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***“The Reality of the Present and the Challenge of the Future”:
J. Fagg Foster for the Twenty-First Century***

L. Randall Wray

Abstract: This paper revisits J. Fagg Foster’s early assessment of the relevance of John Maynard Keynes’s theory of institutional economics. In his view, neither institutionalists nor most of Keynes’s followers really recognized the importance of Keynes’s theoretical insights. I examine Foster’s views on economic theory, with a particular focus on monetary theory. I apply Foster’s approach to what is now called modern money theory, an approach developed by heterodox economists working in the institutionalist and post-Keynesian traditions. I argue that this approach is consistent with Foster’s, and it offers a way forward to policy formation for the twenty-first century.

Keywords: institutionalist theory, instrumental value theory, J. Fagg Foster, Keynesian theory, modern money theory, monetary theory and policy

JEL Classification Codes: A13, B15, B25, B31, B52, E12, E14, E52, E62

Is this the age of John Maynard Keynes? That was the question raised by J. Fagg Foster in a 1966 paper read for AFEE.¹ In the 1960s, the answer seemed obvious. Keynes dominated economics – or, at least, macroeconomics – and Keynesianism seemed to inform policy. And it worked, or so most economists thought.

Foster was not so sure. While he agreed that “[t]here probably has been no instance in history in which a pattern of ideas has had so much effect on the everyday life of everyone in so short a time,” he still thought most of Keynes’s followers misunderstood Keynes’s theory in important ways (Foster 1981b, 949). Furthermore, Foster was not convinced that Keynes’s theory was up to the task of providing the

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¹ See J. Fagg Foster (1981b) for a detailed examination of Keynes’s economics. I also discuss another paper Foster delivered in 1966 (1981a).

basis for policy recommendations. Finally, he (1981b, 954) lamented that “among all post-Keynesian economists, the institutionalists seem to have been least affected by Keynes’s theory ... The institutionalists have not even contemplated the possibility of any generic relationships between the Keynesian theory and their own.”

Barely a decade later, the so-called Keynesian economics was in disarray – a casualty of the apparent failure of policy to fine-tune the economy. Stagflation at the end of the 1970s delivered the final blow, and it fueled the rise of increasingly preposterous approaches, such as the rational expectations, the real business cycle theory, the efficient markets hypothesis, and the dynamic stochastic general equilibrium (DSGE) models with a single representative agent standing in for the economy as a whole (see Skidelsky 2010). In truth, even in the heyday of Keynesianism, policy was usually directed at stimulating the sentiments of the business undertakers – precisely what Keynes should *not* have recommended – with supply-side tax cuts and a cornucopia of overt and covert subsidies to the captains of industry.

While it is true that a parallel approach developed, calling itself New Keynesianism, according to Robert Skidelsky (2010), the only thing “new” was the adoption of the craziest orthodox ideas (witness rational expectations). Also, the only thing “Keynesian” was the mainstream presumption that sticky wages and prices prevent instantaneous market clearing – which was actually the old neoclassical explanation of unemployment that Keynes had dispatched. So, with friends like these, Keynes did not need enemies.

In this paper, I examine Foster’s views on economic theory, with a particular focus on monetary theory. I apply Foster’s approach to what is now called modern money theory (MMT), an approach developed by heterodox economists working in the institutionalist and post-Keynesian traditions.² I argue that this approach is consistent with Foster’s and it offers a way forward to policy formation for the twenty-first century.

Before proceeding, I acknowledge the significant debt I owe to a number of Foster’s students from whom I learned Foster’s work second-hand. These include Bill Williams, Baldwin Ranson, Dale Bush, Kenny Powers, and Edie Miller. Above all, I thank my own professor, Marc Tool, and Gladys Foster for their friendship and their contributions to the scholarship on Foster’s teachings.³

Foster on Keynes’s General Theory and Its Relevance for Institutionalists

In retrospect, Foster might have been a bit hard on the institutionalists. While it took them a while to embrace Keynes, most today accept Keynesian *macro*-theory as their own. Still, some discomfort with Keynes’s theory – or just about any theory – is occasionally expressed on the argument that theory is too mechanical, that it abstracts

² See Stephanie Bell (2000), Mathew Forstater (1999), Scott T. Fullwiler (2003, 2005), F. Gregory Hayden (2013), Alexander Lascaux (2012), and Marc Lavoie (2013).

³ See Baldwin Ranson (1981) for an overview of Foster’s papers, published in the same issue. See also Gladys Foster (1987) and Marc Tool (1989) for discussions of Foster’s work.

too much from institutions, and that it is constraining (i.e., restricted in its applicability).⁴

Foster addressed these concerns about *The General Theory of Employment, Interest and Money* (1964, hereafter *The General Theory*). While in the hands of the "Keynesians," the whole argument became a simple arithmetic problem (multiply the inverse of the marginal propensity to save by autonomous spending), Keynes's own exposition was dynamic, general, and "open." Keynes's theory, according to Foster,

is an explanation of the proximate determination of income — proximate in the sense that it does not include the determination of the independent variables (except the rate of interest), the relationship between which determines the level of income in the immediate sense. It is not proximate in the sense that it applies only to a given time or place or to a certain institutional and technological situation. Its structure and constructs exhibit generality and foundation." (Foster 1981b, 953)

Foster went on to argue 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" (Foster 1981b, 953, emphasis original). It is this generality that makes Keynes's theory "open-ended in the sense in which that quality is associated with scientific theory as such" (Foster 1981b, 953).

By contrast, the neoclassical theory is "teleological" — closed and hence unscientific — as Thorstein Veblen (1909) argued. But, according to Foster (1981b, 955), 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"⁵ [Foster 1981b, 955].)

Let me give two examples. In neoclassical general equilibrium theory, the goal was to find a single vector of equilibrium relative prices that would clear all markets, given the assumptions about behavior, tastes, and endowments.⁶ By contrast, Keynes's

⁴ I occasionally encountered such resistance when trying to publish papers on money in institutionalist journals. For example, my AFIT presidential address was published not in an institutionalist journal, but by the JPKE ("An Irreverent Overview of the History of Money from the Beginning of the Beginning through to the Present," *Journal of Post Keynesian Economics* (Summer 1999): 679-687. An update and major extension was published in May 2012, "Introduction to an Alternative History of Money," as Levy Institute Working Paper #717.)

⁵ We should not expand the critique made by Veblen and Foster of neoclassical theory to theory in general. As Foster (1981b, 955) argued, there is nothing wrong with scientific theory that is general, dynamic, and open: "Keynesian theory is clearly open-ended."

⁶ While the existence of an equilibrium price vector was proven (given assumptions), neither uniqueness nor stability of the equilibrium could be shown. In that sense, the whole project was a failure. Ironically, the problem was the lack of institutional constraints that are required in order to narrow the set of equilibrium prices and to ensure stability (see Ingraio and Israel 1990).

theory allows for equilibrium (of a different sort, defined as a state of rest, or a position in which those who make the decisions have no incentive to do anything different, *ceteris paribus*) at any level of output and employment, with the point of effective demand determined by the three independent variables listed above. To put it differently, firms hire the amount of labor they think they will need to produce the amount of output they think they can sell. In this way, expectations and hiring decisions of business undertakers determine the point of effective demand, which need not clear any market.⁷

As another example, Keynes distinguished between the neoclassical notion of a “natural rate” of interest and his own “neutral rate.” In neoclassical theory, market forces are supposed to produce a unique rate of interest that equilibrates saving (a function of the rate of time preference) and investment (a function of the marginal productivity of capital). Without going into details, this ensures that Say’s Law operates – which is the low brow neoclassical analogue to the Arrow-Debreu general equilibrium.

Keynes argued that saving equals investment regardless of the rate of interest, hence any interest rate is “natural” in the neoclassical sense, and each different natural interest rate has its own corresponding level of effective demand. However, only one interest rate is consistent with the full employment level of effective demand and that is the “neutral rate.” Keynes’s system is “open” in the sense that any interest rate and any level of effective demand is possible. The neoclassical system is “closed” because the assumptions are supposed to ensure that there is a unique “price” (interest rate) that clears the market (loanable funds market, in this case).

As Foster claimed about *The General Theory*, “almost any theory of the rate of interest which does not involve the rate of money savings as a determinant of the rate of interest would be compatible with the Keynesian general theory of income. In any event, the three independent variables are presented as institutionally determined. And that identification discloses that determination of each variable is within the area of discretion – they can, for example, be affected by public policy” (Foster 1981b, 955). Again, this “openness” of *The General Theory* stands in contrast to the tautologies of neoclassical economics.

Somewhat remarkably, Foster recognized Keynes’s Chapter 17 of *The General Theory* (1964) as a theory of asset prices. I say “remarkably,” because very few economists understood what Keynes was trying to do in that chapter. Most look to the exposition in Chapters 13 and 15, which has the interest rate determined by “money supply and money demand.” Some of the followers of Keynes (Hyman P. Minsky, Paul Davidson, and Jan A. Kregel) have insisted that we need to look at Chapter 17 of Keynes’s book instead.⁸ As it turned out, the much more conventional approach taken in the earlier chapters led to J.R. Hicks’s fundamentally flawed investment saving liquidity preference money (ISLM) analysis.

