went on to distinguish between the budgeting of national governments and that of state and local governments:

> The necessity for a government to tax in order to maintain both its independence and its solvency is true for state and local governments, but it is not true for a national government. Two changes of the greatest consequence have occurred in the last twenty-five years which have substantially altered the position of the national state with respect to the financing of its current requirements.
>
> The first of these changes is the gaining of vast new experience in the management of central banks.
>
> The second change is the elimination, for domestic purposes, of the convertibility of the currency into gold.
>
> Final freedom from the domestic money market exists for every sovereign national state where there exists an institution which functions in the manner of a modern central bank, and whose currency is not convertible into gold or into some other commodity.
>
> The United States is a national state which has a central banking system, the Federal Reserve System, and whose currency, for domestic purposes, is not convertible into any commodity. It follows that our Federal Government has final freedom from the money market in meeting its financial requirements.

While I do not know whether Minsky was familiar with Ruml's argument, it is clear that the general ideas were in the air at the time, for both Lerner and Friedman advanced similar policy prescriptions. Friedman's (1948) policy proposal was presented in his article, "A Monetary and Fiscal Framework for Economic Stability." In that piece, he proposed that the government would run a balanced budget only at full employment, with deficits in recession and surpluses in economic booms. Interestingly, he proposed that all government spending would be "money financed," with tax payments reducing the money supply so that deficits lead to net money

creation. He thus proposed to combine monetary policy and fiscal policy, using the budget to control monetary emission in a countercyclical manner.[9]

Lerner's (1943, 1947) version was called the "functional finance" and "money as a creature of the state" approach—the first of these concerned budgetary policy while the second provided the theoretical basis for the policy. He formulated two principles of functional finance: government should spend more if there is unemployment, and government should supply more money (reserves) if interest rates are too high. Lerner thus retained the usual distinction between fiscal and monetary policy, although the budgetary recommendation was similar to Friedman's; further, his admonition that finance should be "functional" (to achieve the public purpose) rather than "sound" (formulated to achieve "balance") was precisely the point that Ruml was pushing. Lerner (1941) also adopted a "steering wheel" approach to policy, which became the "Keynesian" fine-tuning approach.

In his earliest work, Minsky cited Lerner's functional finance approach and extended Samuelson's multiplier-accelerator model by adding the "Big Bank" (central bank) and "Big Government" (fiscal policy) institutional ceilings and floors to constrain endogenous stability. A few years later, he implicitly anticipated Godley's sectoral balance approach when he argued that government-spending-led expansions are more financially robust than are those that are led by private sector spending (Minsky 1963).

In an interesting manuscript (coauthored with Irma Adelman in 1960), Minsky developed a model to examine budgeting for economic stability.[10] The paper begins with the acknowledgement that "much of the following is related to the principles of functional finance," and explicitly cites Lerner's *Economics of Control* and *Economics of Employment,* while admitting that "an old fashioned assumption underlies this paper: that full employment and price

---

[9] This proposal results in strong countercyclical forces to help stabilize the economy. However, Friedman could still be a good quantity theorist, because he could argue that it would be fluctuation of money, not government spending, that stabilized the economy. Further, his plan for countercyclical stimulus is rules-based, not based on discretionary policy. He also would have eliminated private money creation by banks through a 100 percent reserve requirement, an idea he had picked up from Irving Fisher and Henry Simons, hence, there would be no "net" money creation by private banks—they would expand the supply of bank money only as they accumulated reserves of government-issued money.

[10] See Minsky and Adelman (1960).

stability are compatible." The paper asserts that "national debt is unique…, for there is no default risk …. [The only risks are] that the interest rate and the price level may change." Further, the national debt adds net financial wealth to the private sector: "The total wealth of private units equals the value of things in the economy plus the value of the national debt." The paper concludes that the best policy combination consists of a low interest rate, with the national debt growing at the same rate as private debt, and with both equal to the rate of growth of productivity. Note that this implies perpetual budget deficits in order to grow national government debt as productivity grows. This is certainly not a deficit dove position (which would attempt to balance the budget over the cycle)—it is *functional* in the sense that it provides safe financial wealth to the private sector that is *leveraged* as the economy and private debt grow.[11]

However, in a paper published in 1968, Minsky (2013) took a more nuanced position. There he argued that government should pursue tight full employment, which should be a measured rate of 3 percent. He says he had thought this could be achieved through a general increase of aggregate demand (as in pump-priming or a steering wheel approach), but now he changed his mind: "we cannot rely upon 'undirected' aggregate demand increases to do the job which I claimed it could do" (Minsky 2013, 329). Such policy would increase financial instability and trigger credit crunches by stimulating private spending, of which some would be externally financed through debt. It would also likely generate inflation as wages and prices would rise in the more-advanced sectors before a sufficient supply of jobs in the lagging sectors were generated. This policy would not improve equality and might even increase inequality (again, by improving incomes in the advanced sectors relatively more).

For all these reasons, he favored targeted spending, and in particular direct job creation for the unemployed: "It may be that greater attention to the structure of aggregate demand is necessary if a desired change in relative wages is to be achieved. The question is whether 'directed' demand can achieve the goal of greater equality or whether a system of direct controls is needed,

[11] Later, Minsky would argue that postwar growth was promoted, as it leveraged the safe federal debt that had been issued in World War II.

with or without directed demand" (Minsky 2013, 329).[12] "A suggestion of real merit is that the government become an employer of last resort" (Minsky 2013, 338). This could achieve and sustain tight full employment through a "bubble up" policy (rather than through "trickle down"). This would reduce inequality, achieve tight full employment, and enhance both price and financial stability.

To be sure, he was not abandoning functional finance but rather arguing that *what* government spends on matters. The problem was not that government would run out of money before it achieved full employment through general increases of aggregate demand, but rather that such a policy would produce undesirable outcomes (inflation and inequality). He insisted that the impact of the budget on the economy depends on where spending and taxing is directed. Military spending and transfers, for example, are less productive and therefore more inflationary than spending that enhances production of consumption goods.

In the same article, he argued that the budget stance is important for currency[13] and financial stability. A strong countercyclical swing must be built into the budget so that it would produce surpluses large enough to contain euphoric booms.[14] As he put it:

> The 1960's witnessed the apparent victory of Keynesian policy. However, the successful application of Keynesian policy may result in an economy that is inherently unstable. This instability is not the result of a tendency to stagnate or enter into a deep depression state; rather it is due to a tendency to explode…. [T]o an increasing extent both households and business were expecting next year to be better than this year. This trend in the expectational climate resulted in an explosively increasing demand for private investment in the mid-1960s. (Minsky 2013, 331)[15]

---

[12] Here and elsewhere Minsky promoted the creation of a universal job guarantee program, with the federal government acting as an employer of last resort. See *Ending Poverty*: *Jobs, Not Welfare* (Minsky 2013).

[13] Minsky often argued that the fixed exchange rate under the Bretton Woods system imposed a constraint on feasible fiscal policy.

[14] While many believe that Minsky's theory was all about the crisis phase, in truth he was more worried about the thrust to euphoria that he saw as the greater danger in the postwar economy, with its effective demand floors (countercyclical deficits) and asset price floors (lender of last resort intervention) maintained by Big Government and Big Bank, respectively.

