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The "Kansas City" Approach to Modern Money Theory

by

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ABSTRACT

Modern money theory (MMT) synthesizes several traditions from heterodox economics. Its focus is on describing monetary and fiscal operations in nations that issue a sovereign currency. As such, it applies Georg Friedrich Knapp's state money approach (chartalism), also adopted by John Maynard Keynes in his *Treatise on Money*. MMT emphasizes the difference between a sovereign currency *issuer* and a sovereign currency *user* with respect to issues such as fiscal and monetary policy space, ability to make all payments as they come due, credit worthiness, and insolvency. Following A. Mitchell Innes, however, MMT acknowledges some similarities between sovereign and nonsovereign issues of liabilities, and hence integrates a credit theory of money (or, "endogenous money theory," as it is usually termed by post-Keynesians) with state money theory. MMT uses this integration in policy analysis to address issues such as exchange rate regimes, full employment policy, financial and economic stability, and the current challenges facing modern economies: rising inequality, climate change, aging of the population, tendency toward secular stagnation, and uneven development. This paper will focus on the development of the "Kansas City" approach to MMT at the University of Missouri–Kansas City (UMKC) and the Levy Economics Institute of Bard College.

KEYWORDS: Modern Money Theory (MMT); Functional Finance; Chartalism; State Theory of Money; Sectoral Balances; Kansas City Approach; Job Guarantee; Sovereign Currency

JEL CLASSIFICATIONS: B1; B2; B52; E12; E5

INTRODUCTION

The birth of modern money theory (MMT) can be traced to an online discussion group of the 1990s, Post Keynesian Thought (PKT). Warren Mosler, a hedge fund manager, joined PKT in January 1996. He had drafted a paper, *Soft Currency Economics*[1] (SCE) (Mosler 1996). Within the first few weeks he laid out the basic principles of the analysis of a sovereign currency: taxes create a demand for the sovereign's currency, bond sales by the sovereign are not really a borrowing operation but rather are used to drain excess reserves from the banking system, the sovereign cannot run out of its own currency, and government ought to provide jobs at minimum wages to fight unemployment. While many of the participants of PKT were unreceptive or even hostile to the ideas, a few recognized foundations for these arguments within heterodox economics. Those who were generally supportive included Basil Moore (associated with the horizontalist wing of endogenous money), Paul Davidson (among the "fundamentalist" Keynesians), Bill Mitchell (who had much earlier developed a "buffer stock" approach to unemployment), Mat Forstater (who would act as our economic historian and historian of economic thought and whose student, Pavlina Tcherneva,[2] was recruited to write a review of Warren's SCE paper), and me.

Soon after this initial introduction on PKT, Warren and Pavlina organized a conference held at Bretton Woods in June 1996. Basil, Charles Goodhart, and I joined Warren and a number of financial markets participants (and a few regulators) to propagate a new framework for macro policy analysis. Warren convinced me to write a new book (Wray 1998) to lay out the foundations, providing financial support. Two research centers were soon set-up: Bill Mitchell created the Centre of Full Employment and Equity (CofFEE) at the University of Newcastle, Australia, and Warren, Mat, and I created the Center for Full Employment and Price Stability (CFEPS).[3] Later, Bill opened a European branch of CofFEE in Maastricht. Many conferences

[1] "Soft currency" refers to a currency that is not pegged—what MMT calls a sovereign currency.
[2] Pavlina would later act as the associate director of CFEPS (see below).
[3] We first tried to house it at the University of Denver but that did not work out; it was temporarily housed at the Levy Economics Institute and then moved to the University of Missouri–Kansas City (UMKC). Pavlina moved with CFEPS to UMKC; Stephanie (Bell) Kelton also worked with CFEPS at Levy and then moved to UMKC. Many UMKC students have contributed to the development of MMT, including Joelle LeClaire on budget deficits (2008), Eric Tymoigne on central banking and asset markets (2009), Zdravka Todorova on money and gender (2009), Flavia Dantas and Yeva Nersisyan on shadow banking (Nersisyan and Dantas 2017), Fadhel Kaboub on the job guarantee

and seminars were held at CofFEE, Levy, and CFEPS over the years to not only refine our analysis but also to locate the foundations of MMT in the various heterodox traditions.

In what follows I will lay out the "Kansas City" approach[4]—that is, the research developed at the Levy Institute and University of Missouri–Kansas City (UMKC). The parallel development of the "Newcastle" approach of CofFEE was similar but began from different heterodox foundations, as did Mosler's own original creation that relied primarily on real-world observations from working in sovereign bond markets. By focusing on the path to MMT in America, I am not privileging that over the other two. Along the way we were in nearly constant contact and our different backgrounds allowed us to make progress quickly. From Warren's first posts in early January 1996, a handful of researchers had put together the foundations of a new approach to macroeconomics by mid-1998. Barely twenty years later, MMT had achieved something quite rare for heterodox economics: it was in the headlines all over the world—and in quick succession first denounced by all respectable policymakers, politicians, and economists and then suddenly embraced as the necessary response to a global pandemic.[5]

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for developing countries (2012), and Felipe Rezende on MMT for Brazil (2009). Bill Black joined the UMKC economics department in the mid-2000s and introduced white collar "control fraud" as a contributing cause to financial crises (Black 2014). Jan Kregel taught as a distinguished visiting professor for many years, adding a deep understanding of financial markets; John Henry also taught history of thought in the program, deepening, as Minsky put it, our understanding of "the giants on whose shoulders we stand" (see Bell, Henry, and Wray 2004), as well as contributed pieces on the use of money in early Egypt (see Henry 2004). Recently, Caroline Teixeira Jorge completed her dissertation as a visiting scholar at Levy, strengthening the application of MMT to the case of Brazil (Jorge 2020). At Levy, Dimitri Papadimitriou has supported work on MMT and the job guarantee for three decades.

[4] In the early period, our approach was usually called chartalist (or neo-chartalist by some critics) and often labeled the "Kansas City" approach in the Americas (obviously an unfair designation that left out the contributions of Bill and his group in Australia). The term "modern money theory" (also called "modern monetary theory" by some proponents) did not come along until much later (Bill Mitchell credits a commentator on his BillyBlog for the term), even though I had used the term "modern money" in the title of the first academic monograph. (I prefer to use "money" rather than "monetary" both because it was the word I had used in the title but also because the scope of MMT is not confined to "monetary economics" as that term is usually applied. Many critics have wrongly seen MMT as some new form of monetarism with an undue focus on monetary policy—for example, central bank "money printing" to pay for spending. The correct emphasis is on "modern money"—that is, the operation of the "modern" sovereign currency system.)

[5] See Nersisyan and Wray (2020). For an example of a quick turn-around, see Buiter (2020), who argues: "Much of the US response will come in the form of 'helicopter money,' an application of Modern Monetary Theory (MMT) in which the central bank finances fiscal stimulus by purchasing government debt issued to finance tax cuts or public spending increases." The *Washington Post* (Von Drehle 2020) acknowledges this quick conversion: "A year ago, modern monetary theory (MMT) was still the crazy uncle at the economists' tea party, spouting wild ideas and unapproved theories about the almost magical spending powers of the US federal government. Nurtured at out-of-the-way academies such as the Levy Economics Institute of Bard College and the University of Missouri–Kansas City, MMT has received scant support from mainstream thinkers, though the left-wing likes of Sen. Bernie Sanders (I-Vt.) and Rep. Alexandria Ocasio-Cortez (D-NY) have been buzzing about it for years. Mainstream or not, suddenly everyone's an MMT-ist, even if they don't cop to it openly." In an article praising the decision to direct the

1. CHARTALISM-STATE MONEY THEORY

I was first exposed to Knapp's state money theory through Keynes's *Treatise on Money* in 1986 while writing my dissertation with Jan Kregel in Italy.[6] I incorporated Knapp's approach in the dissertation and in chapter 2 of my book, *Money and Credit in Capitalist Economies* (1990), which also surveyed Islamic banking, the rise of banking in Western Europe, the development of modern banking in England, and the *logic* imposed by use of money in a capitalist system. The rest of the book focused on developing an endogenous money approach to private banking. Still, I was intrigued by the link between the state and money and began to read speculations on the origins of money.

