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Market Process Economics and the Market for Money

Barnett and Block (2010) prove beyond any reasonable doubt that money trades in every market and therefore, strictly speaking, has no market price of its own. And so every time I used the phrase "objective exchange price" in my comment (Curott, 2010) I should have used the phrase "purchasing power" instead.[1] The fact that money is traded in all markets is of central importance in macroeconomics, as I discuss below, because it suggests that monetary disequilibrium can cause general unemployment. But Barnett and Block's (2010) lengthy terminological insistence that the purchasing power of money is technically not a price is irrelevant to my critique of their original article.

Barnett and Block's (2009, 2010) primary conclusion, that it is illegitimate to speak of a single market for money, is derived from the premise that money has a price expressed in different units for each market that it is traded in. While the premise is true, the conclusion they draw from it does not follow.[2] Just because money has no market *price* of its own does not mean that it has no market *purchasing power* of its own. The market purchasing power of money, unlike other goods, just cannot be expressed as a conventional price, i.e., as a numeric ratio of exchange in terms of a single other good.

[1]The correct choice of words is important for clearly expressing ideas. The conventional notion of a market price is an exchange ratio of a good in terms of money. Barnett and Block (2010) want to reserve the word "price" solely for money prices. And since there obviously cannot be a price for any particular money enumerated in the same money, the phrase "objective exchange price" of money is a poor choice of words to denote the purchasing power of money because it seems to imply that the objective exchange price is a money price. However, it is important to note that supply and demand analysis is amenable to prices that are not money prices. I used the phrase objective exchange price because it is the phrase used in the English translation of Mises (1981 [1914]).

[2]Barnett and Block's conclusion that there is no aggregate supply and demand for money is based on a confusion of the two meanings of the word "market." Sometimes the word market is used in an ordinary language sense to denote a particular sector of the economy, such as the market for pork bellies or the market for haircuts. Other times the word market is used in a technical economics sense to denote the operation of supply and demand among an aggregate of individuals. While money trades in all sectors of the economy, it has a single aggregate supply and demand. Thus there is no single market for money in the first sense of the word, but there is a single market for money in the second, technical economics sense.

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But the concept of the purchasing power of money is all that is required in order to demonstrate that there is a meaningful notion of the demand for money in the aggregate. This aggregate demand is the market summation of individual demands to hold a given quantity of money at different levels of the purchasing power of money, *ceteris paribus*.[3] The supposedly "erroneous claims of a single market for money" identified in Section III of Barnett and Block's (2009, 20-22) article are claims relating to the market purchasing power of money. There is nothing erroneous about these claims at all.

For the reasons explained in my comment (Curott, 2010), as long as money has an anchored value that isn't circular, the market purchasing power of money is determined by supply and demand. In a static equilibrium, or, if one prefers, in the "evenly rotating economy," the purchasing power of the money commodity is subject to the law of one price.[4] All of the different price ratios for a unit of money in terms of how much of each other good it can buy must have the same purchasing power because inequalities are arbitraged away. By virtue of Walras's Law, equilibrium in $n - 1$ markets implies equilibrium in the n^{th} market. Money appears in $n - 1$ markets but not in its own market. As an equilibrium condition, this doesn't matter because Walras's Law makes it reasonable to speak of a market for money as a residuum.

Unlike in the imaginary construction of general equilibrium, in the real world money does not have the same purchasing power in all markets. Therefore it makes sense to speak of various supplies of and demands for money, but not because this is somehow implied by the nature of money as suggested by Barnett and Block (2009, 2010). Rather, money has different purchasing powers in different markets because uncertainty and dynamic change mean that there are false trades and the law of one price does not apply. There are multiple purchasing powers of money, just as there are multiple prices of cell phones and baked beans.

Most macroeconomists do not consider disequilibrium in these other non-money markets to be particularly noteworthy because they cannot cause general unemployment or a fall in aggregate out-

[3]If Barnett and Block wish to deny that money's purchasing power is determined by *the* supply and demand in a single aggregate market, they are not only rejecting mainstream theory, but also Mises and Rothbard. Rothbard (2004 [1962], Chapter 11) develops an especially clear cash balance theory of money holdings that parallels the treatment I used in my comment; Section 2 of Chapter 11 entitled "The Money Relation: The Demand for and the Supply of Money" leaves no doubt about what Rothbard thought. I submit that it is more likely that Mises and Rothbard insisted that there is a single aggregate market for money because it is in fact true than because they were sloppy or did not understand the nuances of monetary theory.