[15] This is very consistent with what he wrote in his *Stabilizing* book: "The policy problem is to devise institutional structures and measures that attenuate the thrust of inflation, unemployment, and slower improvements in the standard of life without increasing the likelihood of a deep depression" (Minsky 1986b, 295).
And in the same book: "The current strategy seeks to achieve full employment by way of subsidizing demand. The instruments are financing conditions, fiscal inducements to invest, government contracts, transfer payments, and taxes. This policy strategy now leads to chronic inflation and periodic investment booms that culminate in financial

A problem arose over the course of the 1960s in that the government's budget became biased toward balance or even a deficit: "In the 1960s, as a result of the combination of 'modern' fiscal policy ideas and an accidental war, government revenues did not rise rapidly relative to government spending when private investment 'exploded.' Thus, the savings to offset the explosion of private investment had to come from the private sector" (Minsky 2013, 331). While this might appear to be a strange statement (and if taken out of context might be construed as based on loanable funds), Minsky was referring to the developing Post Keynesian work on distribution theory. Restated in injections/leakages terminology, given that the government's budget would not move sharply toward surplus in an expansion, investment would raise private sector income until its saving leakages rose to match the injection. This has undesirable distribution effects:

> The "Kaldorian" relation, in which the propensity to save out of profits is greater than the propensity to save out of household disposable income, means that income distribution shifts towards profits whenever savings must be generated in the private sector. One way in which this change in the distribution of income can take place is through inflation. A rise of prices in excess of the rise in money wages lowers real wages. This classical inflation pattern, in which savings are forced by rising prices was evident during 1966 and is an element in the continuing price pressure of 1967. Thus, not only does the "classical" (wages and profits) distribution of income "deteriorate" during an investment boom but also the deterioration is associated with a politically unpalatable inflation. (Minsky 2013, 331)

Unlike other "Keynesians" of the period, Minsky continued to reject the Phillips curve trade-off (as he had done in the 1960 piece), arguing that wage increases remained moderate so "the mechanism of the inflation was not that of the Phillips curve" (Minsky 2013, 331). Rather, it was caused by investment, which was supercharged as distribution shifted toward profits. This also "put serious pressures upon financial markets," so that "sustained full employment may result in such an explosive increase in investment demand that it becomes impossible to achieve the sustained growth in demand necessary for continuing full employment. This is so because the investment boom is due to an 'euphoric' expectational climate, and to break the investment boom it is necessary to change the expectational climate" (Minsky 2013, 332). That is done

---

crises and serious instability. The policy problem is to develop a strategy for full employment that does not lead to instability, inflation, and unemployment" (Minsky 1986b, 308).

through imposition of tight monetary policy by the Fed that creates turmoil and sometimes a "mini panic" in financial markets.

Hence, the "stabilizing" looser fiscal stance of government is "destabilizing" because it creates conditions in which euphoria generates a self-reinforcing investment and profits boom; this leads to inflationary pressure that amplifies the shift of distribution toward profits even as it creates a more-fragile financial sector.[16] Relief comes in the form of monetary tightening and a credit crunch—which lowers expectations: "Once the expectational climate is changed, all of the private sectors become sluggish…. Of course the deep depression ratifies the changed expectations and thus it will take time to rebuild confidence" (Minsky 2013, 332). To break this cycle, he argues that it is necessary to constrain the "potential investment boom" and instead to pursue full employment by using directed demand.

In sum, this 1968 article is not only amazingly prescient in its implicit critique of "Keynesian" pump-priming (certainly more so than Friedman's AEA 1968 presidential address, which, while important in its own right—as it rejected a simple Phillips curve policy trade-off—required a rather improbable "fooling" mechanism), but also in warning of the dangers of rising inflation, instability, and inequality fueled by "inefficient" spending.

Minsky also began to take a more nuanced position with respect to government debt. In the early postwar period, the economy needed government debt as a safe asset that could be leveraged for growth (that is, used as collateral against private borrowing). However, too much government debt in the economy had shifted monetary policy operations away from discount window lending to open market operations.[17] Since open market operations supply reserves to *markets*, the central bank could not discipline individual *banks*; if the Fed instead provided reserves at the discount window, it would be able to see the books of the banks that needed reserves—allowing it to punish banks without good collateral and to reward good behavior. Finally, a large

[16] Minsky (2013, 335) also shows that over the postwar period wages had become more unequal because wage increases are positively correlated to the original level of wages—increasing the dispersion: "Thus, over the period 1948–1966, for the industries examined, the rich tended to get richer, the poor tended to get poorer, and those in the middle tended to hold their own."
[17] This had been a concern of Minsky's from the time he had participated in a study of discount window operations for the Fed.

outstanding stock of government debt makes it more difficult to produce the required countercyclical surpluses in a boom, since interest payments must still be made. This is a theme to which he would return later.

LERNER'S SECOND THOUGHTS

So, did Minsky abandon functional finance? No; and Yes! He adopted a more nuanced version that recognizes what government spends on matters, that recognized inflation pressures, and that incorporated his theory of financial instability. But he did reject the simplistic "steering wheel" approach to functional finance.

And so did Lerner! If anything, Lerner became even more worried about inflation and the likelihood that general "pump-priming" would generate a stop-go-stop policy that ultimately would lead to stagflation—a combination of high unemployment and inflation. This, he argued, is not a paradox (as the "Keynesian" Phillips curve trade-off supposed) and should have been anticipated all along. As he wrote in 1977,

> STAGFLATION, the simultaneous inflation and depression from which we are now suffering, is seen by many as a "paradox" that demonstrates the bankruptcy of economic science. I see it rather as a confirmation of the deeper economic understanding developed in the last half-century. This development has been from a pre-Keynesian overconcentration on microeconomics (which deals with the automatic market mechanism), through a Keynesian overconcentration on macroeconomics (which deals with government policy), to a post-Keynesian integration of macroeconomics with microeconomics to deal with the combination of depression with inflation. (Lerner 1977, 399; punctuation in the original)

According to Lerner, Keynes completed the Classical theory by showing that falling wages reduce prices rather than increase employment; hence the only path to full employment is to wait for micro-generated wages and prices to fall sufficiently for the real money supply to rise enough to boost macroeconomic demand (through "Keynes" and "Pigou" effects) to the full employment level. But according to Lerner (1977, 402), Keynes prefers "to provide the same increase in the real value of the money stock by increasing the number of dollars. The choice was adjusting the prices to the money and the money to the prices." In other words, Keynes would have

government lend or spend more money into existence rather than rely on falling prices to raise the "real" money supply: "The fundamental Keynesian revolution was essentially a policy revolution. It consisted of choosing the second method and calling on government to provide the additional money" (Lerner 1977, 402).

The Keynesian revolution thus pushed discussion from microeconomics to macroeconomics, and policy from waiting for automatic (micro-)market cures for depression to exercising governmental (macro-)policy to regulate the overall quantity of money (with an assist, in emergencies, from fiscal measures) (Lerner 1977, 402).

Monetary policy would increase reserves (by lending reserves or through open market purchases) and hence the private money supply, or fiscal policy would spend government money into existence.[18]

In an interesting footnote to that passage, Lerner (1977, 402) goes on:

> The highly fashionable contrasting of "Keynesianism" with "monetarism" arises from a misuse of the term "Keynesian" for the *special* fiscal measures prescribed by Keynes (and by no means only by Keynes) in the depths of the depression when investors were afraid to invest. There was such a collapse of confidence that neither increased spending by the government, or by the beneficiaries of tax reductions, could have been effective in increasing spending and employment until investors' confidence was restored. Hence the call for *fiscal* measures.

As we will see, Lerner proposes to eliminate the "false" dichotomy between Keynesianism and Monetarism.

So, according to Lerner, Keynes turned the discussion away from relying on micro-level adjustments toward using policy to engineer a macro adjustment. This is also what Lerner purports to have done with his own formulation of Keynes's revolution as the theory of

[18] Here Lerner seems to have the conventional deposit multiplier in mind. Note that Minsky rejected this view from his earliest writings, adopting instead what we now call an "endogenous money approach."

functional finance with three pairs of policy tools: borrowing and lending, buying and selling, and taxing and subsidizing.[19]

What was wrong with the Classical theory of prices was the assumption of symmetry: excess demand causes prices to rise and excess supply causes prices to fall. But that is only true if wages and prices have been stable. If prices have been rising at 10 percent then excess supply reduces the rate of increase but doesn't cause prices and wages to fall. Wages are not set by markets but by administrators—the wage negotiators representing workers and employers—and they can resist when the market is telling them wages should go down. For this reason, nominal wages move asymmetrically, rising when labor is in short supply but only rising more slowly when labor is in excess. Policymakers thus learned how to defy the market to prevent wages from falling in a downturn and turned that into policy to increase wages in a downturn. Thus was stagflation born, according to Lerner.