While in Bologna, I met Otto Steiger and read his work that linked money's origins to the rise of private property (Heinsohn and Steiger 1983). That led to Keynes's writings from his period of "Babylonian Madness" (a preoccupation with money in Babylonia[7]), which led to a continuing interest in the early monies of account. I did not believe the "barter story" of money because in the late 1970s I had read Lewis Henry Morgan's *Ancient Society* (1877) and studied tribal society. Tribal gift exchange was nothing like the barter story of moneyless market exchange, and tribal society did not have money. Hence, money had to be linked to the rise of civilization. At some point in the 1990s, Michael Hudson gave a lecture at the Levy Institute where he claimed money was invented by the temples in Mesopotamia for the purpose of record keeping.[8] Since the most important food was grain, it made sense to measure the monthly provisions to temple workers in a barley grain unit—the *mina*. This was consistent with Keynes's musings. (Hudson also provided a delightful interpretation of the Bible's Ten Commandments, most of which he insisted had to do with money and debts. For example, the well-known commandment against coveting thy neighbor's wife went on to proscribe coveting thy neighbor's donkey, too—

Bank of England to provide direct finance of the government's response to the pandemic, *The Guardian* (2020) writes: "Randall Wray, an academic whose modern monetary theory owes much to Lerner, writes that it is ironic that 'the real limits faced by the government before the pandemic hit were far less constraining than the limits faced after the virus had brought a huge part of our productive capacity to a halt.' What is possible in dealing with coronavirus can be paid for. Money is not the issue."

[6] Hyman Minsky was my advisor, but I went to Bologna to learn more about the neo-Ricardian surplus approach that I had planned to incorporate into my dissertation. To make a long story short, that got jettisoned as I gained a greater appreciation for both Keynes and Minsky while working with Jan Kregel.

[7] See Ingham (2000).

[8] See Hudson (2004).

a seemingly kinky and overlooked commandment. As Hudson explained, this had to do with placing the neighbor in debt bondage and nothing to do with fornication.)

In April of 1997, I presented an alternative view of money's origins in my presidential address at the Association for Institutional Thought (AFIT), stressing the link between money and authorities.[9] I revisited the chartalist approach as well as the origins of money in my second book, *Understanding Modern Money* (1998a), written between the summer of 1996 and fall of 1997. By that time, we were working at the Levy Institute and had discovered a 1913 article by A. Mitchell Innes (as discussed below, somewhat later we found his 1914 article that more clearly addressed the credit nature of all money—see Innes [1913, 1914] and Wray [2004]). For me, Innes clearly laid out not only the origins of money, but also the nature of money, and the links between the state's money and private credit money (see below). We also discovered that Keynes (1914) had reviewed the 1913 article by Innes in 1914 in the *Economic Journal*. It is probable that this is what led to his "madness" a half decade later. It is also interesting that Keynes seemed to have played a role in getting Knapp's book translated from German to be published in English in 1924.

During this period, Mat Forstater brought in substantial evidence to support Warren's thesis that "taxes drive money" through his study of colonial Africa (as well as colonial America—see below) and well-known examples such as cowry shell "commodity money." As Mat demonstrated, colonial governors well understood that the way to monetize the colonial economy was to impose taxes payable in the crown's currency. As Innes insisted, there are no examples of commodity money—the value of even a gold coin is established by the need to pay taxes. Mat showed that this was also true of cowry shell money and as well of the famous "stone wheel money" of the Yap Islands. All the tropes of the economist's story about Robinson Crusoe and Friday choosing a handy medium of exchange to eliminate the transactions costs of barter were

[9] See Wray (1993) for an early attempt at explaining money's origins from the alternative perspective using Keynes's writings, as well as those of Heinsohn and Steiger. However, this was written before our discovery of Innes and is largely based on an institutionalist approach and devoted to exposing the barter story as a myth. It focuses on a socially determined money of account in which debts are denominated and goes on to argue that: "Central bank 'fiat' money is, like all privately created money, merely an IOU—a debt denominated in the money of account; that is, central bank money and private money have always been 'fiat' money" (p. 28). My presidential address was turned down by the institutionalist journal, the *Journal of Economic Issues*, but a short version was accepted by Paul Davidson, published as Wray (1999). See also Graeber (2011) for evidence against the barter story.

shown to be false. Money was not an invention of individuals but, rather, was an instrument of the authorities. My 1998 book goes through a variety of historical examples: Adam Smith's study of 18th century money and banking; Keynes's explications in the *Treatise* and volume XXVIII of his *Collected Works*; Innes on tally sticks in medieval Europe; colonial America (also taken up by Smith); and the disparate experiences of the North and South with currency issue and inflation during America's Civil War. The evidence for the state's role in the creation and evolution of money is overwhelming.

Finally, I believe Mat was the one who brought to light Abba Lerner's "money is a creature of the state" argument: "[W]hatever may have been the history of gold, at the present time, in a normally well-working economy, money is a creature of the state. Its general acceptability, which is its all-important attribute, stands or falls by its acceptability by the state" (Lerner 1947, 313). He goes on to argue that the state can make anything acceptable as money simply by declaring it will "accept the proposed money in payment and other obligations to itself," which ensures that even noncovertible paper money (often called "fiat money") will be generally accepted even by those without obligations to the state "because they know that the taxpayers, etc., will accept them in turn" (Lerner 1947). Succinctly put, "taxes drive money."

In 1997, Charles Goodhart published his paper, "One Government, One Money," arguing that "the alternative, Chartalist, school sees the power to create money as intimately bound up with the stable existence of government in general and its ability to raise money through taxation in particular, and consequently has no difficulty explaining or predicting the almost universal empirical observation of 'one government, one money.'" As Wynne Godley had put it in 1992: "It needs to be emphasised at the start that the establishment of a single currency in the EC would indeed bring to an end the sovereignty of its component nations and their power to take independent action on major issues. As Mr. Tim Congdon has argued very cogently, the power to issue its own money, to make drafts on its own central bank, is the main thing which defines national independence. If a country gives up or loses this power, it acquires the status of a local authority or colony."

This is why from the very beginning, MMT has been skeptical of the euro experiment.[10]

Hyman Minsky had warned me not to do "Genesis" (origin stories) in the dissertation. But I do recall that he had explained in the classroom that the reason we accept the state's money is because we have obligations such as taxes that have to be paid in currency.[11] He went on to extend the analogy to bank money: we accept it because we must repay loans to banks. Following Knapp, Innes, Minsky, Mosler, Goodhart, and what we learned from historical experience, we summarized our view as: **MMT insists that the usual case has been that each nation state chooses its own money of account, issues currency denominated in that money of account, and imposes obligations (such as taxes) payable in the currency**. This is the succinct view of money from the chartalist view and much of MMT's analysis follows on from this recognition.

2. CREDIT MONEY: THE MONETARY CIRCUIT AND ENDOGENOUS MONEY

Over the course of the 1980s, post-Keynesians embraced an endogenous money approach. Basil Moore developed what he termed "horizontalism," which viewed both the supply of money as well as the supply of reserves as horizontal at an exogenously set interest rate. This was contrasted with the monetarist "verticalist" approach that saw the money supply as exogenous (set by the central bank) and the interest rate as endogenously determined by the market. Marc Lavoie (1985) helped to revive a circuit approach to money that was based on earlier work by French economists; this became the Franco-Italian *circuitiste* approach. Its view of banking recalled the real bills doctrine (money is created to finance the production process) and was consistent with the monetary theory of production (production begins with money to produce commodities to sell for more money) adopted by the three great "fathers" of the various strands of heterodoxy: Marx, Veblen, and Keynes. Both of these approaches rejected the textbook

[10] See the section beginning on page 91 of my 1998 book for early analysis of the euro.
[11] This is repeated in his 1986 book, which he was writing at the time: "In an economy where government debt is a major asset on the books of the deposit-issuing banks, the fact that taxes need to be paid gives value to the money of the economy…[T]he need to pay taxes means that people work and produce in order to get that in which taxes can be paid" (Minsky 1986, 231).

deposit multiplier story, insisting that money is created *ex nihilo* ("out of thin air"). Central banks provide reserves used by banks for clearing purposes (and, in the horizontalist story, they must always accommodate the demand to hit their overnight interest rate target).

In both approaches the government's role is downplayed. Augusto Graziani (perhaps the leading proponent of the circuit approach) insisted that government is like any other user of money and subject to the same rules: it has no "seigniorage" rights and cannot settle its debts using its own liabilities (Graziani 2003). Most expositions of the circuit approach do not even include a government. The government is similarly excluded from most horizontalist discussions and the central bank's role is generally limited to setting the overnight interest rate target and fully accommodating bank demand for reserves. Horizontalists have been among the most vehement heterodox critics of MMT. However, as mentioned above, Moore participated in the earliest discussions with Mosler on PKT and was among the first to understand Mosler's claim that government bond sales are a "reserve drain," not a borrowing operation.

