



MONEY, INTEREST AND AN ALTERNATIVE MACROECONOMIC SYSTEM

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ABSTRACT

This paper discusses the peculiar nature of money, and how the introduction of interest-based financing disturbs the essential function of money and causes economic instability. An alternative system based on profit-sharing is proposed. It is shown that the profit-sharing system may lead to a higher level of investment and consumption and thus provide for greater economic stability. The alternative banking system can extend zero-interest consumer loans that would lead to higher consumption levels and lower general price levels. A central bank shall auction money supply on the basis of profit-sharing with competing banks. The sovereign profit share replaces the discount rate in regulating money supply. Some alternative forms of “rediscounting” and open market operations are suggested. The nature and role of money is one of the most controversial subjects debated by economists. There is almost a unanimous agreement among economists about the monetary sources of economic instability, yet the differences of opinion are basically about the line of causality of such instability. For monetarists, the problem lies with the abrupt changes in the quantity of money, while for the Keynesians, it lies with instability of the money demand function itself. The purpose of this paper is to review the sources of instability and propose an alternative financial system to resolve it. The first section is “On Money and Interest,” the second is about “The Modern Financial System and How it Relates to the Real sector,” the third is about “The Alternative System” and the fourth is the Conclusion.

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1. ON MONEY AND INTEREST

Unlike all other economic factors, the scarcity or abundance of money in today's world is not determined by conditions in nature, but mainly by the institutional structure of the financial sector (government and private) of the economy. Its supply is thus not bounded by any natural limit. For exactly this reason, money might be the only asset wholly private production of which could lead to the destruction of its value. This is because "Competition does not provide an effective limit, since the value of the promise to pay, if currency is to remain fiduciary, must be kept higher than the cost of producing additional units. The production of a fiduciary currency is, as it were, a technical monopoly, and hence, there is no such presumption in favor of the private market as there is when competition is feasible," (Friedman, 1960, 7). Government intervention and control in the production of money is thus necessary to enhance its value and acceptability. It follows that to the extent that private agents manage the production of money, as under today's fractional reserve banking system, there is a tendency for the value of money to be destabilized.

At the same time, however, because of its essential property as a generally accepted medium of exchange, money is the only economic asset that is desired by every economic agent. "It has an elasticity of substitution equal, or nearly equal, to zero; which means that as the exchange value of money rises there is no tendency to substitute some other factor for it," (Keynes, 1936). Yeager (1968) explains that even if the equilibrium stock of money is disturbed, unwanted money continues to circulate until it ceases to be unwanted. Supply creates its own demand. Unwanted money changes hands until it is finally accepted by affecting two arguments in the money demand function, namely the nominal value of wealth (or income) and the interest rate. If the quantity of an asset is out of equilibrium, the situation will be resolved either by a change in its price or in its yield. But money has no unique price of its own in terms of other goods, other than itself, and it has no yield of its own that can serve to resolve the situation. We may note that it is this feature of the general acceptability of money that makes it the key to any economic, and may be social, success. If it is possible for "money to make policy" as is the case under fixed-interest-payment lending, then there is the tendency for money to become "the ultimate consumer good, the thing that is valued above all," (Peterson, 1984). This is so because as long as "money makes money", there is the tendency, on the part of economic agents to pass the burden and risk of production to someone else, and collect the interest payments. The only case for an entrepreneur to be engaged in a production process is when the return on investment is sufficiently high to justify the risk and is at least equal to the interest charges. When discussing the neutrality of money, Irving Fisher (1911) writes that "... periods of transition are the rule and those of equilibrium are the exception." This is because the interest rate is the economic variable most susceptible to change, and most difficult to predict.