Lerner identified three responses to stagflation: the "Classicals" said that Keynesianism is wrong and must be dumped; Keynesians saw it as an unexplainable paradox within the framework of the Phillips curve; and government saw it as resulting from excess demand and so wanted to reduce government spending—but would reverse course whenever unemployment rose to double digits. This led to a stop-go-stop policy pattern that allowed the entrenchment of inflation with unemployment higher than desired. Lerner (1977, 406) confesses: "I was one of those Keynesians." He had thought some macroeconomic regulation of wages through incomes policy could work, but according to Lerner (1977, 407), the policy was unimaginatively applied, flawed, failed, and finally abandoned. It could not work because it neglected microeconomic or market forces.

This was similar to the position Minsky had taken by 1968: relying on aggregate demand policy alone to achieve full employment would fail because of the inflationary effects, which in turn would lead to a stop-go-stop policy. Like Lerner, Minsky argued that this version of Keynes had

[19] Note that here and above, Lerner associates Keynes's *General Theory* with a policy revolution, not a theoretical revolution.

ignored the microeconomic effects of policies implemented to support effective demand.[20] However in light of these developments, Minsky turned to directed spending—in particular to a proposal for a New Deal–style employer of last resort program.

In his 1977 article, Lerner instead embraces a version of Monetarism. He admits that his functional finance approach had been too focused on the macro level and had neglected micro or market analysis and the possibility of stagflation.[21] He thus proposes a "peace settlement" between Keynesians and Monetarists and between sound and functional finance that would consist of three main policy components:

> 1. The government issues wage-increase permits that would generate the desired rate of wage inflation.
> 2. The central bank sets the rate of money growth equal to real output (this would put control of aggregate demand in the hands of the central bank).[22]
> 3. Divorce the government budget from the total level of aggregate demand (in other words, eliminate attempts to use fiscal policy in a countercyclical manner), and focus fiscal policy on social efficiency, internalizing externalities, and alleviating poverty.

Following his new strategy, any increase of government spending should be offset by an increase of taxes to avoid interfering with the central bank's responsibility for regulating aggregate demand through its control of money emission. This amounts to a complete rejection of his first principle of functional finance, and it modifies the second principle (interpreted to be setting interest rates through monetary policy) to put aggregate demand management entirely under the control of the central bank. This would be accomplished through a Friedman-type money growth rule, while divorcing fiscal policy from "money creation." Note that his proposed "peace" with sound finance was not due to any fear of government insolvency or default, but rather to fear of

[20] It also ignores Keynes's discussion of pricing, elasticity of supply, and inflation in chapter 21 of the *General Theory*.
[21] Again, Keynes was not guilty of this—as it is thoroughly discussed in chapter 21.
[22] Surprisingly, the modern "positive money" movement proposes to do the same thing. See Nersisyan and Wray (2016, 2017).

the inflationary impacts of deficit spending. Still, Lerner returns full circle to Friedman's proposal, albeit with all power in the hands of the central bank.

There is a very interesting exchange between Lerner and Minsky related to their different perspectives on Keynes's revolution and this evolution of their thinking on functional finance. Minsky produced his first major book, *John Maynard Keynes*, in 1975, which provided a detailed exposition of Minsky's views on the importance of the *General Theory*. While best known for pushing Minsky's famous model of the investment decision and the financial instability hypothesis, the book also contrasted the mainstream neoclassical synthesis interpretation of Keynes with what has come to be known as the "fundamentalist" Post Keynesian version (embraced by Minsky). On March 4, 1976, Lerner mailed the manuscript of his review of *John Maynard Keynes* to Minsky along with a letter, to which Minsky responded on March 9.[23]

Lerner prefaced his letter with the sentence "I am not sure you will like it"; to which Minsky responded, "you are right when you wrote that I might not like it. I feel you missed the serious thrust of the manuscript." The two letters, along with the review itself, demonstrate a deep theoretical divide between the two friends. Lerner sees Keynes's *General Theory* as a policy tract (as discussed above), while Minsky insists it concerns "mainly a theory of investment within a capitalist financial system and that because of the speculative nature of investment, an economy with our type of financial institutions is intractably cyclical." He goes on to argue that the postwar "Keynesian" policies

[23] The letters and the draft review are in the Minsky Archives at the Levy Institute; the review was published in *Challenge* (Lerner 1976).

have not been able to prevent the economy from going through bouts of accelerating inflation and threats of financial crises and deep depressions. One reason why we have had such oscillations with increasing amplitudes over the past decade is that the theory on which policy is based views the destabilizing forces as exogenous, so that if only we got fiscal policy right (Heller) or money supply growth right (Friedman) then the economy will be fine tuned. In my view the basic destabilizing forces are endogenous to the economy with the financial relations we have. In order to do better, policy has to be based upon an understanding of what the endogenous destabilizing forces are. In my little book I argue that the essential destabilizing forces are in the financial relations that are characteristic of capitalism. To paraphrase a remark you once made to me, within a capitalist financial set up, stability is destabilizing.

Of course, this is fairly standard Minsky, but it contrasts sharply with Lerner's views of Keynes as expressed in the review of *John Maynard Keynes* and as well with his own 1976 policy recommendations discussed above. Indeed, the review of Minsky's *John Maynard Keynes* book repeats the argument from Lerner's 1976 article that Keynes's dispute with the "classicals" (the neoclassical model) was over practical matters, not theory. If sufficient flexibility of wages and prices could be achieved, the "classical" model's results would hold. According to Lerner if "ideal flexibility" held, then both "Keynes and the Keynesians would agree that it would make the classical (or neo-classical) model work; only they both deny that it could ever be brought about."[24] Lerner goes on to fault Minsky's book for seeing "Keynes' essential contribution to be finding that the capitalist economy 'is inherently flawed, because it is intractably cyclical'" because "unfortunately Minsky's 'intractable uncertainty' in negating neo-classical automatic full employment would also frustrate Keynes' full employment policy measures." Importantly, it would also negate Lerner's policy recommendation. Lerner goes on to proclaim:

While admiring Minsky's virtuosity in expounding the ramifications of economic instability, one cannot help feeling that much of it comes from his starting with "a cyclical perspective." This is no less likely than the "full employment perspective" of the classical economists, or indeed the "economic policy perspective" of Keynes, to lead one to exaggerate what one is looking for. This reviewer is not convinced that even with no progress toward these admirable social goals, an intelligent monetary and fiscal policy could not prevent the normal myriad disturbances throughout the economy from developing into *general* expansions or contractions large enough to start up Minsky's intractable oscillations.

[24] This is from Lerner's draft review; he goes on to quote Keynes in support, from the well-known passage of the *General Theory* in which Keynes says the problem is not "logical flaws" but rather in "tacit assumptions" that "are seldom or never satisfied." Lerner takes this at face value, rather than as a rhetorical strategy.

Thus, while he rejected his early formulation of functional finance, he did not reject his notion of using a steering wheel to keep the economy on the road. Even if "stability is destabilizing," for Lerner, proper policy can constrain and overcome the instability. The problem is that he had ignored "micro" or market-level effects to aggregate demand pump-priming given the absence of "ideal" flexibility. Thus, he adjusted the policy recommendations to deal with the inflation dynamics.

