

# THE KEY TO VALUE: THE DEBATE OVER COMMENSURABILITY IN NEOCLASSICAL AND CREDIT APPROACHES TO MONEY

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## I

### INTRODUCTION

As a discipline, economics has famously eschewed debates over the definition of money. Economist André Orléan, summing up the approach, describes money as a “peripheral fact, a secondary device, a mere adjunct” to the concept of “utility” at the center of the neoclassical theory of value.<sup>1</sup> That position is rooted in epistemological principle. Most economists prize the market’s capacity to reveal the values prioritized by individuals. In its ideal operation, the net sorting of private choices produces a distribution of goods and services that maximizes human well-being. By inviting individuals to express and order their preferences, the market thus conceived holds the potential to reconcile individual self-determination with aggregate social welfare. That neoclassical epistemology engenders a particular approach to money: as a measure of comparison, money emanates from the process of expressing preferences. Money is, in other words, an artifact of choice in the model—thus the “peripheral fact” that Orléan describes.

The neoclassical model is supposed to capture essential elements of the economy, if not its detail in actual experience. The basic character of economic activity implied in the model is barter: agents compare the goods they have against those they want in order to trade as warranted to increase their own satisfaction. The focus is on the exchange of “real” objects—the goods and services understood to be at the heart of material productivity. In many accounts, the activity of comparison produces money unproblematically: once we assume ratios of value, commensurability—comparability of goods in a common unit—appears. After all, if the value that market activity concerns can be theorized to

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\* For their valuable comments on the Article, I would like to thank Hanoch Dagan, Avihay Dorfman, Duncan Kennedy, Roy Kreitner, Stephen Marglin, Daniel Markovits, Nicholas Mayhew, Pascal McDougall, Priya Menon, André Orléan, Nadav Orian Peer, Daniel Rohde, Jeremy Stein, Daniel Tarullo, and the participants in the Conference on the Market as a Legal Construct.

1. ANDRÉ ORLÉAN, *THE EMPIRE OF VALUE: A NEW FOUNDATION FOR ECONOMICS* 4 (M. B. DeBevoise trans., 2014).

precede that market, it should be articulable in some measure.<sup>2</sup> According to classical commentators, some item emerges from the set of valued items and acts to measure its counterparts.<sup>3</sup> In more modern renditions, money can be a unit without intrinsic value, a measuring convention like the inch or the pound.<sup>4</sup> Like an inch or a pound, the monetary unit is simply a quantum of pre-existing value. And as a vehicle for comparison, the medium does not affect the activity of choosing (although political communities can interfere with economic activity by disturbing money's operation).

A problem perennial in the neoclassical model is that money in the real world does not take the form assigned it in the model. Rather than a commodity or a convention, money appears again and again in historical experience to be a credit medium. Moreover, rather than emanating from the plethora of individuated comparisons that people undertake in order to barter, moneys appear to emerge when states or political communities design them to coordinate and mobilize for war and other public initiatives. Thus most, perhaps all, major modern moneys are sovereign liabilities—IOWs of the governments that issue them.<sup>5</sup> The commercial bank deposits that multiply the money supply are, likewise, a credit medium. Privately extended, they hold value only in reference to the public base money they promise; they are privileged for use and supported by the national banks that modulate that sovereign unit of account. In that sense, commercial banks are akin to franchisees of the government.<sup>6</sup> Privately issued bank money therefore fits within the monetary project of governing sovereigns, as a kind of public credit money by delegation.

This Article sketches an alternative approach to commensurability and value that is consistent with the modern moneys we observe. The argument begins by taking the neoclassical approach to money seriously. Against that baseline, it becomes clear that conceptualizing money as credit has implications that are arresting and different. It means that we must look to the character of money *as credit* because that character affects the exchange made with it. If that is right, we need to reconsider value and its relationship to the market and the decisions

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2. For a highly developed argument that mainstream economics presupposes a substantive theory of value, see *id.* at 9–84.

3. See, e.g., 3 DAVID HUME, A TREATISE OF HUMAN NATURE, pt. II, § II (1739–40); John Locke, *Two Treatises of Government*, in 2 THE WORKS OF JOHN LOCKE, ch. V, §§ 46–47, 50 (London, Rivington, 12th ed. 1824); John Locke, *Further Considerations Concerning Raising the Value of Money*, in 1 LOCKE ON MONEY 410 (Patrick Hyde Kelly ed., 1991) [hereinafter *Further Considerations*].

4. See, e.g., James Tobin, *Money*, in MONETARY ECONOMICS 224–25 (Steven N. Durlauf & Lawrence E. Blume eds., 2d ed. 2008).

5. For the statutory definition of the dollar along those lines, see, for example, 12 U.S.C. § 411 (2018) and 31 U.S.C. § 5103 (2018). Here, I assume the character of modern money as credit. Considering that character, the evidence supporting it, and changes in the design of money as credit has been the subject of much of my earlier work. See, e.g., CHRISTINE DESAN, MAKING MONEY: COIN, CURRENCY, AND THE COMING OF CAPITALISM (2014); Christine Desan, *Money as a Legal Institution*, in MONEY IN THE WESTERN LEGAL TRADITION 18 (Wolfgang Ernst & David Fox eds., 2014).

6. Robert C. Hockett & Saule T. Omarova, *The Finance Franchise*, 102 CORNELL L. REV. 1143, 1147 (2017).

made there. The market is not a forum for the expression of pre-existing preferences. Rather, the process by which communities make money and put it into circulation *as credit* shapes the way economic decisions occur. We will have to rethink that process, its relationship to choice, and the challenges to equality that come with market exchange in a medium made out of credit.

Part II of this Article explores the paradox sketched above—the striking incongruity between the conceptualization of money in neoclassical thought and its recurring character in political communities. I argue that the neoclassical model of the economy presumes a particular approach to value and money. That approach enables, indeed encourages, adherents to believe in the basic autonomy of the market, at least as an ideal. And that ideal has great normative power: it casts the market as presumptively democratic, in fact more democratic than representative politics, because only in the economic arena are individual choices, independently made, directly and equally effective in creating an equilibrium.

That vision, however appealing, turns on an axiomatic approach to money that is not conceptually sound. In particular, we cannot assume that the act of comparison, carried out across different objects by many independent actors, creates commensurability at the level of value’s expression over the relevant universe of entities compared. On second look, the Walrasian model at the heart of general equilibrium theory claims no such thing.<sup>7</sup> In that model, the unit of account precedes rather than follows the act of comparison. Partial equilibrium models likewise assume a working medium. In other words, neoclassical thought itself ascribes a unit that will make value commensurable. The unit is abstract and therefore neutral; it is a device that transparently expresses value without more. That move is essential to every activity that follows: it enables comparison, choice, and, eventually, exchange. It thus makes possible market activity as a process that aggregates individualized preferences and produces prices.

Having assumed a unit that makes values commensurable, neoclassical thinkers can relegate all other questions about what actual money is and what role it plays to the realm of applied science.<sup>8</sup> That deferral is terrifically enabling. It allows economists to explain actually observed moneys that don’t conform to the abstraction in ways consistent with normative premises of equilibrium models. Thus neoclassical thinkers define money in the real world in ways that tack close to their presumptions about how money should look: they assume that exchange activity among equally situated individuals suffices to produce a medium as bartering individuals converge on a commodity or agree to an empty measure as a convention. Although those moneys fail to resemble the unit of

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7. For a concise overview of the model, introduced by Léon Walras in the late nineteenth century, see ORLÉAN, *supra* note 1, at 13–14, 39–50.