In my 1990 book, I explored the history of the endogenous money approach from the banking school/currency school debates (1830s–40s) through Marx, Keynes, and Schumpeter. I argued that while endogenous money views were common or even dominant until Keynes's *General Theory*, both the "Keynesians" and the monetarists of the postwar period adopted the exogenous money and deposit multiplier approaches. A revival of endogenous money can be traced from Nicholas Kaldor and the Radcliffe Committee (1959), the work of John Gurley and Edward Shaw in the late 1950s, James Tobin (1963), and Minsky (from the late 1950s). Moore and other horizontalists interpret Keynes's treatment of money in the *General Theory* as exogenous (fixed by the central bank) and claim that his liquidity preference theory is inconsistent with endogenous money. In my 1990 book and elsewhere, I integrated Keynes's liquidity preference theory (from chapter 17 of the *General Theory*) with his endogenous money approach (which was clear in the *Treatise*). I argued that while chapters 13 and 15 can be interpreted along the lines that led to the orthodox ISLM analysis (with an exogenous money supply), Keynes's

chapter 17 approach to asset pricing provides the rigorous exposition of his liquidity preference theory, and this is perfectly consistent with endogenous money.[12]

In my dissertation and the 1990 book I provided a close institutional analysis of the practices of modern banking. I included discussion of the rise of "nonbank banking" (what later came to be called "shadow banking") and of the increasing use of off-balance-sheet operations by banks. I showed that direct lending by banks had already declined to just 18 percent of the increase in debt issued by nonfinancial corporations by 1986. I warned of the new trend toward securitization and use of derivatives that might appear to allow banks to hedge risks, but that "interdependence of on-balance-sheet and off-balance-sheet commitments, or covariance of shocks can lead to the transmission of shocks throughout the system" (Wray 1990, 215–16). I argued that credit risk was actually becoming more concentrated among fewer behemoth institutions, and that this would come back to haunt the Fed, as it would eventually have to act as lender of last resort to cover even the off-balance-sheet items. That is precisely what happened in the global financial crisis that began almost two decades later in 2007.

In all of this, I followed Minsky's view that "anyone can create money, the problem is to get it accepted." In the 1990 book I used Minsky's notion of a "pyramid of liabilities," with the most acceptable government liabilities at the top, then chartered bank liabilities, "nonbank bank" liabilities, nonfinancial corporate obligations, and finally the debts of small firms and households at the bottom. This pyramid reflects acceptability and liquidity, with entities lower in the pyramid using liabilities higher in the pyramid for payments. Minsky's understanding of "money and banking" was much deeper than that of the developers and followers of the horizontalist or *circuitiste* approaches, which focused on an outdated "real bills" view of commercial banks. Minsky was among the first to fully recognize the importance of securitization, arguing in 1987 "that which can be securitized, will be securitized" (Minsky and Wray 2008). He went on to

[12] I will not go into a discussion here, but Keynes seems to have made strategic errors in his exposition three times in the *General Theory*, all of which adopted a "supply and demand" approach: in his discussion of the labor "market" where he accepts the neoclassical labor demand curve (with the wage equaling the marginal product of labor); when he characterizes the investment decision as one that compares the marginal efficiency of investment against the market interest rate; and where he adopts a money supply and money demand determination of the market interest rate. All of these have led to problems in interpreting Keynes's argument. The first two are subjects of the two Cambridge controversies and the third is subject to the horizontalist critique; see also Wray (1992).

analyze the tremendous changes to the financial system that followed innovations of the 1980s in a series of papers and conferences at the Levy Institute in the early 1990s. His research program at Levy tackled reform to "reconstitute the financial system to promote the capital development of the economy" (that continued after his death). I warned of the financial speculation that would lead to collapse beginning as early as 1998 and up to the global financial crisis of 2007.[13]

Some critics have wrongly tried to claim that MMT leaves out the private financial system. Nothing could be farther from the truth. The Kansas City/Levy proponents of MMT have been in the forefront of the analysis of the evolution of the financial system, standing on the shoulders of Minsky.

3. THE NATURE OF MONEY

In addition to the 1913 article by Innes mentioned above, we were also influenced by his second article in 1914. Not only does Innes provide the clearest exposition of state money, he includes state money as a category of credit money, posing a universal law of debt: the issuer of a debt must accept it back in payment. This applies equally to government, to banks, and to nonbank entities—not disregarding the different degrees of acceptability of liabilities discussed above. Innes called this redemption: when a taxpayer returns to the government its currency in payment of taxes, both the taxpayer and the government are redeemed—the taxpayer is no longer in tax debt and the government's obligation to accept its own currency is also fulfilled. Quadruple entry bookkeeping shows that two assets and two liabilities are simultaneously struck from the balance sheets of the two parties.

What, then, is the nature of money? First there is the money of account, the unit of measurement in which records are kept. Second there is the record itself. Keynes ([1930]1976) distinguishes

[13] For an early warning, see Wray (1998b) and Godley and Wray (1999); for one of the earliest analyses of the subprime mortgage crisis, see Wray (2007), which "uses Hyman P. Minsky's approach to analyze the current international financial crisis, which was initiated by problems in the American real estate market"; and for an analysis of the commodities market bubble, see Wray (2008), which uses Minsky's money manager capitalism approach.

between the two, calling the money of account the "name or description" and the record itself "the thing": "The State, therefore, comes in first of all as the authority of law which enforces the payment of the thing which corresponds to the name or description in the contracts." He goes on to state that this has been the case for "some four thousand years at least."[14] This is why MMT begins with the state's money—unlike the circuit approach that begins with private banks, or horizontalism that ignores the important role played by the state in choosing the money of account, issuing the liabilities that reside at the top of the pyramid, and enforcing the private contracts denominated in its money of account.

Above I have discussed the Heinsohn and Steiger proposition that money originated with the rise of private property—an idea that initially appealed to me, but that was at odds with Keynes's speculation and Hudson's research. Sometime during the writing of my 1998 book we discovered the work of Phillip Grierson—a foremost numismatologist who speculated on money's origins in a short book (Grierson 1977), providing a convincing alternative. He argued that the notion of measuring debt in a unit of account may have come out of the ancient tribal practice of wergild. While wergild "fines" were measured in-kind, he argued that with the evolution to civilization, public assemblies that imposed fines might have settled on a unit of account (such as the barley grain unit) to measure debts.

This leads nicely into Hudson's story that locates money's origins in the record keeping of Mesopotamia's temples. That also explains the close religious connection of many terms having to do with money and debt, such as redemption and debt jubilee, and why debt and sin are synonymous.[15] Money did not rise out of the search for a transactions cost–reducing medium of exchange, but rather emerged out of debt, which itself is a social relationship. While all human societies have recognized debts to one another (indeed, so do many other animals), it was a huge jump to "monetize" debts with a single measuring unit. As Grierson insists, this is much more difficult than coming up with a convenient measure for length, weight, or volume—although each of those would also have required social consensus. And while there might be a very small

[14] This is the source of the term "modern money"—which applies only to the "modern" period, the past "four thousand years at least" (Keynes [1930]1976, 4).
[15] For a remarkably thorough and entertaining account, see Atwood (2008).

number of examples of private institutions creating monies of account (the giro money of Northern Europe, discussed by Knapp and in my 1990 book, would be an example), as emphasized by Keynes and Goodhart, the rule for the past "four thousand years at least" has been a money of account chosen by authorities.

Stephanie (Bell) Kelton undertook a search of the British Library to see if Innes had written any other pieces on money, discovering a fascinating tract titled *Martyrdom in our Times*, an investigation of the history of punishment in Western civilization.[16] In an important sense, this can be seen as the third part of the trilogy by Innes on money and debt, extending Grierson's analysis that locates the tribal custom of wergild as the "Genesis" story for money, as wergild is likewise the "Genesis" for modern Western "justice" systems. Early prisons were not for punishment but rather were to ensure that families paid fines to the authorities—much as wives were held as "bondmaids" in Mesopotamia to ensure payments of debts.[17] As Innes argued, wide-scale use of imprisonment for the purposes of punishment only dates from the 18th and 19th centuries. Throughout Western history, incarceration was used primarily to hold the accused until trial, or to hold the convicted until debts or fines were paid. The modern notions that the guilty should be held in prison to punish and/or reform them—or to force them to "pay their debt to society" in "redemption"—were foreign to concepts of justice until remarkably recently.[18]

The evolution of "justice" in the West involved the gradual usurpation of the right of victims to compensation—not to prevent crimes (and thereby eliminate the ability to levy fines!) but as a "revenue" source. With the development of capitalism and the concomitant development of an underemployed and displaced class, crimes committed by those without the ability to pay increased, leading to expanded use of the death penalty. As victims had gradually become excluded from compensation, they quite naturally supported greater use of capital punishment.[19] Holding large numbers of prisoner was costly, so prisoners would be rented out as cheap labor—

[16] See Innes (1932).
[17] Similarly, America's bond market grew out of mortgaged slaves—collateralized slaves provided most of the credit to early America; see da Costa (2019).
[18] The verb "to pay" derives from "to pacify," indicating the original purpose of such compensations, which was to prevent blood feuds from developing.
[19] In practice, however, societies rarely carried out such severe sentences. The Mediterranean nations tended to commute death sentences to service in the galleys, while the northern European nations commuted them to "transportation" (banishment to the colonies).

especially after slavery ended. When there was a shortage of labor, sheriffs would make arrests to replenish "chain gangs" of workers. While labor unions managed to limit use of prison labor during the 1930s, "penal Keynesianism"—use of prison labor by some of the biggest corporations in the world—made a comeback in the 1990s.[20] Hence, we can hypothesize that civilization transformed the wergild tradition along two paths—one leading to "modern money" and the other to "modern incarceration," each with its own notion of debt and redemption!

