

# THE ROLE OF FRACTIONAL-RESERVE BANKING AND FINANCIAL INTERMEDIATION IN THE MONEY SUPPLY PROCESS: KEYNES AND THE AUSTRIANS

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**T**imothy Fuerst (1994) has argued for the need for more banking theory in monetary theory.<sup>1</sup> A review of the history of economic thought indicates that, until the 1930s, banking theory and the role of banks in the process of financial intermediation and credit creation were emphasized in the writings of monetary economists beginning at least in the early 1800s.<sup>2</sup> In such theories, the role and impact of monetary policy on the economy follow as corollaries from a well-developed theory of money, credit, and banking.

This article presents two alternative interpretations of the role of banks in the monetary transmission process. The interpretation based on the work of Mises, Hayek, and Rothbard leads to the conclusion that central banking and monetary policy are the “generators of the ‘business cycle’” (Hayek 1979). The other interpretation presents a Keynesian theory minus the liquidity preference theory of the rate of interest.<sup>3</sup>

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<sup>1</sup>Fuerst’s paper examines how an economy responds to changes in the monetary base which enter the economy through a fractional-reserve banking system.

<sup>2</sup>See Rothbard (1995, chaps. 5–7) for a summary of this earlier literature. The works of Mises and Hayek are in this tradition.

<sup>3</sup>The framework provided here gives Keynesians an out from the “paradox of thrift” implications of the standard ISLM Keynesian model while retaining a strong argument for discretionary monetary and/or fiscal policies.

[W]e regain the concept of savings as something more than an antisocial refusal to spend. It matters because it is also a supply of loanable funds. . . . We can make a clean break with one of the most dangerous and harmful confusions ever taught as accepted economic doctrine. (Leijonhufvud 1981a, pp. 196–97; see also Skousen 1997, and Samuelson 1997)

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These models provide an explanation of the indirect transmission mechanism that is an alternative to both the current money view and the credit and lending view.<sup>4</sup> The Austrian and Keynesian models developed here begin from a similar starting point: the loanable funds interest rate theory and the Wicksell transmission mechanism.<sup>5</sup> They differ in critical ways based on the following unresolved and often overlooked issues in the theory of money, credit, and banking:

1. Is money a present good or a future good?
2. Is a bank deposit (redeemable at par on demand) a debt transaction in both its legal and economic impact, or is the deposit a bailment in its economic impact even if it is treated as a debt by the legal system?
3. Is the money-creation process made possible by fractional-reserve banking true financial intermediation that facilitates the transfer of savings to investors, or is fractional-reserve banking and the money-creation process a credit-creation process?

Part 2 will discuss the interactions of money, credit, and interest, with special emphasis on the "Wicksell mechanism" and the natural rate of interest. Part 3 will develop an economic interpretation of fractional-reserve banking based on the work of Mises ([1912] 1971), Rothbard (1994), de Soto (1995), and Hoppe (1994). In this model, a bank deposit is considered a warehouse receipt, a bailment, not a debt.<sup>6</sup> The extension of circulating credit (credit issued from bank reserves acquired from deposit banking or created by a central bank) through the banking system eventually causes an economic crisis. The recession phase of the business cycle is the economic correction of previous excesses and malinvestment. Part 4 uses the basic Wicksellian framework to develop a model of money,

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<sup>4</sup>From our perspective, the credit and lending view is a step in the right direction. The focus is just too narrow. The emphasis should not be limited to bank lending, but should examine the impact of bank lending on total credit available relative to savings. See Romer and Romer (1990), Robinson (1993), and Morgan (1992) for more recent surveys of the money versus credit debate in the recent literature. Cochran and Call (1997) present a more detailed discussion of these issues in the context of the recent discussions on the monetary transmission process. Goldfeld (1990, p. 199), in his discussion of the Romer and Romer article, stated,

I regard this topic with some nostalgia since it was one that many people of my generation encountered at a formative stage of their careers. Indeed, the question of whether bank loans are special and the role of banks in the transmission mechanism played a prominent part in my graduate education and early professional interests.