⁷ See Fadhel Kaboub (2007) for a rejection of the orthodox view of the cause of unemployment, which is said to be found in the “labor market.”

⁸ See L. Randall Wray (1992, 1995) for discussion.

Furthermore, especially as Jan A. Kregel has pointed out,⁹ the supply and demand approach is subject to Piero Sraffa's critique of the whole Marshallian supply and demand edifice. It is doubly ironic that Chapters 13 and 15 of *The General Theory* form the basis of the mainstream "Keynesian" monetary theory. Keynes had prodded Sraffa to produce the criticism aimed at Friedrich Hayek's capital theory, and earlier, together with Sraffa, had developed the commodity "own rate" approach adopted in Chapter 17.

Foster (1981b, 953) emphasized the generality of the Chapter 17 approach: "Even in the absence of money, judgments would have to be made about whether to add to inventory and what the components of the inventory should be. All commodities have their 'own rates'." Keynes presented a liquidity preference theory of the own rates, with behavior resulting from a preference for liquidity, institutionally determined as a pattern of "correlated human behavior" (Foster 1981a, 964).

Foster's Approach and Heterodox Money Theory

In this section, I review a heterodox alternative to the orthodox money supply and money demand approach that is consistent with Foster's institutionalist approach.¹⁰ Recall that orthodoxy has a money supply that is fixed by the authorities and a money demand function that is determined by three presumed motives for holding money — i.e., Keynes's transactions, precautionary, and speculative demands — with the intersection determining *the* interest rate.

Post-Keynesians turned this on its head, making the money supply "horizontal" at *the* interest rate determined by the central bank.¹¹ The central bank accommodates the bank demand for reserves, and banks accommodate the demand for loans. The money supply is "endogenous" and interest rates are "exogenous." The two points of equilibrium are the intersections of a downward-sloping money demand curve crossing the horizontal money supply curve, and a downward-sloping demand for reserves crossing a horizontal supply of reserves.¹²

While this is an improvement, it is not a very satisfying one. I will not go into a critique of horizontalism,¹³ but instead wish to hold it up to Foster's critique of "Keynesians." Is this "general"? Is it "scientific"? Is it "institutional"? Foster (1981b, 956) insisted that "Keynesian theory must be developed toward generality and foundation."

Many institutionalists have argued that money is an institution.¹⁴ In fact, Dudley Dillard (1980) argued that it might be the most important institution in the capitalist

⁹ See Jan A. Kregel (2010) and Wray (forthcoming).

¹⁰ See D.J. Bezemer (2007), Lascaux (2012 op.cit.), Georgios Papadopoulos (2009), and Wray (1989b, 1991a, 1992, 1993, 1995).

¹¹ See B.J. Moore (1995), Jane Knodell (1995), and Wray (1989a, 1995).

¹² Note that the mainstream would have no complaint about using the "horizontalist" supply-and-demand framework to display a case where the central bank chooses an interest rate peg, although they would reject it as a description of normal policy.

¹³ See Wray (1990).

¹⁴ Again, for recent examples, see Lascaux (2012), Papadopoulos (2009), Wennerlind (2001), and Wray (1989b, 1991a, 1992, 1993, 1995).

economy. Yet, most economists, including institutionalists, identify *things* as money, too, such as wampum, shells, metal coins (and even uncoined metal), paper notes, and demand deposits.¹⁵ How can a *thing* be an *institution*? As Foster (1981a, 964) argued, “the very word *institution* connotes patterns of correlated human behavior; it does not pertain to nonhuman phenomena.” Things are not correlated human behavior.

What is the nature of the institution that we call money? What do the *things* that many people call *money* have in common? Most economists, including institutionalists, identify *money* as something we *use* in exchange. The conventional Keynesian motives also define money as *something* we can *hold* as protection against unforeseeable events. Others, such as Paul Davidson (1978), emphasize that we preserve flexibility by writing contracts in *money terms* – contracts are *denominated* in money, much as they are *written* in English (or another legally sanctioned language).

One of the most popular institutionalist tracts on money is a book by Walter (Terry) Neale.¹⁶ I confess that after reading his book several times, I came away with no firm idea about what money is. While Neale (1976) tells a series of good stories about lots of different “monies” and human behavior, the “monies” seemed to be a wide variety of “things,” not correlated human behaviors. In his conclusion, Neale argues that all monies have at least one of two characteristics: (i) they are used to make several kinds of payments; and (ii) they serve to measure values of some other things, processes, or events. His discussion of money involves human relationships with things – what humans do with the things he calls money – rather than with money as an institution itself.

On Foster’s definition of institution, these approaches to money seem to fall short, although at least Davidson’s approach focuses on a social convention rather than a *thing*.¹⁷ If we are to follow Foster, we need to drop the money-as-a-thing, the money-demand-and-supply, and the money-as-a-medium-of-exchange approaches to money. Instead, we need to focus on the institutional nature of money.

In *The Treatise*, Keynes ([1930] 1976) began with the *money of account* – the unit in which we denominate debts and credits – and prices. He also made statements

¹⁵ See, for example, Walter Neale (1976), who includes everything from cattle to Yap island stone wheels as “money.” Neale’s approach is very similar to Paul Samuelson’s list of things used as money that includes wives, focusing on the “functions” served by money. Like orthodox economists, the main function Neale uses to identify money is what thing is used to make payments. This is a common theme in institutionalist writings. Lascaux (2012, op.cit.), for example, insists that money is an institution, a socially constructed debt relation, but still focuses on money “as a means of discharging debt obligations.” Lascaux also follows Viviana Zelizer’s view that “every currency attaches to a circuit of exchange” (Lascaux 2012, 80). While this is a significant advance over orthodoxy, it still focuses excessively on money’s “thing-ness,” rather than on its institutional nature.

¹⁶ Neale (1976).

¹⁷ I do not intend to be overly critical. Carl Wennerlind (2001) clearly argues that money is a social relation that mediates interaction between people. Faruk Ülgen (2014) refers to the “peculiar” nature of money in that it is socially guided and controlled, allowing individuals to undertake decentralized decisions. Papadopoulos (2009, 962) defines money as an institution “because of its dependence to [sic] these constitutive and normative rules” that give “rise to specific patterns of behavior and habits of thought.” Lascaux (2012) defines money as a socially constructed relation of debt.

about the *nature* of the money of account. Following G.F. Knapp, Keynes argued that for the past 4,000 years at least, the money of account has been chosen by the state authorities. Keynes's generalization holds up well, as there are few exceptions to the rule that monies of account are chosen by authorities.¹⁸ As Georgios Papadopoulos (2009) reports, a survey of 1,200 ethnographic studies convincingly reinforces Keynes's argument that money originated in non-commercial activities.¹⁹ In any event, as Geoffrey Ingham²⁰ has argued, units of measurement are necessarily social constructions. I can choose my own idiosyncratic measuring units for time, space, and value, but they must be socially sanctioned to become widely adopted.²¹

Following Philip Grierson,²² Geoffrey Ingham argues that this is particularly true for a unit used for valuing heterogeneous things, which share no obvious physical characteristics. It is relatively easy to develop weight units – typically an important grain food is counted out to obtain the weight measure – or length units (the King's foot will do). But *money* value is a conceptual leap. We know that the early money units came from the weight measures, but that leap is still difficult because the *money* values of a cow versus a basket of fruit cannot be simply obtained by their weight equivalent in terms of barley grains. As Michael Hudson²³ demonstrated, the earliest money units were equivalent to a month's ration of grain, and the authorities measured and established the money value of other things by posting price lists.²⁴

So, one commonality is that all monies are measured in a money of account. All those *things* economists declare to be *money* are denominated in the money of account. But the *nature* of money must amount to more than that if money is to be considered an institution. We have an inch or a centimeter that we use to measure the length of a couch, but no one claims that a couch is an institution, even though we certainly

¹⁸ As Geoffrey Ingham states, examples of non-state currency are few and short-lived, and the authority of the state seems to be necessary to sustain currency (Ingham 2006; Papadopoulos 2009).

¹⁹ "Such evidence, although inconclusive, is supportive of the explanation of the emergence of money in terms of taxation and authority, as opposed to an outcome of exchange and efficiency" (Papadopoulos 2009, 959).

²⁰ See Ingham (2004) and Wennerlind (2001).

²¹ "Typically, but not exclusively, the right to issue money is reserved for a political authority. This political authority symbolizes and represents the community it governs, and the monopoly to issue money is exercised in the name of this community. Still, this authority and the consequent monopoly on issuing money are also socially constituted – and thus are dependent on the collective intentionality of the subjects of the political authority ... the fact that money is socially recognized creates obligations as well as expectations for the people who share this collective intentionality toward its status as money" (Papadopoulos 2009, 962).