There are other interesting tidbits in the letter, although they are less important. In the second paragraph of the letter, Lerner says, "As you may know I have always been extremely critical of 'Post-Keynesianism.'" He goes on to criticize the Kalecki profits equation as well as Post Keynesian distribution theory as "truisms" based on identities than can be "read backwards without losing any of their validity." Minsky protests that he did not use the "Kalecki framework" in the *John Maynard Keynes* book (he only adopted the Kalecki profits equation after he had finished the book "two–three years ago"), but he goes on to defend its use in "my present post-Keynes book work" as "a set of identifies [sic] and definitions which are significant only as they isolate important behavioral relations."

Minsky would go on to use that framework to develop his own "macro markup" approach to prices at the aggregate level. Further, as discussed above, Minsky had used Kaldor's distribution theory in his explanation for the euphoric processes of the boom phase. In later work, Minsky would attribute the inflationary bias in the economy to growth of the markup; in the letter he referred to use of the Kalecki framework "to examine how the investment that is financed forces a 'surplus' out of the economy. The money wage reaction can be interpreted as a degree of acceptance of the decline in consumption standards that 'too large' a surplus would force." In other words, as investment rises as a share of output, income is shifted toward capital; if workers fight to retain their wage share, money wages will rise and contribute to inflation. Again, this does not require full employment (it only requires bargaining power of at least a portion of the workforce) and so is not necessarily a Phillips curve problem.

In the context of the low inflationary environment we have lived with over the past quarter century, the focus of both Minsky and Lerner on the links among aggregate demand, budget

deficits, and inflation now seems excessive. There are significant deflationary forces around the globe, among which we could include the emergence of China and India as major suppliers to the global economy, austerity policy imposed throughout the European Monetary Union area, lingering effects of the Global Financial Crisis (GFC), and cheap energy. It is thus difficult to believe that a general boost to aggregate demand today would set off a price spiral. However, this does not mean that Lerner and Minsky were wrong to point their fingers at a flaw in the mainstream Keynesian interpretation of Keynes: deficits *can* be too big, and the composition of government spending *does* matter. The functional finance proposition if there is unemployment that government needs to spend more must be tempered by analysis of the inflationary impact by type of spending undertaken.

The question is whether it is Lerner or Minsky who has provided the better analysis of the problems and who has proposed the better solution. Should heterodox Keynesians embrace Lerner's steering wheel and version of Monetarism, or should they follow Minsky?

THE VIDEO: DID MINSKY REPUDIATE HIS EARLY POSITIONS ON DEFICITS?

As mentioned earlier, a video of a talk by Minsky in 1991 recently surfaced that appears to show he had reversed his earlier support for the functional finance position, and seems to adopt a deficit dove—or even hawk—position. There are two particular points in the video that bear scrutiny.

The first comes at approximately the 45-minute mark, where he is discussing New Deal programs that created productive capacity and contrasting those to the (then-current) situation in which most government spending was on transfer payments, military, and interest on debt—items that are largely not resource creating. With spending in excess of tax revenues, chronic government deficits had increased government debt (even as private sector debt had grown on trend).

This had generated a problem, according to Minsky: American debt (public and private) was higher than ever before, so we needed the government's steering wheel to ensure that aggregate demand and income remain high enough to service it. Until 1980, the government's debt was declining as a percent of GDP; however, Reagan's deficit of 5 percent of GDP, as well as the creation of a bias toward continuing deficit spending even with recovery, has caused a deterioration of the *quality* of government debt in international markets. While this would seem to indicate rising risk of default by government, Minsky says there is no question of affording the required payments to service the debt.

The second relevant part of the talk comes at approximately the 65-minute mark where he discusses taxes. While government can always make payments on the debt, he worries that we lack the will to raise taxes to *validate* it. He asserts that government must validate its debt *with taxes*, and goes on to repeat the common joke that: "Taxes are the price you pay for civilization." But he frets that we were not in the position we were in in the 1960s—now we had competitors: the yen and the mark. Further, we increased the proportion of national income coming from interest, but in large part assets were held abroad, by higher-income people, and by the finance, insurance, and real estate (FIRE) sector. In other words, interest payments were going to sinkholes of leakages, where they would not fuel demand for (or supply of) domestic output.

He warns that the US was in danger of becoming Argentina: spending without taxes, which means printing money, which could lead to inflation. The alternative to taxation is the inflation tax.

These are somewhat surprising given his earlier work. However, close inspection of his writing after the experiment in Reaganomics reveals that he had been making similar statements since 1986.[25] In a 1986 paper (Minsky 1986a) he warned that the tax reduction of 1981 had compromised "the revenue system. As a result of its programmed tax cuts, the deficit remained

[25] However, in 1981, Minsky (1981) wrote: "In the United States state and local governments issue debts on the basis of their own credit, and their ability to fulfill their payment commitments depends upon their ability to collect taxes or their receipt of transfers from the Federal Government or agencies of the Federal Government"—which seems to recognize the difference between the currency "users" (state and local government) and currency issuers (the national government).

at depression levels even as the expansion took hold." Because of the deficits of 1981–85, the total national debt increased by about $1,000 billion: "This means that the revenues needed for any given spending program and any given desired deficit is now some $100 billions greater than would have been needed when Reagan took office" (Minsky 1986a).

What did he mean by that? He meant that if the budget needed to be tightened (i.e., to fight a runaway boom), it would have to be tighter (by approximately $100 billion) to remove the stimulus of interest payments on outstanding debt run-up due to the chronic Reagan deficits. While it superficially might look like Minsky was worried that revenues would be insufficient to "finance" spending, closer inspection reveals that he was worried about the difficulty of producing a sufficiently tight budget when one is needed.

We can find similar statements in his 1986 book, *Stabilizing an Unstable Economy*. There he argues that "government can run a deficit without suffering a deterioration of its creditworthiness if there is a tax and spending regime in place that would yield a favorable cash flow (a surplus) under reasonable and attainable circumstances" (Minsky 1986b, 302). The final part of that sentence is the key—what is important is *not* the achievement of a balanced or surplus budget, but the ability to do so when *needed*. In the book, he thought that should occur when unemployment falls to about 6 percent (Minsky 1986b, 304).

However, it is important to recognize that he concluded his discussion by predicting "there will either be a run from the dollar or a substantial debt repudiation through inflation" (Minsky 1986b, 303). In other words, the problem is *not* that government will run out of money or default in nominal terms, but that there could be pressure on the dollar exchange rate and/or pressure on the Fed to raise interest rates *because of the inflation*. Pressure on the dollar can generate a run out of the dollar, while higher rates will cause capital losses on longer-term bonds and inflation would reduce the "real" value of the bonds. Any of these outcomes would reduce the "quality" of the government's debts from the perspectives of holders, although none of them is a default on contractual commitments. When he worries about government's "creditworthiness" (as in the quote above), it is not that there is a prospect of default on its *nominal* promise to pay.

Government can and will make promised payments. The problem is that inflation, exchange rate depreciation, or higher interest rates will reduce the purchasing power of those payments.

MINSKY'S VIEWS FROM THE 1990s

When Minsky retired from Washington University in 1990, he moved on to the Levy Economics Institute. As mentioned, he began to rework his 1986 book, but then started a new book manuscript that was based on working papers he wrote for the Levy Institute between 1991–93. While he left behind a half-dozen chapters, he did not provide a table of contents nor an introductory chapter. He seems to have set aside the manuscript by 1994, although he continued to produce working papers until he died in 1996 (he was very ill in his final year, preventing him from organizing his papers). He returned again to issues surrounding the government budget balance in several of the manuscript chapters and other working papers from that period.

