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Abstract

This paper offers a fresh look at the economic theories advanced by Keynes. Keynes correctly asserted that in a fractional reserve banking system supply could not create its own demand when agents held time and savings deposits as a longrun store and entrepreneurs were engaging in the disinvestment of capital. There are two fundamental problems. The first, disinvestment creates a disjoint between ex-ante supply and current period income; the second, the banking sector cannot transfer real resources, therefore, it cannot intermediate savings. Thus, the economy requires demand injections, financed by bank debt, if it is maintain economic activity.

Key Words: Keynes, Fractional Reserve Banking, Capital Stock, Time and Savings Deposits, Inactive Balances

1. Introduction

In the Keynesian paradigm, money held as a longrun store includes, but is not limited to, outside money. Important components of inactive balances are savings and time deposits held in commercial banks. Keynes wrote in the journal article,

The Alternative Theories of the Rate of Interest:

Moreover, no amount of anxiety by the public to increase their hoards can effect the amount of hoarding, which depends on the willingness of the banks to acquire (or dispose of) additional assets beyond what is required to offset changes in the active balances. (Keynes, 1937a, p.251)

The term hoards is synonymous with inactive balances, idle balances, and money held as a longrun store and are by definition, money that is unavailable for current consumption or the preparation of future consumption.

The classification of time and savings deposits as inactive stands in stark contrast to our general understanding of the relationship between the banking sector, the money wealthholder and real economic activity. Typically, the willingness of wealthholders to hold time and savings deposits as a longrun store is viewed as an economic good that promotes the ability of the banking sector to funnel finance to the productive sector. When an agent moves to save in money, they replace demand deposits with savings deposits and in so doing release required reserves. The increase in net free reserves allows the banking sector to write new loans and thereby divert purchasing power away from the wealthholder toward an agent that intends to express a current demand for goods. The causal structure is reserves to loans and loans to deposits; ergo, when the level of free reserves rises, so too does the ability of the banking sector to create its principal output, money. Thus, in the literature, inside money held as a longrun store is classified as active funds available for

intermediation and the banking sector, an effective intermediary for money that is held in the wealth account.

There is little doubt that the above text is correct. However, neither the above text nor any other, which emphasizes the money creation process can be used to dismiss and/or dispute the veracity of Keynes' assertion. Keynes is not questioning the ability of the banking sector to create money from fractional reserves; in fact, money per se, is not even the focal point of inactive balances. The focal point is the creation and final disposition of wealth that is held in financial asset— money. This is an important and necessary clarification. Inactive balances are created by bank lending activity; but the deposits are held by wealthholders, and the economic processes that allow an agent to hold bank credit money as a longrun store are fundamentally different from the creation of money by the banking sector.

Rules and regulations govern the creation of bank deposit liabilities; if a bank controls sufficient free reserves and a non-bank agent is willing to borrow, then the bank can fund new loans with demand deposits. This having been said, the only elements required to create bank credit money is free reserves and a willing borrower. However, the demand deposits thus created will not influence real economic processes, unless the deposits are offered by the new bank debtor and accepted by a non-bank agent. Therefore, while an increase in the level of free reserves will allow the banking sector to write new loans, the impact of the money creation process is not felt in the real economy until a non-bank agent willingly transfers valuable resources in exchange for the bank deposit liability. Moreover, it is the resources that have been

drawn from the flow of current economic activity, which are the basis for the credit relationship between the bank and the bank debtor.

The acceptance of new bank credit money acts upon the real economy by creating an aggregate disjoint between the flow of real income and the flow of goods offered in the marketplace. If the money is employed in the production of consumption goods, then, on average, the aggregate disjoint will be closed on or before the end of the current accounting period. This is an example of a self-liquidating loan. The entrepreneur uses bank credit money to procure current labor services and labor, in turn, uses bank credit money to purchase current goods from the entrepreneur.

Conversely, when new bank credit money is used to finance investment in real capital goods, then the disjoint between the flow of income and the flow of goods becomes an inter-period phenomenon. At the end of the current period, the new bank debtor holds real capital that has been drawn from the current flow of economic activity and current period surplus units are holding bank deposit liabilities as a longrun store of value.

To hold a bank deposit liability as a longrun store is to hold financial wealth as a longrun store. Financial wealth is, in all cases, a stock that is created from a flow of saving. Therefore, when an agent holds money as a longrun store, they have chosen to hold a bank deposit liability instead of purchasing a current good. In the period of investment, the replacement of current goods by liabilities issued by the banking sector is the outcome of a series of economic flows that is mediated by the

multiplier. The creation of bank deposit liabilities is a legal process. Thus, when we limit our examination of time and savings deposits to the money creation process, we, in turn, neglect the real economic processes that transform new issue demand deposits into real wealth.