Along the way we included the work of many others who emphasized the social and debt nature of money, including Geoff Ingham (2000) and Dudley Dillard (1980). The principle of redemption was best illustrated by Farley Grubb (2019) in relatively recent work on colonial American paper currency (which had also caught the eye of Adam Smith). As he shows, because the early colonies were prohibited from issuing coins and forced to rely on an insufficient supply of British currency, they hit on the idea of issuing paper money. A colony would pass a law authorizing the printing of a specific number of notes to be directly spent. At the same time, they would pass a new tax law that would be expected to raise an amount of revenue over several years that was more or less equal to the value of the notes issued. As tax revenue came in, the notes would be burned. The taxes were called "redemption taxes," acknowledging the recognized purpose: taxes are for redemption, not to finance spending. The spending would have already been financed as the notes were issued, so the purpose of the tax was to create a demand for the notes to be used to pay taxes. Once redeemed, the "revenue"[21] served no other purpose.

Economists have long been blinded by shiny metals when it comes to money, focusing on the precious commodity value of coins. This has led to a commodity money view that seems to support the barter story, as well as providing an erroneous and dangerous misunderstanding of the determination of the value of money. Abandoning the gold standard has long been viewed as the path to inflation as money's value supposedly became unmoored and reduced to nothing more than "trust" in irresponsible government. However, careful study demonstrates that, first, money preceded metallic coins by thousands of years and, second, the value of coins usually has

[20] See Wray (2000) and Pigeon and Wray (2000).
[21] The term "revenue," still used today, is derived from an early French term (borrowed into English) meaning "come back to" or "return to." What returns? The notes that are spent first. Tax "revenue" refers to returning to the issuer the currency that has already been spent—this is "redemption" of the currency, as discussed above.

not been determined by precious metal content. The first coins were produced under Pheidon of Argos in the seventh century, B.C. (Wray 1990, 7).[22] While use of precious metals in coins was common thereafter, those coins were too valuable to be used in everyday commerce. As in Mesopotamia, most commerce took place through the use of credit, recorded as "chalk on slate" tallies with debts settled typically once a year at harvest, or even less frequently. (See McIntosh [1988] for a study of London during the period 1300–1600.) European kings relied largely on tally sticks—records of debt—as Innes argued. In any event, coins mostly circulated at a nominal value well above the commodity value of the coin.

The nominal value was set at the "public pay houses"—that is, at the value the issuing sovereign announced they were worth in payment of liabilities to the authority. This value could be changed simply by announcement—sending the town crier around to "cry down" the value—which was recognized as an effective and appropriate way to increase the tax burden, so long as it was not carried too far. Roman law proclaimed that courts would enforce only a coin's nominal value—not its "real" precious metal value (as Innes correctly asserted). I have linked continued use of precious metals in coin through the "age of conquest" to the need to make payments outside the jurisdiction of the coin's issuer—in particular to hire and provision mercenaries (Wray 1998a). It has long been recognized that the high value of precious metal coins made them particularly useful for paying salaries of "soldiers and sailors"—with large lump sum and infrequent payments—and once issued, they would be redeemed in tax payments (Crawford 1970).[23] As these soldiers and sailors could be far from home, the embodied precious metal assured they would retain some value abroad, even if the issuer of the coins lost the war.[24]

[22] Kurke (1999) has an interesting thesis that coins emerged in ancient Greece out of a political struggle between elite society that relied on social networks and gift exchange and a rising democracy led by city government, the polis. The coinage of precious metal was an intentional challenge to elite dominance, as it used the highest-prestige good (aristocrats used the quantity and quality of the precious metals as a "measure of a man's worth") in the production of coins, and then distributed these to citizens for use in the agora; see Wray (2004, 236).
[23] "Coinage was probably invented in order that a large number of state payments might be made in a convenient form…. Once issued, coinage was demanded back by the state in payment of taxes" (Crawford 1970, 46).
[24] See Wray (1998: ch. 3; 2004, 252–54).

4. BALANCE SHEET CONSOLIDATION AND COORDINATION: OR, HOW THE GOVERNMENT REALLY SPENDS

MMT has always recognized that the modern central bank sets the overnight rate target. In the United States, the Fed directly sets the discount rate at which it lends reserves and targets the fed funds rate at which banks lend reserves to one another. Before the global financial crisis, the Fed did not pay interest on reserves, but since the crisis it has used the rate paid on reserves to set a floor to the fed funds rate while the discount rate acts as a ceiling. Central banks have discretion in determining how much the "market" rate (fed funds rate in the United States) deviates from target. Previous to 1994, the Fed did not announce its target, so the market had to find it; since the Fed now announces any changes to its target, the fed funds rate moves quickly to the target. Some fluctuation still occurs, in part because some institutions that hold reserves do not have access to the discount window (so the fed funds rate can be pushed above the discount rate ceiling). All of this is consistent with the post-Keynesian endogenous money and horizontalist views.

What Mosler introduced was the idea that we should view treasury bond sales as part of monetary policy, that is, as a reserve drain instead of a borrowing operation. MMT argues that all treasury spending takes the form of a credit to bank reserves, with the receiving bank then crediting the deposit account of the recipient of government's spending. In a fractional reserve system, this creates excess reserves. Before the Fed paid interest on reserves, systemic excess reserves would place downward pressure on the fed funds rate and, if that were not relieved, the rate could fall toward zero. Bond sales lead to debits of bank reserves, relieving that pressure.

Mosler's insight (as a bond trader) was that this is true whether the sale of bonds is by the treasury (new issues) or by the central bank (open market sales)—in either case, the function, removing reserves, is the same. Stephanie (Bell) Kelton and I had the good fortune of studying money and banking with John Ranlett at California State University-Sacramento (albeit a couple of decades apart) and had been drilled in the T-accounts of these operations, so immediately recognized that Mosler was correct.[25] Government spending puts reserves into the banking

[25] See Ranlett (1977).

system, while taxing and bond sales remove them. Why would we call it a fiscal borrowing operation when it is done by the treasury, but a monetary policy operation when done by the central bank? In retrospect, this was completely missed by horizontalism—there is was no discussion of the fiscal impact on reserves of spending, taxing, and bond sales by the treasury. This is strange, indeed, as the impact of fiscal policy on bank reserves is normally orders of magnitude greater than the impacts of purely "monetary policy" operations by central banks.

To be sure, the real-world operations are more complicated and involve a number of steps and institutional participants, including dealer banks, tax and loan accounts at special deposit banks, and treasury accounts at the central bank. For the purposes of simple exposition, MMT sometimes consolidates the treasury and central bank into a "government balance sheet," eliminating internal operations between them and ignoring some intermediate steps that involve the special banks. This has led to the creation of a subbranch of post-Keynesian economics that accuses MMT of oversimplification. However, from the very beginning MMT has sought to fully expose all the operational details—to a degree that had never been attempted by academic economists (and certainly not by post-Keynesians). Stephanie began this research when I was writing my 1998 book,[26] and the details of coordination between the Fed and the Treasury were amplified by Stephanie (Bell 2000) and later by Scott Fullwiler (2010) and Eric Tymoigne (2016) for the United States and Felipe Rezende (2009) for Brazil. However, as all this work demonstrates, the "consolidation" of the simplified model does not mislead, as the final balances remain the same no matter how deeply one goes into the intermediate steps.