In an economy where money commands a price (that is, an interest rate),

money becomes not only a medium of exchange but also a factor of production. This disturbs the notion of the neutrality of money in the sense that the change in the “price” of this factor, like any other factor of production, will affect the volume of output and employment. Because of its zero or very low elasticity of substitution, however, a rise in the “price” of money is expected to lead to a greater reduction in output and employment than a similar rise in the prices of other inputs. The existence of an interest rate in the economic system is not by way of natural necessity for the well-functioning of the system. It is a consequence of the institutional setting, for if it disappears and is replaced by another mechanism (and we propose a profit-sharing one), nothing is lost in terms of efficiency or equity.

Contrary to classical economists, Joseph Schumpeter (1934, 210–1) argues that the interest rate is a stagnant variable, and does not necessarily show a secular trend to fall mainly because of the element of risk, and “that the real *rate* of interest does not display any clear secular trend.” Furthermore, Schumpeter argues that the interest phenomenon is not an indispensable economic institution and that it can be replaced quite easily with other forms: “. . . the fact that the interest phenomenon is not a necessary element in all economic organizations, will always result in the critic of social conditions finding more to object to in interest than in anything else. Therefore, it is important to state that interest is only the consequence of a special method of carrying out new combinations, and that this method can be much more easily changed than the other fundamental institutions of the competitive system.”

The only way to restore money fully to its basic function as a medium of exchange is by setting the conditions whereby money does *not* make money but “production makes money.” This necessitates that we first look into the nature of the modern financial system and how it relates to the real sector. Following that, a sketch of an alternative system will be proposed.

2. THE MODERN FINANCIAL SYSTEM AND HOW IT RELATES TO THE REAL SECTOR

The modern financial system has four main characteristics. First, it is a fractional reserve system where in reserves are government-issued money. The remainder is created and supplied by the financial system itself. Second, it is not directly involved in the process of real production but rather acts as an intermediary between savers and investors, giving interest on savings and charging interest on loans. Third, it thus “supplies and demands the same kind of assets,” (Saving, 1971), namely, money. In that process, its interest-based operations represent a prior charge on national income. Fourth, it enjoys in many countries a unique type of government insurance to prevent public panics towards banks in the first place, and to prevent the system from collapsing should these panics develop.

The fractional reserve system that enables the banking system to affect money supply renders the conduct of monetary policy very difficult. Decisions

by the holders of money and by banks about the structure of their assets tend to affect the stock of money supply. This has often been referred to as the “inherent instability” of a fractional reserve system (Friedman, 1960). But the problem does not stop there. Banks, demanding and supplying the same asset (money), and as profit-maximizing firms, will have money as their ultimate goal. This introduces the potential danger that an active banking industry may not always be aligned with the real sector. To the extent that these banks can create money “out of thin air”, in the process of multiple deposit creation, there is a tendency to greater risk-taking than in the real sector. There are equity (distributional) and efficiency consequences for such an institutional set-up. The institutional aspect comes from the fact that the risk-taking tendency is enhanced by the unique government insurance that banks enjoy. It might be argued that money is the lubricant of the economic engine, it is the blood that circulates oxygen and nutrition to different parts of the economic body, and this is the necessity that justifies government insurance. This is a very logical argument, yet the ability to take more risk may result in tilting the balance of economic power in favor of the banking sector and disturbing the competitive setting in the economy.

As for the efficiency implications, Hyman Minsky argues that the instability in the capitalist economy emerges when the euphoria of economic success entices businessmen and bankers to accept higher debt ratios while financial innovations flourish. “A period of relative tranquil growth is converted into a speculative boom,” (Minsky, 1986, 173). But one has to remember that the possibilities of profits are limited by productivity growth and effective demand, whereas the possibilities of debt finance under the current financial system may be unlimited. Financial leverage (through debt) and operating leverage (through increased capital intensity of production methods) increase the value of possible profit margins at good times, but as competition intensifies, the possibility of business failures increases (Minsky, 1986, 166-7).