²² Grierson (1977).

²³ Hudson (2004).

²⁴ "As far as we know, writing proper began in ancient Iraq. By 3300 B.C. simple impressed tokens were superseded by a system of pictographic and numerical signs. The first known use of writing was for official book-keeping in city states like Uruk. By about 3100 BC we find documents recording multiple transactions over a period of days, months or years or involving several cities." Between 3300 and 3100 BC, food rations are recorded "by combining a human head and a bowl. Temples issued workers with daily rations of barley beer, the staple drink of Mesopotamia," with the ration claims "written" on clay tablets that could cover "rations to feed one worker from a day to 150 years" (Source: Display in the British Museum, London).

agree that the inch and centimeter are social conventions used to measure the couch *thing*.

Markets are surely institutions. While neoclassical economists usually only address one kind of market (the famous auctioneer taking bids and offers), we know there are many types of markets. As mentioned, many economists identify money as that which is used to intermediate market exchange. But that seems to reduce money to a thing that we agree to use to intermediate exchange in the institution we call a market, rather than being an institution in its own right.

What is the *institutional* nature of those *money things*? The most obvious shared characteristic of *some* (possibly most, or even all) of them is that they are evidence of debt: Coins and treasury or central bank notes are government debt, and bank notes or deposits are bank debts. We can also expand our definition of *money things* to include shares of money market mutual funds that are debts of their issuers.

If we go back in time, we would find wooden tally sticks issued by European monarchs and others as evidence of debt (notches recorded money amounts). According to Knapp,²⁵ we can even view the claim ticket issued by the coat check attendant as a debt that is redeemed by returning one's coat. Clearly, it does not matter what material substance is used to record the debt. The claim ticket and the tally stick are just tokens, records of the relation between creditor and debtor. In each case, there is a prescribed pattern of behavior: The coat check attendant owes a coat to the claimant, and the monarch promises to redeem his tally IOU ("I owe you"). In each case, there are prescriptions governing redemption. The attendant cannot return just *any* coat. It must be the coat originally deposited, and it must be returned in a condition close to the original. A taxpayer cannot bring *any* notched hazelwood stick. The stock and stub must match exactly when tested by the exchequer or his representative.

Note that use of cowry shells or the huge stone "wheels" of the Yap islanders or the tobacco leaves of early America would not seem to fit this explanation — they seem to be "things," not "records" of money debt. However, as Forstater²⁶ has shown, the cowry shells used as money things actually were issued by authorities as a debt that could be used to pay taxes (discussion below). And the stone wheels were converted from "primitive valuables" (as Dalton²⁷ put it) to "money-like" things by German colonizers, who "seized" them by painting an "X" on them and requiring that the Yap people work to earn their return.²⁸ The example of American tobacco seems to come close to barter exchange of things, although the money value of tobacco was administered by the authorities. Hence, it was not really (or just) a barter of things, but rather an exchange of money values. Tobacco would be used in many of these exchanges because the authorities administered its price.²⁹

²⁵ Knapp ([1924] 1973).

²⁶ Forstater (2010).

²⁷ George Dalton (1965).

²⁸ See Wray (1998).

²⁹ See Alfred Mitchell-Innes's paper, "What is Money," (1913) (in Wray 2004, op.cit.). Following Keynes then, I am only addressing "modern money" — the nature of money for the past 4,000 years.

Alexander Lascaux (2012, 80) follows Viviana Zelizer (who claims that "[t]here is no single, uniform, generalized money, but multiple monies")³⁰ and Neale in asserting "the multiplicity of money in societies and the broad variation of the objects, forms, and circumstances of the monetary payments in different systems of economic and social relationships." While it is true that the *record* of debt can take multiple forms — notched sticks, stamped coins, or electronic entries — it does not mean that there is no general social relation that we can identify as a debt denominated in the money of account.

In my view, we should treat money as an institution, while the method of keeping records of money-denominated amounts is a question of technology. Hazelwood tally sticks resolved one kind of problem (counterfeiting), but were difficult to transfer because the stock and stub had to be matched to check authenticity. With technological advances in minting coin, authenticity was enhanced, but Gresham's Law acted to drive "good" (heavy) coins out of circulation. Paper notes resolved the problem of clipping or rubbing coins, but they were relatively easy to counterfeit until quite recently. However, these are not examples of a "multiplicity" of "monies," but rather of technological solutions to a variety of problems of creating transferable records of monetary debts.³¹

I am going to restrict the rest of my arguments to the more clear-cut examples where there is no dispute about the debt-nature of the money things. These are far more relevant to the analysis of modern economies and are sufficient to demonstrate the MMT approach to money.³²

³⁰ See Viviana Zelizer (1994, 18-19).

³¹ This is not to deny the main points that Zelizer and Neale were driving at. Zelizer argues quite sensibly that individuals earmark varied income sources for different purposes (wages pay rent, tips are for splurges). Neale holds that ceremonial use of primitive valuables should not lead one to jump to the conclusion that tribal societies used general purpose money. In my view, while correct, these observations are substantially unrelated to the topic of the institution identified by Dillard and Foster as "money."

³² As is well-known, orthodoxy presumes that money evolved as a solution to the problem of barter. Not only is there little historical or anthropological evidence in support of that view, but it also faces a logical problem: Individuals are supposed to believe that the chosen "money thing" is and will remain acceptable, but that it is "predicated on and conditioned by the collective belief ... To put it more clearly, the construction of the collective acceptance of money as the aggregation of individual beliefs presuppose the collective acceptance they need to constitute." This poses a fatal free-rider problem for the presumed evolution to a paper money: "[A]s long as fiat money remains intrinsically valueless, individuals will be better off if others exchange their goods for 'worthless' fiat money with them, while they exchange their goods only for other goods" (Papadopoulos 2009, 955-956). While many "goldbugs" would agree with that critique — which is why they want to go back to gold — they cannot explain why the so-called fiat money duped so many dopes for so long.

Modern Money³³

What we have then is a socially created and generally accepted money of account, with debts that are denominated in that money of account. Within a modern nation, socially sanctioned money-denominated debts are typically denominated in the nation's money of account. In the US, it is the dollar. Some kinds of money-denominated debts "circulate," used in exchange and other payments (i.e., paying down one's own debts).³⁴ The best examples are currency (debt of treasury and central bank) and demand deposits (debt of banks). Why do we accept these in payment?

It has long been believed that we accept currency because it is either made of precious metal or redeemable for the same – we accept it for its "thing-ness." In truth, coined precious metal almost always circulated well beyond the value of embodied metal (at least domestically), and redeemability of currency for gold at a fixed rate has been the exception, not the rule. Thus, most economists recognize that currency today is (and often was in the past) "fiat". More importantly, legal norms going back to Roman times have typically adopted a "nominalist" perspective: the legal value of coins was determined by a nominal value. For example, if one deposited coins with a bank, one could expect only to receive on withdrawal currency of the same nominal value.³⁵ In other words, even if the currency consisted of stamped gold coins, they were still "fiat" in the sense that their legal value would be set nominally.³⁶

One could concoct a variety of stories about why someone would accept another's "fiat" debt, denominated in the national money of account. I will accept your IOU if you promise to redeem it later for something I want – a commodity, a

³³ The term "modern money" comes from a quote of Keynes, who argued that the chartalist or state money approach – that provides the foundation for the MMT – applies to the last 4,000 years, "at least." So, in short, the MMT applies to the use of money since the rise of civilization (see Wray 1998a). Neale (1976) uses the term "modern money" to apply to "general purpose money," as opposed to "limited purpose." Hence, his use of the term is similar, although more restricted, arguing that its origins can be found in early coinage and the rise of commercial debt (i.e., only 2,500 years ago). Neale (1976, 2-3, 65) goes on to argue that modern money is used in six ways – again closely identifying money with its functions. Neale has little to say about the government's role, and denies that there can be a "nature" of money. His book has no citations to the early chartalist literature, to Keynes, or to later developments, such as Lerner's "money as a creature of the state" or "functional finance" approach, nor to work by Grierson and others who linked money's origins to wergild debts (see Wray 1990, 1998a, 2012, for discussions of the chartalist, state money, or the MMT approaches; also see Forstater 1998a, 1998b, 2005; Kaboub 2007; and Fullwiler 2005, for discussion of the functional finance approach. A collection of chapters on the topic can be found in *Reinventing Functional Finance: Transformational Growth and Full Employment*, edited by Edward Nell and Mat Forstater. Cheltenham, UK: Edward Elgar, 2003).

³⁴ Neale (1976) distinguishes between "credit" and "money" (or, more narrowly, "money proper"). Credit is a promise to make a deferred payment, while money is accepted as full and final payment. While "credit" might be accepted in payment by a "second party," it is not likely to be accepted as final payment by a "third party." However, Neale notes that in the case of a bank's demand deposit, it is simultaneously credit (can be redeemed for cash) and money (accepted as final payment).