While orthodoxy (and most heterodox economists) argues that government faces a budget constraint similar to those faced by households and firms, MMT argues that the issuer of a currency faces no budget constraint (other than the budget adopted by legislators). The typical exposition presents the constraint as: G = T + dB + dHPM, where G is government spending plus interest payments on the debt, T is tax revenues (less transfers), dB is new bond issues, and dHPM is "printing of high-powered money" (new issues of cash plus reserves). Further, the method of finance is seen as a choice—government chooses whether to use taxes, borrowing, or

[26] I used Stephanie's 1998 manuscript while writing chapter 5 of Wray (1998, 115–18); her manuscript was published as Bell (2000).

money printing to pay for the spending. Borrowing can push up interest rates and crowd out private borrowing and spending; beyond some point it increases default risk and can lead to insolvency. Money printing can cause inflation.

MMT objects that this is an ex post identity, not an ex ante constraint. Further, the "financing" always takes the form of a credit to bank reserves (and a credit by a private bank to the recipient's account)—government doesn't "choose" whether to use taxes, money, or bonds. Indeed, spending normally involves all three even if the budget ends up "balanced" or in surplus at the end of the accounting period. This is due to self-imposed procedures adopted by the treasury and central bank. There is no such thing as special "deficit financing"—government is "financed" as it spends, with a deficit recorded only ex post. If the central bank pays interest on reserves, then it can choose whether to leave excess reserves in the banking system or to drain them through bond sales. Only in that sense can one say that there is a choice whether to "use" bonds or high-powered money—but that choice is made after the spending has occurred. Further, tax receipts over the course of a year are endogenously determined (and highly procyclical)—they are not a discretionary choice to be used as a means of financing spending.

Government deficits do not drive interest rates up (as in the crowding-out and loanable funds stories); all else equal they put downward pressure on the overnight interest rate as they lead to net credits of bank reserves. This was Mosler's original insight: bond sales drain excess reserves to help the central bank keep interest rates from dropping below the target. It could be true that if the treasury chooses to issue bonds of a particular maturity that markets do not want to buy it could push up rates of that maturity. But that is a "debt management" mistake, not an inevitable outcome of deficits. Once the central bank pays interest on reserves, bond sales are no longer necessary for the purpose of maintaining target rates.

They still may be needed because of operational procedures adopted—for example, the prohibition against central bank provisioning of overdrafts for the treasury. In that case, a treasury might sell new issues before spending—which requires that the central bank ensures banks have the reserves they will need to purchase the bonds. This is accomplished by lending reserves or through open market purchases coordinated with the treasury's new issue. However,

the central bank can always remove the new bonds from markets through, for example, "quantitative easing" (QE).

After multiple rounds of trillions of dollars of QE it should now be obvious that so far as inflation goes, there is no difference between leaving reserves in banks or draining them through bond sales. Reserves remain within the banking system and cannot get out to cause inflation havoc—all the excess reserves can do is to push the overnight rate to zero or the support rate paid by the central bank. QE was effectively a duration trade—it reduced the maturity of the government's outstanding debt—from longer-term bonds to reserves, lowering bank earnings. To the extent that central banks bought troubled assets (i.e., uninsured mortgage-backed securities) this could have made an insolvent bank solvent—but unless government was ready to force such banks into resolution, this made very little difference to their operations. In short, as we argued from the beginning, QE was not likely to boost lending and spending, so by itself asset purchases by the central bank would not be inflationary.[27]

This does not mean, however, that government spending cannot be too large or misdirected. But if it is, it is the (net) spending that causes inflation—not the "choice" between borrowing or money printing. Too much private spending would similarly cause inflation pressures. As Stephanie Kelton is known to say, "cash registers don't discriminate" between private and public spending. In any event, it is the "too much spending" not the "too much money" that presents an inflation danger. Exactly how the government spends is not issue of concern when it comes to inflation.

[27] Some have argued that QE lowered interest rates, helping to boost asset market prices, which could indirectly generate spending and thus inflation. While it could be true that there were some marginal impacts on longer-term rates that did contribute to rising equity prices, the Fed could have just as easily lowered rates on long maturity bonds simply by announcing it would stand ready to purchase them. In other words, it could have lowered the rates without actually buying the bonds and injecting reserves into banks. In any event, even the stock market recovery did not generate any significant increase of measured inflation (although asset market prices did rise).

5. SECTORAL BALANCES

Wynne Godley arrived at the Levy Institute in the early 1990s. He began building a model of the US economy using his sectoral balance approach, with his first Levy publications coming in 1995. When I arrived for an extended stay that began in late summer of 1997, I began circulating chapters of my new book manuscript to the Levy scholars, including Wynne. At that time, Wynne was warning us about the growing deficits of the US private sector—what he would highlight in his "Seven Unsustainable Processes" paper of 1999. MMT had already included a recognition that government deficits produce surpluses for the nongovernment sectors, and government debt represents net financial wealth for the nongovernment sectors. This was a major point of Minsky's "big government" approach (discussed in the next section).

What Godley provided was a stock-flow consistent model that explicitly treated the foreign sector and that used the flow of funds accounts. This was soon added to MMT. Wynne and I collaborated on some op-ed pieces in the *Financial Times* and on a Levy Policy Note (Godley and Wray 1999) warning about the coming collapse of the "Goldilocks" economy. Stephanie (Bell) Kelton applied Wynne's skepticism about the future of the euro project to her own work, and I included a section in my 1998 book.[28] Stephanie and Ed Nell organized a conference on the euro at the New School,[29] and Warren helped to organize one in London in 1998.[30]

The most important takeaway is that the balances must balance, meaning that we cannot think about the government's budgetary outcome independently of the other two balances. Any sector can run a surplus (the sector's income is greater than its spending), but that means at least one other runs a deficit (spending exceeds income). It is not possible to reduce the government's deficit by reducing spending or raising taxes unless the private sector's surplus declines and/or

[28] "Roundtable on the European Economic and Monetary Union (EMU)" at the Eastern Economic Association's annual meetings in New York in March 1998. The papers, along with an introduction by C-FEPS Director Mathew Forstater and an invited comment by Princeton University's Walker Professor of Economics and International Finance Peter B. Kenen, were published in Forstater (1999). See also Bell (2002).
[29] Charles Goodhart (1998) presented his paper "The Two Concepts of Money and the Future of Europe," at a C-FEPS-sponsored symposium at the New School for Social Research in April 1999.
[30] C-FEPS-sponsored conference on "The Launching of the Euro" in London in May 1998. Papers are published in: *The Launching of the Euro: A Conference on the European Economic and Monetary Union* (with J. A. Kregel, C. A. E. Goodhart, et al.). Annandale-on-Hudson, NY: The Bard Center. See also Godley (1997) and Mosler (2001).

the foreign sector's surplus declines. Fiscal and monetary policy have uncertain impacts on these balances, as each balance is complexly determined and linked in complicated ways to one another. For the United States, we generally observe that robust growth is associated with a declining private sector surplus but a rising foreign sector surplus. Typically, the net result of those is a reduction of the leakages (domestic private saving and net imports), allowing the government's injection (a deficit) to fall.

But those movements of the balances also set in motion countervailing forces: the reduction of the private sector surplus generally increases debt ratios (one of Godley's most important unsustainable processes, and also highlighted by Minsky in his financial instability hypothesis; see below) even as the comovement of the government's budget toward surplus and the current account toward bigger deficits takes demand out of the economy. Once a breaking point is reached (a "Minsky moment"), a financial crisis is triggered and the fallout is accompanied by slow growth, a rising private sector surplus, falling current account deficit, and rising government deficit. Deficit hawks who want to maintain balanced budgets must explain how they are going to control the private and foreign balances to produce them.

The MMT position is that the government's balance should play the stabilizing role, accomplished by putting in place automatic stabilizers such as procyclical taxes and countercyclical spending. A deficit can certainly be too big—potentially fueling inflation. The evidence for the United States suggests that federal taxes are already sufficiently procyclical; however, if anything, federal spending is not sufficiently countercyclical, so the focus should be placed on creating a stronger movement of spending against the cycle—the topic of section seven (Wray 2019). It would also be helpful to address the inherent tendency toward financial instability in the private sector, the topic of the next section.

6. FINANCIAL INSTABILITY

Hyman Minsky is the most important contributor to developing our understanding of the inherent tendency of modern capitalism to evolve toward financial fragility over the course of the cycle. His financial instability hypothesis was developed between the late 1950s through the mid-1970s, with a full exposition in his book *John Maynard Keynes* (1975). He claimed to extend Keynes's "investment theory of the cycle" by adding the "financial theory of investment."

