

CREDIT CREATION OR FINANCIAL INTERMEDIATION?: FRACTIONAL-RESERVE BANKING IN A GROWING ECONOMY

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Austrian business cycle theory is in many important ways a capital-based macroeconomics (Garrison 1997). But many of the disagreements between supporters of the Mises–Hayek model of macroeconomic maladjustment and monetary disequilibrium or monetarist economists depend on differing interpretations of the essential nature of the money creation process in a fractional-reserve banking system with or without a central bank. Austrians view money creation in a fractional-reserve banking system as a credit creation process.¹ The market process which translates changes in money (and credit) into changes in prices and quantities is driven by injection effects.² Monetary disequilibrium theorists, Keynesians, and most monetarists view fractional-reserve banking as a form of financial intermediation. Real-balance effects, not injection effects, drive the economy's response to a monetary disturbance. This difference of opinion has even "fellow travelers" ardently rejecting Austrian business cycle theory.

Professor Leland B. Yeager is such a fellow traveler to whom Austrian economists owe a great debt for his contributions to monetary theory. Yeager (1997d, 1997e) has consistently stressed the importance of money as a medium of exchange and the importance of banks in the money-supply process. Injection effects and relative price changes are part of the economy's responses to monetary disturbances (Yeager 1997e, pp. 253–79). Many of the major errors and fallacies in

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¹See Cochran and Call (1998), de Soto (1998), and Hoppe, Hülsmann, and Block (1998).

²See Garrison (1997, p. 23), "The Austrian theory of the business cycle emerges directly from a simple comparison of a savings-induced expansion, which is sustainable, with a credit-induced expansion, which is not."

monetary thought can be attributed to theorists confusing the demand for credit with the demand for money (Yeager and Greenfield 1997, pp. 179–95). As a supporter of some elements of Austrian economics, Yeager (1997b, p. 164) feels, “The neoclassical and Austrian schools, each stripped of excrescences, are complimentary.” Yeager (p. 155) also finds much to disagree with in Austrian economics, including “the specifics of their business-cycle theory.”³

While much of Professor Yeager’s work in monetary disequilibrium theory is compatible with Austrian economic thought, his view of injection effects and intermediation is remarkably similar to the views of John Maynard Keynes.⁴ Yeager (*ibid.*, p. 162) argues that fractional-reserve banking provides an important intermediary service, “Demands for additional ‘money’ thereby get intermediated into additional supplies of ‘credit.’ And this intermediation is appropriate. It does not counterfeit or misrepresent the availability of resources.” If banks do not engage in such intermediation an increased demand for money may “impair the allocation of resources as savers and investors (and consumers) desire” (*ibid.*).⁵

Section two briefly reviews the Austrian model of credit creation, injection effects, and cyclical phenomena. Section three will analyze the key elements of the more traditional neoclassical synthesis model, which treats deposit banking as financial intermediation. Section four will look at Yeager’s criticisms of Austrian business cycle theory in terms of these differing views of money, banking, and intermediation with particular emphasis on the role of fractional-reserve banking in a growing economy. Friedman’s “plucking” model will be used to compare and contrast the two competing views. Section five will provide summary and conclusions.

CREDIT CREATION AND INJECTION EFFECTS

The Austrian model presented here is based on the work of Mises (1971), Rothbard (1994), Hoppe, Hülsmann, and Block (1998), and de Soto (1995 and 1998), and Cochran and Call (1998). Money is a present good. As argued by Cochran and Call 1998 (pp. 33–34),

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 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

³See Yeager (1986, 1997c, and 1997e) for detailed criticisms of the Austrian business cycle theory. For another critique of Austrian business cycle theory see Friedman (1993, p. 172). Garrison (1996) provides a thoughtful response.

⁴Cochran and Call (1998) contrasts Keynes and the Austrians.