In interest-based transactions, the constraints and criterion that face the banking sector are not the same as those faced by the real sector. For the former, its most important input and output are of the same kind, the value of both, in terms of physical and nominal terms, is the same and the rate of return is also measured in terms of the same units. However, for the real sector, the inputs used are usually different in kind from its output, and thus the supply and the demand relations are also different. The financial sector faces a much more elastic supply of its (monetary) input and a much less elastic demand for its output. In other words, the banking sector basically faces only a financial constraint, while the real sector faces both financial and real constraints.

This imbalance in competitive edge between the financial and real sectors creates disequilibrating conditions in which money is diverted from its basic role as a medium of exchange into an institution by itself that greatly influences the production process. The destabilizing elements of money do not lie only in the abrupt changes in its quantity – that is certainly true – they lie also in the ransom-levying nature of the interest provision. For, even if we assume a

completely constant stock of money (both government and banking money), changes in the price of loanable funds, i.e., the interest rate, could affect the velocity of money and hence income and prices. The mere existence of interest-payment provision is thus, a destabilizing factor. "What is of crucial importance in this paper world are cash flows. Cash flows are a legacy of past contracts in which money is obtained in exchange for a commitment to make money payments in the future by repayment of the debt. In this view, investment decisions are bound up with deals that involve commitments to pay cash in the future in exchange for getting cash today. In the world of 'Wall Street', the investment process flows from money to real investment to money, not from investment to money to consumption as in the classical view," (Peterson, 1984). We thus need to look for an alternative model that will hopefully help us resolve some of these problems.

3. THE ALTERNATIVE SYSTEM

In terms of monetary relations, the alternative system will rest on two major changes in the capitalist system. First, all interest-provisioned dealings will be forbidden and replaced by profit-sharing ones. Second, the banking systems will be converted into 100 percent reserve system, reducing the bank's ability to manipulate the money supply. No attempt is made here to investigate other aspects of the alternative system.

3.1 THE PROFIT-SHARING SYSTEM

A profit-sharing system is expected to soften the rivalry between savers and investors by making realized profits the basis (criterion) of splitting rewards and pooling out of risks. It is most essential for the success of this system that banks be directly involved in the process of investment where their returns are determined on the basis of an agreed-upon share of profits and not a pre-stipulated interest rate. To illustrate some of the macroeconomic aspects of this system, let us start by using a model developed by Franco Modigliani (1944). The attraction of the model is its simplicity, and that helps us to make the necessary comparison. Modigliani's model is as follows:

$$(1) \quad M = L(\bar{r}, \bar{Y}^+)$$

$$(2) \quad I = I(\bar{r}, \bar{Y}^+)$$

$$(3) \quad S = S(\bar{r}, \bar{Y}^+)$$

$$(4) \quad S = I$$

$$(5) \quad Y = PX$$

$$(6) \quad X = f(N)$$

$$(7) \quad W = f'(N)P$$

$$(8) \quad N = F\left(\frac{W}{P}\right)$$

The unknowns are r, Y, I, S, W, N, X, P , and the signs refer to the nature of the relationship between the dependent and independent variables where,

r = interest rate

Y = income, or the money value of output

I = investment

S = savings

N = labor employed

X = output

P = price level

M = demand for money

W = wage rate

We note that equation (4) expresses an ex-ante equality of saving and investment and wage is a function of the marginal productivity of labor. To facilitate the comparison, let us suggest the following model under profit-sharing conditions:

$$(9) \quad M = L(\bar{PS}, \bar{AR}, \bar{Y}^+)$$

$$(10) \quad I = I(\bar{PS}, \bar{AR}, \bar{Y}^+)$$

$$(11) \quad S = S(\bar{PS}, \bar{AR}, \bar{Y}^+)$$

$$(12) \quad S = I$$

$$(13) \quad PS = f(\bar{AR}^+)$$

$$(14) \quad Y = PX$$

$$(15) \quad X = f(N)$$

$$(16) \quad W = f'(N)P$$

$$(17) \quad N = F\left(\frac{W}{P}\right)$$

Where PS = profit share required by savers, and $0 \leq PS \leq 1$, and

AR = average rate of profits (return) on investment.