³⁵ In Roman law, an exception was made if one deposited coins for safe-keeping in a sealed sack, in which case, the bank must return the sack still sealed (see Wray 2012).

³⁶ However, Gresham's Law dynamics would not allow nominal value to fall much below the bullion value since coins would be taken out of circulation (see Wray 2012, op.cit.).

service, or someone else's IOU. I might be able to pass off your IOU to a third party before redemption day if I can find someone who is willing to accept it (and who exchanges something I want now more than whatever it is you have promised to give me later). Some IOUs might be easier to pass along, and they could become a generally recognized media of exchange and payment. Some refer to "trust," "trustworthy," or "trustiness" as an important ingredient in money's acceptability.³⁷

That is indeed the typical story. It usually takes the form of an infinite regress argument: I accept BillyBob's IOU because I think BuffySue will take it, and she accepts it because she believes she can dupe some other dope to take it. This is perhaps an institutional approach to money: the institution is "trust" or "delusion" (depending on how well it is working). But, it is hard to believe that such an ephemeral social relation underlies "the most important institution of the capitalist economy."³⁸

When this is applied to a sovereign's currency, it is said that we accept it both because it is "legal tender" and because we think there are plenty of people who will take it. However, sovereign currencies are accepted without legal tender laws, and are refused with them. As Knapp put it, those laws are little more than a "pious hope." The dupe-a-dope explanation of the sovereign's currency relies on weak institutions — probably, at times, even weaker trust and more fragile delusion than in the case of acceptance of IOUs of some private issuers.³⁹

The argument of Adam Smith, Knapp, Alfred Mitchell-Innes, Keynes, Philip Grierson, and Abba Lerner is that currency will be accepted if there is an enforceable obligation to make payments to its issuer in that same currency.⁴⁰ Thus, the MMT has adopted the phrase "taxes drive money" in the sense that the state can impose tax liabilities and issue the means of paying those liabilities in the form of its own liabilities. Here, there is an institution — or a set of institutions — that we can identify as "sovereignty."⁴¹ As Keynes stated, the sovereign has the power to declare what will be the unit of account — the dollar, the lira, the pound, the yen. The sovereign also has the power to impose fees, fines, and taxes, and to name what it will accept in payment. When the fees, fines, and taxes are paid, the currency is "redeemed" — i.e.,

³⁷ See Moacir dos Anjos, Jr. (1999) and Lascaux (2012).

³⁸ Wennerlind (2001, 571) cites Karl Marx's "insistence that money is grounded in the concrete reality of social relations and not in ephemeral reflections of ideas and thought (trust and confidence)." In a related Marxian vein, Wennerlind (2001, 565) also cites Heiner Gansmann that "money must be seen as an expression of domination ... [I]n a commodified society the dispossessed are forced to sell their labor power for money in order to gain access to a share of social wealth."

³⁹ Enter the bitcoin, which seems to satisfy at least some of those who have lost trust in "Uncle Sam" at the Treasury, as well as "Uncle" Ben Bernanke and "Aunt" Janet Yellen at the Fed.

⁴⁰ See Wray (1998a, 2004, 2012), Papadopoulos (2009, op.cit.), Mitchell-Innes (1913, op.cit.), and Knapp ([1924] 1973, op.cit.).

⁴¹ Note that different forms of government have different forms of sovereignty, and sovereign power goes well beyond the ability to choose a money of account and to impose and enforce obligations. While some critics have scapegoated the MMT as applying only to dictatorships, it is obvious that all modern democracies have representative governments with vast sovereign powers, including these specific powers. In the case of the US, the Constitution specifically gives these powers to Congress.

accepted by the sovereign.⁴² The sovereign can also declare what serves as “legal tender” to be accepted in private payments.⁴³

While sovereigns also sometimes agree to “redeem” their currency for precious metal or for foreign currency, that is not necessary. The agreement to “redeem” currency in payment of taxes, fees, tithes, and fines is *sufficient* to “drive” a sovereign currency – that is, to create a demand for it.⁴⁴ Note that we also do not need an infinite regress argument. While it could be true that I am more willing to accept the state’s IOUs if I know I can dupe some dope, I will definitely accept it if I have a tax liability and know I must pay that liability with the state’s currency. This is the sense in which the MMT claims that “taxes are sufficient to create a demand for the currency.” It is not necessary for *everyone* to have such an obligation. So long as the tax base is broad, the currency will be widely accepted.

⁴² The history of the use of coins confirms that their circulation was not a simple matter of determining the value of the embodied precious metal. The following quotes are taken from the British Museum’s display on ancient monies: “In ancient Egypt many transactions were made in metal, measured using weights like this. Once coinage was introduced, a Greek system was combined with the Egyptian one. Coins like this could have been used to pay the penalties specified in the papyrus below.” “Demotic papyrus found in Thebes (Egypt) recording an inheritance and the penalties for non-compliance, in coined or uncoined weights of gold, silver, and copper.” “The Temple in Jerusalem required every adult Jewish male to pay a half-shekel in tax. Tyrian shekels like these were preferred to the local Roman coinage as they had a higher silver content. This is why money-changers were operating at the Temple (as referred to in the Bible). Jews objected to having to pay taxes using coins that showed an image of the Roman emperor and referred to him as a god. The bible reports that when Jesus was questioned about this, he asked to see the coin, which was probably one like this. He then replied ‘Render unto Caesar the things that are Caesar’s.’ When the Jews rebelled against the abuses of Roman rule in AD 66 they issued their own shekels. In AD 70 the Roman authorities regained control of Jerusalem, and the Temple was destroyed. Coins were issued in Rome to celebrate the defeat of Judaea. The emperor Vespasian insisted the temple tax be paid to the Capitoline temple in Rome. The tax collection was carried out in a particularly cruel manner. Emperor Nerva issued a coin in AD 97 stating that he had ended this outrage (calumnia), although he maintained the tax (‘fiscus Jadaicus’) itself. The clemency did not last. During a Second Jewish Revolt in AD 132–[13]5, rebels over-struck this Roman coin of Trajan with the inscription ‘deliverance of Jerusalem.’ The emperor Hadrian crushed this revolt and re-founded Jerusalem as the Roman colony Aelia Capitolina. Money in the ancient world was used to pay a wide range of taxes, fees and fines. Such transactions were carried out between individuals as well as at the level of the state. Taxes were usually accepted in coins of a controlled standard (for example, gold) and unofficial or local coins might have to be exchanged for this purpose. For the Jewish population of Judaea, the coins required to pay taxes to the Roman authorities were unsuitable for their own religious levies” (Source: British Museum display).

⁴³ This is hard to enforce, except in courts. If private parties agree to use something else, legal tender laws are irrelevant, except in the case of a dispute brought before the authorities. Some writers distinguish between “money,” which is defined as a final means of settlement, and “credit,” which represents the relation between creditor and debtor. In that case, “money” would be what the state designates as legal tender. Jongchul Kim (2014, 1009) associates “money” with “thingness” – for example, precious metal coins – but recognizes that, since most “money” today is “immaterial money in electronic and digital form,” indicating that “the origin and power of money has nothing to do with the thingness of money,” “the fundamental difference between money and debt (credit) disappears.”

⁴⁴ The MMT does not claim that taxes and other obligations are necessary to drive a currency. It is difficult to find exceptions – that is, cases in which currency (defined here as government-issued “current” IOUs) circulated without taxes, fees, fines, tithes, or tribute, requiring its use in payment. If we broaden the definition of currency to include nongovernment-issued current means of payment, then bitcoins might qualify as a counter-example.

There are other reasons to accept a currency. Maybe BuffySue will accept it, maybe I can exchange it for gold or foreign currency, or maybe I can hold it as a store of value. These supplement taxes and derive from the obligations that need to be settled using currency, such as taxes, fees, tithes, and fines. Note also that general legal tender laws are not necessary, since it is sufficient that the law requires that obligations to the state are paid in currency, although legal tender laws might enhance the use of currency for other purposes.

Mitchell-Innes⁴⁵ posed a "primitive law of commerce": The issuer of an IOU must accept it back for payment. We can call this the principle of redeemability: The holder of an IOU can present it to the issuer in payment. Note that the holder need not be the person who originally received the IOU. It can be a third party. If that third party owes the issuer, the IOU can be returned to cancel the third party's debt. Indeed, the clearing cancels both debts – the issuer's debt and the third party's debt.⁴⁶ This "law" applies equally well to government and private issuers of IOUs.