8. Cf. Ben S. Bernanke, Chairman, Bd. of Governors of the U.S. Fed. Reserve Sys., Implications of the Financial Crisis for Economics, Speech Presented at the Conference Co-Sponsored by the Center for Economic Policy Studies and the Bendheim Center for Finance 2–5 (Sept. 24, 2010) (distinguishing an economic “science” of fundamentals from economic “engineering” in the applied sense).

account imputed by Walras—they are either material and non-neutral or non-material and meaningless—those problems are not categorized as fatal.<sup>9</sup> To the contrary, economists can correct for monetary dynamics while identifying those dynamics as distortions, given money's deviation in the real world from the Walrasian abstraction.

In effect, neoclassical economics imputes a term to resolve the challenge of commensurability at the conceptual level: it assumes money as an abstract and neutral unit of account. The discipline subsequently explains moneys actually observed: it focuses here on money as a medium emerging from trade. The sleight of hand submerges the issue of incommensurable values. Incongruities are set aside as the byproduct of difficulties on the ground.

Part III of this Article treats the Walrasian recognition that commensuration precedes choice as an invitation. It begins by recognizing that, just as the sequence in the model suggests, participants in a market, conceptual or real, establish a unit of account *before* beginning the process of comparing otherwise incommensurable values.<sup>10</sup> That money is created by something other than their decentralized choice, activity that can take place only when the auction occurs. In fact, we know that modern societies regularly create money out of public credit that is packaged to have material worth and to circulate. Those societies install value in a unit by identifying that unit with an obligation owed to the group, giving the unit out as payment when resources are needed in advance by the group, and accepting it back in satisfaction of the obligation.<sup>11</sup>

Once participants have a unit that substantiates value cognizable to all or virtually all participants, they can use it in exchange. Emerging from a world heterogeneous in so many aspects, participants now have a unit with a common reference point and meaningful worth over time. They offer and take it for objects and services. Their practice of exchange produces prices. Commensurability in the new money emerges from that activity. Value, as it is articulated in this money, is not pre-existing but rather produced.

The parameters of this observation are both specific and capacious. On the one hand, the argument reaches value as it occurs in the monetary realm, not beyond it. Many communities have ordered relations without money and many aspects of our experience, even in the modern world, elude or repel expression in that medium. Human desire, appetite, and need make us prize certain things, people, or qualities independent of their being articulated in money.

On the other hand, the monetary realm is vast. It represents all exchange that occurs because and insofar as money as a medium makes items comparable. That commensurability alone allows the kind of ranking, a comparative relation, that

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9. Walras's model assumed a monetary unit that was material (one among commodity goods) and could measure other goods without affecting their value. For discussion, see MARK BLAUG, *ECONOMIC THEORY IN RETROSPECT* 144 (5th ed. 1996).

10. Thanks to Jeremy Stein for discussion that clarified the importance of the sequence.

11. In the interim, societies support money's use as a medium, thus constructing an instrument that circulates. I leave that defining feature of money aside here.

persuades observers to understand the market as a coherent terrain of decision-making. Thus economists understand “price,” for all its inconsistencies, to express a set of real choices, the aggregate work of comparative *ordering*. In turn, they hold out the hope that maximizing individual preferences, identified through price, can move us towards increased social welfare. None of those assumptions can stand without the shared term that makes comparison possible across an ocean of goods. The construction of that term is therefore critical to the market as we know it.<sup>12</sup>

That conclusion directs attention to the nature of money. In a very preliminary way, this Article sketches the implications that follow if, as it appears in the modern world, money is in fact a medium of credit. Most striking is a feature of money that appears to be structural to that character. The agents that coordinate the production of credit money—governments and commercial banks in our system—create that measure and medium in order to spend or loan it to specific parties. By contrast, they have no reason to issue money evenly across a population. If so, then money, *by definition*, enters circulation selectively, spent or loaned to certain hands. That feature means that markets, at least markets made in money, are based on a measuring resource—money—that is allocated unevenly across participants.

This is true at a formal level. Commensurability, according to this view, is a matter produced when a group restructures its internal relationships, creating a unit of value that can act as a comparative and injecting that unit into circulation.<sup>13</sup> The nature of credit as the medium matters in that process. Credit works by advancing a unit of monetary value to some people relative to others. In that case, as a condition inherent to its construction, money carries value differentially to participants, those who are graced with credit and those who are not.

If so, we cannot assume that everyone comparing value has access to the comparative, if only as a unit of account, that will express his or her preferences. Money as a credit medium operates by creating capacity as a relative resource. The process of money’s dissemination articulates value in that unit. In turn, representations of value manifested as prices are produced in the activity of deals made for the monetary unit. The results embed both the facility and disparity represented in the medium. Models that assume money as a neutral measure, hypothetically accessible as a valuing tool if not a factor endowment, do not give us information that can be understood as a reflection of people’s preferences. Rather, we need to reconceptualize value if money is in fact a public credit medium.

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12. I am grateful to Roy Kreitner for his insightful commentary on this point.

13. We will see that the activity of comparing incommensurables cannot produce its own measure. Nor does an abstract term, given its inability to refer to any substantiated value, supply any coherent relation to it.

## II

## THE NEOCLASSICAL APPROACH

Most neoclassical thinkers believe that “the *choices* of the agent reflect her/his *preferences*, and . . . the *preferences* of the agent (even when s/he is not selfish), in turn, reflect the *welfare* of the agent.”<sup>14</sup> In this formulation, value precedes commercial exchange; it is the “hidden property that is logically prior to such transactions and that gives them form.”<sup>15</sup> Orléan agrees that the commitment to pre-existing value is central to mainstream economics. In his view, that principle organizes economic thought. As he observes, “exchange exists because there is value—value being understood as the distinctive quality of tradable commodities.”<sup>16</sup> That is true whether scholars attribute value to labor or to the utility of scarce resources, and whether they attempt to model the expression of choice in general equilibrium theory or in more dynamic partial equilibrium processes that sort market results by competitive selection and exclusion.<sup>17</sup> All are attempts to understand how recognizing underlying value, in ways that may be unknown to market actors themselves, “orders the apparent anarchy of market exchange.”<sup>18</sup>

According to this approach, the economic process is resolutely comparative; it assumes a way of measuring the value of real things or their characteristics against each other.<sup>19</sup> Ideally, the exercise itself produces a measure. In Schumpeter’s words, it is “the exchange ratios between the commodities that are the really important thing ‘behind’ money prices,”<sup>20</sup> or, according to those in the Marshallian tradition, “the ratio of the marginal utility of the two goods exchanged.”<sup>21</sup> The basic point is that some commensurability in value allows comparison among the wide heterogeneity of commodifiable items. Neoclassical theory has split again and again in its debates over value, from the subjectivism of Bentham’s utility to the methods for comparing pairs of preferences.<sup>22</sup> Implicit across those debates, however, is an agreement that comparison is possible, even if in an abstract term.

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14. YAHYA M. MADRA, *LATE NEOCLASSICAL ECONOMICS: THE RESTORATION OF THEORETICAL HUMANISM IN CONTEMPORARY ECONOMIC THEORY* 15 (2017) (emphasis in original).

15. ORLÉAN, *supra* note 1, at 13.

16. *Id.*

17. *See id.* at 9–12 (reviewing the shift from labor to utility theories of value); *see also* MADRA, *supra* note 14, at 13, 48–60 (considering the use of auction and evolutionary arguments in neoclassical theories of value).