<sup>5</sup>See Cochran and Call (1997), Cochran and Glahe (forthcoming), and Garrison (1992) for more detailed discussions of the Wicksell connection.

<sup>6</sup>Even though such a deposit may be legally considered a debt, these economists view the economic incidence of bank deposits as a bailment. The distinction being made here is similar to the distinction between the legal and the economic incidence of a tax. See Rothbard (1994, pp. 41–45) and Mises ([1912] 1971, pp. 268–71). See de Soto (1995, pp. 29–30), for a discussion of the legal tradition dating to old Roman law where "custody, in irregular deposits, consists precisely of the obligation to always have an amount equal to that received at the depositor's disposal."

banking, and credit that supports Keynes's (1936, p. 322) argument that abolishing booms will keep an economy in a permanent semi-slump. The model assumes that deposit banking is financial intermediation in both the legal and the economic sense. Part 5 compares and contrasts the two views, makes comments on the relevance of the old controversy for current monetary policy, and provides suggestions for future research.

### MONEY, CREDIT, AND INTEREST

While most modern approaches to monetary theory and policy place a heavy emphasis on the analysis of the money demand function and the role of money as a store of value, the earlier literature in the Austrian tradition focuses on the role of banking institutions in the money-creation process, the importance of money as a medium of exchange,<sup>7</sup> and the role of monetary changes in the savings-investment process.

A major factor in the Austrian analysis is the recognition that the way money enters the economic system will affect the dynamic adjustment process. Institutions are an important component of the monetary-transmission mechanism.<sup>8</sup> As Yeager ([1990] 1997, p. 253) recognizes,

Injection effects, in the broadest sense, can hardly be doubted: monetary expansion cannot leave all real quantities and relative prices the same as they would otherwise have been. New money enters the economy in particular ways and has differential impacts.

Or as stated much earlier by Cantillon ([1755] 1964), the demands of those who are initially affected by the monetary disturbance change before the demands of those who receive additional money balances only as the effects of the monetary change spread through the economy.

In contrast, the indirect transmission mechanisms of the more modern money view or lending-and-credit view are similar to the traditional direct transmission mechanism of the older Quantity Theory of Money. The means by which money enters the system is deemed irrelevant or of the second order of smalls. These are helicopter drop or "Angel Gabriel" models<sup>9</sup> of the monetary system. Monetary changes alter real cash balances. Economic agents respond through: (1) Pigou effects: aggregate demand is affected directly as agents alter spending on goods and services in response to changes in real cash balances; (2) Keynes effects (the money view): aggregate demand is changed indirectly as portfolio adjustments alter market interest rates; and (3) bank lending (lending and credit view): banks adjust the asset side of their balance sheet in light of the new monetary conditions. Changes in bank

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<sup>7</sup>See Yeager (1968) for a detailed discussion of the importance of money as a medium of exchange.

<sup>8</sup>See Boettke (1997) for a discussion of the role of "ideal types" in the construction of economic theories and the importance of institutions and historical detail in "good" economic analysis.

<sup>9</sup>See Rothbard (1994, p. 22).

lending affect aggregate demand as firms that are dependent on banks for credit increase or decrease their borrowing and spending.

Money, however, is seldom dropped by angels or from helicopters, or taken out of circulation by angelic pickpockets. Economic agents do not wake up with changed money balances. The money must enter (or leave) the system somehow and somewhere. In an economy with a developed banking system, monetary changes initially show up as changes in the availability of credit. Money enters the system (is created) as banks purchase assets (make loans).<sup>10</sup> The initial impact of a money supply change occurs in the market for credit as banks adjust both sides of their balance sheets.<sup>11</sup> Monetary changes that originate through the banking system have initial dynamic effects on spending because they alter not just bank credit but total credit available in the economy (or more correctly, credit available relative to savings available). A monetary change will thus alter the money rate of interest relative to the equilibrium rate and disrupt the balance between the "supply and demand" for capital. But it is important to note that it is not changes in the rate of interest *per se* that cause the demand-side changes, but changes in the rate relative to the rate that would equate saving and investment. As expressed by Wicksell ([1898] 1965, p. 107):

It is only in this relative sense that the money rate of interest is of significance in regard to movements of prices. It can at once be seen that it is quite useless to try to demonstrate the existence of any direct relation between the absolute movements of the rate of interest or of the discount rate and movement of prices.