If one reasonably expects that he/she will need to make payments to some entity then he/she will want to obtain the IOUs of that entity. This partly explains why the IOUs of non-sovereign issuers can be widely accepted. As Hyman P. Minsky (1986) said, part of the reason that bank demand deposits are accepted is because we (at least, many of us) have liabilities to the banks, payable in bank deposits. In modern banking

⁴⁵ "[O]wing to our modern systems of coinage, we have been led to the notion that payment in coin means payment in a certain weight of gold. Before we can understand the principles of commerce we must wholly divest our minds of this false idea. The root meaning of the verb 'to pay' is that of 'to appease,' 'to pacify,' 'to satisfy,' and while a debtor must be in a position to satisfy his creditor, the really important characteristic of a credit is not the right which it gives to 'payment' of a debt, but the right that it confers on the holder to liberate himself from debt by its means – a right recognized by all societies. By buying we become debtors and by selling we become creditors, and being all both buyers and sellers we are all debtors and creditors. As debtor we can compel our creditor to cancel our obligation to him by handing to him his own acknowledgment of a debt to an equivalent amount which he, in his turn, has incurred" (Mitchell-Innes [1913] in Wray 2004, 31).

⁴⁶ "This is the primitive law of commerce. The constant creation of credits and debts, and their extinction by being cancelled against one another, forms the whole mechanism of commerce and it is so simple that there is no one who cannot understand it. Credit and debt have nothing and never have had anything to do with gold and silver. There is not and there never has been, so far as I am aware, a law compelling a debtor to pay his debt in gold or silver, or in any other commodity; nor so far as I know, has there ever been a law compelling a creditor to receive payment of a debt in gold or silver bullion, and the instances in colonial days of legislation compelling creditors to accept payment in tobacco and other commodities were exceptional and due to the stress of peculiar circumstances ... It is by selling, I repeat, and by selling alone – whether it be by the sale of property or the sale of the use of our talents or of our land – that we acquire the credits by which we liberate ourselves from debt, and it is by his selling power that a prudent banker estimates his client's value as a debtor. Debts due at a certain moment can only be cancelled by being offset against credits which become available at that moment; that is to say that a creditor cannot be compelled to accept in payment of a debt due to him an acknowledgment of indebtedness which he himself has given and which only falls due at a later time. Hence it follows that a man is only solvent if he has immediately available credits at least equal to the amount of his debts immediately due and presented for payment. If, therefore, the sum of his immediate debts exceeds the sum of his immediate credits, the real value of these debts to his creditors will fall to an amount which will make them equal to the amount of his credits. This is one of the most important principles of commerce" ((Mitchell-Innes [1913] in Wray 2004, 31-32).

systems that have a central bank to clear accounts among banks at par, one can deliver any bank's deposit IOU to cancel a debt with any other bank.

Acceptability can be increased by promising to convert on demand one's IOUs to more widely accepted IOUs. The most widely accepted IOUs within a society are generally those issued by the sovereign (or, at least, by some sovereign – perhaps by a foreign sovereign of a more economically important nation). In that case, the issuer must either hold or have easy access to the sovereign's IOUs to ensure conversion. In the financial literature, this is called leveraging and, while it sounds similar to the notion of a deposit multiplier, there is no simple fixed ratio of leverage.

Stephanie Bell-Kelton, Duncan Foley, and Minsky have all used the metaphor of a pyramid of liabilities, with those lower in the pyramid leveraging those higher in the pyramid, and with the sovereign's liabilities at the apex.⁴⁷ Monetary contracts for future delivery of “money” typically designate whose liabilities are acceptable, usually either commercial bank demand deposits or the sovereign's liabilities. As the government's backstop of chartered banks has increased, the need to use sovereign liabilities for settlement has been reduced to net clearing among banks, to foreign exchanges, and to illegal activities.

In any event, whatever final payment courts of law enforce can be used as final payment. From Roman times, courts have interpreted money contracts in *nominal* terms, requiring payment in “lawful money” that is always in the form of designated liabilities denominated in an identified money of account.⁴⁸ That is to say, the contracts are not enforceable in terms of *things* if they are written in money terms.

Technological Determination or Financial Feasibility?

The power of the sovereign brings us back to Foster's great essay, “The Reality of the Present and the Challenge of the Future,” whose title I borrowed for this paper. It contains one of the most profound economics statements:

Whatever is technically feasible is financially possible. To the perpetual question “Where is the money coming from?” the answer is now clear. It comes from the only two institutions we permit to create money funds: the treasury of the sovereign government and commercial banks. And the rate at which we permit either to create funds is pretty much a matter of public policy. (Foster 1981a, 966, emphasis original)

Foster (1981a, 966) went on to argue that there is no theoretical limit to the ability to create funds, so “the only question is should they be made available.” Finance is not a scarce resource. When funds are created by private banks, the answer to the question, “Should they be made available?,” “hinges on the security of repayment.” That is, it depends on the private sector's test of soundness. As Foster

⁴⁷ Bell (2001), Duncan Foley (1987), and Hyman P. Minsky (1986).

⁴⁸ Wray (2012, op.cit.).

argued (Foster 1981a, 967), society needs a better answer than that: Society needs to ensure that not only are the loans repaid, but also that they have financed activity that maintains "increments in money income and increments in real income."⁴⁹ That is to say, we want finance directed to industrial pursuits rather than purely pecuniary ones, which requires close regulation and supervision.⁵⁰ Obviously, regulators and supervisors have consistently failed us over the past forty years as pecuniary business interests have dominated.

More relevantly to my purposes, Foster recognized that the state cannot run out of its own money (currency), so it is only constrained by what is technically feasible (which, of course, includes resource availability). He went through a list of technically feasible projects outlined in a 1966 report of the National Commission on Technology, Automation, and Economic Progress. On the list, he found recommendations for (i) guaranteed minimum income of \$3,000 for every family in the US; (ii) provision of fourteen years of free education to every qualified person; and (iii) the "use of the U.S. government as the residual employer of all of those unable to find employment elsewhere"⁵¹ (Foster 1981a, 967). He noted that the report "suggested institutional adjustments to implement its recommendations. In all of this, there is no finding of financial incapacity. The only question is, again, whether these recommendations should be adopted, since they are technically feasible" (Foster 1981a, 967).

These are the policy conclusions that the MMT⁵² has worked toward from the beginning. Here I will provide close institutional analysis of monetary and fiscal operations to back up Foster's claim that financial affordability is not the question.⁵³

⁴⁹ See Glen Atkinson (2013), who argues in line with Foster that our technical potential to achieve abundance has been stymied by our institutions. He goes on to advocate employer-of-last-resort policies (see below).

⁵⁰ John R. Commons emphasized the "collective action in control, liberation and expansion of individual action" which spreads "the will of the individual far beyond what he can do by his own puny acts" (Ülgen 2014, op.cit.) Ülgen argues that money is a peculiar institution which allows individuals to undertake decentralized decisions, but requires a political authority to support that institution. Papadopoulos (2009, 966-967) provides justification for regulation of the institution: "The postulation of a political authority and its contribution in the constitution of money can be defended ontologically against methodological individualists by using the notion of collective intentionality and the respective analysis of the ascription of social status through constitutive rules. Political authority constitutes and enforces these rules, safeguarding at the same time the collective intentionality of its subjects."

⁵¹ While I will not explore the topic in detail, the MMT has long included an employer of last resort (or job guarantee) as an important component in its structure. This is not simply to ensure full employment, but also to improve price stability. This follows the work of Minsky, who was developing his employer-of-last-resort proposal at the time that Foster wrote his paper (see Kaboub (2007, op.cit., for an exposition of the ELR proposal, following Foster's notion of institutional adjustment; see also Gordon 1997; Forstater 1998a, 1998b; Long 1999; Mitchell 1998; Mitchell and Wray 2005; Sawyer 2003; Tcherneva 2011; Wray 1998b, 1999).

⁵² See Wray (2012).

⁵³ As Papadopoulos (2009, 962) argues, the sovereign is invested with a legitimate monopoly of power over its currency, "dependent on the collective intentionality of the political authority ... This remains possible as long as the political authority enjoys the collective intentionality of its users." (See also Lascaux [2012, 77], who argues that the political authority gives legitimacy to "certain properties and functions of money within the area of its jurisdiction.")

Foster adopted the position that technology is “determinant”: “[T]echnology determines how the instrumental functions are carried on” (Foster 1981c, 912). He did not argue that all technological problems have been resolved, but that most of our problems today are with institutions, not with technology. Our current institutions partially serve an instrumental function, but also ceremonial ones. An “economic problem” exists when we notice a discrepancy between *what is* and *what ought to be*. For example, if we notice that our public infrastructure is inadequate, but that we have the technological capacity (and resources) to improve it, we have a problem. Because we *know* that the problem cannot be that our sovereign government is broke, we know that infrastructure improvement is affordable.