⁵Contrast with Keynes (1936, p. 322). “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.”

current income are not a part of saving, but represent part of the allocation of income to provide present utility.⁶

Thus the proper economic interpretation of a deposit is that of a warehouse receipt. A deposit is a claim instrument, not a credit instrument.⁷ A bank deposit (redeemable at par on demand) is not a debt transaction. It is a bailment in its economic impact even if it is treated as a debt by the legal system (Rothbard 1978, pp. 148–49). The money creation process made possible by fractional-reserve banking is not financial intermediation. It does not facilitate the transfer of savings to investors. Instead fractional-reserve banking and the associated money-creation process is a credit-creation process.

How money enters the economic system does affect the dynamic adjustment process. Institutions are an important component of the monetary transmission mechanism.⁸ In an economy with a developed banking system, monetary changes often initially show up as changes in the availability of credit. Money enters the system (is created) as banks make new loans (create credit). Monetary changes that originate through the banking system have initial dynamic effects on spending because they alter credit available relative to savings available. A monetary change will thus alter the money rate of interest relative to the natural or equilibrium rate and disrupt the balance between savings and investment. Changes in investment relative to saving alter the demand for goods and services relative to their supply and lead to price level or output changes or both.⁹

Monetary changes are the loose joint in the saving-investment process. The problem, as initially explained by Mises (1971, p. 261) is that banks play two distinct roles in the credit process. While banks do negotiate credit through the loan of other people's money, they also grant credit through the issue of fiduciary

⁶See also Rothbard (1976), de Soto (1998), Hutt (1979, chap. 8), and particularly Hoppe et al. (1998 pp. 20–28). This Austrian insight probably originated with Mises's (1971, p. 268) statement, "The claim that he has acquired by his deposit is also a present good for him. The depositing of the money in no way means that he has renounced immediate disposal over the utility that it commands." Contrast with the neoclassical formulation of Hicks (1951, p. 18): "A preference for holding money instead of spending it on consumption goods presents no serious difficulty, for it is obviously the ordinary case of the preference for future satisfactions over present." Notice the failure of the neoclassicals to see the similarity of the inverse relationship between consumption (present goods) and the interest rate and the inverse relationship between money demand (supposedly a future good) and the interest rate as a potential problem in their reasoning.

⁷See Rothbard (1994) and de Soto (1995 and 1998). Hoppe et al. (1998, pp. 21–36) provide additional support for the fiduciary media as credit-creation argument. Those who view fractional-reserve banking as harmless (beneficial?) financial intermediation fail to clearly recognize two principles of praxeology; no object can be owned by more than one party at a time and there is a "fundamental difference between property and property titles."

⁸Boettke (1997) provides a discussion of the importance of institutions and historical detail in "good" economic analysis.

⁹This effect of 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 constitute the intertemporal co-ordination problem that is the key feature in a "Wicksellian" approach to the monetary transmission mechanism (Bellante and Garrison 1988, p. 216).

media, i.e., notes and bank balances that are not covered by money.¹⁰ The first role is clearly financial intermediation. But according to Mises, the second role, credit issued by money creation, is not financial intermediation.¹¹ It is not a conduit of savings into investment. The transaction is different in nature from a true credit transaction, in which the lender temporarily surrenders "money or goods, disposal over which is a source of satisfaction and renunciation of which is a source of dissatisfaction" (Mises 1971, p. 264). Credit issued in the money creation process involves no reduction of current satisfaction on the part of the depositor and hence may finance investment (or other spending financed by money creation) without any prior equal savings.

Since there has been no actual saving, fractional-reserve banking may expand the supply of credit beyond the limits set by prior saving. Demand measured by monetary expenditure will increase. The initial responses of the economy will be determined by the tastes and preferences of those borrowing the newly created purchasing power. If the newly created credit enters the market as loans to businesses, spending by ultimate investors will be in excess of savings.¹² Economic activity is misdirected in favor of early recipients of the newly created credit and at the expense of those whose expenditures increase later in the adjustment to the monetary shock.