Changes in investment relative to saving alter the demand for goods and services relative to the supply and lead to price-level changes and/or output changes. The lending-and-credit view, with its sole emphasis on bank lending, takes too narrow a view of the monetary transmission process, while the money view begins too late in that process.<sup>12</sup> In the latter case, the effect on interest rates is considered only after the money supply increase is complete.<sup>13</sup> It is the effect of such monetary changes on the money rate of interest relative to the natural rate and the consequent effect on the decision to invest relative to the decision to save that constitute the saving-investment problem that is a key feature in this natural rate approach to the monetary-transmission mechanism.

<sup>10</sup> Or leaves the system (that is destroyed) as banks fail to renew or call in loans.

<sup>11</sup> See Yeager and Greenfield ([1986] 1997) for a discussion of errors in monetary thought that result from the failure to clearly distinguish the demand for credit from the demand for money. The Post-Keynesian endogenous money models also consistently make this error. See, for example, Lavoie (1984) and Rogers (1989).

<sup>12</sup> Here is an area where Austrian insights on injection effects could perhaps be meaningfully combined with monetary disequilibrium models.

<sup>13</sup> The Wicksell mechanism does not preclude real balance effects, whether Pigou effects or Keynes effects. If the monetary disturbance occurs through a fractional-reserve banking system, then these spending effects occur, if at all, later in the transmission process. They do provide excellent alternative models of the economy-wide reaction to a helicopter drop. Direct effects would most likely dominate the response to such an experiment.

## COMMODITY CREDIT, CIRCULATION CREDIT, AND THE BOOM-BUST BUSINESS CYCLE

The ability of monetary changes to become a loose joint in the saving-and-investment process is what Leijonhufvud (1981a) has labeled the “Wicksell Connection”<sup>14</sup> and is developed from the idea, most clearly explained in Mises ([1912] 1971, p. 261), that banks play two distinct roles in the credit process: “the negotiation of credit through the loan of other people’s money, and the granting of credit through the issue of fiduciary media, i.e., notes and bank balances that are not covered by money.”<sup>15</sup> The first role, called “commodity credit” by Mises, is clearly financial intermediation. The second, Mises’s “circulation credit,” makes a distinction that was considered of vital importance at one time in monetary theory and is now usually ignored or discounted.<sup>16</sup> Credit issued by money creation is not considered financial intermediation.<sup>17</sup> It is not just another conduit of savings into investment.<sup>18</sup> The transaction is different in nature from a true credit transaction. In a true credit transaction, the lender temporally surrenders “money or goods, disposal over which is a source of satisfaction and renunciation of which is a source of dissatisfaction” (ibid., p. 264). It is different because the issuance of circulation credit involves no reduction of current satisfaction on the part of the ultimate lender, and hence may finance investment (or other spending financed by money creation) without any prior equal savings.<sup>19</sup>

Money is the medium of exchange, and is thus the present good *par excellence*. The implied household decision tree is: (a) Present goods or future goods (save)? (b) If present goods, specific consumption goods or money? Saving is the

<sup>14</sup>See Cochran and Glahe (1994) for a discussion of the importance of the Wicksell connection in the Keynes–Hayek debate of the 1930s.

<sup>15</sup>See Rothbard (1994), de Soto (1995), and Hoppe (1994) for more recent developments of this formulation. These papers explore the economic and legal aspect of fractional-reserve banking from both a theoretical and historical perspective.