So what is the problem? Our institutions — prescribed patterns of correlated human behavior — are not up to the task of delivering the infrastructure we need and have the capacity to provide. A resolution of the problem requires “institutional adjustment.”⁵⁴ Foster (1981d, 902) argued that economists typically evade this recognition in one of two ways: (i) they define “economics as analysis of the process of providing the means of life within a given institutional structure,” or (ii) they equate “price and value” and demand “that economic analysis be restricted to price.” For Foster, both are flawed. The first must fail because, if the problem lies in the institutions, it cannot be resolved, except through institutional adjustment.⁵⁵

The second fails because, if price equals value, then there is no external criterion of judgment by which we ascertain a problem. We cannot say that there *ought to be* more infrastructure since its relative price must exceed what we are willing to pay. If we were willing to pay more, we would have better infrastructure. Conflating value and price reduces economics price theory to an absurdity — a justification for what exists and a refusal to see the problems. Foster argues that we must have a criterion of judgment outside the existing institutional patterns — i.e., outside “the market” — to even identify economic problems.

Foster proposed instrumental value theory.⁵⁶ The analysis begins by recognizing that wants and institutions are situational factors, while continuing factors are the functions that must be carried out, so that the life process can continue. Instrumental value theory posits that structures must be adjusted to permit the optimal

⁵⁴ See also Ülgen (2014), Henry (2012), and Kaboub (2007). Note, as Kaboub (2007) argues, that the creation of an ELR program is an example of institutional adjustment, putting in place an institutional arrangement that ensures there is a job for anyone seeking work, at the program wage.

⁵⁵ An example of an employment policy that must fail is one that focuses on changing the character of the unemployed, rather than one that creates institutions to ensure the unemployed can obtain jobs for which they are ready. As Minsky (see Wray 2016, 109) put it, the ELR program “takes workers as they are.” Note that because mainstream economics keeps its analysis focused on “the market,” the unemployment problem is not institutional — the unemployed have a reservation wage that is too high. New Keynesians allow for “market failures,” but, again, the problem is not with institutions but with “frictions” that prevent the market from working properly.

⁵⁶ See, for example, the December 1981 issue of the *Journal of Economic Issues*, which contains a number of relevant articles by Foster (see especially Foster 1981e, 923).

implementation of these functions. The criterion of judgment is the instrumental efficiency of behavior patterns. Where these are found lacking, institutional adjustment is called for.

Critics of the MMT have claimed that the government's ability to finance projects, such as the employer of last resort (ELR) program that Foster embraced, is limited by operational rules of behavior. Today's institutions constrain the financial feasibility. But, as Foster (1981d, 964) argued, "the very word *institution* connotes patterns of correlated human behavior" and "all answers to all social problems take the form of institutional modifications." He went on to state that any social theory, including economic theory that assumes institutions are static, is "without significance." Those, who would argue against Foster's claim that society can *afford* desirable and technologically feasible programs on the basis that there exist constraining institutions, are unscientific (like neoclassical economists). The general, open, scientific statement is that the government can financially afford full employment. The institutional barriers to achieving that can be changed and any pronouncements on what is not possible, presuming static institutions, is "without significance." The answer to the social problem of unemployment is institutional modification.⁵⁷

Specifically, what critics often point to are two constraints on Treasury spending today.⁵⁸ Most sovereign governments no longer spend directly by stamping coins or cutting tally sticks. Instead, they write checks on deposits held at their central bank, but before they can write these checks they must have credits to those accounts. They receive the credits through transfer of tax payments to the accounts, or through sales of bonds. In many of the wealthy, developed nations the central bank is prohibited from buying treasury bonds in the "new issue" market. By requiring the Treasury to obtain tax receipts or to sell new issues to the market, it is commonly believed that the government cannot finance its spending by "creating money." That would seem to conflict with the MMT arguments I summarized above: Perhaps the government can "run out" of its financial wherewithal if tax revenues, plus willingness of bond market "vigilantes" to buy new issues, proves insufficient.

However, as the MMT proponents have shown, these prescribed operating procedures – institutional constraints – actually are not binding in practice and do not prevent "money creation" from relieving financial constraints.⁵⁹ In a nutshell, special dealer banks stand ready to buy all new issues (the only question is over pricing) and if they have trouble placing them in markets, the central bank reacts to

⁵⁷ This is not to deny Foster's principle of minimal dislocation. It is important to ascertain what can be done, given existing institutional arrangements. However, to relieve the apparent financial constraint requires simple adjustment to current operating procedures – they have been adjusted many times over the course of the past century, sometimes precisely to relieve financial constraints – such as during major wars.

⁵⁸ Lavoie (2013, op.cit.).

⁵⁹ See Scott T. Fullwiler, Stephanie Kelton and L. Randall Wray (2012). Note that Marc Lavoie (2013), an outspoken critic, agrees that in practice the self-imposed rules are not constraining.

pressure on interest rates by purchasing bonds in the open market.⁶⁰ That provides low-earning reserves that banks will exchange for bonds. Note that “money” will be created even if the central bank does not buy the bonds since private banks create “bank money” as liabilities when they purchase assets (if they buy treasuries, they credit the Treasury’s “tax and loan” deposit account).

Furthermore, these operating procedures have been changed in the past, and can be changed again, should it become necessary to relieve financial constraints. For example, in both world wars, the Fed cooperated with the Treasury to ensure that finance would not constrain the U.S. war effort.⁶¹ With half of GDP going to the government during WWII, and with budget deficits equal to 25 percent of GDP, the U.S. government never faced a financial constraint and was able to issue bonds at near-zero rates. What the government faced was a real resource constraint, and that was mitigated by rationing and patriotic saving.

Again, the claim that what is technically feasible is financially affordable is true and needs no qualification. It is a general scientific statement that applies to sovereign governments which issue their own currency and impose obligations denominated and payable in the currency. The currently self-imposed constraints are purely ceremonial and do not even serve the purpose that critics of the MMT suppose. That is, they do not, in fact, constrain government spending. What does constrain the government funding of the life process is the budget. It is easy to identify the economic problem: Appropriated funds are far too small to finance “what ought to be.” The solution is to identify the institutional factors that impede budget authority and to adjust those factors.

Constraints on Growth

Let me finally turn to Foster’s view on economic growth – a major challenge for the present and the future. The mainstream view is that growth is promoted through thrift: More savings allow for more investment, which increases capacity. While no one who has read Keynes’s *The General Theory* [1930] 1976) should fall into the paradox of thrift trap, almost all do. Generally, institutionalists and post-Keynesians

⁶⁰ Eric Tymoigne (2014, 652) explains the spending process in the US this way: “Under current budgetary procedures, if the Treasury deficit-spends, it must obtain Federal Reserve currency by selling securities to economic units other than the Federal Reserve (provided there are not enough funds in TGA [Treasury general account] and TT&Ls [Treasury tax and loan accounts]). The government has at least four ways to bypass this budgetary procedure. The first one is the issuance of monetary instruments by the Treasury. The second way is to allow banks to buy treasuries by crediting TT&L accounts instead of paying with Federal Reserve currency. The third way is to allow the Federal Reserve to provide an emergency or regular credit line to the Treasury. The fourth is for the Federal Reserve to provide funds indirectly to the Treasury through financial institutions. The federal government uses (or has used) all of these techniques.”

⁶¹ As Paul DeGrauwe recently put it, the central bank will never let down the sovereign in trying times (see www.youtube.com/embed/0vijSOR2B8s?start=1554).

do not.⁶² However, Foster added that, because the propensity to consume is less than one, the "level of economic activity cannot remain constant; it either increases or decreases. The level of income and employment either contracts or expands" (Foster 1981a, 964, emphasis original). In recent years, there has been an argument by some institutionalists and other economists that, for environmental reasons, growth must be stopped. This is not consistent with Foster's understanding of our economic system.

Foster recognized the "Domar problem" that served as the basis for much of the work of Harrold G. Vatter and John F. Walker: A constant level of investment can close the "demand gap," but constant investment increases capacity.⁶³ The "demand side" of the economy is outpaced by the "supply side":

The reason for this has to do with the fact that, with a fractional propensity to consume (C/Y), two conditions are inescapable. The first is that a positive level of investment would be necessary to maintain any level of income, and the second is that a positive level of investment increases both the aggregate productive capacity and the productivity per unit of the other factors employed. And it usually stimulates technological innovation, which in turn further increases production capacity and productivity per unit of all the factors, including capital ... In common parlance, what this means is that we must continue to progress or we decay. We cannot stand still. (Foster 1981a, 964-965)

Here, we face two kinds of problems. The first is technological: Some important part of our technology that is used to carry out the life process is not environmentally sustainable. Growth through replication of what we are now doing will lead to disaster. However, as Foster argued, wants are mutable. Some combination of redirecting technology (and technological advance) and wants toward environmental sustainability is required.⁶⁴

The second problem is institutional, where the solution is to identify new behavior patterns that permit state-of-the-art applications of sustainable technology toward furthering the life process. We cannot take the current situational factors as given: "[T]he application of social theory which assumes a particular institutional

⁶² At least, when it comes to the relation between domestic saving and investment (for related arguments, see Bell and Wray 2000). Unfortunately, when extended to the open economy, many heterodox economists do fall into the trap, arguing that "foreign savings" must "finance" current account deficits. There is a "cottage industry" pushing "Thirlwall's Law" which supposes that financing current account deficits constrains domestic "affordability." This makes no more sense than arguing that domestic savings "finance" domestic investment.