18. ORLÉAN, *supra* note 1, at 13. For that aspiration as a historically developed ideology, *see generally* JONATHAN SHEEHAN & DROR WAHRMAN, *INVISIBLE HANDS: SELF-ORGANIZATION AND THE EIGHTEENTH CENTURY* (2015).

19. Commentators often loosely identify preferences for commodities per se, while others specify the utility of their underlying properties or characteristics. *See* ORLÉAN, *supra* note 1, at 42–43 (discussing Kelvin Lancaster’s work, which defined utility as an objective quality).

20. JOSEPH ALOIS SCHUMPETER, *HISTORY OF ECONOMIC ANALYSIS* 277 (Elizabeth Boody Schumpeter ed., 1954).

21. MADRA, *supra* note 14, at 13.

22. *Id.* at 4–6, 13, 48–60.

In fact, abstraction may be essential for most theorists. The market is a conceptual device, a phenomenon that registers and reflects preferences. Exchange in turn represents the fact that those preferences, once identified, can be reordered. The Walrasian auction is only the most elegant representation of that process. In that model, the critical moment occurs when participants recognize value and rank it. By contrast, exchange is simply the execution of those decisions. Thus, “exchangeability is considered to be directly implied,” *after* the act of judgment in which individuals make their choices.<sup>23</sup> Actual exchange and the terms on which it occurs is a different subject, one that raises issues of application, rather than questions of the first order.<sup>24</sup> The truck-and-bartering individuals that Adam Smith made famous are merely carrying out the commands, we learn, of their inner ideal decision-makers.<sup>25</sup>

The normative stakes of the neoclassical vision are profound. Within that frame, the autonomy of individuals—the fact that they make value choices independent of any influence or mediation—ensures freedom from coercion. Those actors find sovereignty and equal voice insofar as their preferences operate to determine the relative value of goods and services. In order to respect the choices made by individuals, we should preserve that underlying distribution so far as we can. Their decentralized action is the most democratic of expressions.

In fact, economists claim a connection between the market and the democratic form explicitly. Milton Friedman legitimates the economic space as, itself, democratic: “The great advantage of the market . . . is that it permits wide diversity. It is, in political terms, a system of proportional representation. Each man can vote, as it were, for the color of tie he wants.”<sup>26</sup> Kenneth Arrow generalizes the logic, suggesting an isomorphism between the economy and politics in “a capitalist democracy”:

[T]here are essentially two methods by which social choices can be made: voting, typically used to make ‘political’ decisions, and the market mechanism, typically used to make ‘economic’ decisions. . . .

. . . The methods of voting and the market . . . are methods of amalgamating the tastes of many individuals in the making of social choices.<sup>27</sup>

The exercise of preferences in the market can be tuned in a populist key. Friedrich Hayek recast the ideal of expressing choice into a method of gathering

23. ORLÉAN, *supra* note 1, at 17.

24. Those working out early partial equilibrium models took a similar approach. Thus Alfred Marshall would assume a medium and give it unchanging marginal utility for his model, while only subsequently accommodating the impact of money flows in the real world by way of a money demand function. See HENRY WILLIAM SPIEGEL, *THE GROWTH OF ECONOMIC THOUGHT* 567, 583–84 (3d ed. 1991).

25. In fact, we might understand neoclassical responses to “income” approaches, like that of Ralph Hawtrey, and to Keynesian theory in particular as categorizing the challenges raised there as problems of application, therefore short-term issues of transition, rather than challenges to the fundamental structure of assumptions underlying classical and neoclassical thought. See *generally* RALPH HAWTREY, *CURRENCY AND CREDIT* (1919).

26. MILTON FRIEDMAN, *CAPITALISM AND FREEDOM* 15 (1962).

27. KENNETH J. ARROW, *SOCIAL CHOICE AND INDIVIDUAL VALUES* 1–2 (3d ed. 2012).

information, thus elevating the diffuse wisdom of entrepreneurs over the claimed expertise of centralized planners.<sup>28</sup>

This conception of the market and its normative stakes explains the neoclassical approach to money and practitioners' intransigence on the matter. Preserving the integrity of the comparative exercise and all that it promises invites, or perhaps requires, abstracting the definition of money, that is, blackboxing the unit of account. At the same time, the discipline in applied fields can accommodate the practical reality that a medium of exchange will exist to facilitate the actual exercise of reordering goods. The combination will guard the neutrality in principle of the unit in which value is expressed, while acknowledging slippage in the real world.

Perhaps the most common method of blackboxing the unit of account is to assume that one among the commodities traded in a market can act as the measure of other commodities in that market. In that case, the commodity, which Walras called a "numeraire" when used as a comparative unit, can be set equal to one—it expresses its own value after all—and then deployed to measure other goods. In neoclassical models, the numeraire is a measuring fiction; no one holds it as a store of value, an intervention that would upset the project of measuring all commodities against all others in terms of their utility for consumption or productivity.<sup>29</sup> James Tobin takes pains to distinguish the numeraire as a mathematical supposition from the money actually used to set prices.<sup>30</sup> But that is precisely the point for our purposes: in their effort to hypothesize a measure, economists split money into its constituent functions. They theorize its identity as a measure separately from money as a transactional medium, store of value, or mode of payment. As Mark Blaug writes about the numeraire, "this kind of money serves only as an abstract unit of account; it may exist in a physical sense but it need not and trade has all the characteristics of barter."<sup>31</sup>

That conclusion is empowering. Having assumed commensurability, the market for real things can exist independently of a medium. As Blaug describes the circumstances in which the numeraire operates, "the medium of exchange being an arbitrary commodity like any other—the total value of all goods demanded is always identically equal to the total value of all goods supplied."<sup>32</sup> We can then hypothesize the trade of commodities directly for one another by value; consumer demand thus informs the decisions of producers. As Frank Hahn summarizes this logic and its consequence, "the best developed model of the economy cannot find room for [money]" at all, given the zero sum logic.<sup>33</sup>

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28. F. A. Hayek, *The Use of Knowledge in Society*, 35 AM. ECON. REV. 519, 520–21 (1945).

29. See BLAUG, *supra* note 9, at 144; Tobin, *supra* note 4, at 224, 231.

30. Tobin, *supra* note 4, at 232; see also MADRA, *supra* note 14, at 13 (analogizing abstract nature of utility ratios).

31. BLAUG, *supra* note 9, at 144.

32. *Id.*

33. FRANK HAHN, MONEY AND INFLATION 1 (1982).

Partial equilibrium models, by a somewhat different route, likewise assume commensurability. Focusing more narrowly on one segment of a market, they incorporate competition over time into their analyses of market equilibrium. Whereas general equilibrium models assume adjustments in price offered to all simultaneously, partial equilibrium models often aim at a process of quantity adjustment by competitors in a particular industry over a certain period. There, given demand and the costs of production, “those who cannot survive [at] the equilibrium price leave the market.”<sup>34</sup> Price and budget constraints, put in money terms, are key assumptions. And, if not an abstract numeraire, money remains an entity that acts without a clear identity. Writing in the *New Palgrave Dictionary of Economics*, Tobin pondered how something could hold value as a medium given that, “[a]ccording to standard theory, something can have positive value only if it generates positive marginal utility in individuals’ consumption or positive marginal utility productivity in the making of goods and services.”<sup>35</sup> Although he found no clear answer to the puzzle of how money could be so categorized, efforts to crack the puzzle continued. In the meantime, as Tobin put it, “what is universal and important is that something is chosen [as money], not what is chosen.”<sup>36</sup>

The intuition of real exchange is thus entrenched around an imputed unit of account. It remains only to make sense of money’s existence and role in the real world. There, the same intuition shows the way: once we have resolved the problem of commensurability, comparison is possible but for smaller challenges, mere frictions in a system that is conceptually operational. Those challenges can be resolved by decentralized activity—barter that produces a medium, or a convention that produces an agreed upon measure—that is consistent with the normative vision of the market as an individuated matter.