<sup>16</sup>Rothbard (1994) uses the term “loan banking” instead of Mises’s term “commodity credit” to describe a bank’s role as a financial intermediary, and uses the term “deposit banking” instead of the term “circulating credit” when discussing the role of banks in the money creation process.

<sup>17</sup>According to Mises ([1912] 1971, pp. 268–69), “It is usual to reckon the acceptance of a deposit which can be drawn upon at any time by means of notes or checks as a type of credit transaction and juristically this view is, of course, justified; but economically, the case is not one of a credit transaction.” And, “But this is not a credit transaction, because the essential element, the exchange of present goods for future goods, is absent.”

<sup>18</sup>The view Keynes accepted and the view implied in the lending and credit view and money view is that the distinction is either unimportant at best or false. Both forms of bank activity should be interpreted as true financial intermediation. See Part 4 of this article. See also Yeager ([1990] 1997, pp. 266–68) for a non-Keynesian approach that accepts the Keynesian interpretation of deposit banking as legitimate and necessary financial intermediation.

<sup>19</sup>De Soto (1995) makes the argument that deposit banking is essentially a fraudulent contract since the bank would be unable to meet all of its contractual obligations simultaneously. By legalizing such contracts, the government has granted bankers special privileges and has failed to fulfill its obligations to protect person and property from fraud and force.

sacrifice of present goods (a claim on present goods is temporarily foregone) for a claim on future goods. Since the holding of cash balances, whether in the form of deposits or currency, does not require the sacrifice of present utility, changes in cash balances financed from current income are not a part of saving, but represent part of the allocation of income to provide present utility.<sup>20</sup> If money is a present good, then the proper economic interpretation of a deposit is that of a bailment or warehouse receipt. A deposit is a claim instrument, not a credit instrument.<sup>21</sup> If bank deposits are considered short-term loans from a legal standpoint, then the funds are legally considered the property of the bank and not the property of the depositor. But if such deposits (or notes) are used as a medium of exchange, they are in the minds of the depositor the property of the depositor. The deposits (notes) are a readily available source of current purchasing power. The depositor has not engaged in a true credit transaction, because no sacrifice of present utility has taken place. If banks hold fractional reserves (less than 100 percent) as backing of these deposits, and use the excess reserves to extend loans, the associated money creation is the economic equivalent of counterfeiting or embezzlement. The issuance of circulation credit is not financial intermediation. There has been no actual savings. Fractional-reserve banking and the use of circulating credit expands the supply of credit beyond the limits set by prior saving. Banking institutions will regularly push interest rates below the natural rate. Spending by ultimate investors will be in excess of savings.<sup>22</sup> Demand measured by monetary expenditure will increase and the resulting increase will initially be determined by the tastes and preferences of those borrowing the newly created purchasing power. Economic activity is misdirected in favor of early recipients of the newly created credit and at the expense of those whose expenditure flows increase later in the adjustment to the monetary shock.

This interpretation of the Wicksell mechanism is the foundation of the Austrian theory of the business cycle as developed by Mises and Hayek.<sup>23</sup> The extension of circulating credit (credit issued from bank reserves acquired from deposit banking) through the banking system eventually causes an economic crisis. The normal operations of the money and banking institutions supported by

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<sup>20</sup>See Rothbard (1976) and (Hutt 1979, chap. 8).

<sup>21</sup>See Rothbard (1978, pp. 148–49).

<sup>22</sup>This analysis assumes the newly created credit (bank loans) enters the system as loans to businesses. See Rothbard (1978, pp. 152–53), for a brief discussion of the effects on the economy if the credit enters the system as loans to government or consumers. While such loans may not generate business cycles, they do definitely generate a redistribution of wealth and purchasing power.

