

Copeland on money as electricity

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Bear with me while I summon the spirit of a too-often forgotten economist, one Morris Copeland, who did more than any other to create the flow-of-funds accounts that inform so much of modern economic macro analysis of the real world economy (Copeland 1952).¹ This summons from the dusty peace of library stacks seems essential in the face of the currently wildly misleading and ill-informed public debate over the perils of deficit spending by governments, a debate that threatens the world with more years of economic hardship and worse. Before turning to Copeland, consider again the need for better information and understanding.

Readers of this journal will certainly agree that public debate over the role of government finance in combating recessionary forces in our global economy has been seriously impoverished by the way in which textbooks and some financial journalists simplify or, to put it more accurately, talk down and obfuscate when describing processes of intersectoral finance in modern economies. When the public is led to believe that governments finance deficits by printing money, it is little wonder that there is anger and worry over the probable outcome.

People who are already angry over job losses, public corruption, stagnant wages and the many other problems that have been well documented over recent years in the U.S. and elsewhere are justified in wondering where those printed dollars go. The helicopters of the monetarist metaphor for money creation have not been seen dropping printed dollars over their neighborhoods. It is little wonder that there have been calls for greater transparency on the part of the FED and belt tightening by the government that is alleged to determine the drop zones of those helicopters.

Of course, readers of this journal know that money-dropping helicopters do not exist. Indeed, most economists know that the textbook and journalistic version of FED actions is not what happens in the real world economy, but the need for simplification at the introductory level and in the world of television sound bites and quick-read newspapers has served to perpetuate a quasi-official textbook view of money that derives from a long history in which money was a real stuff such as gold, or pieces of official paper, for which various forms of “credit” were adequate substitutes in good financial times, but from which sensible people ran in times of panic and distress. In this treatment it is important to maintain—as most textbooks do—a hard and fast distinction between credit, which is created in the ongoing interactions of a variety of public and private agents in the economy, and money, which exists as a result of the self-regulating market mechanism itself (as in an idealized gold standard) or through policy determination (as through the actions of the Federal Reserve System).

This distinction between money and credit makes little or no sense in our world of electronic payments, but, even more importantly, it also serves to obscure public discourse. At some point in their training, most economists learn, as do major participants in the financial sector and the journalists who write about them, that governments do not actually “print” money and most learn to rely for actual understanding of economic conditions on the “flow-of-funds” accounts (that Copeland pioneered and that are now compiled and published quarterly

¹ This brief paper is based on a longer paper on Copeland and his model presented at an interdisciplinary conference on “Money and Metaphors” held at the University of Virginia in October 2009. I will be glad to send an electronic version of the draft of that paper. For more on Copeland and his contribution see Millar (1990) and Rutherford (2002).

by the FRS) rather than upon measure of the quasi-official money supply of textbook fame. In this passage to a more sophisticated, or perhaps simply truer, understanding of how the economy works, there is recognition that the idea of a central bank determined “money supply” may be as fictional as the Wizard of Oz or Santa Claus. Indeed Frederic S. Mishkin, author of a widely used textbook in which the quasi-official version of money is the basic model, has also written (with co-author Arturo Estrella) that at least since 1979, there is no empirical evidence to show that either M1 or M2 (the standard measures of the quasi-officially defined money supply) serve as “information variables” (Mishkin 2007; Estrella and Mishkin 2007). In other words, the standard measures of a “money supply” do not tell us what monetary policy is, which certainly implies that monetary authorities may not have the control that the textbooks allege. If we cannot conclude that the standard measure of money supply reveals the intention of the FED, then either the FED is lying (as many in the U.S. are inclined to believe), or something is wrong with the way we are thinking about the powers of the FED. However, my intention here is not to revisit and bring forward into the 21st century Keynes’ liquidity trap, or to argue about whether, a la Friedman and Schwartz (1963), the fault lies with a timid and ineffectual FED. Rather my goal is to say that the quasi-official measure of money does not tell us much that is useful and that the textbook way of thinking about the relationship of money, finance, and spending is deeply flawed.

Alternative models are part of a well-established Post Keynesian and heterodox tradition in economics. However, this literature has not made its way into the standard texts and even into serious journalism, as evidenced by continued references to the helicopters of monetarist fame. One reason for this, I suggest, is that the alternatives proposed have lacked a simplifying metaphor suitable for easy presentation. And, this is where Morris Copeland comes in. Back in 1952, when Copeland, a Cornell University economist who had worked closely with Wesley Mitchell at the early NBER, published the first estimates of money flows in the United States, he not only provided the basis for the now widely used flow-of-fund accounts. He also proposed replacing the commonly used hydraulic model of the money supply—one in which money is thought of as a stock of water that flows through pipes or is held in reservoirs by banks—with a model of money as electricity.² In Copeland’s electrical analogy, the reservoir become batteries and the conduits are wires. In a schematic picture, credit poles for each sector of the economy are fed by earnings from the “real” sector, which in the case of households would mean mostly wages and salaries, *and* by financial transactions, including transfers and, most importantly, by borrowing from other sectors. Borrowing sectors acquire funds and lending sectors acquire assets in the form of promises to pay.