A theme running through many of these papers is the lingering effects of Reagan and Thatcher, who had attempted to overthrow the Big Government interventionist capitalisms that they inherited. According to a 1994 paper by Minsky (2013, 165), Reaganomics caused:

> (a) the destruction of the revenue system;
> (b) the emergence of an economy that was structurally dependent upon the government's deficit financing of a budget that was mainly devoted to transfer payments (including interest on the government's debt) and military spending;
> (c) a high-consumption economy due to the increases in the inequality of income distribution and in entitlements;
> (d) the fall in the real wage of a large portion of the labor force;
> (e) a fragile financial system; and
> (f) a rising tide of un- and underemployment.

After what Minsky (2013, 165–66) labeled a "spurious prosperity" (the so-called "jobless recovery" of President Bush in the early 1990s),

> largely based upon a) an unproductive government deficit, b) an enormous expansion of the financial services industry, and c) financing schemes that left the country with an excess supply of office structures, highly indebted firms, and nonperforming assets, the economy of the United States has virtually stagnated for some five years. Furthermore, government spending became even more inefficient as an instrument to create resources, because the high interest rates that were a long-lasting legacy of the experiment in practical monetarism of the Volcker era and the great expansion of the government debt resulted in a huge item in the budget called "interest on the debt."

Note here that he explicitly links the high interest rate to Volcker's attempt to fight inflation, which then with a large deficit grows the outstanding debt that fuels growth of economically inefficient debt service. In his paper, Minsky (2013, 166) concluded that "the Reagan–Thatcher–Bush experience is a second failure of the laissez-faire model. It showed that the laissez-faire model of capitalism cannot meet the performance standards established in the 1950s and 1960s."

In another paper, Minsky (1992, 28) tackled the impact of the Reagan years on the international position of the United States:

> The Reagan era saw a vast increase in the outstanding government debt as well as a fundamental shift in the international indebtedness position of the United States. As a result the United States enters the 1990's with its fiscal independence greatly reduced. In this situation monetary and fiscal interventions to sustain United States profit flows in a recession, or in the aftermath of a financial trauma, may not be effective unless the trading partners adjust their international posture.

Here, again, Minsky warned that the consequence of the run-up of government debt includes a commitment to pay interest, but now his focus is on the inefficiency of interest spending in terms of promoting domestic growth as profits leak out of the economy (following the Kalecki equation, if net exports are negative, domestic profits are reduced).[26] This is in part due to foreign holding of much of the debt—interest payments simply leak out of the US economy.

[26] In a draft chapter for the book manuscript Minsky was preparing in the early 1990s, he expanded on the theme that the transformation of the US from international creditor to international debtor has implications for fiscal policy. (There are several versions of this chapter; these quotes and page numbers come from the manuscript designated by Minsky as "file name Turkey 1 disc book Reconstituting The Financial Structure: The United States worked over for book. Hyman P. Minsky Prospective Chapter # restructuring May 13, 1992," available in the Minsky archives at the Levy Institute; see http://digitalcommons.bard.edu/hm_archive/18.)

In the same paper (Minsky 1992, 43), he argued that a government unable to raise taxes sufficiently to cover its spending on current operations plus interest on debt is in a Ponzi position. Unlike a household or firm, however, government faces no default risk even if it is using Ponzi finance (that is, "printing money" to pay interest). The danger is inflation, currency depreciation, and higher interest rates. Since the government's debt remains free of default risk, it will still pay the lowest interest rates in the economy—so if it pays higher rates, the private sector will also pay higher rates. Thus, he argues, it is imperative that a key element of reform is to establish "a fiscal regime in which government debt is validated by government tax receipts" (Minsky 1992, 43). Again, he uses the term "validation," by which he should be understood to mean that the taxes are not necessary to "pay for" government spending (including interest) but rather to avoid the danger of the "inflation tax."

Even as he remains worried about inflation during this period, he was now also concerned with long-term stagnation of the economy. A major theme of his book manuscript (as well as the series of conferences he began at the Levy Institute) concerned policy to promote the "capital development of the economy," and he insisted that the tilt of the budget toward transfers and interest payments was inconsistent with that goal. In the various working papers that he was reworking for the draft manuscript, Minsky formulated an agenda for reform to promote capital development that included the following recommendations:[27]

- "The spending side requires a large overhaul. The Keynes phrase 'the socialization of investment' means that the government spending program needs to finance a significant part of the resource creation of the economy."

- "Income from work, where if necessary the work is provided by government, should replace much of today's transfer payment schemes."

[27] These particular quotes come from a prospective chapter of the draft book: *Reconstituting the Financial Structure: the United States* (May 13, 1992), pages 165–66. This is based on several versions of the "Reconstituting the Financial Structure" manuscripts (not all of which are currently available) that have been synthesized and edited by the Levy Institute for possible future publication as a book.

- "Such a package of reforms, where the government debt, though growing, is always in principle, i.e., when the economy is at a close approximation to full employment, being validated by revenues."

- "'Ponzi' financing by the government needs to come to a halt. Even though the government, unlike private institutions may not exhaust its balance sheet equity, Ponzi financing by government means that an inflation tax will in time contain the real size of the government debt. The threat of an inflation tax means that private long term debt financing needs to be at rates that compensate for the expected erosion of the purchasing power of the principle due in the future. This inflation premium in interest rates is in fact an amortization of the principle."

These constitute a statement of Minsky's alternative construction of functional finance. First, it matters *what* government spends on, and he insisted that the budget needs to be focused on investment and job creation, while reducing transfers (including interest). Second, the fiscal *stance* matters. The budgetary outcome should move toward a surplus as the economy approaches full employment. The problem is not that the government will go bankrupt, but that if government continues to run deficits even as it nears full employment, the danger of fueling inflation, as well as financial instability, rises. To preserve the purchasing power of bond holders, longer-term interest rates would need to rise.[28] That could create a vicious cycle of bigger deficits, more inflation, and then higher interest rates to compensate for the "inflation tax."

MINSKY'S INSTITUTIONALIST INTERPRETATION OF KEYNES AND IMPLICATIONS FOR FUNCTIONAL FINANCE

Minsky's training under Simons and Paul Douglas at Chicago made it relatively easy for him to integrate Keynes's economics and Institutional economics. When he moved on to Harvard after World War II, he rejected Hansen's version of Keynes—for the same reason that many

[28] I would phrase this somewhat differently: inflation would likely push the central bank to raise its target rate, which would then be likely to feed through into higher long-term interest rates.

Institutionalists at first recoiled from the mechanistic, mathematical exposition of Keynesian economics. He received the Veblen-Commons award in 1996—the highest honor awarded by the American Institutionalist group, the Association for Evolutionary Economics (AFEE)—and gave one of his last presentations (and papers) at the annual conference that year. His talk was titled "Uncertainty and the Institutional Structure of Capitalist Economies" (Minsky 1996a). He began with a quote from Keynes's letter to John R. Commons (one of the founders of the Institutionalist school of economics): "There seems to me to be no other economist with whose general way of thinking I feel myself in such general accord," which Minsky said: "illustrates the affinity between the economics of Keynes and the American Institutionalist, [an] affinity… as relevant now as it was when Keynes wrote to Commons: The current crisis of performance and confidence in the rich capitalist countries make it necessary, once again to think about the institutional prerequisites for successful capitalism."

However, like the Institutionalist J. Fagg Foster (as well as Dudley Dillard), Minsky was able to distinguish between Keynes and the Keynesians (see Wray 2016). It is ironic that both Keynes and Minsky studied math as undergrads but refused to mathematize economics. While the *General Theory* uses the language of math (talking of functions and dependent and independent variables, for example), Keynes refused to specify functional relations on the argument that it would not be consistent with his goal—which was to provide a *general* theory. Specific mathematical functions cannot be general (see Backhouse 2010).