This mechanism is the monetary foundation of the Austrian business cycle theory as developed by Mises and Hayek.¹³ The extension of credit (credit issued from bank reserves acquired from deposit banking or from reserves newly created by the central bank) through the banking system eventually causes an economic crisis. The normal operations of the money and banking institutions supported by a central bank generate business cycles. The recession phase of the business cycle is the economic correction of previous monetary excesses and malinvestments. The Austrian model predicts that the distortions in the structure of production will also occur if credit is created in a growing economy.¹⁴ Expanding the money supply in a growing economy to stabilize the price level still creates circulation credit. The

¹⁰Rothbard (1994), de Soto (1995 and 1998), Hoppe (1994), and Hoppe et al. (1998) provide more recent developments of this argument.

¹¹Mises calls the first type of transaction commodity credit and the second circulation credit. According to Mises (1971, pp. 268-69) circulation credit "is not a credit transaction, because the essential element, the exchange of present goods for future goods, is absent." Loan banking and deposit banking are Rothbard's (1994) terms for commodity credit and circulation credit.

¹²Rothbard (1978, pp. 152-53) provides 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. Creation of new bank reserves by a central bank magnifies the potential distortions. Garrison (1994) discusses how credit creation impacts not only the length but also the risk of investment.

¹³Yeager (1986) provides an excellent summary of the Austrian business cycle theory as do Rothbard (1970), Cochran and Glahe (1994 and 1999), Hayek (1935 and [1933] 1966), Steele (1993), and Mises (1971).

¹⁴See Rothbard (1972) and Anderson (1979). Both authors use the model to explain the cause of the downturn leading to the Great Depression. Hayek "was one of the few economists

extension of circulation credit leads to malinvestments and sets the stage for the end of the boom and the eventual economic correction and recession.

BANKING AS FINANCIAL INTERMEDIATION

The modern mainstream (neoclassical synthesis) view of money demand, savings, and fractional-reserve banking was developed from the insights of Hicks (1951) and Keynes (1936). In this approach the distinction made between circulating credit and commodity credit is either ignored or treated as invalid. Both forms of bank activity are considered to be financial intermediation.¹⁵

Banks are financial intermediaries that issue liabilities some of which the public willingly uses as a medium of exchange. Money is treated as a future good, not a present good. Saving is defined as current income less household spending on consumption. Hence additions to cash balances financed from current income are viewed as a form of saving. Changes in the money supply or money demand affect aggregate demand through real balance effects (wealth effects) and portfolio adjustments.

Bank liabilities that serve as a medium of exchange are part of the financial intermediation process. The saver prefers liquidity to return and decides to invest in money. The depositor loans funds to the bank and receives a bank I.O.U., a bank deposit payable on demand.¹⁶ The bank now has ownership of additional loanable funds. When these reserves are loaned out, funds have been transferred from a saver (the depositor) to an 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 become new loanable funds and new loans in turn create new money.

In the static model, when banks, for legal or economic reasons, deem it necessary to maintain cash reserves to back such short-term liabilities, total lending will be less than total saving. A dollar held in a reserve balance is a dollar saved but

who warned about the possibility of a major economic crisis before the great crash." Hayek showed how "lending which exceeded the rate of voluntary saving would lead to a misallocation of resources, particularly affecting the structure of capital" (Royal Swedish Academy of Sciences 1974). Timberlake (1999) attempts to refute this argument with monetary data and an alternative institutional analysis. However, if money creation is credit creation and not financial intermediation, his data, despite his contention, are consistent with the Austrian interpretation.

¹⁵A more detailed development of this mainstream framework can be found in Cochran and Call (1998, pp. 35–38) or (sadly) in any standard money and banking textbook. Hoppe et al. (1998, pp. 37–47) provide another in-depth critique of this framework. The institutional (banking) details that are so important in the interest rate dynamics in the Wicksell–Mises–Hayek framework are totally ignored in this general equilibrium framework. Garrison (1999) has correctly argued that Keynes had once borrowed this interest rate dynamic framework from Knut Wicksell, but later rejected it. The modern credit-lending view of the monetary transmission mechanism has at least returned some of the institutional detail to the analysis of monetary policy. See Romer and Romer (1990), Robinson (1993), and Morgan (1992).