<sup>23</sup>See Rothbard (1970), Cochran and Glahe (1994), Hayek ([1931] 1935 and [1933] 1966), and Mises ([1912] 1971). Anderson ([1949] 1979) and Rothbard (1972) use the Austrian business cycle in their interpretations of the cause(s) of the Great Depression. See Yeager ([1990] 1997) for a critique of the use of Austrian business cycle theory in these explanations. Yeager's critique uses an interpretation of money, credit, and financial intermediation similar to the model of Keynes's reasoning developed in the next section of this article.

a central bank generate business cycles by attempting to keep market rates of interest too low. The recession phase of the business cycle is the economic correction of previous monetary excesses and malinvestment.

### BANKING, INTERMEDIATION, AND THE PERMANENT SEMI-SLUMP

Keynes (1936, p. 322), as a late voice in the Keynes–Hayek debate<sup>24</sup> of the 1930s, argued:

Thus the remedy for the boom is not a higher rate of interest but a lower rate of interest! For that may enable the so-called boom to last. The right remedy for the trade cycle is not to be found in abolishing booms and thus keeping us permanently in a semi-slump; but in abolishing slumps and keeping us permanently in a quasi-boom.

The boom which is destined to end in a slump is caused, therefore, by a combination of a rate of interest, which in the correct state of expectation, would be too high for full employment, with a misguided state of expectation which, so long as it lasts, prevents this rate of interest from being in fact a deterrent. A boom is a situation in which over-optimism triumphs over a rate of interest which, in a cooler light, would be seen to be excessive.

According to Keynes, a production and exchange economy with a fractional-reserve banking system and well-developed financial markets following a *laissez-faire* policy would suffer from chronic unemployment. Money and banking institutions would operate so that the market rate of interest would, under a “correct state of expectations,” be too high to ensure full employment.

In this section it is assumed that banks are financial intermediaries and issue liabilities that the public willingly uses as a medium of exchange. These liabilities are subject to reserve requirements (either voluntarily chosen or imposed as legal requirements). Banks also may acquire loanable funds by issuing other liabilities not used by the public as a medium of exchange and not subject to reserve requirements. For simplicity the model will assume that the public prefers bank-issued media of exchange to high-powered money. No distinction is made between commodity credit and circulation credit, or between loan banking and deposit banking. The relevant monetary theory and money demand analysis stresses the importance of money as a store of value. Money is treated as a future good, not a present good. Saving is defined as current income less household spending on consumption. The household decision tree is of the Tobin portfolio type: (a) consume or save; (b) if save, is it in the form of money or other financial assets. Hence, additions to cash balances financed from current income are

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<sup>24</sup>While the explicit debate between Hayek and Keynes in the 1930s ended with Keynes’s letter of, March 29, 1932, several passages in *The General Theory*, including the passage quoted above, are direct attacks on the Mises–Hayek or Austrian business cycle theory. The debate centered on differences of opinion concerning fundamental theoretical and institutional issues in monetary theory and capital theory. See Cochran and Glahe (1994; and forthcoming).

viewed as a form of saving. Changes in the money supply (money demand) affect aggregate demand through real balance effects (wealth effects) and portfolio adjustments.

Financial intermediation should facilitate the flow of funds from ultimate savers (surplus units) to ultimate investors (deficit units). The sale (issuing) of bank liabilities that do not serve as a medium of exchange<sup>25</sup> is clearly of this type. The owner of the bank liability clearly has lent the funds to the bank for future considerations. Such intermediation is usually viewed as efficiency enhancing in a world with imperfect information. No change in the money supply takes place. Just as in a credit transaction without intermediation, the ultimate lender and the bank have a claim on future money and the borrower has acquired present money. The lender has a future claim on ready purchasing power, and the borrower has ready purchasing power.

The issuing by a bank of liabilities that serve as a medium of exchange may also be viewed as part of a financial intermediation process. The saver prefers liquidity to return, and decides to invest in money. The depositor lends funds to the bank and receives a bank I.O.U., a bank deposit payable on demand. The bank now has ownership of additional loanable funds. When these reserves are lent out, funds have been transferred from an ultimate lender (the depositor) to an ultimate investor. But in this case, new money has been created. Both the borrower and the ultimate lender believe they have readily available purchasing power in the form of money. As the borrowed money is spent, it returns to the banking system as additional deposits. The process continues as new deposits lead to more available loanable funds and new loans in turn create new money.