As economist after economist emphasizes, real exchange—barter—in the real world is an unwieldy affair, haunted by difficulties and delays as participants struggle to overcome obstacles of distance, information, and time, as well as differences in quantity and in quality that set apart what they have to exchange from what they want to gain that way.<sup>37</sup> Those problems—all failures of a “double coincidence of wants”—generate the need for money: economists almost

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34. Yahya M. Madra, *Auction or Selection? Two Competing (Neoclassical) Metaphors for “The Economy”* 8 (unpublished manuscript) (on file with the Duke University Center for the History of Political Economy).

35. Tobin, *supra* note 4, at 232.

36. *Id.* at 225. Typical introductory macroeconomics textbooks exhibit a similar logic. They discuss the economy “in the long run,” free from monetary distortions; those are set aside for consideration of “the short term” with attention to monetary dynamics. *See, e.g.*, N. GREGORY MANKIW, *MACROECONOMICS* (5th ed. 2003). But the economy in the long run is a moneyed economy: a unit of account exists and is presumed even as the focus is on the real economy.

37. *See, e.g., id.* at 158; FREDERIC S. MISHKIN, *THE ECONOMICS OF MONEY, BANKING, AND FINANCIAL MARKETS* 57–59 (9th ed. 2010); Ross Levine, *Financial Development and Economic Growth: Views and Agenda*, 35 *J. ECON. LITERATURE* 688 (1997); Tobin, *supra* note 4, at 224–25; *see also* Neil Wallace, *Lawrence R. Klein Lecture 2000: Whither Monetary Economics?*, 42 *INT’L ECON. REV.* 847 (2001) (locating the need for credit and monitoring in lack of double coincidence of wants).

uniformly explain it as a means of reducing the static of barter. As Tobin summarizes, “the reason for the universality of money . . . is that it facilitates trade.”<sup>38</sup> It dissolves the barriers that make barter so “awkward and inefficient.”<sup>39</sup>

The double coincidence of wants is an applied problem, not a theoretical one. If people had the wherewithal, they would be able to find and make the trades they wish. That is, they understand the relative values of everyone’s possessions—they merely need to find the right partner at the right time with the right quantity and quality of goods they desire. Trade is a matter of degree, if you will; an image that invites commentators to posit that money emerges from existing trade to facilitate subsequent trade.

Note that the sequence reverses the logic of the conceptual models. Those models recognize that a unit of account must be postulated both before comparison takes place and in order to allow comparison to take place. Exchange takes place subsequent to those choices; it merely carries them out. By contrast, applied explanations rely on exchange to generate a unit of account. Much of the time that happens on the ground. People converge on a commodity unit by migrating towards an item that can serve as a medium, thus the classics like Carl Menger’s “most saleable commodity,”<sup>40</sup> and Karl Marx’s approach to gold as the “universal equivalent.”<sup>41</sup> Some of the time, participants in an exchange community simply accept a suitable item by convention, thus John Locke’s claim that silver was, by acclaim, “the money of account, and measure of trade, all through the world.”<sup>42</sup>

The problem of commensurability is different. It poses the challenge of comparison: how is it possible to compare an orange to an advance of resources, or a dog to military service? What about the relationship of any of those to the possession of land or art, or to the obligation to support the public order? That question, infinitely harder, is virtually nonexistent in the economic literature on money.<sup>43</sup> That neglect, in contrast to the intense focus on the issue of the double coincidence of wants, occurs because Walras’s auction has done its work. It has established the intuitive power of the market-as-a-huge-bazaar, an orgy of real exchange among objects of comparable value.<sup>44</sup> Once we imagine the operational auction (or existing trade carried out in money), we recognize friction or

38. Tobin, *supra* note 4, at 224.

39. *Id.*

40. CARL MENGER, ON THE ORIGINS OF MONEY 263 § 2 (1892).

41. KARL MARX, CAPITAL: A CRITIQUE OF POLITICAL ECONOMY 162 (Ben Fowkes trans., 1976).

42. *Further Considerations*, *supra* note 3, at 422 § 2; see also R. A. Radford, *The Economic Organisation of a P.O.W. Camp*, 12 *ECONOMICA* 190 (1945) (“[C]igarettes rose from the status of a normal commodity to that of currency.”); Tobin, *supra* note 4, at 225 (“General agreement to the convention, not the particular media agreed upon, is the source of money’s immense value to society.”).

43. One could argue that the question of commensurability haunts the economic literature insofar as that work grapples with the issue of how to understand subjective value or utility. But those efforts do not articulate the problem as the reason for money’s existence.

44. Existing markets in the real world, markets *made with money*, have the same effect. Indeed, those markets—characterized by trade enabled by money—are surely the inspiration for Walras’s auction.

obstruction as plausibly providing a reason for money. That reason obscures the *conceptually prior* possibility that money is necessary to create commensurability.

Setting the challenge of commensurability aside, we have a problem that is manageable within the terms of neoclassical thought. Decentralized activity can resolve frictions if items are comparable. In particular, that decentralized activity can produce an object—a commodity or a convention of measure—that facilitates the market if there is enough decentralized activity (that is, enough of a market) in the first place. (Never mind the circularity; assuming commensurability allows a significant amount of trade to occur without money.) Finally, the “convergence” story about money’s creation tacitly reinforces the discipline’s normative stake in the market’s democratic character. Most evidently, a wide range of participants have vetted the medium and chosen to accept it; apparently, they could opt out if they preferred. As a medium, money is hypothetically available to all as a measuring tool, although not a factor endowment. In that important sense, it is distributively neutral—even though we will find it unevenly accumulated by individuals.

Of course, there are distortions that separate this applied world we have constructed from the conceptual one. Thus the moneys hypothesized by economists as emerging from barter or convention do not resemble the numeraire. Either they carry value as money and therefore depart from the definition of a commodity equivalent that Hahn and Tobin imputed to the numeraire, or they have no intrinsic value and therefore provide no coherent reference for measuring that quality. In the first category are all those items selected as money because bartering agents prefer them increasingly until they emerge as a medium. The very act of bartering for a commodity preferentially because it will be used as a unit of account changes the value of the commodity. That disqualifies it from acting as a sister commodity in the Walrasian model. In the contemporary neoclassical literature, a set of models that posit moneys that are “productive”—necessary to resolve cash-in-advance requirements or transactional frictions—fail for this reason.<sup>45</sup> As Neil Wallace argues, general equilibrium theory assumes complete competitive markets; it is therefore inconsistent with a money that is productive in its ability to aid transactions.<sup>46</sup>

Wallace in turn crafts a theory of money according to which an intrinsically worthless object is circulated as evidence of past behavior. That is, one gives money as a token to document a good or service provided; the money produces information on the behavior of contracting parties as opposed to resolving transactional frictions.<sup>47</sup> Wallace acknowledges that his theory is inconsistent with the assumption in general equilibrium theory that markets for credit are

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45. Wallace, *supra* note 37, at 847–48.

46. *Id.* at 848–49.