Minsky's understanding of banking and finance integrated the "banker as the ephor of capitalism" view of his dissertation advisor (Schumpeter) with the broad approach to money and banking of Gurley and Shaw, who recognized the importance of what we called "nonbank banks" until Paul McCulley renamed them "shadow banks." Minsky also had a good understanding of Ritter's integration of cash flows and balance sheets to produce a flow of funds matrix. He argued that every economic entity can be analyzed as a "bank" that issues liabilities to take positions in assets. He further argued that anyone can issue "money" (a liability denominated in the money of account); the problem is to get it "accepted." And, as discussed above, he not only kept up with the financial innovations, but recognized how they had stretched liquidity and increased the potential for fragility. In all these respects, he pushed the generalization of money and banking to the limits.[31]

Minsky recognized the importance of New Deal and early postwar reforms that had produced an unprecedented period of prosperity and financial tranquility, but he began to warn even in the 1950s that this would change behavior. He argued that while institutions can constrain instability, inherent market processes would reduce their efficacy. Unlike most analyses of

[31] Minsky wanted to explain the endogenous processes that produce financial crises, rather than focusing on irrationality or what he characterized as "idiosyncratic" causes (such as fraud). Ironically, he had used the name of a fraudster (Charles Ponzi) in his classification of financial profiles—something he later admitted to regret. This is not because he doubted that fraud is important, but because he wanted to explain why things go wrong even without speculative bubbles (the focus of Charles Kindleberger) or fraud. When I analyzed the saving and loan (S&L) crisis of the 1980s, I included multiple causes—not only Volcker's monetarist experiment and Minsky's financial instability hypothesis, but also fraud. It was my study of the S&L crisis that introduced me to Bill Black's work. When Bill first came to UMKC he warned that by ignoring the role of fraud in the mid-2000s we would be missing the most important factor contributing to the upcoming crisis. I became convinced that he was right, and we coauthored several pieces on the role of fraud; see for example Black and Wray (2010). Also see Wray (2020: part A) for a discussion of fraud as a business model.

economic cycles, Minsky's view was that the "invisible hand of the market" was destabilizing, while the "visible hand" of institutions (including, prominently, the visible hand of government) could produce a semblance of stability. But "stability is destabilizing." When he moved to the Levy Institute in 1990 his focus turned to analysis of the long-term transformation of the financial system over the past century, identifying several stages of capitalism, each associated with a particular type of financial system. Minsky had always joked that there are "57 varieties of capitalism" (a reference to the Heinz pickles slogan), but this work focused on the rise of "money manager capitalism" after 1980. In his view, this was a stage that was similar to the era of "finance capitalism" that crashed into the Great Depression. He worried this might "happen again" (from the title to his 1982 book). At the Levy Institute he created the long-running annual "Hyman P. Minsky Conference on the State of the US and World Economies," held each April to formulate proposals to "reconstitute" the financial system. In his view, the key to reforming capitalism is to reform finance, because he viewed capitalism as a "financial system"—and as the financial system evolved, the form of capitalism did also.[32]

Minsky had long argued that both the "big government" and the "big bank" should play a stabilizing role in the economy. The first refers to fiscal policy and the second to central bank policy. Minsky argued that the growth of the federal government from approximately 3 percent of the economy before the Great Depression to above 20 percent after World War II gave it the weight in the economy to offset fluctuations of private spending (like Keynes, he viewed private investment as the main source of fluctuation)—with the government's budget balance moving countercyclically it could potentially attenuate capitalism's natural propensity to boom and bust. He identified three effects of countercyclical budgets: the income effect, the cash flow effect, and the portfolio effect (Minsky 1986). The first is the usual Keynesian multiplier notion except that Minsky emphasized the automatic movements of transfer spending as well as government spending on interest. The second derives from the Kalecki profit equation—which Minsky added to his approach after his 1975 book: growth of a government budget deficit in recession can offset the impact on profits of falling investment.[33] This would help to maintain profit flows so

[32] See Tymoigne and Wray (2014)
[33] In the simplified "classical assumptions" Kalecki equation, aggregate profits are identically equal to the government's deficit plus investment plus the current account surplus.

that firms could service their debt—helping to prevent a Fisher-type debt deflation (where firms must sell assets to make payments on debt—pushing asset prices down). Finally, government deficits put safe government bonds into portfolios precisely when firms crave them and help to fuel the recovery, as they can be used for collateral when borrowing begins again.

Minsky had argued that one of the legacies of WWII's huge budget deficits was the large amount of government debt in private portfolios. This helped to maintain robust balance sheets (filled with safe assets) over the postwar boom as private firms and households began to borrow.

The most important role of the "big bank" central bank is to act as lender of last resort in a financial crisis. This puts a floor to asset prices (again, helping to prevent another Fisher debt deflation). This was the monetary policy counterpart to fiscal policy's role in setting a floor to aggregate demand. But because Minsky was also worried about the tendency toward runaway euphoria, he wanted fiscal policy to help enforce a ceiling on aggregate demand, and monetary policy to likewise put a ceiling on asset prices. Hence, the budget should move toward surplus in a robust expansion. The counterpart to lender of last resort policy was banking supervision and regulation by the central bank (and, in the case of the United States by the Treasury through the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation—which share responsibilities with the Fed). Unlike mainstream economists, Minsky did not believe the central bank can control the money supply through control over bank reserves. Instead, he wanted to influence bank lending—mostly by supervising the quality of assets banks purchased.

Minsky argued against the two main policy proposals of monetarists like Milton Friedman and Alan Meltzer: money supply growth rate rules and use of open market operations to supply reserves. The first would be ineffective—as early as 1957 Minsky argued that banks could economize on reserves by innovating, so that even with control over the quantity of reserves, the central bank could not control the growth of money. The second would diminish the central bank's ability to influence the quality of assets banks held and, thus, the types of lending they financed. Minsky wanted to force banks to the discount window for reserves. He argued that the Fed—like any other bank—would then get a chance to look at the books of the borrower (in this

case, a bank that needed reserves). The Fed could demand changes to bank behavior to reduce risky lending or lending to activities that it did not want to encourage. This would help advance the Fed's role in supervising and regulating. Unfortunately, Minsky ultimately lost both of these debates—as the Fed increasingly turned to open market operations in the 1960s (over the following decades, increasingly using the discount window largely for emergency lending to troubled banks), and Volcker's Fed explicitly adopted money growth rate rules in 1979. Each of these in their own way helped to bring on the transformation from a relatively robust financial system at the beginning of the 1960s to what Minsky termed "money manager capitalism" by the 1980s.

Minsky's framework has always been part of the Kansas City/Levy approach to MMT. When I first arrived at the University of Denver in 1987, I began to teach a course on Minsky, using his 1986 book; that continued at UMKC and now at Bard and Levy. Minsky's views of banking and financial markets, his views of the nature of money and the role of the government in the monetary system, his recognition that the market is naturally unstable, and his policy reforms have always been part of our approach to understanding how money works and how policy can be used to reform the system.

7. FUNCTIONAL FINANCE, DEMAND MANAGEMENT, AND FULL EMPLOYMENT

As mentioned above, Forstater brought Lerner's functional finance approach to MMT. The main argument is that the national government's budget should be *functional*, that is, formulated to serve the public purpose, rather than to achieve some preconceived "balance"—whether that be defined as setting spending equal to revenues, keeping deficits below some arbitrary ratio relative to GDP (such as the Maastricht Treaty's criteria of 3 percent), or keeping the ratio of government debt to GDP stable (i.e., below 60 percent, as Maastricht requires). Further, Lerner is famous for the government "steering wheel" metaphor: using (mostly) fiscal policy, it can keep GDP growing at some "Goldilocks" rate (neither too hot to cause inflation nor too cold to cause unemployment). This was, of course, a common interpretation of the policy implications of Keynesian economics in the 1960s—which was likened to "fine-tuning" the economy (again

with an emphasis on fiscal policy, as the early postwar Keynesians did not put much faith in the potency of monetary policy).

While Minsky was influenced by the Keynesian–Lerner approach to aggregate demand management, he rejected any notion of fine-tuning.[34] For Minsky, the most dangerous tendency in the postwar economy is the potential for runaway euphoric booms—not collapse (as he believed government would prevent a downturn from accelerating to a full-blown depression). It was precisely the recognition that government could prop up demand and intervene in a financial crisis that posed the greatest danger. If government could do this, it removed the possibility of severe downside risk and hence fueled optimism that would build to euphoria. This was apparent in his strong criticism of the Kennedy–Johnson War on Poverty.[35] Sure, he argued, government could boost demand and move the economy closer to full employment—with some jobs trickling down to the poor—but this would unleash inflation and financial instability so that full employment could not be maintained. It could never resolve the poverty and unemployment problem, he warned, because government would reverse course by putting on the brakes.