In the journal article, *The General Theory of Employment*, Keynes stated that wealth was a, 'peculiarly unsuitable subject for the methods of the classical economic theory', adding, 'the greater the proportionate part played by such wealth-accumulation the more essential does such amendment become' (Keynes, 1937b, p. 211). It is the opinion of the present author that the behavior of wealthholders coupled with the ability to hold money as a longrun store is the principal reason why Keynes advanced the injection/leakage technology embodied in the theory of aggregate demand and disavowed the classical methodology.

As the following text will show, in an economy where real and financial stocks interact with the current flow of economic activity, the demand to hold money as a longrun store is an activity that directly influences the ability of ex-ante supply to create its own demand. As a direct consequence, the economy must create demand injections, financed by debt, to compensate for the inactivity of the money wealthholder. If debt financed demand is not generated, then the aggregate economy will contract.

2. Inactive Balances and Investment/Saving Equality

Importantly, Keynes never stated that supply would not create its own demand because agents could save in money. Rather, Keynes stated that supply would not create its own demand because money was a rational longrun store of value in an uncertain world. The distinction is between a flow of saving created through the multiplier process and the stock of prior period saving held as a longrun store in the commercial banking sector.

In the Keynesian paradigm, current investment creates its own saving via changes in the level of income: the multiplier mediates the change. When investment is rising, so too is the level of income. Conversely, when saving is rising independently of current period investment, income will contract until aggregate saving is brought into equality with current period investment. Therefore, given the multiplier, it can never be true that current saving, in money, is unavailable for current investment. Thus, for Keynes' inactive balances to be logically consistent with his theory of the multiplier, hoards must be a stock that is separate and distinct from the current flow of saving and investment. Keynes wrote:

There is a deep-seated obsession associating idle balances, not with the action of the banks in fixing the supply of cash nor the attitude of the public towards the comparative attractions of cash and other assets, but with some aspect of current savings. (Keynes, 1937a, p. 251)

If hoards are not current saving, then it must be true that hoards are prior period saving. This having been said, when Keynes stated that supply would not create its own demand, he was referring to the influence of the stock of money wealth on the current flow of economic activity. The time structure is as follows: money wealth created in periods $[(t - (n + 1)) \text{ to } (t - 1)]$ does not circulate against output created in periods $(t) \text{ to } [(t + (n + 1))]$. Or, in other words, prior period saving that is held in time and saving deposits in commercial banks is unavailable for current consumption or the preparation of future consumption.

3. The Banking Sector and Investment/Saving Equality

The ability of the banking sector to facilitate the investment/saving process is the cornerstone of the causal structure by which investment causes saving. Prior to fractional reserve banking, an agent could invest only if he had access to legal tender money or could borrow legal tender money from other agents. In either case, to invest required that the agent draw upon the monetary wealth stock.

With the advent of fractional reserve banking, it was no longer necessary that monetary wealth precede an investment flow. When non-bank agents accept bank credit money in exchange for their current factor services, they have transferred their legal rights to the output they helped produce. When agents hold money, they are precluded from drawing on the current market basket of goods. Therefore, when an

agent saves in money, current resources are transferred to the entrepreneur and current consumption is forgone in return for a new bank deposit liability.

If we abstract from the government and foreign sectors, then saving is the economic counterpart of investment. Moreover, for an agent to save in money, an increase in the capital stock must have been financed by an increase in the flow of money. This is a common theme in Keynesian economics: bank credit money is required to finance ex-ante investment. But it is real saving that is the factor that makes investment effective where real saving is defined as income less consumption. Moreover, because banks willingly offer interest on deposits of bank credit money, inside money is a rational store of value for the individual.

The finance of investment, through an increase in the flow of bank credit money, begins with a joint or double obligation of a banker with an entrepreneur. Both agents are debtors: the banker provides funds to the entrepreneur by releasing a demand debt against itself in exchange for a future debt against the entrepreneur. The actual credit or real capital that is the basis of the credit relationship is secured from the non-bank public, when the entrepreneur offers, and a non-bank agent accepts, the demand deposits in exchange for current goods and/or factor services.

Let an entrepreneur enter a bank in period (t) and request a loan to finance an increase in the capital stock. Upon receipt of the demand deposits, the entrepreneur offers the money to the marketplace and receives in return resources that are drawn from the current flow of economic activity. The use of money to obtain real resources creates a disjoint between the flow of current income and the flow of goods offered in

the marketplace. The multiplier mediates the disjoint. Through the multiplier process, income will rise until agents willingly hold the increase in the flow of demand deposits and the flow of saving is equal to the current period demand injection. At the end of the period, current period saving is equal to current period investment and the demand deposits that were issued to finance an increase in the capital stock have been transformed into a longrun store of value.