⁶³ See Wray (2008) for an analysis of the contributions of Vatter and Walker toward our understanding of the Domar problem.

⁶⁴ See Robert Skidelsky and Edward Skidelsky (2012) for Keynes's views, which are quite different from the neoclassical views of the insatiability of human "wants." Keynes argued that wants need to be adjusted, so that they become desirable. Current wants are neither good for individuals, nor for society. We must promote a change in desires, so that what is desired is actually desirable.

structure as its basic datum and as its criterion of judgment cannot but result in the continuation and intensification of problems arising within that same structure.”⁶⁵

Hence, we need growth, but we must change technology, wants, and institutions to make it sustainable.

In recent months, the mainstream has rediscovered secular stagnation, as both Paul Krugman and Larry Summers have warned that we cannot find a stable source of demand to keep the economy growing at a pace that provides enough jobs. Many economists say we have to resign ourselves to permanently lower employment rates — high unemployment and declining labor force participation rates are the “new normal.” Summers went on to argue that stagnation has been relieved over the past three decades only by speculative financial bubbles (dotcoms, stocks, commodities, houses, etc.).⁶⁶ Bubbles are all we have got — Bubbles R Us.

Foster (1981a, 965), however, argued that “[t]his proposition is not as alarming as it might sound. We have learned to use autonomous investment (mostly government purchases of public capital) to counteract any deficiency in ordinary induced investment, and directly in proportion to our astuteness in this regard we find our previous problems of prolonged recession less serious.” Of course, our policy-makers over the past three decades have been considerably less “astute” than they were in the early postwar period. We suffer stagnation *and* crumbling public physical and social infrastructure *and* massive quantities of idle resources. Yet, it is said that “Uncle Sam” is “broke.” “He” cannot afford spending on infrastructure, and “he” cannot afford to put the unemployed to work. Spending more today would only burden future generations with debt. In fact, they claim, we need to reduce spending today in order to increase saving for the future. The only hope for the rising tide of “baby-boomer” retirees is to increase saving immediately.⁶⁷

Institutionalists can counter these claims with another of Foster’s brilliant statements: “Aggregate income cannot be transferred from one time period to another” (1981a, 967, emphasis original). He went on to explain:

This means that one generation cannot implement or diminish the income of future generations by expending less or more than its own means. The traditional concern with this issue arises out of the palpable fact that individuals can hoard, and they can incur debts beyond their accumulation of assets. These opportunities to individuals arise out of the fact that an individual can, and often does, buy more than he sells or sell more than he buys. But this opportunity is not available to the entire economy. In the entire area of economic transactions, sales and purchases are necessarily equal. And this equation is an instantaneous one. There is no “time lag”

⁶⁵ See Foster (1981c).

⁶⁶ See Wray (1991b). In the early 1990s, I facetiously proposed speculative bubbles in Martian oceanfront condo futures as a solution. (See here for an update, including discussion of the recent recognition by Krugman and Summers that secular stagnation might be a problem, www.economonitor.com/lrway/2013/12/09/when-robots-make-drones-the-brave-new-world-of-secular-stagnation-2/.)

⁶⁷ See Bell and Wray (2000, op.cit.).

here. The community at large cannot “save money”; it can save only by investing, and its savings are constituted by that investment. The instantaneity of the equation between aggregate sales and aggregate purchases forces the instantaneity of the equation between saving and investment. And the equation between saving and investment precludes the financing of investment out of previous hoarding. But since individuals can and sometimes do finance investment out of previous hoarding, other individuals or institutions are thereby forced to incur debts beyond their individual accumulation of real assets ... [o]ne can see why we have come to use the federal government to incur debt without accumulating equivalent assets in order that the rest of us can accumulate unobligated liquidity – so that the rest of us can save money. (Foster 1981a, 967-968)

An entire course in macroeconomics is contained in that paragraph alone. Foster destroyed the loanable funds argument. He dispatched the “intergenerational warriors” like Larry Kotlikoff, who claims we cannot “afford” retiring “baby-boomers” – and calculates a looming federal government revenue shortfall of \$200 trillion due to unfunded commitments (Galbraith, Mosler and Wray 2009). Foster cleared up the confusion caused by the mechanical investment multiplier (in which investment raises income through a series of steps, so that saving only gradually rises to equality with investment after some indeterminate time period) since investment equals saving instantaneously. And Foster made a distinction between the options available to the individual versus the adding-up constraints at the macro-level – in other words, the fallacies of composition that befall mainstream macro-theory.

Foster intuitively understood the point made by the Franco-Italian circuitistes, who argue that saving by some individuals is not a source of finance, but rather is matched by the debts incurred by others. This leads directly to Wynne Godley’s (2003) sectoral balance approach, holding that government deficits are matched by the nongovernment sector’s surpluses, and government debt is accumulated by the non-government sector as financial wealth.

The United States’ government spending is our income, its deficit is our surplus, and its debt is our net financial wealth. “Uncle Sam” can financially afford to put us to work to mobilize our resources toward progress rather than decay. There is nothing inevitable about stagnation. There is also nothing inevitable that makes growth necessarily environment-destructive. We need to adjust the institutions that have encouraged growth to protect our environment. We have some of the technological know-how already, and we can develop more of it. What we already know how to do is financially affordable, and what we learn how to do in the future will also be affordable. Our economic problems are (mostly) inept institutions that require adjustment.

Conclusion

The reality of the present is that policy is failing us in many ways. The challenge of the future is to recognize that, through application of Keynes’s “scientific theory,” “the

quality of a much greater part of human life will be in man's own hands" (Foster 1981b, 956).

I focused on a "scientific" approach to money that is consistent with the views of J. Fagg Foster. Foster's main claims are validated by an understanding of the "nature" of money. We need to abandon an approach that sees money as a "thing," or that refuses to acknowledge that money is an institution – a set of social rules that potentially expand individual and social capacity. Most importantly, the sovereign state's legitimate monopoly of power over its currency provides it with the financial capacity to afford anything that is technologically feasible. This is Foster's most important message as we face the realities of the present and the challenges of the future.

References

- Atkinson, Glen. "Abundance Is Not Profitable." *Journal of Economic Issues* 47, 2 (2013): 359-366.
- Bell, Stephanie. "Do Taxes and Bonds Finance Government Spending?" *Journal of Economic Issues* 34, 3 (2000): 603-620.
- . "The Role of the State and the Hierarchy of Money." *Cambridge Journal of Economics* 25, 2 (2001): 149-163.
- Bell, Stephanie and L. Randall Wray. "Financial Aspects of the Social Security 'Problem'." *Journal of Economic Issues* 34, 2 (2000): 357-364.
- Bezemer, D.J. "The Evolution of Creditary Structures and Controls." *Journal of Economic Issues* 41, 3 (2007): 888-889.
- Dalton, George. "Primitive Money." *American Anthropologist* 67 (1965): 44-65.
- Davidson, Paul. *Money and the Real World*, London: Macmillan, 1978.
- Dillard, Dudley. "A Monetary Theory of Production: Keynes and the Institutionalists." *Journal of Economic Issues* 14, 2 (1980): 255-273.
- Dos Anjos, Jr., Moacir. "Money, Trust and Culture: Elements for an Institutional Approach to Money." *Journal of Economic Issues* 33, 3 (1999): 357-364.
- Foley, Duncan. "Money in Economic Activity." In *The New Palgrave: Money*, edited by Peter Newman, John Eatwell, and Murray Milgate, pp. 519-525. New York, NY: W.W. Norton, 1987.
- Forstater, Mathew. "Institutionalist Approaches to Full-Employment Policies." *Journal of Economic Issues* 32, 4 (1998a): 1135-1139.
- . "Flexible Full Employment: Structural Implications of Discretionary Public Sector Employment." *Journal of Economic Issues* 32, 2 (1998b): 557-563;
- . "Functional Finance and Full Employment: Lessons from Lerner for Today." *Journal of Economic Issues* 33, 2 (1999): 475-482;
- . "Keynes and the Social Sciences: Contributions Outside of Economics, with Applications to Economic Anthropology and Comparative Systems." In *Keynes's General Theory After Seventy Years*, edited by Robert Diamond, Robert Mundell and Alessandro Vercelli, pp. 120-132. London: Palgrave Macmillan, 2010.
- Foster, Gladys. "Financing Investment." *Journal of Economic Issues* 21, 1 (1987): 101-112.
- Foster, J. Fagg. "The Reality of the Present and the Challenge of the Future." *Journal of Economic Issues* 15, 4 (1981a): 963-968.
- . "Understandings and Misunderstandings of Keynesian Economics." *Journal of Economic Issues* 15, 4 (1981b): 949-957
- . "The Effect of Technology on Institutions." *Journal of Economic Issues* 15, 4 (1981c): 907-913.
- . "The Relation Between the Theory of Value and Economic Analysis." *Journal of Economic Issues* 15, 4 (1981d): 899-905.
- . "The Theory of Institutional Adjustment." *Journal of Economic Issues* 15, 4 (1981e): 923-928.
- Fullwiler, Scott T. "Timeliness and the Fed's Daily Tactics." *Journal of Economic Issues* 37, 4 (2003): 851-880.