Further, he criticized welfare as a "conservative rebuttal" to the radical's claim that poverty and unemployment represent *failures* of the capitalism *system*. He argued that charity should not be the basis of a government's response to those failures. For Minsky, getting to full employment would be easy, but remaining there would be difficult. In chapter 24 of the *General Theory*, Keynes had warned of the two great faults of capitalism: the failure to operate at full employment and excessive inequality. Minsky added a third: the inherent tendency to financial instability, which could be fueled by policy to address the other faults. To tackle these faults, we need systemic reform—not welfare band-aids.

Minsky used to provoke me by disparaging welfare. At the time, I knew he promoted a New Deal–style jobs program (what he called "employer of last resort"), but his hostility to welfare was puzzling. I had no knowledge of his earlier work and hence no context in which to place his

[34] See Wray (2018).
[35] See Bell and Wray (2004) for an account of Minsky's parallel development of an alternative approach to poverty while he was at Berkeley during the Kennedy–Johnson years.

rejection of the Kennedy–Johnson approach that relied on maintaining high aggregate demand, providing Head Start early childhood education and skills training for adults, and tackling the "culture of poverty." While I also rejected Daniel Patrick Moynihan's thesis that poverty could be alleviated only by changing the behavior of the poor, I held the typical liberal views of welfare. There were some hints of Minsky's views in his 1986 book—such as the argument that welfare and food stamps add to the aggregate markup over costs and hence create price pressures—but I was unaware of his writings from the 1960s through the early 1970s on poverty, unemployment, and the employer of last resort. I found them only after he died, when I went through his office as well as his huge number of boxes stored in the Levy Institute's basement. Not only did I find those writings (some of which we collected for a short book published in 2013), but I also found a book manuscript that he worked on in the early 1990s. That manuscript put his critique and alternative within an updated framework that made it more clear why he thought that the welfare approach would promote inflation and financial instability.

In laying out his approach to policy to address the inherent faults of capitalism, Minsky argued in his 1986 book that: "The emphasis on investment and 'economic growth' rather than on employment as a policy objective is a mistake." He warned that focusing on growth could increase inequality and instability. The key arguments Minsky (1986, 308) made as he set out his employer of last resort (ELR) approach were:

1. "The policy problem is to develop a strategy for full employment that does not lead to instability, inflation, and unemployment. The main instrument of such a policy is the creation of an infinitely elastic demand for labor at a floor or minimum wage that does not depend upon long- and short-run profit expectations of business."

2. "Since only government can divorce the offering of employment from the profitability of hiring workers, the infinitely elastic demand for labor must be created by government."

3. "The permanent programs will provide outputs—public services, environmental improvements, etc. that transfer-payment government does not yield, as well as the creation and improvement of human resources."

4. “The fact that taxes need to be paid gives value to the money of the economy… the need to pay taxes means that people work and produce in order to get that in which taxes can be paid.”

Later I found a manuscript he had written in 1969 where he explained: “I labeled an employer-of-last-resort program as a wage support law; the terms upon which the government stands ready to employ all is analogous to the farm price support programs.”[36] Bill Mitchell would later independently develop this idea to propose an employed “buffer stock” as a stabilizing alternative to the orthodox NAIRU (non-accelerating inflation rate of unemployment) and the Marxist reserve army of the unemployed.[37] It began to be clear why Minsky had been hostile to welfare and why he saw the ELR approach as the way to achieve sustained full employment without setting off inflation and financial instability—using the program as a buffer stock of employed labor to stabilize wages just as agricultural buffer stocks stabilize commodities prices.

As Minsky had explained in various articles in the 1960s and through the mid-1970s, the “Keynesian” pump-priming approach would generally target spending to the most advanced sectors (for example, the military-industrial complex) that were unionized and oligopolized, or provide tax subsidies to private investment. In his view, both of these would promote inflation and financial leveraging. By contrast, targeting spending to the unemployed, taking workers as they are and where they are, would directly benefit low-income individuals and communities. He preferred a “trickle-up” policy over a Keynesian demand-side or a neoclassical supply-side “trickle-down” policy of pump priming or tax subsidies. By gradually raising the program’s wage floor and at the same time constraining wages at the top, he hoped to reduce inequality of incomes.

Many progressive critics of the job guarantee proposal have referred to a famous article by Kalecki,[38] arguing that full employment is not politically possible in a capitalist economy; as he put it: “The maintenance of full employment would cause social and political changes which

[36] Republished in Minsky (2013, 78).
[37] Bill called it “NAIBER,” the non-accelerating inflation buffer employment ratio—the ratio of the number employed in the ELR program over the total employment. This would fluctuate automatically to stabilize the economy.
[38] The original article was published in 1943 and republished in 1971 in a collection of his essays.

would give a new impetus to the opposition of the business leaders. The 'sack' would cease to play its role as a disciplinary measure. The social position of the boss would be undermined, and the self-assurance and class-consciousness of the working class would grow…. Their class instinct tells them that lasting full employment is unsound from their point of view, and that unemployment is an integral part of the 'normal' capitalist system…" (Kalecki 1971, 140–41).

While there is much in Kalecki's article to recommend it, the main argument became outdated in what Minsky called the "managerial welfare state" version of capitalism (or what is often called "social democratic capitalism" in Europe), where big government, big business, and big labor cooperated to maintain high employment (substantially close to full employment) for many years and even decades in some countries. Further, social safety nets and even generous welfare systems in many countries were accepted by capitalists—also for decades. Finally, the means discussed by Kalecki that might be used to achieve full employment (such as ramped up public infrastructure spending) did not include anything like the modern job guarantee policy proposals.[39]

In my view, Minsky's arguments against the use of Keynesian pump priming to try to achieve full employment were more cogent than Kalecki's. Even if capitalists "bought in" to pump priming (and it could be argued that they did with their endorsement of what Joan Robinson called "military Keynesianism"), Minsky argued that full employment could not be sustained by maintaining high aggregate demand—it would cause inflation and financial instability. To the extent that we can see the 1960s as an experiment in maintenance of full employment, it did contribute to inflationary pressure and financial fragility. Minsky had argued that measures that can move the economy to full employment (such as raising aggregate demand) might not be able to keep it at full employment. This is why he had proposed an alternative policy that targeted government spending directly to the unemployed.

In retrospect, Minsky's earliest writing was remarkably prescient. The War on Poverty did fail (Bell and Wray 2004). Financial instability did return, with a vengeance. The concern with

[39] See Bill Mitchell's blog for a thorough review of Kalecki's arguments along with a rebuttal of the potential use of them against a JG program: http://bilbo.economicoutlook.net/blog/?p=11127.

inflation in the late 1960s and early 1970s helped to fuel the turn to the most virulent form of pre-Keynesian neoclassical economics, and later to the rise of neoliberalism that destroyed organized labor and ramped up inequality. President Clinton finally ended "welfare as we know it," effectively putting the final nail in the War on Poverty's coffin. Minsky's alternative approach to stabilizing the economy with a targeted jobs program was always part of my Minsky course and became the most important policy pushed by our version of MMT.

8. MMT AND THE JOB GUARANTEE

As mentioned above, the beginnings of MMT can be dated to early 1996. Minsky had presented a paper at the annual American Social Science Association meeting in San Francisco in early January and then stopped for a visit in St. Louis with his doctor on the way back to New York. He was diagnosed with advanced cancer and soon began treatment. He died in the fall. As a result, he was not directly involved in the creation of MMT. I did meet with him to talk about my work. I recall telling him I was including an ELR proposal, and I mentioned the term "modern money," which I was playing around with to work up a book title. He raised his eyebrow but did not tell me about all his writings on the topic; nor did he tell me that he had used the term "modern money" as the working title of a book manuscript he had begun at Levy. In any event, in March 1997, we held a panel for the Eastern Economics Association: "Roundtable on Hyman Minsky and Government as Employer of Last Resort." My first Levy working paper on the topic was published in November (Wray 1997), which drew heavily on Minsky's 1986 book, but did not cite his earlier work, which I had not yet discovered.

Minsky used the term "employer of last resort"—which he said had been used during the New Deal era—to invoke a fiscal policy bookend to the central bank's lender of last resort responsibility. The private financial system cannot rescue itself when there is a run to a liquidity—the central bank must stand ready with a perfectly elastic supply of reserves. Similarly, a rise of liquidity preference would cause investment spending to collapse. Private employers cannot be expected to rescue the unemployed, for only the national government can provide a perfectly elastic demand for workers. The central bank was expected to provide

ceilings and floors for asset prices, while the Treasury would ensure ceilings and floors for aggregate demand through the ELR program. Essentially, Minsky saw the ELR as the fiscal policy counterpart to the central bank's lender of last resort function. While Minsky would also support other kinds of countercyclical spending, targeting jobs to the unemployed was the key. For reasons discussed above, he was skeptical of both the Keynesian pump-priming approach as well as of welfare programs. While the latter would be necessary, he argued that charity cannot be the basis of government antipoverty policy.