The unknowns are PS, AR, Y, I, S, W, X, N , and P .

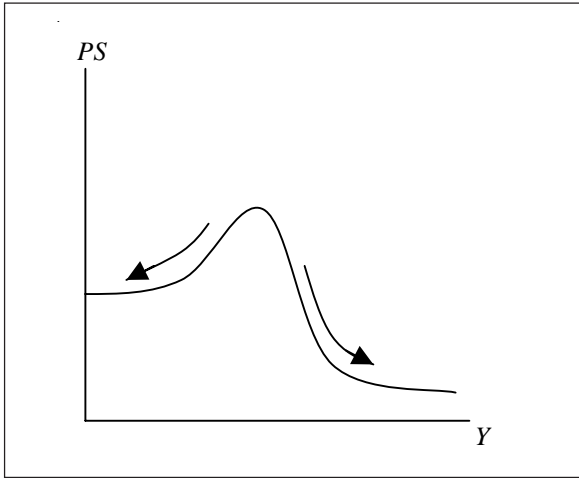
We note from the first model that investment and savings respond differently to the interest rate. There is thus disharmony between savers and investors. But in the second model, investment and savings respond in the same fashion to AR but differently to PS . The latter is a source of conflict but the model assumes that PS is positively related to AR , i.e., the higher (the lower) the average rate of return in the economy, the higher (the lower) the required profit share by savers.

Under an interest-based system, where the interest rate represents the opportunity cost of capital, r , and I are procyclical, meaning that investment and income can still increase, in spite of a rise in the interest rate, because of a rise in aggregate demand. The positive response to the increase in aggregate demand may not be uniform across all sectors of the economy. Some industries may be more interest-elastic than others, and smaller firms within an industry may be more interest-elastic than larger ones. Such situation provides a larger interest-brake to investment.

In the absence of interest, the product of PS and AR measures the opportunity cost of capital. At high levels of capital stock and income, AR will be declining and PS is expected to decline too. The income effect is expected to dominate AR in influencing PS , providing further inducement for investment. But what if there is an economic down turn? While in the interest-based system, the interest rate is expected to go down, PS (in the proposed system) is also expected to go down in order to induce investment, especially as AR will be falling. Consequently, then, PS is expected to reach its peak when the economic activity is moderate. Unlike the interest rate, PS sounds to be countercyclical when the economy is booming, but procyclical when the economy is slacking. This implies that a profit-sharing system tends to be more stable than an interest-based system since investment always tends to be higher.

One may ask, however, how it is that when there is an economic downturn households will not ask for a higher profit share, to compensate them for a lower average rate of return? The answer is two-fold. First, since we have established that the opportunity cost of capital under a profit-sharing system is PS times AR , a decrease in AR lowers the opportunity cost even if PS remains constant. But since a slacking economy implies that more savings will be idle, it will only make sense to ask for lesser PS if savings are to be channeled into investments. And thus, a lower AR feeds back into a lower PS , lowering the opportunity cost of capital further. Second, since savers in a profit-sharing system are the owners (or at least partners) of business, and not just lenders as in the interest based system, savers will be in a relatively better economic condition than the entrepreneurs who only receive a share of profits. The wealth effect makes savers afford a lower PS . Of course, one can imagine a lower limit for PS , below which it will not fall under either expansionary or contractionary conditions, with the limit in the first case being lower than in the second. Figure 1 illustrates the change in PS at different levels of income.