¹⁶Hoppe et al. (1998) use a title-transfer theory of contracts to argue that such contracts should be viewed as fraudulent.

not lent to an ultimate investor. The supply of credit will fall short of available saving. With correct expectations the market interest rate will be above the natural rate. The economy will be in a permanent semi-slump. Investment will be less than savings, and Say's Law (in Keynes's sense) is broken. The income-constrained process will then lower output to a level consistent with the new lower level of investment.¹⁷

FINANCIAL INTERMEDIATION IN A GROWING ECONOMY

Yeager (1986, 1997b, and 1997c) in general is critical of the Austrian business cycle theory. The specific Austrian business cycle theory is not needed to explain "why demands for capital goods, particularly of higher orders, fluctuate more widely over the cycle than demands for consumer goods and for investment goods closer to final consumption" (Yeager 1986, p. 382). The interest rate and relative price changes caused by the injection effects are mere details in the adjustment process.¹⁸ Better, simpler explanations exist. Monetary disequilibrium, not the injection effects and distortions in the structure of productions, is ultimately the cause of economic downturns. According to Yeager (*ibid.*, p. 380), "Monetary disequilibrium theory, in contrast, can handle the phenomena of boom and depression with less specific suppositions; unlike the Austrian theory, it does not disregard Occam's razor."

Yeager is even more critical of the model applied to a growing economy. Monetary policy following Austrian recommendations would trigger, not prevent, the crisis. Yeager (1997e, p. 253), using the neoclassical synthesis interpretation of savings, money demand, and financial intermediation, criticizes Rothbard (1972) and Anderson (1979):

Their view fails to recognize how the entire monetary system can function as a financial intermediary and how monetary expansion working to stabilize the price level in a growth context, far from emitting false signals about the availability of resources, can facilitate the transfer of resources released by savers into the control of entrepreneurs who will employ them for investment projects.

Recessions or downturns are caused by an excess demand for money combined with rational downward price rigidity. In a growing economy the expanded volume of production and transactions should lead to an increased demand for money. As economic agents in the aggregate attempt to build up cash balances, they refrain from buying, "they are relinquishing or postponing command over resources" (Yeager 1997e, p. 258). The money balances represent not present but

¹⁷Keynes (1936, pp. 178–85) and Cochran and Call (1998, pp. 35–38). Krugman (1998) provides an interpretation of a liquidity trap as a cause of recession that is compatible with this disintermediation view of economic stagnation. Krugman (pp. 155–56) cites studies by Bernanke (1994) and Cooper and Corbae (1997) as source of an argument that a "dramatic decline in the money multiplier was the signature of a major episode of financial disintermediation; and that this disintermediation . . . was the cause of the sustained slump."

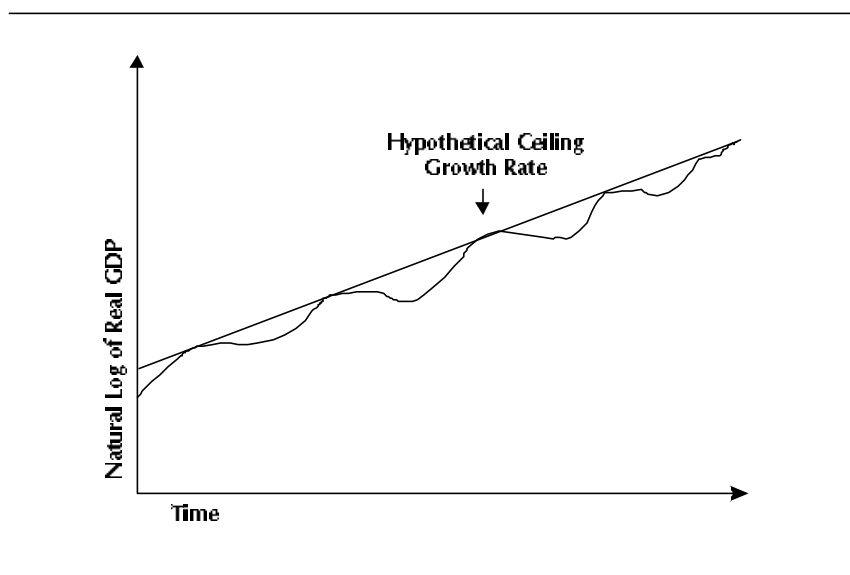
¹⁸While Yeager (1997e, p. 253) does recognize the existence of injection effects, he downplays their importance.