As the Institutionalist Foster (1981a) put it, the generality makes Keynes's theory "open-ended in the sense in which that quality is associated with scientific theory as such."[29] Keynes's theory is "subject to evidential verification and correction…. Its conclusions are not simply the validification of its assumptions." The "independent variables within the system of the analysis are in fact independently variable…. The theory is… subject to indefinite development." By contrast, according to Foster, neoclassical theory is "tautological"—closed and hence

[29] Specifically, Foster pointed to Keynes's refusal to mathematically specify the three independent behavioral relations: Keynes's exposition was dynamic, general, and "open"—and that "[g]enerality is attained by identifying income as the instantaneous concomitant of any particular combination of the whole range of possible relationships between the three independent variables. Since the theory is equally applicable to any, it is applicable to all patterns of relationships between the propensity to consume, the marginal efficiency of capital, and the rate of interest." See also a related 1966 paper, published as Foster (1981b).

unscientific. The obsession with simple mathematical models—with assumptions that validate the foregone conclusions—invalidates any pretense of scientific method.

These are precisely the points that Minsky (1991) stressed in his talk in the video, as well as in his AFEE presentation:

> "Keynes always stressed the importance of 'vigilant observation' for successful theory-construction, theory being nothing more, in this view, than a stylized representation of the dominant tendencies of the time, derived from reflection on the salient facts" [Skidelsky 1992, 221]. In this view relevant theory is not a compendium of propositions derived from axioms assumed to be universally true: economic theory is not a subdivision of mathematics.
>
> Relevant theory is the result of the exercise of imagination and logical powers on observations that are due to experience: it yields propositions about the operation of an actual economy. The current methodological fashion, where artificial economies are first specified, then simulated and finally deemed satisfactory (unsatisfactory) if it can be said that the general characteristics of simulation are similar (dissimilar) to the general characteristics of a time series of constructs based upon observations (such as GNP [gross national product]) would most certainly have been anathema to both Keynes and the Institutionalist of his day. (Minsky 1996a)

Minsky embraced Keynes's *General Theory*, but he pursued the development of that theory by infusing it with the relevant institutional facts of our times. He developed a theory of modern financial capitalism that allows us to understand its faults and helps us to try to reform it. As he always argued, theory must be institutionally specific, and his theory concerned the modern, developed, capitalist economy with long-lived and expensive capital equipment. That economy is complex, nonlinear, and time dependent; it experiences periods of instability due to its own internal dynamics rather than because of external shocks. While apt institutions can constrain the instability, they cannot defeat it. Stability is destabilizing.

Postwar "Keynesians" pushed the notion of pump-priming to generate growth. As Minsky (1971) put it, with the exception of defense spending, "the preferred instrument for generating fiscal expansion has been some type of tax cut or loophole, i.e., the shifting of resources to private consumption and investment." These "Keynesian" policies to promote full employment relied on a favorable business environment to stimulate investment spending, which was supposed to induce consumption through the spending multiplier. Various tax incentives,

including accelerated depreciation and investment tax credits, were a common feature of the postwar investment strategy. Policymakers also tried to increase the certainty of capital income, through the use of government contracts with guaranteed profits, such as those granted to defense, transportation, and housing industries.

However, Minsky (1973) had argued earlier that there are four problems with the high investment strategy. First, tax incentives to shift income to capital exacerbate inequality between ordinary workers and those who have income to invest and who reap the rewards when policy promotes investment. Second, high capital incomes lead to opulent consumption by the rich and emulative consumption by the less affluent, creating the potential for demand-pull inflation (not to mention debt-financed consumption by those with lower income who try to "keep up with the Joneses"). Third, government contracts granted to sophisticated high-tech industries generate demand for skilled, high-wage labor, thereby exacerbating income inequality within the labor force. Finally, by targeting the size and surety of capital income, tax-cut programs would increase business confidence and debt financing, and borrowers' margins of safety would decline. Thus, a private investment strategy can lead to a debt-financed investment boom, thereby undermining the stability of the financial system.

As mentioned above, Minsky (1963) had earlier argued that an expansion led by the private sector tends to increase private indebtedness and financial fragility as debt-service payments rise relative to prospective business revenues. In contrast, an expansion led by public sector spending could actually enhance stability by providing safe assets (government bonds issued as the budget moved to deficit).

In sum, the postwar era was characterized by a preference for private investment strategies to promote private spending and economic growth. Even as the War on Poverty got underway, the Johnson administration demonstrated its preference for private sector spending strategies, passing tax cuts in 1964 and again in 1965 and 1966. By encouraging private sector spending (especially investment), policymakers aimed to stimulate growth in total income. Even though the Kennedy and Johnson administrations succeeded in generating postwar growth that temporarily reduced unemployment rates in the mid-1960s (often called the "golden age" of the

US economy), policymakers failed to understand that "policy weapons which are sufficient to move an economy from slack to sustained full employment are not sufficient to sustain full employment" (Minsky 1971, 28). Though demand stimulus might get the economy near to full employment, the position would be unsustainable because it would encourage risky behavior leading to financial fragility and inflation.

According to Minsky, this "Keynesian" approach would have to resort to a "stop-go" policy that would stimulate investment and thus growth until inflation picked up, then would use policy to slow growth to fight inflation. Hence, although unemployment would fall in the boom, it would return in the slump. Meanwhile, financial fragility would grow on trend and repeated financial crises would stress the system. If government intervened to ameliorate a crisis, that would simply encourage even more risk taking. In other words, such a policy strategy would be biased toward the promotion of inflation as well as financial instability.

Minsky's own theory of inflation was developed in his 1986 book, as well as in a series of working papers he was modifying for a new book. Briefly, Minsky accepted Keynes's *General Theory* argument that the impacts of increased demand depend on where it is directed. Keynes had argued that the elasticity of output to an increase of demand varies across sectors, from the extreme of zero (only prices rises) to one (only output rises). To that, Minsky adds a variant of the Kalecki profits equation: at the aggregate level, prices must be marked-up over the wage bill in the consumption sector to guarantee a surplus from which gross profits come.

Hence, all else equal, higher investment, government spending net of taxes, net exports, or consumption out of profits must increase the marked-up prices; higher saving out of wages reduces the markup. If investment, the government's deficit, the current account surplus, or consumption out of profits rises through time, this engenders inflationary pressure (rising saving out of wages reduces the pressure). Inflationary pressure is mitigated by rising labor productivity. In Minsky's view, the high and rising inflation of the late 1960s through the 1970s was due to a combination of these factors: policies that promoted higher investment as well as more government spending in unproductive sectors (military defense, Welfare, and Social Security), both of which would increase the aggregate markup and at the same time would

increase demand in sectors with low elasticity of output (the more-advanced sectors with high unionization and pricing power).[30] Note that the inflationary impacts of government spending thus depend on various factors, including where the spending is directed as well as the institutional structure of the sectors enjoying higher demand. This is consistent with both Keynes's approach as well as the Institutional approach, and the relationships would change over time as well as across economies.

Minsky modified his early beliefs about functional finance because the economy had evolved. The impacts of the budget stance would depend on the complex nonlinear dynamics of the economy. By the late 1960s, those dynamics included growing financial fragility as well as significant market power of the big corporations and labor unions. Large deficits would generate high profits, making the economy susceptible to a runaway expansion; at the same time, the pattern of government spending—largely directed toward the more-advanced sectors as well as toward transfer payments—would produce an inflationary bias. Given "Big Government" and "Big Bank" protection against downsized risks, wages and prices in those advanced sectors could only go up (as Lerner also came to realize).

Minsky's preferred solution was not to turn to a modified Monetarism, but rather to combine adjustments to the composition of government spending with wage and price constraints on those advanced sectors that are responsible for inflationary pressures. An important component of his policy proposals was to reorient government spending toward a targeted jobs program, raising wages at the bottom (where wages would rise faster than average productivity) and constraining wages at the top (which would rise slower than average productivity). Of course, he also advocated various reforms to constrain rising fragility while continually warning that financial reform could never be finished—as the financial structure evolved, so too must the regulation and supervision.