Banks may, however, for legal or economic reasons, deem it necessary to maintain cash reserves to back such short-term liabilities. The result: total lending will be less than total saving. A dollar held in a reserve balance is a dollar saved but not lent to an ultimate investor. The supply of credit will be less than available saving, and with "correct expectations," the market rate will be above the natural rate. The economy will be in a permanent semi-slump.<sup>26</sup> Investment will be less than savings, and Say's Law (in Keynes's sense) is broken. The income constrained process will then equilibrate output at a new lower level of output consistent with the new lower level of investment.<sup>27</sup>

Friedman (1982) asks important questions about monetary policy: "(W)hat should be the ultimate objectives of monetary policy?" What is the appropriate strategy? What tactics should be used to achieve the desired goals? Friedman asks the questions in the context of what he refers to as the "present monetary

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<sup>25</sup>Rothbard (1976, pp. 180–81) would expand the Austrian definition of money to include all assets that are redeemable on demand at par in standard money. Such a definition would exclude "any form of genuine time liability."

<sup>26</sup>See Yeager ([1990] 1997) for an argument from a monetary disequilibrium perspective that comes to similar conclusions in a growth context.

<sup>27</sup>See Keynes (1936, esp. pp. 178–85).

constitution," i.e., the existing "particular monetary standard and international monetary arrangements."

Friedman answers his own questions by suggesting that the possible objectives of monetary policy are the maintenance of full employment, suitable economic growth, and stable prices. He, argues, however, "Experience and not theory has demonstrated that the first two strategies are not feasible, that monetary policy is not an effective instrument for achieving directly either full employment or economic growth."<sup>28</sup>

No one argues that experience is unimportant. But in the absence of a well-grounded theory of money, credit, and banking, experience alone will be insufficient in addressing questions concerning the proper role and conduct of monetary policy. And while discussions of the best strategy for monetary policy, given the present monetary constitution, are important, so also are discussions about what the proper monetary constitution should be.

The theory of money, credit, and banking developed by Mises and Hayek implies that monetary policy would be ineffective in achieving full employment and adequate economic growth. Attempts to achieve such goals with monetary policy would, in the end, be destabilizing. (How much harm to the economy could have been avoided if past policy had been directed by good theory?) The Mises–Hayek model suggests that the more important question about monetary policy is not what are the strategies or objectives, but what is the appropriate monetary constitution. As Hayek (1979, p. 18) has suggested, in normal times, rules and institutions are more important than discretion in conducting monetary policy. The important concern is not how policy can help us achieve certain desirable goals, but how monetary institutions can be set up to eliminate or minimize the instabilities caused by inappropriate monetary policy.

The model developed in Part 4 of this paper, however, leads to just the opposite conclusions. Discretion on the part of the monetary authority is essential if the economy is to avoid a permanent semi-slump. Additional credit must be created to offset savings being absorbed into bank reserves and/or idle cash balances. Without a continuous injection of new reserves from a central banking authority, saving will exceed investment and output will be below its full employment level.

Not only must proponents of the Austrian monetary theory and Austrian business cycle theory convince critics that the capital structure of the economy is an extremely important and neglected aspect of economic theory, they must also convince these critics that the Austrian answers to basics questions in the theory of money, credit, and banking are plausible and powerful. Money as a medium of exchange is primarily a present good in an uncertain world. Deposit banking is dependent on a fraudulent contract. Deposit banking is, in an economic if not

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<sup>28</sup>These strategies are : (1) "monetary policy should be directed specifically at promoting full employment"; and (2) monetary policy should be "directed at promoting growth through cheap money, through keeping interest rates low" (Friedman 1982, p. 100).

currently in a legal sense, a bailment and not a loan. Fractional reserve banking backed by a central bank creates credit not backed by real savings and hence misdirects production into lines that favor the recipients of the new credit at the expense of current wealth holders.

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