FIGURE 1
The Relationship Between Profit Share and Income
over the Business Cycle

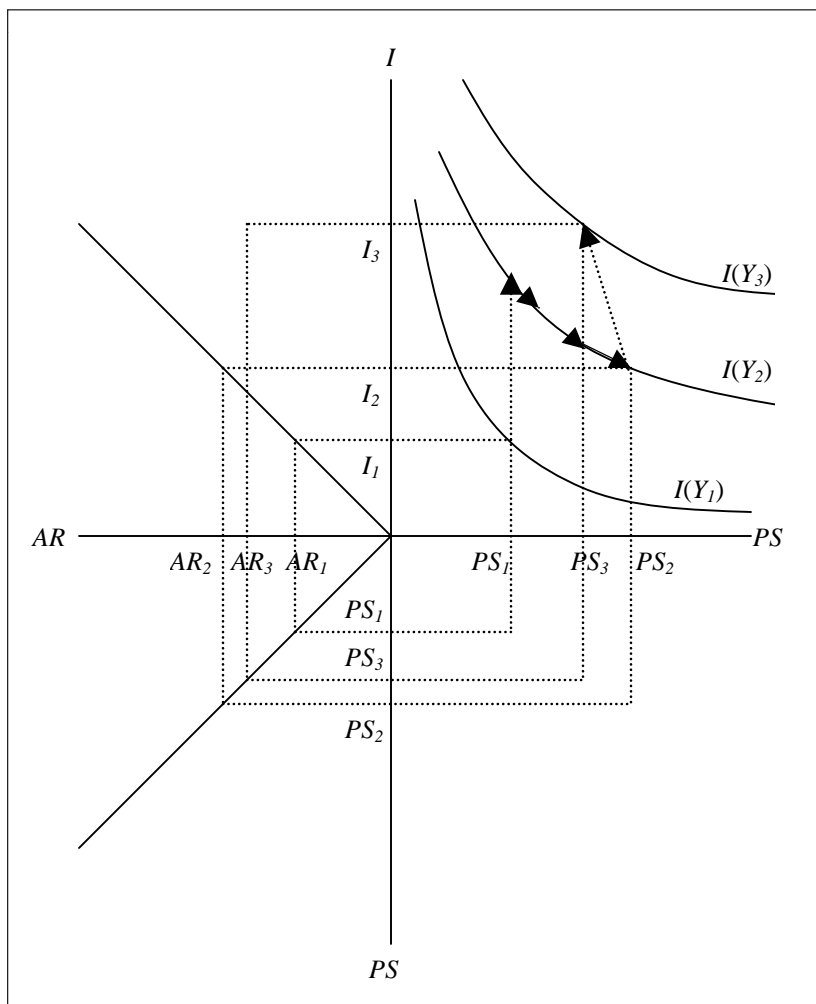


PS is highest at moderate levels of income, but tends to decrease on either side of that level.

It may be useful to represent the relationship between the key variables of our profit-sharing model. Figure 2 illustrates a *ceteris paribus* relationship between *PS*, *AR*, *Y*, and *I*. It can be analyzed as follows.

In quadrant 1, investment, *I*, is negatively related to the savers' required profit share, *PS*. When income rises the investment schedule shifts upward, where we assume $Y_1 > Y_2 > Y_3$. If we assume that the economy is initially represented by $I(Y_1)$ and PS_1 , the investment level is I_1 . This determines an average rate of return AR_1 in quadrant 2, where investment is shown positively related to *AR*. The relationship between *AR* and *PS* is directly represented in quadrant 3. *PS* is positively related to *AR*. A rise in income shifts the investment schedule upward to $I(Y_2)$. Investment rises along the arrows shown corresponding to PS_1 . If *PS* does not rise, the investment level will be greater than I_2 but less than I_3 (i.e., where the arrows hit the $I(Y_2)$ schedule). However, if savers demand a higher share, PS_2 , investment decreases, moving along the $I(Y_2)$ schedule until it is equal to I_2 which correspond to AR_2 in quadrant 2 and PS_2 in quadrant 3. As the economy expands further, a higher level of capital stock lowers *AR* to AR_3 , where $PS_1 < PS_3 < PS_2$. In other words, at a moderate level of income, *PS* reaches its peak. The income to savers, Y_L , can be represented by the following equation:

FIGURE 2
The Relationship Between Income, Investment, the Share of Profits, and the Average Rate of Return



$$\begin{aligned}
 (18) \quad Y_L &= (K)(AR)(PS), & AR &= TP/K \\
 &= (K)(TP/K)(PS) \\
 &= (TP)(PS)
 \end{aligned}$$

Where K is the level of capital stock, and TP is total profit. As the economy expands beyond a moderate level of income, K rises faster than TP , leading to lower AR . The implicit microeconomics assumption here is that lenders are not necessarily income maximizers, but mainly target-income satisfiers. It is for this

reason that as long as *TP* is rising, a lower *PS* may be acceptable in the face of a decreasing *AR* on the other side of the business cycle, reflecting a sense of forgiveness. The effect of total income dominates *AR* in affecting *PS*. Borrowers on the other hand, working not only for their own benefit, but also as agents for their lenders/partners can be assumed to be income maximizers. Also, the fact that lenders and borrowers are partners implies risk-pooling by the two sides: *PS* is not a contractual element of cost to entrepreneurs, sustaining investment at some higher level as *AR* may be declining. The profit share to lenders, *PS*, is governed by the business cycle, rather than governing it. Once again, *PS*, is procyclical when the economy is slacking, but countercyclical when the economy is booming. This is unlike the interest rate, which is procyclical on both sides of the business cycle.

3.2 CAN THE SYSTEM PROVIDE FOR CONSUMPTION LOANS?

Under the existing capitalist system, consumption loans are motivated by the interest payments the borrower-consumer will have to pay later on. The prohibition of interest under our proposed system should cause no problem. This is because banks under this system are not only financial intermediaries, but also real-investment firms. It will be in the interest of banks to encourage consumer loans, as these loans will increase sales of the firms they own. Consumers also will be encouraged to borrow, as these loans are interest-free.

The arrangement sounds like aid given by a donor country to the recipient country so that the latter can buy goods and services from firms in the former. It may be asked, what return will a bank make from offering such a consumer loan? To answer this question we have to remember that banks in our proposed system need capital for two purposes. One part is to finance the acquisition and production of goods and services, and the other is to finance the interest-free consumer loans. The rate of return on total capital will come from the sale of goods. In other words, the zero-interest return on consumption loans in our proposed system is being indirectly compensated in the selling price of goods. The required rate of return on sales will be most equal to the rate of return if interest-based lending alternatively financed the production of goods. This is so because the firms in the latter case will have to generate a gross rate of return sufficient to pay for their interest expenses plus their required rate of profits. But even if the two systems result in the same price level of consumption goods, the impact on consumption expenditures in the economy may not be the same. To illustrate the argument, let us compare the two cases.

Case 1: Suppose under interest-based borrowing, a firm needs to borrow \$100 million at 5 percent interest rate. Also suppose it requires another 5 percent profit on the principal. The value of goods sold will be \$100 million. Suppose consumers are fully dependent on borrowing for consumption purposes. This implies that consumers have to borrow \$100 million to purchase that output.

But if the interest rate on consumption loans is 5 percent, consumers need to repay \$115.5 million.

Case 2: Alternatively, suppose the economy is interest-free, and the bank will establish its own production firm at the same capital requirement of \$100 million as in Case 1. Also suppose that the bank would like to make 5 percent on the self-extended loan. This means that the value of goods sold should be at least \$105 million. But if consumers need to borrow at zero interest rate and the bank needs to make another 5 percent on consumer loans, the value of goods sold should be \$110 million and consumers need to repay only \$110 million.

In comparison, both banks make the same 5 percent rate of return on production loans and another 5 percent on consumption loans. Also, both are charging the same price and making the same rate of return. The only difference is that the actual cost to consumers under profit sharing is less than the cost to them under an interest-based system. Apparently the interest-free system can provide for consumer loans, but also leads to a higher level of consumption in the economy. It may not be far-fetched to imagine that the absence of interest charges in our proposed system will lead to a lower price level simply because the risk of liquidation and foreclosure under this system is lower than that under the interest-based system. Hence, there may be another factor in favor of a higher consumption level as the price level is lower.