Copeland’s model of money flows integrated the “real” and the “monetary” sectors of the economy and was based on the accounts generated by businesses, households, and governments in the normal course of carrying on transactions in the real world economy. There are other crucial advantages as well. First, because there are no significant lags in the flows within and between sectors, there is no need to speak of a separate supply of and demand for money. In the case of electricity we speak of the ability of a system to generate

² The NBER began the great task of construction “national” or “social” accounts with the National Income and Product Accounts, which continue in the classical tradition of a sharp separation between the “real economy” of goods and services, in which money serves only as a measuring device. This left the monetary sector to be modeled using the more traditional tools of supply and demand. Wesley Mitchell and his disciple, Copeland, knew, however, that money had in many ways become as “real” as “real” goods for households and certainly for business firms. With the ever wider use of mortgages, credit purchases, and retirement accounts this has become ever more the case in recent decades. Copeland sought to revise national accounting to take this reality into account, but was not successful in persuading economists to introduce flow-of-funds accounts along with NIPA accounting into our textbooks. For more on this see Mayhew (2009).

electricity and of circuit breakers, but not of a supply that lurks behind the walls and is somehow there independently of the demand for electricity. Or, to put it differently and in the more precise language used by accountants, the crediting of an account automatically generates a debit in like amount to another account and the two are simultaneous, just as is the switching on of an electrical appliance and the draw upon electrical capacity. This is the process of modern economies and the electrical analogy suggested by Copeland closely approximates it.

A further advantage of Copeland's model, and one that makes it a nice supplement to the important work of Godley and Lavoie (2007), is that it stresses the discretionary power of the different actors in the modern economy. Using the more familiar hydraulic model, in which money is thought of as a stock of water, a stock of liquidity; we are required to think that something outside the financial grid causes an increase or decrease in the quantity. Money, as traditionally thought of, can flow rapidly or slowly or simply sit in a reservoir. This causes no end of confusion about velocity but it also requires that we think that central banks have a power that is belied by empirical evidence. Rather than argue about velocity, it is so much easier to say that in the dreadful period of 1929 to 1933, households and business firms didn't, for a variety of reasons, turn on the switches that cause money, thought of as electricity, to flow. Partly they did not do so because banks did not give them access to switches to people unlikely to be able to repay, but, even where they households and businesses did have access, they didn't use it and money, rather than sitting idle, just did not get generated.

Bring that idea forward, and note that if money is thought of as water and as a finite substance, then to spend it you have to take it away from someone else or, as newspapers and textbooks have it, increase something that is being printed and handed out, perhaps by helicopters or maybe by politicians. Of course, this is not what happens. As governments spend, they rely on transfers from households and businesses when taxes and other levies are paid, but they also issue promises to pay (either to themselves as Randy Wray [2006] would emphasize) or to others. Copeland's model has the enormous advantage of bringing this aspect of deficit finance to the fore. For every increase in government debt there is an increase in the holdings of assets by some sector of the economy.

The call for greater transparency on the part of the FED and of governments in general has been a major part of the political response to the current and ongoing recession. But, such transparency is going to be hard to achieve if you have to rely on hypothetical helicopters and money drops or measures of money supply that tell you little about what the FED's intentions may be. Actually, the FED itself, using a modified form of Copeland's money flow accounts, does a pretty good job of explaining what it does and what happens in the economy in its flow-of-funds accounting data. But, there is little to nothing in the textbooks that most of our students read that equips them to read these accounts and there is certainly no model or simple metaphor that helps in understanding the multiple sources of discretionary decision-making that determine macroeconomic outcomes. Much less are there explanations that are easily accessible to a television audience.

Copeland's electric metaphor could be the tool that is required to give us the transparency that could greatly improve public discourse. To adopt Copeland's model as both accounting tool and as guiding metaphor will require that we give up the idea of an all powerful if frequently bumbling FED and accept that ours is a complex and global electrical grid of money access, with very real circuit breakers that can in fact be managed in the public interest. To think in this way will require that we abandon inherited notions about money, abandon a lot of old debates that have engaged economists, and abandon the simple satisfaction of blaming central bankers. What we would gain in understanding and

transparency would be enormous and, besides, the ghost of Morris Copeland would, I think, be mightily pleased.

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