47. *Id.*; see also Neil Wallace, *The Mechanism-Design Approach to Monetary Theory*, in 3A HANDBOOK OF MONETARY ECONOMICS 4–5 (Benjamin M. Friedman & Michael Woodford eds., 2011) (discussing the benefits of a mechanism design approach to monetary theory); MARTIN SHUBIK, 1 THE THEORY OF MONEY AND FINANCIAL INSTITUTIONS 322 (1999) (arguing for an alternative approach to the price system to reconcile micro and macroeconomics).

perfect, but argues that the departure will be worthwhile given his theory's ability to account for money's existence.<sup>48</sup> But there is another problem he does not recognize: his account does not explain how heterogeneous items become commensurable. Narratives that propose an empty measure provide no reference point against which comparison can proceed. Money, even if considered only as a unit of account, is nothing like an inch or a pound. Those metrics are more like denominations; they divide a matter already commensurable, like linear space or weight. By contrast, money creates a reference point for an amorphous matter: value. To this day, neither economists nor philosophers have agreed upon how to conceptualize the "value" of time, goods, services, satisfactions, or desires. Once that is done monetarily—the whole trick—no one really cares much how denominations are ordained to subdivide existing value.

The moneys constructed by economists, aimed as they are to explain problems of transactional frictions or informational shortfalls, therefore do not satisfy the demand implied by the conceptual models for a unit that enables commensurability. Somewhat ironically, that shortfall does not suggest the inadequacy of those models for those advocating them. Recall that, given the role that economists have identified for money as a medium—its operation to mitigate the interference to the ideal market posed by real world conditions—the issue of money is understood as a second-order problem. Economists can correct for monetary dynamics while categorizing those dynamics as distortions given money's deviation in the real world from the abstract numeraire.

Those distortions may be grave. The fact that commodity moneys never behaved like the commodity they contained bedeviled the European medieval world. Gresham's law, competitive debasements, and the bewildering traps of bimetallism followed from the fact that money's face value diverged from its metallic value—and would always diverge, no matter if individuals knew the metallic value down to the grain. The issues raised in the modern world are arguably more profound. Keynes's notion of liquidity preference turns on the point that people value a medium for its "moneyness," a utility it carries that affects its value and people's desire to hold it.<sup>49</sup> That demand interferes with the identity of savings with investment. Another problem occurs because cash, the transactional medium, has long been supplemented, one might say submerged, by a thick layer of financial assets offering different degrees of liquidity and different returns for risk. That market also complicates the flow of savings into investment, arguably obstructing it.<sup>50</sup> Much of macroeconomics and monetary

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48. Wallace, *supra* note 47, at 4–5.

49. John Hicks may have been the first to use the term "moneyness" in this sense. See JOHN HICKS, VALUE AND CAPITAL: AN INQUIRY INTO SOME FUNDAMENTAL PRINCIPLES OF ECONOMIC THEORY 163 (1947).

50. Tobin, *supra* note 4, at 239–40.

policy might be understood as dealing with the consequences, the distortions to the ideal, that result.<sup>51</sup>

In short, neoclassical economics has produced a position on money dictated by the discipline's implicit theory of value. Mainstream approaches assume that value pre-exists interaction. They prioritize the choice that individuals make among valued goods as a critical act of self-determination and assume the process of exchange as the execution of that choice. In order to make the comparative process cognizable, they posit an abstract and neutral unit of account that precedes and facilitates that activity. At the same time, neoclassical approaches accommodate money in practice (that is, in the real world) as a medium constructed by individuals who, already able to compare goods, face frictions in the exchange. Those frictions are a second-order problem, one that makes trade difficult but not impossible. In fact, in the applied realm, trade—the activity that only executes choice in equilibrium analysis—produces money as a means of facilitating more exchange. The role and salience of exchange confirms the market as a decentralized phenomenon, consistent with the democratic vision of free choice as the base of neoclassical commitments. The distortions that occur in the real world will be managed by fixes that are also second-order.

### III

#### MONEY AS A PUBLIC CREDIT MEDIUM

Money is not so easily tamed; again and again it violates the neoclassical edifice constructed to house it. That is incontrovertibly true in the contemporary world, where money does not resemble the numeraire; neither is it a commodity nor a signifier empty of material value.<sup>52</sup> Virtually all modern sovereign moneys are credit mediums that entail material value, unit by unit. They are created by governments or, as in the case of the European Union, consortia of governments. Those authorities create an official unit of account, control issue of that unit, and take it back for taxes and other public payments. (If a debtor does not have money, a government will confiscate goods of an equal “monetary” value, thus providing a material anchor for its currency.) Governments further support the value of their sovereign moneys by privileging its travel between individuals: officials enforce transactions for value made in the official monetary unit. American courts, for example, default to the dollar as the medium that states and

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51. See MICHEL BEAUD & GILLES DOSTALER, *ECONOMIC THOUGHT SINCE KEYNES: A HISTORY AND DICTIONARY OF MAJOR ECONOMISTS* 29 (1997) (discussing the differences between economic models that assume money supply is endogenous and models that assume it is exogenous).

52. Even coin, often assumed to circulate as a commodity, operated as a public credit money, if its design in Britain is representative. The government there clearly authored money, determined that it should operate at face value, committed to accepting it for public payment, and privileged its use in individual exchange. Given that character, coin's metal content acted as a kind of collateral—for both users and the government, while the coin's nominal value depended on the government's credit. In fact, one way to understand the argument over whether coin traveled at “extrinsic” (or face) value or the “intrinsic” value of its metal content is that the debate concerns whether coin was a credit money or a simple commodity. I canvas the evidence and argument in DESAN, *supra* note 5, at 70–107.

conveys the value necessary to settle contracts, to redress injuries in tort, to convey property, and to comply with myriad other requirements from jurisdictional thresholds to regulatory standards.<sup>53</sup>

Money issued by commercial banks—a profuse source of money since the nineteenth century—fits within the architecture constructed for the dollar and other sovereign moneys. Commercial banks issue credit denominated in the official unit of account in the form of private promises-to-pay money to one sovereign or another. Those representations of private credit—bank deposits—are treated as money, not just credit: they hold immediate purchasing power. And they hold that purchasing power because they are embedded in national payments systems that allow banks to clear their obligations against each other, borrow from each other, and depend on the central bank for help—all in the official unit of account. In that way, public credit money systems add “elasticity” to the monetary base. That is, they include an avenue for the money supply to expand in response to the demand by individuals who want money for their own purposes.<sup>54</sup>

The character of modern moneys suggests a solution to the conundrum about commensurability that haunts the neoclassical approach. Communities do in fact require a unit to render value commensurable before participants set about the enterprise of comparing goods. The neoclassical theorists correctly insist on that logic. But the monetary unit is neither an abstraction, nor a commodity that costlessly distinguishes itself, nor an empty measure. Rather, communities construct a unit of account by creating a token that carries value relevant to each participant. They do that in the figure of credit that is good to satisfy political dues or, in the case of bank-issued money, credit that is good to repay an advance—thus the pattern of credit money that we find pervasive across the modern world.

Once participants have a comparative unit, they use it in exchange. That practice puts a money value—a price—on goods and other commodities. The practice of exchange with a unit of comparative value therefore creates commensurability and, by that token (literally), articulates value. In other words, insofar as we consider money an expression of value, that value does not reflect

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53. See generally Christine A. Desan, *The Monetary Structure of Economic Activity* (Harvard Pub. Law Working Paper, 2020), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3557233](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3557233) [<https://perma.cc/YHP9-9B4T>] (detailing the ways in which governments influence which assets are considered valuable).