The profit-sharing relationship in investment financing will make banks more cautious that their finances do not result in excess capacities of production; at the same time their interest-free financing of consumer loans will encourage a higher level of consumption. The result is a closer synchronization of investment and consumption spending, a lower probability of deficient or excessive supply and a more stable growth of the economy.

3.3 THE TOOLS OF MONETARY POLICY

The absence of financial debt instruments in our system calls for the design of alternative tools for monetary policy. One tool is for the central bank to auction, on profit-sharing basis, stocks of money to the financial institutions. The banks that offer the central bank a higher profit share shall get more funds. In other words, the sovereign profit-sharing (SPS) rate shall replace the discount rate as a tool of monetary policy. The receipts of the central bank from its share of profit constitutes a way of financing the government budget should the need arise. It might also serve as an alternative, to some extent, to indirect fiscal taxes.

The SPS can vary according to the length of time to maturity of the "loan", on the ground that the rate of return is usually proportionate to the duration of the investment. It may be required sometimes, however, to do the opposite in order to encourage long-term investment. Dernberg and McDougall (1980, 400-1) explain that the Fed in the USA in the 1960s used open market operations

to “twist” the term structure of the interest rates by selling short-term securities and buying long-term ones, driving up interest rates on the first, and thus attracting foreign capital and driving down interest rate on the other to encourage long-term investment. We may note that such a policy may have two drawbacks. First, other countries may do the same, and to a larger magnitude, thus reversing the flow of capital. Second, borrowing short-term at high interest rates, and lending long-term at low interest rates would worsen the risk position of the banking system.

The SPS may have the first drawback. But it may not have the second. The reason for this is that agreement and contract terms between banks and the central bank do not have to be copied or imitated between banks and depositors. In other words, while the central bank may introduce a “twist” of the SPS, it may allow banks to maintain the normal proportionate maturity relationship of deposits and SPS, in order not to encourage public preference for short-term investment. This may not be possible under the interest-based system because negotiable debt instruments provide a substitute for non-negotiable bank deposits. Thus, open market operations affect interest rates on both types of debts. To solidify the impact of “twisting” the SPS, the central bank may instruct the banks not to pass on that “twist” in their relations with depositors.

The absence of interest-based instruments under our system does not mean that the central bank will be deprived of its own version of open market operations and rediscounting. The central bank can buy and sell equities (common stocks), in addition to other securitized Islamic contracts, such as *salam* (forward) and leasing contracts. The new securities can be issued both by the government and the private sector.

The central bank can “rediscount” non-fixed income instruments by buying them at the below market price. The reason for this is that the central bank is a far bigger and more liquid customer than any other agent in the market. Under the interest-based system, the discount rate policy has been criticized as generating “announcement effects” that may steer expectations about the central bank policy and the trend of economy (Dernberg and McDougall, 1980, 397-400). Nevertheless, discounting remains an option under our proposed system, where the central bank can buy instruments at below market price (positive discounting) when the economy is booming, and doing the opposite when the economy is slacking (negative discounting).

One of the important features of the proposed system is the 100 percent reserve rule for banking. This implies, according to Fisher (1935), that there has to be full reserve against checkable deposits. The argument rests on the fact that efficiency claims changing portfolio preferences of the private sector are destabilizing and weaken the ability of the central bank to regulate money supply. This may be debatable, for there are other economists (the banking school) that question the ability of the central bank to control the money supply as the latter is determined by the needs of trade (Makinen, 1977, 85-93).

Nevertheless, we argue for a 100 percent reserve rule on equity grounds. Partial reserves imply a tremendous allocation of property rights to the fortunate

“producers” of money, who are prone to generate wealth and income effects in their favor. Dernberg and McDougall (1980, 400) explain that “a reduction in reserve requirements supplies excess reserves without creating a corresponding liability on the bank balance sheet. Consequently, a fall in reserve requirement may carry with it a powerful wealth effect.” But whether reserves are created by reduction in their required level, or by open market operations, multiple deposit creation sounds like a government transfer payment (Dernberg and McDougall, 1980, 388-9). The only difference between this transfer and the usual fiscal one is that recipients in this case are the rich, not the poor. The government may auction banking permits to appropriate any monopoly rent.