future goods. Saving has occurred. As in the static Keynesian scenario, saving exceeds investment and the economy faces contractionary forces. But

If, now, the money and banking system expands the volume of banknotes and deposits through expanding the volume of its loans to business firms, it is acting as a kind of super financial intermediary. The public, in acquiring new money, is relinquishing command over resources; and the money and banking system, in expanding its loans, is transferring command over those relinquished resources to the borrowers.

In the situation described, the monetary system is not counterfeiting the availability of resources released by saving; it is not falsifying interest-rate signals in the manner envisaged by Austrian business cycle theory. People building up their cash balances really are relinquishing current command over some of the resources to which their current revenues entitle them, and the money and banking institutions are accomplishing intermediation that transfers command over resources to borrowers who will employ it for their own purposes, including productive investment. (Yeager 1997e, pp. 258–59)

Figure 1
A Stylized “Plucking Model” of the Economy



The contrast between the two approaches can perhaps best be illustrated by using a stylized form of the Friedman (1993) plucking model (see Figure 1). The important feature from the model for this study is that “U.S. data on real output show an important ‘ceiling’ effect; growth rates are on average below the ceiling rate, but tend back to the ceiling rate” (Goodwin and Sweeney 1993, p. 178). Why does such a pattern in the data appear? Both a monetarist/monetary disequilibrium model and an Austrian model can be used to explain the observed business cycle phenomena.¹⁹

¹⁹The Austrian interpretation of the plucking model is based on Garrison (1996).

In the monetarist model, "natural" full-employment growth is interrupted by monetary disequilibrium, the "money string is plucked downward" (Friedman 1993, p. 173). These plucks may be random policy errors which decrease the supply of money (à la Friedman) or may result from a failure of the banking system to "fully intermediate" an increased demand for money in a growing economy (à la Yeager). In either case, an excess demand for money coupled with price rigidity triggers a recession followed by a subsequent recovery that may or may not be aided by an expansionary policy.

In the Austrian model, the problem develops as an investment boom. Investment (and growth) generated by savings is sustainable, while investment (and growth) generated by credit creation is not. As Garrison made clear (1996, p. 800),

The boom for the Austrians refers to something going on largely within the output aggregate. It is represented in Friedman's plucking model not by a conspicuous recovery to trend but rather by some period preceding a pluck which Friedman, operating at a higher level of aggregation, presumes to be healthy growth.

The credit-induced boom is, however, malinvestment, not healthy growth. While the downturn may appear to be the result of a pluck (a central bank or banking sector-induced restriction in credit availability), more careful analysis makes it clear that a "policy-induced boom contains the seeds of its own undoing" (Garrison 1996, p. 800).

CONCLUSIONS

Yeager, using the Keynes–Hicks framework, argues that the Austrians are wrong on all three monetary theory-institution issues. Money is a future good, not a present good. Accordingly attempts to increase cash balances from current income flows represent savings. A demand deposit or bank note is a debt instrument in both its legal and economic aspects. Money creation through fractional-reserve banking is financial intermediation. Such financial intermediation facilitates the flow of resources from savers to investors. Growth in the money supply may be needed to prevent or postpone a recession, particularly in a growing economy.