54. See generally Hockett & Omarova, *supra* note 6, at 1147 (arguing that the modern financial system is a public-private partnership between financial institutions and sovereigns); Perry Mehrling, *Payment vs. Funding: The Law of Reflux for Today* (Inst. for New Econ. Thinking, Working Paper No. 113, 2020) (illustrating payments elasticity through credit creation by private banks). Coined regimes built in elasticity by drawing on the collateralized nature of their money. Sovereigns could expand the money supply for private use (thus adding “elasticity”) by taking collateral as the content of coin that they agreed to mint in return. For the way the “free minting” (or minting on demand) system worked, see generally THOMAS J. SARGENT & FRANÇOIS R. VELDE, *THE BIG PROBLEM OF SMALL CHANGE* (2002), which documents the evolution of monetary theory and minting technology over 600 years. See also DESAN, *supra* note 5, at 70–71 (describing the free minting system in medieval England).

pre-existing preferences.<sup>55</sup> Rather, the value expressed in money follows the practice of exchange in money and is a product of that exchange.

Finally, in that process, the character of money as credit matters. In particular, credit money enters circulation selectively: it is an advance (a credit) made to some people relative to others. Thus money, inherent to the way it is constructed as credit, comes into use as a resource that some participants acquire first. That character affects the practices made with money, including the establishment of prices. At a formal level, money is allocatively partial; it cannot be a neutral medium.

We can begin rethinking the process by which money is made and put into circulation where neoclassical approaches do. Like the unit hypothesized there, credit moneys can also be conceptualized at a theoretical level. The stakeholder model is one such attempt.<sup>56</sup> The model starts from the premise that groups are as elemental as individuals in understanding exchange. Groups survive on the basis of contributions from members. At times, however, groups facing emergencies or sudden shortfalls want to mobilize help outside the usual schedule of member contributions. In that case, a stakeholder for the community can draft contributions from some members in advance and “pay” for that advance by giving them IOUs. Each IOU confirms that the member has given a contribution early: it denominates that contribution as a credit, inviting the person holding the IOU to “redeem” it by turning in the IOU next time a member contribution is due, instead of making a new and additional contribution. The arrangement explains how a unit—written in the term of one contribution—comes to entail value in a reliable way: The group has, collectively, a reference point for value—the recurring contributions made to it and anticipated in the future.<sup>57</sup>

A second step explains how money moves from an accounting device to a medium. That transition, routinely assumed by economists, actually draws on the issuing authority’s decision to accept a public credit unit back from anyone’s hand, not only the individual initially paid. The accommodation greatly increases money’s capacity: it now serves not only public uses (mobilizing contributions

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55. Compare the Walrasian approach, which Orléan describes as identifying price as a matter “discover[ed]” by a comparison of values. See ORLÉAN, *supra* note 1, at 46.

56. I have elaborated the stakeholder theory at length elsewhere; it captures the “constitutional” aspect of money as an important dimension of governance. See DESAN, *supra* note 5, at 45–50; Christine Desan, *Decoding the Design of Money*, EUR. FIN. REV., Feb.–Mar. 2015, at 24. There are similar and contrasting models of credit-based money. See, e.g., Charles W. Calomiris, *Institutional Failure, Monetary Scarcity, and the Depreciation of the Continental*, 48 J. ECON. HIST. 47 (1988); Farley Grubb, *Chronic Specie Scarcity and Efficient Barter: The Problem of Maintaining an Outside Money Supply in British Colonial America*, in INSIDE MONEY: RE-THEORIZING LIQUIDITY AS A MATTER OF DESIGN (Christine Desan ed., forthcoming); Bruce D. Smith, *American Colonial Monetary Regimes: The Failure of the Quantity Theory and Some Evidence of an Alternate View*, 18 CAN. J. ECON. 531 (1985); L. Randall Wray, *Alternative Approaches to Money*, 11 THEORETICAL INQUIRIES L. 29 (2010).

57. For details, including the discounts that individuals may demand for advancing their labor and the premium that money carries as a transferable token, see DESAN, *supra* note 5, at 45–50, 70–107. The next paragraph is elaborated in the same sources.

through spending in IOUs) but private ones as well (exchange between individuals). In fact, individuals regularly want more money than the government puts into circulation for its own use. Communities routinely find ways to expand the credit money made by the public to service trade between individuals—thus the commercial bank money of the modern world.<sup>58</sup>

Once communities have constructed a comparative unit that has relevance for participants, they will use it in exchange. Sharing an entity that entails value has novel importance in a community populated by people who, previously, had incommensurable needs and resources. In fact, the new money is uniquely appealing because people can use it to trade for objects they need or want.<sup>59</sup>

That trading activity is *contiguous* with the character of the money used: participants have credit money, issued by governments and amplified by commercial banks. We must look to the nature of credit money—including the way it is introduced into a community of users—in order to understand the practice of exchange and the values that result.

Understanding money as a public credit indicates that money enters circulation selectively. That phenomenon appears constitutive to the rationale and process of money creation. If so, the medium, with all its capacity for generating growth and widespread benefits, also carries an inherent non-neutrality: the condition of allocative bias. The circumstances of making money not only produce an instrument with unparalleled relevance as a comparative unit, they also inject it unevenly into circulation. That condition will affect the way the market prices value in that money.

To analyze the phenomenon, we need to unpack the reasons that a government or a bank creates a unit of credit. Recall that, under our public credit theory, a stakeholder would invent money by issuing credit, written in the term of anticipated revenue, when it needed to draft contributions to the group in advance of the time they were due. That innovation allows a stakeholder to hire certain people and acquire specific goods. Wartime is the paradigmatic example; not coincidentally, it is also a period when governments often create or redesign their moneys.<sup>60</sup> A government spends on the industries and people that it needs for its defense. It then taxes back as it did originally, matching its selective dispensation of resources by taking in obligations owed more broadly. (In effect, the government is paying for the contributions it took in advance by sticking to the system that gives its IOUs value.)

The strategy of issuing credit against future revenue is aimed, at bottom, at creating the capacity to spend specifically. If the government could obtain the

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58. See *supra* note 54 and accompanying text.

59. Credit can be figured in the unit as well. It will have to be settled in money, and therefore remains tied to the issue and existence of the unit. N. J. Mayhew, *Population, Money Supply, and the Velocity of Circulation in England, 1300-1700*, 48 *ECON. HIST. REV.* 238, 253–54 (1995).

60. Examples include early Anglo-Saxon innovation, the Bank of England, the assignats created during the French Revolution, and the Federal Reserve insofar as its mission, defined in 1913, was redefined by World War I a few years later.

flexibility it wanted by spending evenly (that is, hiring evenly) across the population, it could simply increase the routine contributions that everyone owes the group. In fact, pre-monetary governments and groups may frequently do or have done that—but those events would not be the instances in which they innovated money. There would be no reason to give out credit tokens to mark the advance of a contribution to the group: the whole population would have given resources and each person is in the same boat relative to others. By contrast, money as a credit represents a claim by an individual *relative to* the contributions due the community from her peers. Money, by definition, represents compensation to an individual for a disparate (advance) contribution.

That condition indicates that the way money enters circulation influences production, distribution, and prices. Public spending for goods and services effectively allocates to certain hands a transactional medium that offers unique benefits—cash services—to individuals. We might imagine a government paying, consistently over time, those people with the skills and strength to be soldiers. That subset of society now holds an asset that others want; they will compete to supply the soldiers' needs in particular, driving down prices for the goods that soldiers prefer. Those needing money will not make the same efforts to satisfy others, even if those people have significant amounts of wealth in other forms. Those forms do not carry the cash-quality that attaches to the credit medium. These dynamics will affect production and output in complex ways. They might increase the supply of goods demanded by the money monopolists at the expense of other goods, for example, or incentivize sellers to differentiate between segments of the market, lowering prices for the monopolists buying in bulk. In any case, the differential access to liquidity inherent in the way credit money enters circulation would affect relative prices and production in the market.