[4]Perhaps the "law of one price" should instead be called the "law of one purchasing power" in order to avoid confusion when it comes to money. Money has many prices, but only one purchasing power, meaning the ratios of all these other prices are fixed by supply and demand. Unfortunately, the phrase "law of one price" is embedded within the classical (and neo-classical) equilibrium barter framework in which "price" means the purchasing power of one good in terms of another good, where any good is capable of being the *numeraire*. For better or for worse the phrase "law of one price" has become standard usage and it would be difficult to change at this point in time.

put. Overproduction in the cell phone market, for example, would represent errors of judgment by some producers that could cause firms to go out of business. Such discoordination results in structural unemployment that would surely affect the quality of life of certain individuals, so it is a relevant macroeconomic problem. But Say's Law tells us that such overproduction in the cell phone industry must be matched by an equal amount of underproduction in other industries (Kates, 2003). Thus, while the cell phone market is depressed, markets for other goods would be booming. In other words, one entrepreneur's loss is another entrepreneur's gain. Disequilibrium in goods markets cannot cause a business cycle, which is characterized by a clustering of errors in many industries and by general underconsumption.

Things are different with respect to money. The fact that money is traded in all markets suggests that monetary disequilibrium can have economy-wide effects. For this reason numerous explanations for recessions have been proposed that rely in some way on the concept of monetary disequilibrium. The most influential has been the Monetarist interpretation of the quantity theory of money, which implies that a fall in prices caused by contractionary monetary policy results in insufficient effective aggregate demand and economic recession (Friedman and Schwartz, 1963; Yeager, 1996).[5]

An alternative monetary disequilibrium theory relies on the Austrian interpretation of the capital structure, which implies that injections of credit in the market for loanable funds can result in structural malinvestment and an eventual correction marked by unemployment (Hayek, 1931, 1941; Garrison, 1996). The distinguishing characteristic of the Austrian theory is the insistence that macroeconomic discoordination is caused by changes in relative prices throughout the economy, especially those brought about by increases in the money supply. For those who adhere to this precognitive analytical vision, which includes both Barnett and Block as well as myself, articulating malinvestment theory persuasively enough to convince the broad economics profession constitutes a progressive research program that requires much more empirical and theoretical investigation.[6] Therefore the theoretical notion of

[5]In the words of Yeager (1996, 5-6): "The catch is this: while an excess supply of some things necessarily means an excess demand for others, those other things may, unhappily, be money. If so, depression in some industries no longer entails boom in others .... Say's law overlooks monetary disequilibrium. If people on the whole are trying to add more money to their total cash balances than is being added to the total money stock (or are trying to maintain their cash balances when the money stock is shrinking), they are trying to sell more goods and labor than are being bought. If people on the whole are unwilling to add as much money to their total cash balances as is being added to the total money stock (or are trying to reduce their cash balances when the money stock is not shrinking), they are trying to buy more goods and labor than are being offered. The most striking characteristic of depression is not overproduction of some things and underproduction of others, but rather, a general 'buyers' market,' in which sellers have special trouble finding people willing to pay more for goods and labor. Even a slight depression shows itself in the price and output statistics of a wide range of consumer-goods and investment-goods industries. Clearly some very general imbalance must exist, involving the one thing—money—traded on *all* markets. In inflation, an opposite kind of monetary imbalance is even more obvious."

[6]Most economists, for instance, do not think

the many markets for money that Barnett and Block should be exploring, but don't, is the internal dynamic of various changes in money demand among the various members of a society, and how this plays out in real time. That is a very hard theoretical problem, and answering it satisfactorily would require serious advances in process-style economic theorizing, whether it be in the form of well reasoned thought-experiments or perhaps even agent-based computer modeling.

Barnett and Block render economics a service by evoking the notion of the various demands for money and thus how changes in monetary policy might affect specific markets differently, potentially causing general business fluctuations. But they give no good reason for refusing to speak of a market for money because if one can speak of the $n - 1$ other markets in an economy it is impossible not to speak of the n^{th} market. So the demand for money is an intelligible notion even if its pristine articulation is based on a theory of equilibrium. One can understand what is meant by a general change in the demand for money and can reason about it.

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that structural shifts in the economy, such as the shift of employment from higher orders to lower orders emphasized in the Austrian theory, are capable of generating the rate of unemployment witnessed during large depressions. Nor do they think it has been satisfactorily explained how expectations factor into Austrian business cycle theory, or in which actual markets malinvestment will appear. Furthermore, the timing of the upper turning point predicted by Austrian theory is very poorly understood. My purpose in bringing up these issues is not to argue that satisfactory resolutions are lacking, but rather that they have not been presented with sufficient theoretical rigor or substantiating evidence. See Hummel (1979) and Wagner (1999), and the references they cite, for discussion of some of the weak areas in Austrian business cycle theory and for suggestions about how to fix them.

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