However, the neoclassical synthesis approach misinterprets the important economic and institutional features of the money demand, savings, and credit creation process. Credit creation is not intermediation. It can and does lead to malinvestment. Money and credit creation is a self-reversing process with the potential to generate cycles that could be prevented by avoiding credit creation.

In addition, critics are excessively concerned with how an economy would respond to an excess demand for money caused by an increase in the public's demand for real cash balances. Historically, when an excess demand for money has created economic adjustment problems, it is much more likely to have been caused by a decline in the money supply that ultimately resulted from initial

over-expansion of the money supply.²⁰ Such excess demand situations could be prevented by 100-percent reserves in a commodity (market based) monetary system or greatly reduced in a free banking system with convertibility to a market-chosen, commodity base-money and strict enforcement of bankruptcy.

If an excess demand for cash balances did develop due to a change in demand preferences of economic agents, it should be recognized that this is not a change in time preferences. As pointed out by de Soto (1998, p. 36), "The decision as to the proportion that will be spent on consumption or investment is different to and independent of the decision on the fiduciary media and cash balances one wishes to hold." No new saving has occurred. Individuals now place a higher value on cash as compared to other present goods. The correct adjustment is not a change in the rate of interest, but an adjustment in the relative price of money and other present goods. As Yeager (1997d) has pointed out, money has no market of its own. Individuals who have an increased demand for cash will curtail spending and increase sales offers, but the decreases in spending will be decreases on specific goods and the increased sales offers will be offers to sell specific goods. The market will solve the "who goes first problem." Prices will decline first in the individual markets affected by decreases in spending and increased sales offers.²¹ This analysis implies that in a growing economy no increase in the demand for money need develop. Growth develops in specific industries, not as an aggregate phenomenon. As industries expand, prices for the products produced by the growing industries fall relative to both other goods and money.²² An expanding level of transactions in goods is accompanied by declining prices.²³

While it is important that Austrians continue in their endeavor to convince colleagues, policymakers, and the public about the instabilities inherent in a

²⁰It is curious to observe how the modern theorists

seem obsessed by short-term unilateral changes in the demand for money. However, such changes historically have been produced over an economic cycle—during the last stages of booms and crises—which almost always begins as the result of previous changes in the supply of new money created by the banking system. (de Soto 1998, p. 27, n. 9)

While the modern approach would view this as disintermediation, the Austrian model correctly argues that such "disintermediation" would not be possible without fractional-reserve banking and credit creation. Economists also must clearly distinguish between an increased demand for money and a change in the preference of the type of money demanded (currency or deposits in the modern system).

²¹Hutt (1979, pp. 191–92; 1974, pp. 61–65) also argues that markets should adjust to changes in money demand as they would to any other change in preferences. Failure of the market to coordinate economic activity is caused by "withholding of supply" in specific individual markets.

²²The price trend in the personal computer industry is a good example of such a trend. In the 1992 to 1997 period prices in the industry fell between 5 percent and 20 percent per year. The long-run average (1968–96) was –11.8 percent. See Duca (1997).

²³Selgin (1997, pp. 64–67) makes a similar argument relative to economic growth and price changes and recommends a productivity norm as a guide for monetary policy. He follows Yeager and other monetary disequilibrium theorists in their concern that an increased demand for money can be a major source of monetary and macroeconomic instability.

fractional-reserve system, Austrians need to remember that economic fluctuations can have other causes. Other approaches may be complementary to the Austrian approach. Monetary disequilibrium can be the source of a contraction and may be essential in modeling the adjustment process in the recession period (the Hayekian secondary deflation). Real business cycle theory should remind Austrians that real shocks do occur and markets do adjust.²⁴ Credit creation and malinvestment could complement real business cycle research, which has difficulty explaining satisfactorily why downturns occur. A technology shock accompanied by credit creation, however, has elements of healthy growth and unhealthy growth. Austrian business cycle theory can augment real business cycle theory by explaining both the boom and the necessary correction.

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²⁴Hayek (1966, chap. 2) addresses this issue in *Monetary Theory and the Trade Cycle*.

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