While Lerner understood that the simple version of functional finance ignored micro-level inflationary pressures, he rejected the macro implications of the Kalecki equation (which he saw as an identity that could be read either way), as well as the importance of financial instability (he

[30] All of this is discussed in detail in Minsky (1982).

thought that proper macro policy could deal with the negative consequences). Lerner would constrain inflation through a combination of control over money creation (in the hands of the Fed), as well as issuing a limited number of marketed inflation permits. It remained an essentially macro-level policy approach.

CONCLUSION

Lerner's rejection of his earlier views led him to argue that demand management should be left to monetary policy and placed under the control of the central bank. He argued that any increased government spending needs to be offset by a reduction of spending elsewhere—this could be reduction of some other government spending, but he advocated instead a tax increase that would reduce private spending. Ironically, Lerner replaced functional finance with a sound, budget-balanced, finance approach—not because government would run out of money, but because he worried about the inflationary impact. He goes even further than the deficit dove position, for he no longer would have the deficit expand even in recession—on the argument that monetary policy alone could steer the economy.

This is somewhat in line with what Minsky was arguing—who also feared that fiscal policy had become too biased toward deficits and that debt that could fuel inflation because the spending on transfers and interest payments are "inefficient"—although Minsky's views were better grounded in institutional reality, and he never adopted the Monetarist line that the Fed should be responsible for "demand management" through control of the money supply.

Why did both of them abandon the simple version of functional finance? I think that it is in part because those who lived through the accelerating inflation of the 1960s to the 1980s were traumatized by the experience. Lerner replaced functional finance with a combination of a certain kind of wage and price controls (marketed "permits" allowing wage or price hikes) plus Monetarism. Both of these rely on getting the "macro" right (the right amount of price and wage hikes and the right amount of new money injected) but then rely on market forces to get the "micro" right.

Minsky instead argued for targeted rather than general government spending and, especially, for use of an employer of last resort program to achieve full employment without inflation while also promoting greater wage and income equality. He advocated additional government-led policy (financial regulation and supervision, socialization of investment) rather than trusting the invisible hand. For Minsky, the institutional structure of the economy determined the setting within which individuals function. Minsky always argued that to be effective, policy must change behavior—which requires effective adjustments to that institutional setting. It makes no sense to simply ratchet up macroeconomic structure without changing the system's institutional structure if the goal is to change the economic outcome. Lerner's proposal (as well as that of traditional Keynesians and Monetarists) would leave the flawed institutional structure in place and *hope* for a different outcome. That would conform to the definition of insanity often (apparently wrongly) attributed to Einstein: "insanity is doing the same thing over and over again and expecting different results." As Minsky (1996b) argued:

> I accept Henry Simon's view that the aim of economic policy is not narrowly economic. The aim of policy is to assure that the economic prerequisites for sustaining the civil and civilized standards of an open liberal society exists. If amplified, uncertainty and extremes in income maldistribution and social inequality attenuate the economic underpinnings of democracy, then the market behavior that creates these conditions have to be constrained. If it is necessary to give up a bit on market efficiency or aggregate income, in order to contain democracy threatening uncertainty, then, so be it. In particular, there is a need to supplement private incomes with socially provided incomes, so that civility and civic responsibility are promoted.

Unlike Lerner, Minsky did not advocate raising taxes in line with any increased government spending. Indeed, he continued to advocate countercyclical swings of the budget to help constrain swings of aggregate demand. Thus, he did not abandon a stabilizing role for fiscal policy. However, the key word is "stabilizing"—he feared that the budget could become too biased toward deficits to serve its stabilizing role. He also worried that biasing the budget toward transfers (including interest payments) would not only reduce the ability of the budget to perform its stabilizing role, but would also bias the budget toward inefficient kinds of spending.

Particularly after the Reagan years, he worried about the capital development of the economy—neither government spending nor the rapid growth of the private financial sector were promoting long-term investments to increase productive capacity. His fears were compounded by the turn of

the US foreign account toward chronic and rising trade deficits. Thus, he feared not only inflation but also possible depreciation of the dollar. While that fear, too, may have been overwrought (given the nearly insatiable demand for dollar reserves after the Asian Tiger crisis), Minsky's concern with the capital development of the economy and the potential for secular stagnation is more relevant than ever.

While Minsky (1965, 183) had long cautioned that "irrational prejudices… against spending, deficits and easy money" must be ignored, he recognized that legitimate barriers must be taken into account: "Economic forces can frustrate programs if either the policy objective is inconsistent with such forces or if the program is so poorly conceived that it quite unnecessarily runs afoul of a barrier, even though the objective is, in principle, attainable" (Minsky 2013). One such frustrating force is inflation. "The policy problem," he argued, is to achieve and sustain tight full employment "without an inflationary rise in prices and wages" (Minsky 1972). But Minsky's (1965) antipoverty campaign called for "a rapid increase of those wages that are close to or below the poverty line." He recognized that there might be an inflationary bias in a policy of this sort, particularly if the productivity (output per hour) of the low-wage workers failed to keep pace with their wage increases.

In order to keep the overall price level fairly stable, prices of other goods and services would have to be constrained. Minsky (1965, 183) suggested that in the high-wage industries, wages "would have to rise by less than the increases in the productivity of their workers." To prevent firms from simply increasing their profits, it was necessary to ensure that "management in these often oligopolistic industries would have to pass this decline in unit costs on to their customers" (Minsky 1965, 183). Thus, he argued that "effective profit and price constraints would have to accompany tight full employment" (Minsky 1972). If inflationary pressures were not contained, Minsky feared that the "political popularity of full employment" would be undermined (Minksy nd, 55).

However, the inflation constraint is much less of a concern in today's global economy; indeed, Minsky's and Lerner's worry about inflation seems almost quaint. First, deflationary pressures around the globe are substantial as many nations keep domestic demand depressed in order to

run trade surpluses, looking to the United States to provide demand for the world's "excess" output. Most importantly, many of the global exporters have very low wages, which keeps global prices down. This means that US firms face substantial price competition so that even relatively rapid growth—such as that experienced in the Clinton expansion and again in the years before the GFC—does not produce significant inflationary pressures.

Second, technological advances and the removal of trade restrictions have increased wage competition from abroad, reducing the likelihood that low unemployment could generate a wage-price spiral. Indeed, since the mid-1970s, the US problem has been that average wages have grown much more slowly than labor productivity—in part because of globalization of production. To the extent that such competitive pressures keep wage growth in line with productivity growth, price pressures will remain moderate. Although both Minsky and Lerner were affected very strongly by the high inflation that began in the late 1960s, they might today want to temper their views. We must view some of their repudiation of the strong version of functional finance in the context of that high-inflation period.

The final institutional barrier discussed by Minsky concerns the exchange rate regime. Most of Minsky's papers on poverty policy were written in the 1960s or early 1970s, when US policy was constrained by an international monetary system with fixed exchange rates. Because the integrity of the Bretton Woods System rested on dollar convertibility to gold, policymakers had to restrict their fiscal and monetary operations to those that would not adversely affect the balance of payments. In Minsky's (1965, 192–93) words,

> To a considerable extent, ever since 1958 the needs of the dollar standard have acted as a constraint upon domestic income. We have not had tight labor markets because of the peculiar bind that the dollar is in internationally. It is apparently appropriate to allude to William Jennings Bryan by saying that, in part, the cross that the American poor bear is made of gold…. The solution to the gold standard barrier is simple: get rid of the gold standard.