Demand for the government's money would also affect the willingness of people to sign up as soldiers or give other goods in advance. In negotiating for labor, a government might have to discount its medium, accepting less labor for full exoneration in the future or, conversely when demand for money by individuals is high, receiving a full contribution in advance.<sup>61</sup> When people sell their services to the government for lower prices, those selling to the money monopolists would assumedly need to lower their prices a corresponding amount. But in that case as well, the prices that those without much money face for goods would remain relatively higher.

The more consistently a government spends to one group, our soldiers for example, the more privileged that group is compared to others in society. Those others could of course adjust their skills and compete for the state's business. But that change would be particularly difficult, given that they lack money to facilitate their retraining and relocating—transaction costs are built into the situation, as those conceptualizing the pre-monetary world as barter would agree. The fact

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61. For a mapping of this effect, see generally Desan, *supra* note 53.

that private demand for money modifies the structure of production suggests again that the way money enters circulation shapes economic exchange.

In short, as the actor creating the money stock, the government is a *sui generis* party. Its approach to spending its money into circulation matters greatly. In modern polities like the United States, the government is the single largest actor in the economy—an economy written in its public credit medium, the dollar. Today, the federal government's spending comprises twenty-one percent of GDP.<sup>62</sup> Even aside from the way its balance of priorities affects health, education, welfare, infrastructure, and defense on their own terms, its allocation of money privileges certain beneficiaries with the allocation of a resource singular for its liquidity. That is the resource these beneficiaries will use to bid for goods and services in the market. The government's authorship irrevocably affects, then, the relative values made in the unit it produces.

But the allocative bias inherent in the character of money is more penetrating yet. The government destroys money as well as creating it. Like all credit, money has value until its moment of retirement. In the simple example here, where money holds value against an anticipated tax or public payment, that event cancels a unit of the medium.<sup>63</sup> That corollary to spending reminds us that a government's tax system becomes part of the allocative drama.

Imagine that a community, like the one we assumed at the outset, levied a tax on all its members (that is, they all shared an obligation to contribute regularly to support it). Imagine also that the society converts to primarily using money. In other words, instead of taking in-kind contributions from people, the government generally spends to specific parties, and then takes taxes from the broader population in money. In the United States today, federal taxation matches spending in magnitude, if not precise quantity.<sup>64</sup> In that case, money is no longer an optional resource for people, one that they want for reasons of their own exchange. Rather, individuals need the monetary resource to pay their public dues. Their need for money as a mode of payment means that they must deal with those who have that resource. They are tied into an economy in which people are differentiated by their access to money and the bargaining power it represents.

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62. THE WHITE HOUSE, BUDGET FOR A BETTER AMERICA (2019) <https://www.whitehouse.gov/wp-content/uploads/2019/03/budget-fy2020.pdf> [<https://perma.cc/7MG7-5MGA>] [hereinafter BUDGET]. The U.S. government spends about twenty percent of its budget on the military. See Kimberly Amadeo, *US Military Budgets, Its Components, Challenges, and Growth*, BALANCE (Dec. 7, 2019), <https://www.thebalance.com/u-s-military-budget-components-challenges-growth-3306320> [<https://perma.cc/5SGH-D2RJ>] (identifying expected military spending for fiscal year 2021 at \$934 billion); Kimberly Amadeo, *US Federal Budget Breakdown*, BALANCE (Mar. 3, 2020), <https://www.thebalance.com/u-s-federal-budget-breakdown-3305789> [<https://perma.cc/36JF-ZUV4>] [hereinafter *US Federal Budget Breakdown*] (identifying \$4.829 trillion in projected total federal spending in fiscal year 2021). It spends another sixty percent on entitlements. *US Federal Budget Breakdown*, *supra*.

63. The American colonies ran economies based on classic tax anticipation currencies. See, e.g., Calomiris, *supra* note 56.

64. Federal taxation is about 16.5% relative to GDP; government debt makes up the difference between federal spending and taxing. Kimberly Amadeo, *US Federal Government Tax Revenue*, BALANCE (Jan. 21, 2020), <https://www.thebalance.com/current-u-s-federal-government-tax-revenue-3305762> [<https://perma.cc/T782-KG75>].

The modern architecture of money creation adds another twist to the drama. Most modern governments do not create money by spending it directly into circulation.<sup>65</sup> Governments today tax in already-existing money (money created in an earlier round of government action) and spend those funds. They also borrow previously issued money now in private hands. By contrast, governments *increase the money supply*—or create new money—when their central banks purchase public debt, the very debt that governments issue when they borrow.<sup>66</sup> Central banks purchase that public debt (or other qualified assets) by issuing credit—new public credit money or fiat money—for it. In the modern world, then, money creation is conducted through a circuitous route, one mediated by central banks and public debt (and other assets).<sup>67</sup>

The circuitous route taken in the modern world also matters. Politically, the system came about by happenstance, improvisation, and some shrewd calculation: the strategy created an alliance between government and investors. The design offered an asset to those with money to lend the government; as an investment, a government bond was relatively safe, especially as governments learned to monetize those bonds when they needed to. At the same time, the design offered governments good lenders and political allies. Relatedly, the arrangement established a device that reinforced the government's commitment to tax in a disciplined way; there was now a group of creditors with a particular interest in that practice. No doubt the design also increased the credibility of the government by yoking investors into a set of supporting obligations, originally including the responsibility of redeeming their own notes in coin.<sup>68</sup>

But independent from (or implicit in) those important innovations is that the modern architecture channels money creation through finance—the central bank's purchase of either public debt or other qualified investment assets. The system, by its very design, sorts members of the public who hold enough money to invest in financial instruments from those who do not. A flow of funds to the former is built into the way modern governments add to the money supply. Today, the government's debt channels an amount equivalent to ten percent of

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65. They always retain the ability to do so, however, and regularly recur to it. Civil War greenbacks, Treasury notes, and early American paper money are moneys made by that method. Coin is somewhat similar: insofar as governments require payment in coin and make mints available to convert bullion into coin, they effectively draft people to supply a currency made of metal that the government then collects and spends.

66. Central banks can also purchase other qualified assets, increasing the money supply by that route as well.

67. See Morgan Ricks, *Money as Infrastructure*, 3 COLUM. BUS. L. REV. 757, 772–87 (2018) (detailing modern monetary policy in the United States); Christine Desan, *Money Creation by the Federal Reserve: A Note on the Basics of Legal Authority* (2019) (draft on file with author) (detailing the role of the Federal Reserve in the creation of money). Randall Wray argues that, in addition, government deficit spending effectively increases the money supply. See L. Randall Wray, *Outside Money: The Advantages of Owning the Magic Porridge Pot*, in INSIDE MONEY, *supra* note 56.

68. Initially, national banks were privately owned. A group of investors agreed to lend to a government, taking its national debt and issuing their private promises-to-pay. The government then spent and taxed in those promises, assimilating them to its own money. The dollar is, thus, a “Federal Reserve Note.” See generally DESAN, *supra* note 5, at 295–329.