If reserves are 100 percent, however, how could zero-interest consumer loans be financed? Some investment deposits can be partially used to set up consumer retail business, and partially to extend consumer loans. The return on such deposits will be in line with the example given above.

4. CONCLUSION

The essential property of money, that it is the generally accepted medium of exchange, makes it the asset desired by every economic agent. It has a very low elasticity of substitution. If it is possible to make money through fixed interest charges, there is the tendency that money becomes the “ultimate consumer good” as it becomes possible to pass the risk and burden of production to someone else. The elimination of interest rate from the economic system has no adverse effects in terms of efficiency or equity. A fractional reserve system that enjoys government insurance increases the acceptability of risk on the part of a bank, versus that accepted by the investors. This disturbs the competitive setting in the economy. The fractional reserve system is inherently unstable as banks and individuals, when they change the structure of their assets, can affect the stock of money in the economy. The mere existence of an interest rate, even under stable growth of money supply, is destabilizing as it affects velocity of money and hence income and prices. Investment decisions will be bound up with deals that involve commitments to pay cash in the future in exchange of getting cash today.

The alternative system has two features. First, banks will deal on the basis of profit-sharing and not interest-based financing. This has the benefit of unifying interests around the success of investment projects and pools the risk of investment for all parties to it. The profit-sharing ratio is procyclical at low levels of income, but countercyclical at high levels. The implied microeconomic assumption about savers is that they are income-target satisfiers. The second feature of the proposed system is that it should be a 100 percent reserve system, where the total amount of money and the high-powered money would be the same. Consumption loans at zero interest rate will be encouraged as they imply an increase in the sales of firms owned and/or financed by the banks. The money supply in this system can be increased by auctioning money stocks to the financial institutions on the basis of profit-sharing between banks

and central bank. Open market operations and rediscounting shall involve the buying and selling of non-financial debt instruments. The 100 percent reserve rule rests not only on efficiency grounds, but also on equity grounds.

REFERENCES

- Dernburg, Thomas F., and Duncan M. McDougall. *Macroeconomics: The Measurement, Analysis, and Control of Aggregate Economic Activity*. 6th ed. McGraw Hill Books Company, 1980.
- Fisher, Irving. *The Purchasing Power of Money*. New Haven, 1911.
- . *100% Money*. New York: Adelphi. (Discussion in James W. Angell, “The Percent Reserve Plan,” *Quarterly Journal of Economics*. 1935.
- Friedman, Milton. *A Program for Monetary Stability*. New York: Fordham University Press, 1960.
- Keynes, John Maynard. *The General Theory of Employment, Interest and Money*. Harcourt, Brace & World Inc., 1936.
- Makinen, Gail E. *Money, the Price Level, and Interest Rates: An Introduction to Monetary Theory*. New Jersey: Prentice Hall Inc., 1977.
- Minsky, Hyman P. *Stabilizing An Unstable Economy*. New Haven & London: Yale University Press, 1986.
- Modigliani, Franco. “Liquidity and the Theory of Interest and Money.” *Econometrica* 12 (1994).
- Peterson, Wallace. *Income, Employment and Economic Growth*. 5th edition. New York: W.W. Norton & Company, 1984.
- Saving, Tom R. “Transaction Cost and the Demand for Money.” *American Economic Review* (June 1971).
- Schumpeter, Joseph A. *The Theory of Economic Development*. New Brunswick: Transactions Publishers (Reproduced in 1989 with Introduction by John E. Elliott), 1934.
- Yeager, L.B. “Essential Properties of The Medium of Exchange.” *Kyklos* 21, no. 1 (1968): 45-68.