- . "Paying Interest on Reserve Balances: It's More Significant Than You Think." *Journal of Economic Issues* 39, 2 (2005): 543-550.
- Fullwiler, Scott T., Stephanie Kelton and L. Randall Wray. "Modern Money Theory: A Response to Critics." PERI Working Paper Series No. 279. PERI, January 2012. Available at www.peri.umass.edu/fileadmin/pdf/working_papers/working_papers_251-300/WP279.pdf. Accessed January 1, 2015.
- Galbraith, James K., Warren Mosler and L. Randall Wray. "The Case Against Intergenerational Accounting: The Accounting Campaign Against Social Security and Medicare." Levy Public Policy Brief No. 98. LEVI, 2009.
- Godley, Wynne. "Weaving Cloth from Graziani's Thread: Endogenous Money in a Simple (but Complete) Keynesian Model." In *Money, Credit and the Role of the State: Essays in Honour of Augusto Graziani*, edited by Richard Arena and Neri Salvadori, pp. 125-133. Aldershot, UK: Ashgate, 2003.
- Gordon, Wendell. "Job Assurance – The Job Guarantee Revisited." *Journal of Economic Issues* 31, 3 (1997): 826-833.
- Grierson, Philip. *The Origins of Money*. London: Athlone Press, 1977.
- Hayden, F. Gregory. "Network Analysis for Modern Monetary Theory." *Journal of Economic Issues* 47, 2 (2013): 575-584.
- Henry, John F. "The Veblenian Predator and Financial Crises: Money, Fraud, and a World of Illusion." *Journal of Economic Issues* 46, 4 (2012): 989-1006.
- Hudson, Michael. "The Archaeology of Money: Debt vs. Barter Theories of Money." In *Credit and State Theories of Money: The Contributions of A. Mitchell Innes*, edited by L. Randall Wray, pp. 99-127. Cheltenham, UK: Edward Elgar 2004.
- Ingham, Geoffrey. *The Nature of Money*. Cambridge, UK: Polity Press, 2004.
- . "Further Reflections on the Ontology of Money: Response to Lapavistas and Dodd." *Economy and Society* 35, 2 (2006): 259-278.
- Ingrao, Bruno and Giorgio Israel. *The Invisible Hand: Economic Equilibrium in the History of Science*. Cambridge, MA: MIT Press, 1990.
- Kaboub, Fadhel. "Institutional Adjustment Planning for Full Employment." *Journal of Economic Issues* 41, 2 (2007): 495-502
- Keynes, John Maynard. *A Treatise on Money*. Volumes one and two. New York, NY: Harcourt, Brace & Company, [1930] 1976.
- . *The General Theory of Employment, Interest and Money*. New York, NY: Harcourt-Brace-Jovanovich, 1964.
- Kim, Jonchul. "Money Is Rights in Rem: A Note on the Nature of Money." *Journal of Economic Issues* 48, 4 (2014): 1005-1019.
- Knapp, G.F. *The State Theory of Money*. New York, NY: Augustus M. Kelley, [1924] 1973.
- Knodell, Jane. "Alternative Approaches to Money and Interest Rates: A Comment." *Journal of Economic Issues* 29, 1 (1995): 266-273.
- Kregel, Jan A. "Keynes's Influence on Modern Economics: Some Overlooked Contributions of Keynes's Theory of Finance and Economic Policy." In *The Return to Keynes*, edited by B.W. Bateman, Toshiaki Hirai, and M.C. Marcuzzo, pp. 241-256. Cambridge, MA: Harvard University Press, 2010.
- Lascaux, Alexander. "Money, Trust and Hierarchies: Understanding the Foundations for Placing Confidence in Complex Economic Institutions." *Journal of Economic Issues* 46, 1 (2012): 75-99.
- Lavoie, Marc. "The Monetary and Fiscal Nexus of Neo-Chartalism: A Friendly Critique." *Journal of Economic Issues* 47, 1 (2013): 1-32.
- Long, Jennifer. "Government Job Creating Programs – Lessons from the 1930s and 1940s." *Journal of Economic Issues* 33, 4 (1999): 903-918.
- Minsky, Hyman P. *Stabilizing an Unstable Economy*. New Heaven, CT: Yale University Press, 1986.
- Mitchell, William. "The Buffer Stock Employment Model and the NAIRU: The Path to Full Employment." *Journal of Economic Issues* 32, 2 (1998): 547-555.
- Mitchell, William and L. Randall Wray. "In Defense of Employer of Last Resort: A Response to Malcolm Sawyer." *Journal of Economic Issues* 39, 1 (2005): 235-244.
- Moore, B.J. "The Exogeneity of Short-Term Interest Rates: A Reply to Wray." *Journal of Economic Issues* 29, 1 (1995): 258-266.
- Neale, Walter. *Monies in Societies*. San Francisco, CA: Chandler & Sharp Publishers, 1976.

- Papadopoulos, Georgios. "Between Rules and Power: Money as an Institution Sanctioned by Political Authority." *Journal of Economic Issues* 43, 4 (2009): 951-969.
- Ranson, Baldwin. "John Fagg Foster." *Journal of Economic Issues* 15, 4 (1981): 853-856.
- Sawyer, Malcolm. "Employer of Last Resort: Could It Deliver Full Employment and Price Stability?" *Journal of Economic Issues* 37, 4 (2003): 881-907.
- Skidelsky, Robert. *Keynes: The Return of the Master*. London, UK: Penguin, 2010.
- Skidelsky, Robert and Edward Skidelsky. *How Much Is Enough? Money and the Good Life*. New York, NY: Other Press, 2012.
- Tcherneva, Pavlina. "The Case for Labor Demand Targeting." 45, 2 (2011): 401-410.
- Tool, Marc. "An Institutional Legacy: Remarks on Receipt of the Veblen-Commons Award." *Journal of Economic Issues* 23, 2 (1989): 327-336.
- Tymoigne, Eric. "Modern Money Theory, and Interrelations Between the Treasury and Central Bank: The Case of the United States." *Journal of Economic Issues* 48, 3 (2014): 641-662.
- Ülgen, Faruk. "How to Guide the Economy in a Socially Desirable Direction: Lessons from the 2007 Financial Turmoil." *Journal of Economic Issues* 48, 2 (2014): 575-584.
- Veblen, Thorstein. "The Limitations of Marginal Utility." *Journal of Political Economy* 17, 9 (1909): 620-636.
- Wennerlind, Carl. "Money Talks, but What Is It Saying? Semiotics of Money and Social Control." *Journal of Economic Issues* 35, 3 (2001): 557-574.
- Wray, L. Randall. "A Review of Horizontalists and Verticalists: The Macroeconomics of Credit Money." *Journal of Economic Issues* 23, 4 (1989a): 1185-1189.
- . "A Keynesian Presentation of the Relations Among Government Deficits, Investment, Saving, and Growth." *Journal of Economic Issues* 23, 4 (1989b): 977-1002.
- . *Money and Credit in Capitalist Economies: The Endogenous Money Approach*. Cheltenham, UK: Edward Elgar, 1990.
- . "Boulding's Balloons: A Contribution to Monetary Theory." *Journal of Economic Issues* 25, 2 (1991a): 1-20.
- . "Saving, Profits, and Speculation in Capitalist Economies." *Journal of Economic Issues* 25, 4 (1991b): 951-975.
- . "Alternative Approaches to Money and Interest." *Journal of Economic Issues* 26, 4 (1992): 1145-1178.
- . "The Monetary Macroeconomics of Dudley Dillard." *Journal of Economic Issues* 27, 2 (1993): 547-560.
- . "Keynesian Monetary Theory: Liquidity Preference or Black Box Horizontalism?" *Journal of Economic Issues* 29, 1 (1995): 273-282.
- . *Understanding Modern Money: The Key to Full Employment and Price Stability*. Cheltenham, UK: Edward Elgar, 1998a.
- . "Zero Unemployment and Stable Prices." *Journal of Economic Issues* 32, 2 (1998b): 539-545.
- . "Public Service Employment-Assured Jobs Program: Further Considerations." *Journal of Economic Issues* 33, 2 (1999): 483-490.
- . "Demand Constraints and Big Government." *Journal of Economic Issues* 42, 1 (2008): 153-173
- . *Modern Money Theory: A Primer on Macroeconomics for Sovereign Monetary Systems*. London: Palgrave MacMillan, 2012.
- . *Why Minsky Matters: An Introduction to the Work of a Maverick Economist*. Princeton, NJ: Princeton University Press, 2016.
- Zelizer, Viviana. *The Social Meaning of Money*. New York, NY: Basic Books, 1994.