GDP to investors.<sup>69</sup> The construction is a striking aspect, arguably definitional, of modern capitalism.<sup>70</sup>

The conclusion that money enters circulation selectively holds when we add commercial banks to the analysis. Those institutions expand the money supply by issuing deposits against private borrowing, the longer-term loans they make to customers. Banks extend that credit by making promises-to-pay the official unit of account, with the permission of the issuing sovereign and the support of its payments system.<sup>71</sup> Those commercial entities thus hold a significant monopoly in the contemporary system as agents of money creation.<sup>72</sup>

Banks claim that role according to a particular theory: they are supposed to be experts in allocating credit. Commercial lenders are entrepreneurs out to make a profit from lending money. Motivated by their own interest in getting repaid by borrowers, they use local knowledge and experience to find those people and projects most likely to generate a material return in the length of the loan period. They make loans only to those prospects.<sup>73</sup>

The banks' strategy maximizes the chance that the credit they extend will be returned to them with interest. By the same token, the strategy virtually advertises that banks will selectively dispense access to money, as represented by their extension of private credit. Projects that promise a profit to bankers become, literally, the occasion for money creation through the issue of deposits. By contrast, projects that cannot promise a profit will not be similarly blessed—even if they contribute to the social good in non-material ways, are productive in nonmonetary ways, are simply slow to mature in terms of monetary profit, or fail to motivate bankers to lend for an arbitrary reason. In other words, commercial banks create money in accord with their priorities; their distributive rationale affects the way private credit money issues and to whom. They also affect, thus, the way prices are set.

There are, in other words, no “helicopter drops” of money as in the textbook hypotheticals. Rather, the rationale for creating a monetary unit, whether the money was made by a sovereign government or the deposit issued by a bank, is to spend it selectively. The patterns by which money enters circulation bless

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69. BUDGET, *supra* note 62, at 109; *see also* *US Federal Budget Breakdown*, *supra* note 62.

70. For the impact on wealth and its distribution, *see*, for example, SANDY BRIAN HAGER, *PUBLIC DEBT, INEQUALITY, AND POWER: THE MAKING OF A MODERN DEBT STATE* (2016). For a definition of capitalism based on this and related changes in money's design, *see* DESAN, *supra* note 5, at 5–6.

71. For the relevant law in the United States, *see*, for example, *Thompson v. Riggs*, 72 U.S. 663 (1866).

72. More recently, other financial entities have found ways to construct and issue what some scholars call “near-moneys,” repo agreements, and similar instruments that they use to fund investments in the capital markets. *See generally* GARY GORTON, *SLAPPED BY THE INVISIBLE HAND: THE PANIC OF 2007* (2010). Those “shadow banks” also depend on the sovereign unit of account, drawing credit from conventional banks, clearing in the sovereign unit and, as of the Financial Crisis, relying on the Federal Reserve (and other central banks) for support.

73. *See, e.g.*, ALEXANDER HAMILTON, *FIRST REPORT ON THE PUBLIC CREDIT* (1790), <https://founders.archives.gov/documents/Hamilton/01-06-02-0076-0002-0001> [<https://perma.cc/MY26-U5S5>]; Amar Bhidé, *Why We Need Traditional Banking*, *NAT'L AFF.*, Winter 2018, at 78.

people differentially with access to the resource of liquidity. Exchange takes place in those circumstances.

In short, recognizing why societies make money and how they do it recasts the way we approach the market and the values we observe there. First, societies create a unit of account because their members (including public officials) need a way to compare values that are otherwise not commensurable. Making money out of credit works to that end: it produces a unit of substantive value that is relevant to all or most individuals because each person can use it to satisfy their political dues or, in the case of bank money, to repay their loans. That innovation allows exchange to take place: using the unit, people will make deals for money. That process generates prices.

In that process, the character of money as credit matters: by its very structure, money only enters circulation as it is allocated by governments and banks to particular parties. That selectivity affects the exchange that follows. It means that, according to the way money is created—definitionally we might say—individuals will not be equally situated in the process that generates prices. Decisions about value are made in the wake of that fact.

#### IV

##### CONCLUSION: INCOMMENSURABLE APPROACHES

Considering money as a public credit generates a profoundly different approach to value than that in neoclassical formulations. For many in that tradition, the market is conceptualized as a forum or process in which individuals express pre-existing preferences according to a self-evident measure. By contrast, the public credit approach suggests that groups build a touchstone for value by configuring their relations—thus the credit unit they create out of political obligation.<sup>74</sup> That unit allows comparison and exchange, activities that produce the market and the prices observed there.

Just as neoclassical formulations have normative implications, so also does the credit approach. Most conspicuously, the credit approach recasts the image of democracy and its possibility. Recall that the neoclassical tradition offers a vision of democracy that turns fundamentally around maximizing choice, the freedom to name value and claim it. Agents bid independently, insulated from undue influence, ideally in the auction setting. In that vision, public activity is a neutral coordinating device—the auctioneer and its abstract numeraire.

By contrast, understanding money as a public credit medium locates collective action as foundational to market regimes. Governance is catalytic in creating commensurable value for a particular community. That governance is a relational matter—it recognizes groups as composed of contributing members. Moreover, it creates its touchstone for value, the unit of account, by reorganizing their relations when it accepts resources early from some and advances them

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74. For a focus on this process as a way to package political obligation in a circulating unit, see generally Desan, *supra* note 53.

credit relative to others. Democracy becomes a matter that starts with mutual contribution but requires even more. It entails a complex system in which a group sustains itself by structuring its growth and character through a process of soliciting and managing resources, distributing benefits, and spreading costs—all difficult matters that require discussion and deliberation.

That project is expansive. It includes making public credit—money—for public needs and goals, as well as private exchange. On the first, we can understand the tight fit between modernization and money, between political capacity and robust fiscal states, and between monetary innovation and mobilization for war, welfare, economic development, or other reasons.<sup>75</sup> The connection between money and society suggests that money is an infrastructural resource and collective good.<sup>76</sup> Recognizing money as a public credit medium thus frames political activity as a significant component of money's genealogy and purpose.

As for private exchange, we should understand the way modern communities structure credit and its allocation as critical decisions about the market society they are creating. The determination to identify commercial banks as the conduit for money creation shapes what kind of projects and industries find funds and prosper. More generally, the financial system as a whole is an elaborately engineered dimension of governance in modern polities. Its dynamics, an operation carried out in official units of account and structured by permissions and defaults of public authority, determine the flow of material wealth, privilege, and voice.

At an elemental level, recognizing money as public credit installs a particular challenge at the heart of democratic governance in a monetary world. Rather than suggesting the priority of protecting individual autonomy, it poses as fundamental the difficulty of ensuring equality. Making money is an emancipatory innovation for communities because it allows them to create commensurability in value. But that project, by its very unfolding, orders people in disparate ways and begets differential access to money itself. Far from assuming that markets operate equally, the challenge is to make markets that engender equality.

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75. See, e.g., JOHN BREWER, *THE SINEWS OF POWER: WAR MONEY AND THE ENGLISH STATE, 1688-1783* (1988); Isaac William Martin et al., *The Thunder of History: The Origins and Development of the New Fiscal Sociology*, in *THE NEW FISCAL SOCIOLOGY: TAXATION IN COMPARATIVE AND HISTORICAL DIMENSION* (Isaac William Martin et al. eds., 2009); Max Weber, *Bureaucracy*, in *FROM MAX WEBER: ESSAYS IN SOCIOLOGY* (H. H. Gerth & C. Wright Mills eds., 1958).

76. See, e.g., MEHRSA BARADARAN, *HOW THE OTHER HALF BANKS: EXCLUSION, EXPLOITATION, AND THE THREAT TO DEMOCRACY* (2015); Ricks, *supra* note 67.