Minsky argued that with its fixed basic wage, the ELR program would not be inflationary. As noted above, he made a comparison to agricultural price support programs, which provide ceilings and floors to prices. They do not cause prices of covered products to rise, although they prevent them from falling. During shortages, government can release its buffer stocks of commodities to reduce price pressures. The ELR program operates in a similar manner. By contrast, Minsky saw both welfare and food stamp programs as potentially inflationary, as each of these increase demand for output without enhancing supply.[40] Minsky saw the ELR alternative as price stabilizing so long as the base wage is held relatively constant (Minsky would increase the program's wage on a pace determined by rising average labor productivity[41]) and so long as ELR workers did something productive.[42]

The Kansas City/Levy job guarantee proposal has always followed Minsky's lead. Like Minsky's proposal, ours is a universal program that takes workers "as they are, where they are." It would strive to enhance skills on the job and would produce socially useful output. Funding would come from the national government, the program would pay a single wage to all participants, and it would include a package of benefits (we would pay a living wage plus benefits including healthcare and childcare). This wage would become the national effective minimum wage (Minsky always argued that if there is any unemployment the effective minimum

[40] Minsky was particularly concerned that the food stamp program would simply drive up food prices, leaving the poor no better off; see Minsky (2013, 138–41).
[41] To reduce wage inequality, Minsky proposed that wages at the bottom would rise faster than labor productivity, while wages at the top would rise more slowly than labor productivity, compressing the wage structure.
[42] Minsky's vision of the ELR program was highly influenced by the US Works Progress Administration (WPA), which contributed greatly to the economic development of the United States—preparing it for WWII and for the postwar boom.

wage is zero). Minsky used to wonder aloud whether the US government had administrators as competent as those who ran the New Deal program—particularly after President Reagan had purposely put incompetent administrators in charge to destroy confidence in government's capacity. We took that to heart in constructing our proposal. The main difference between his and ours is that he modeled his ELR on the WPA (centrally administered) while ours would be highly decentralized (with local governments and not-for-profits organizing the projects).

9. CONCLUSION: MMT AND POLICY

Much of MMT is descriptive, explaining how sovereign currency "works," as well identifying the policy space open to a sovereign currency issuer. The descriptive part can be used by either progressives or conservatives to formulate policy. MMT's developers are largely progressive but have sought to explain how the monetary system in place works with a view to exposing fallacies held by both the right and the left. For the most part, the descriptive part of MMT can be separated from the policies advocated by MMT's proponents. However, we see three policies as following directly from MMT: the job guarantee, flexible exchange rates, and interest rate targeting.

Some critics claim that the job guarantee is not essential to MMT. They see it as, at best, an optional policy that some progressive proponents of MMT have unnecessarily added. This is false. All of MMT's developers (including Warren Mosler, as well as the Newcastle approach of Bill Mitchell) have included the job guarantee from the beginning as one of the fundamental policies. MMT sees the job guarantee as the most important policy to regulate the value of a sovereign currency.

As discussed above, MMT argues that "taxes drive money" in the sense that obligations create the initial demand for the sovereign's currency. This ensures that currency will have some value. However, MMT insists that the value is determined by what one must do to obtain the currency. If one must work for one hour to obtain $15, that establishes the value of the currency: one hour of labor equals $15. If a job guarantee program pays $15 as the basic wage, this ensures that

anyone willing to work will be able to obtain that wage. Other employers will have to at least match the wage. Workers of higher skill or otherwise in greater demand will receive higher pay as other employers try to bid them away from the job guarantee program.

MMT views the sovereign government as the price-setter and quantity-taker through the job guarantee program. As in Minsky's approach, MMT argues that the job guarantee is a stabilizer of employment, wages, aggregate demand, and prices. Setting the base wage and operating a buffer stock of labor helps to directly stabilize wages and prices more effectively than simply trying to rely on aggregate demand stabilization.

Further, by using the job guarantee as the major anti-unemployment policy, it will not promote financial instability. As Minsky argued, choosing the typical conservative supply-side policy of tax cuts for the rich or subsidizing investment can encourage speculative booms, as does the typical Keynesian pump priming aimed at the most advanced industrial sectors. Such policies increase inequality, which over recent decades has forced at least the bottom half of the distribution to rely on debt to maintain living standards. The job guarantee instead provides jobs and can be used to raise wages at the bottom, enhancing equality and reducing the tendency toward financial fragility. For these reasons, the job guarantee is an essential component of MMT.

The other two policies that are fundamental to MMT are flexible exchange rates and interest rate targeting by the central bank. Flexible exchange rates maximize policy space and eliminate the danger of forced default by government on its domestic currency obligations. A country that pegs to precious metal or to a foreign currency must have adequate access to the metal or foreign currency. Since it has promised to convert at a fixed exchange rate, both its currency and its bonds are effectively claims on the metal or foreign currency. To ensure it can meet those claims, its domestic policy must be shaped by the need to maintain adequate reserves for conversion. This generally means austerity policy to run current account surpluses and/or to please suppliers of the metal or foreign currency through the capital account. MMT proponents do not necessarily claim that every country should float, they simply argue that the domestic policy advantages of

issuing a sovereign currency are not available to a nation that doesn't float. In some cases, pegging or managing an exchange rate might be the best policy for an individual nation.

MMT has always accepted the horizontalist view that the central bank sets the overnight interest rate target and then accommodates the demand for reserves—a view that is now also commonly accepted by central bankers. In difference to conventional views (and those of some followers of the horizontalist approach), however, MMT does not support use of interest rate policy to manage demand (and indirectly to manage inflation). First, there is little evidence that spending is sufficiently interest-elastic to enable a central bank to have much influence over aggregate demand within the normal range of interest rate targets. Second, there is little evidence that central bank interest rate policy (or even the nontraditional QE and negative interest rate policies of the past decade) has been able to move inflation rates in desired directions. Third, while sharp increases to very high interest rates (such as those produced by Volcker's experiment in monetarism after 1979) can break a speculative bubble, they do so by present value reversals, insolvencies, bankruptcies, and financial crises. The costs of these episodes are great, and it is likely that credit controls as well as tighter regulation of financial institutions would be more effective. For these reasons, MMT proposes greater reliance on fiscal policy as well as more focus on quantitative and qualitative control of financial institutions rather than manipulation of interest rates.

MMT prefers a low and stable interest rate target. Because MMT recognizes that government bonds are not really a borrowing operation and instead should be seen as a tool of interest rate policy, it sees interest payments on reserves as a viable alternative to issuing bonds—as either will serve to keep the overnight rate in line with the interest rate target. For this purpose, short-term bonds are sufficient (i.e., one to three month) as they serve as a good substitute for interest on reserves. Minsky and MMT both see interest payment by government as a generally inefficient form of government spending: it tends to go to high-income individuals, to institutional holders, and to foreigners. For this reason, the interest rate target should be kept low. Further, as Keynes argued, the policy rate sets the base interest rate for the economy; the higher the target, the greater the hurdle that must be reached for alternative investments. All else equal, high interest rates reduce investment that would be in the private and public interests (while the

national government can always make interest payments no matter how high they might be, subnational governments are in a different position and interest costs on their public infrastructure can significantly increase total costs faced).

Keynes advocated "euthanasia of the rentier" through eliminating interest on risk-free debt. Interest would be a reward only for taking risk. This is a recommendation for permanent zero interest rate policy (ZIRP), and it has been adopted by MMT proponents such as Bill Mitchell, Warren Mosler, and Mat Forstater. While I agree with this as a general policy, I can also see a public interest in offering risk-free savings bonds to individuals, pension funds, and insurance companies. Only qualifying buyers would be allowed to hold them (with income and wealth caps for individuals and conditions placed on institutional holders) and the interest rate would be set by Congress or Parliament.

These are the basic policies accepted by all the developers of MMT. Of course, proponents of MMT also have formulated other policy proposals to promote the public purpose. While these do not necessarily follow from the tenets of MMT, understanding how "modern money" works helps to delineate what is financially possible. Of course, MMT can also be used by conservatives to formulate policy that is not in the public interest—such as foreign wars to subjugate other peoples or policies to increase inequality in order to benefit the lucky few. While we recognize that this is a danger, it can be avoided only by arming progressive movements with the understanding they need to counter the claims that government cannot afford to spend in the public interest. Given a choice between explaining how sovereign currency works versus perpetuating lies about budgeting—lies that have been propagated by anti-democratic elites that fear their status could be challenged by the truth—MMT chooses to enhance understanding.

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