Today, the dollar is a floating currency so that policy is not constrained by the need to protect foreign currency and gold reserves. Thus, the primary barrier to attaining and sustaining tight full employment is political will—not the exchange rate regime. This is not to say that America's current account balance poses no political challenges—most policymakers as well as most

economists proclaim themselves in favor of policies that would reduce the current account deficit. Minsky did not write much on this issue, although what he did write took a nuanced approach—arguing that if the dollar is to remain an international reserve currency, dollars must be supplied to the world. There are three main choices here: they can be supplied through international lending by the US, through American purchases of foreign assets, or through US current account deficits.

From the viewpoint of financial stability, US spending is better than lending. However, the current account deficit is problematic to the extent that US consumers are running up debt to finance their consumption. To be sure, they are burdened by debt whether that is held domestically or externally. As Minsky argued in the early 1960s, private-led expansions are risky and as we have learned (in the run-up to the GFC) that is true whether they are led by business or by households. I think that Minsky would still argue that it is better to embark on a fiscal expansion, with government spending targeted to job creation and raising wages at the bottom.

In any event, we see that both Lerner and Minsky abandoned a simple interpretation of functional finance. Lerner's rejection went further than Minsky's, as he embraced a version of Monetarism that puts responsibility for macroeconomic policy in the hands of the central bank. Minsky, instead, remained committed to the view that it is the responsibility of fiscal policy to ensure adequate aggregate demand and to pursue full employment. However, he recommended targeted spending as well as policy to constrain price and financial stability. It is true that his recommendation is much vaguer than Lerner's and has more moving parts. This reflects, I think, his view that the modern capitalist system is highly complex, nonlinear, and dynamic so that policymakers must have much less confidence in their ability to control it. As he always admitted, his financial instability view is ultimately pessimistic. It is clear from Lerner's letter and review of *John Maynard Keynes* that he did not share this view. However, the 40 years that followed their exchange seems to validate Minsky's view that capitalism is fundamentally flawed.

REFERENCES

Backhouse, Roger E. 2010. "An abstruse and mathematical argument: The use of mathematical reasoning in the *General Theory*." In Bradley W. Bateman, Toshiaki Hirai, and Maria Cristina Marcuzzo (eds.), *The Return to Keynes*,. Cambridge, MA: Belknap Press of Harvard University Press.

Forstater, Mathew. 1998. "Toward a New Instrumental Macroeconomics: Abba Lerner and Adolph Lowe on Economic Method, Theory, History and Policy." Levy Institute Working Paper No. 254. Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.

Foster, J. Fagg. 1981a. "Understandings and Misunderstandings of Keynesian Economics." *Journal of Economic Issues* XV(4): 949–57.

———. 1981b. "The Reality of the Present and the Challenge of the Future." *Journal of Economic Issues* XV(4): 963–68.

Friedman, Milton. 1948. "A Monetary and Fiscal Framework for Economic Stability." *American Economic Review* 38(June): 245–64.

Lerner, Abba P. 1941. "The Economic Steering Wheel: The Story of the People's New Clothes." *University Review* (University of Kansas City) 7(4): 257–65.

———. 1943. "Functional Finance and the Federal Debt." *Social Research* 10: 38–51.

———. 1944. *The Economics of Control*. New York: Macmillan.

———. 1947. "Money as a Creature of the State." *American Economic Review* 37(2): 312–17.

———. 1976. "John Maynard Keynes." *Challenge* 19(2): 69–70.

———. 1977. "From Pre-Keynes to Post-Keynes." *Social Research* 44(3): 399–415.

Minsky, Hyman P. 1963. "Discussion." *American Economic Review* 53(2): 401–12.

———. 1965. "The Role of Employment Policy." In Margaret S. Gordon, (ed.), *Poverty in America*. San Francisco: Chandler Publishing Company; reprinted in Minsky (2013).

———. 1968. "Effects of Shifts of Aggregate Demand upon Income Distribution." *American Journal of Agricultural Economics* 50(2): 328–39; reprinted in Minsky (2013).

———. 1971. “Where Did the American Economy—And Economists—Go Wrong?” Hyman P. Minsky Archive, 428. Available at: http://digitalcommons.bard.edu/hm_archive/428

———. 1972. “Economic Issues in 1972: A Perspective.” Hyman P. Minsky Archive, 427. Available at: http://digitalcommons.bard.edu/hm_archive/427

———. 1973. “The Strategy of Economic Policy and Income Distribution.” *Annals of the American Academy of Political and Social Science* 409(September): 92–101.

———. 1977. “The financial instability hypothesis: an interpretation of Keynes and an alternative to ‘standard’ theory.” *Challenge* 20(1): 26.

———. 1981. “Banking and Industry between the Two Wars: The United States.” Hyman P. Minsky Archive, 425. Available at: http://digitalcommons.bard.edu/hm_archive/425

———. 1982. “Policy Pitfalls in a Financially Fragile Economy.” Hyman P. Minsky Archive, 66. Available at: http://digitalcommons.bard.edu/hm_archive/66

———. 1986a. “Stabilizing an Unstable Economy: The Lessons for Industry, Finance, and Government.” In Karl Aiginger (ed.), *Weltwirtschaft and Unterrelmerische Strategien*. Vienna: Osterrichisches Institut fur Wirtschaftsforschung.

———. 1986b. *Stabilizing an Unstable Economy*. New Haven and London: Yale University Press.

———. 1991. “Lecture at Westminster College.” Video. October 30. Available at: https://www.youtube.com/watch?v=FLi2wdSA66A&t=2895s

———. 1992. “Reconstituting the United States’ Financial Structure: Some Fundamental Issues.” Levy Institute Working Paper No. 69. Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.

———. 1994. “Full Employment and Economic Growth as an Objective of Economic Policy: Some thoughts on the limits of capitalism.” In Paul Davidson and Jan A. Kregel (eds.), *Employment, Growth and Finance: Economic Reality and Economic Growth*. Cheltenham, UK: Edward Elgar; reprinted in Minsky (2013).

———. 1996a. “Uncertainty and the Institutional Structure of Capitalist Economies.” *Journal of Economic Issues* 30(2): 357–68.

———. 1996b. “Uncertainty and the Institutional Structure of Capitalist Economies.” Levy Institute Working Paper No. 155. Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.

———. 2013. *Ending Poverty: Jobs, Not Welfare.* Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.

———. n.d. "Draft manuscript on Policy and Poverty, 1969: Minsky archives items 8–10." Available at: http://digitalcommons.bard.edu/hm_archive/

Minsky, Hyman P., and Irma Adelman. 1960. "On the National Debt and Economic Growth." Hyman P. Minsky Archive, 120. Available at: https://digitalcommons.bard.edu/hm_archive/120

Mitchell, William. 2016. "Hyman Minsky was not a guiding light for MMT." BillyBlog, November 9. Available at: http://bilbo.economicoutlook.net/blog/?p=34749.

Nersisyan, Yeva, and L. Randall Wray. 2016. "Modern Money Theory and the Facts of Experience." *Cambridge Journal of Economics* 40(5): 1297–316.

———. 2017. "Cranks and heretics: the importance of an analytical framework." *Cambridge Journal of Economics* 41(6): 1749–60.

Papadimitriou, Dimitri B., and L. Randall Wray. 1998. "The Economic Contributions of Hyman Minsky: Varieties of Capitalism and Institutional Reform." *Review of Political Economy* 10(2): 199–225.

Ruml, Beardsley. 1946. "Taxes for Revenue Are Obsolete." *American Affairs* VIII.I: 35–39.

Skidelsky, Robert. 1992. *John Maynard Keynes: The Economist as Savior 1920–1937*. London: Penguin Books.

Wray, L. Randall. 1998. *Understanding Modern Money: the key to full employment and price stability*. Cheltenham, UK: Edward Elgar.

———. 2016. "The Reality of the Present and the Challenge of the Future: Fagg Foster for the 21st Century." *Journal of Economic Issues* 50(1): 245–68.