When an agent converts demand deposits into a time or saving deposit, the bank gains net free reserves. The increase in net free reserves allows the bank to fund new loans, i.e. create money. Both the loanable funds model and traditional banking theory state that the saving balances held at the end of period (t) are made active via bank lending in period (t+ ϵ). The surplus units have transferred resources to the bank and the bank in turn lends these resources on behalf of the surplus units. This is categorically untrue: the real resource — saving, *has already been transferred* to the entrepreneur in period (t). The signal that the transfer has taken place is the increase in the stock of money, which is held as a longrun store.

Let us move into period (t+ ϵ) and introduce a new entrepreneur. The new entrepreneur, like that of his counterpart from period (t), requires bank credit money to finance investment. The bank will provide finance to the entrepreneur via a bookkeeping entry: the bank debits required reserves and loans and credits excess reserves and demand deposit liabilities. The credit to demand deposit liabilities transfers to the new entrepreneur current rights to current purchasing power. When the entrepreneur offers this bank liability to the marketplace he draws upon the

current flow of economic activity. The agents who accept the liability transfer to the entrepreneur current rights to current output. This is not an unexpected result: the flow of *current period investment* is derived from *current production* and is matched by *current period saving*, i.e. current surplus income. This does, however, pose an important point. Surplus units do not transfer claims to banks that can be lent in the open marketplace. Investment and/or consumption facilitated by new bank credit always draws upon the current flow of economic activity. Therefore, while bank credit can finance ex-ante investment, and thereby facilitate the real economic processes that create current period saving, it can not transfer saving that was created in a previous economic period; thus, the banking sector is not an intermediary for prior period savings. This is a significant clarification.

By law, legal tender money is the medium that will discharge a debt if no other asset is specified; custom allows bank credit money to substitute for legal tender money. Accordingly, when an entrepreneur offers a demand deposit in exchange for current goods and/or factor services, the debt between the entrepreneur and the non-bank agent is closed. The entrepreneur receives real capital and the non-bank agent receives the generally accepted substitute for legal tender money. The marketplace views the transaction as a quid pro quo. However, whereas the entrepreneur has received valuable resources, the agent that accepted the demand deposit has not. The holder of the demand deposit has substituted real resources for a debt and has thereby become a creditor of the banking system.

It is a fundamental truth that all credit involves the temporary redistribution of real capital from the debtor agent toward the creditor agent. Thus, when a wealthholder holds a bank deposit liability, it is prima facie evidence that the banking sector owes real capital to the wealthholder. This having been said, the role of the bank depositor, at the close of period (t) is as a creditor of the bank. The surplus units from period (t) are the agents who allow the bank to hold a long-term financial asset on its balance sheet at the close of period (t). Similarly, if the bank offers to finance investment activity in period (t+ ϵ), it will be the surplus units from period (t+ ϵ) that transfer real resources to the entrepreneur and, in turn, become a creditor of the bank.

Importantly, a bank's ability to lend to the non-bank public is limited by its ability to borrow from the non-bank public. Banks do not lend real capital, nor do they directly transfer real capital; ergo, if non-bank agents did not willingly transfer valuable resources in exchange for a bank deposit liability, then the bank would have no basis for its lending activities. It is the capital that is drawn from the current flow of economic activity that is the legal basis for the contract between the bank and the bank debtor. Furthermore, if agents were unwilling to hold bank deposit liabilities as a longrun store, then the ability of the banking sector to engage in capital finance would be limited to its capital.

4. The Capital Stock, Disinvestment and Money Wealth

While Keynes is renowned for his analysis of the investment/saving process and the relationship of the banking sector to investment and investment to current period aggregate demand, of equal importance is his codification of the relationship of the capital stock to aggregate demand. In *The General Theory*, Keynes stated, 'capital is not a self-subsistent entity existing apart from consumption, adding that:

Consumption is satisfied partly by objects produced currently and partly by objects produced previously, i.e. by disinvestment. To the extent that consumption is satisfied by the latter, there is a contraction of current demand, since to that extent a part of current expenditure fails to find its way back as a part of net income. (GT, pp.105-106)

The disinvestment of capital is the transformation of the capital stock into a flow of current goods and is equivalent to the economic depreciation reported in the NIPA and captured by the Flow of Funds. When capital is employed in the production of goods, each unit of output released into the marketplace embodies some small portion of the useful life of capital. The portion of current period consumption demand that is satisfied by the disinvestment of the capital draws demand away from the current period flow.

From an accounting perspective, disinvestment is an introduction of a stock that creates a one sided flow: disinvestment increases the supply of current period goods but does not directly augment the current period supply of inter-sector income claims. Therefore, the aggregate economy will contract unless the disinvestment of the capital stock is counterbalanced by a current period demand injection.

The fundamental problem is a disjoint between current income and current supply; when entrepreneurs are using capital in the production of goods, supply exceeds current period income by the magnitude of current period disinvestment. Further, because all capital is fated to be used up in the production of goods, the disjoint is the norm, rather than the exception. This having been said, demand injections are required even though all current income revolves into consumption and/or investment. Thus, the disinvestment of capital is the flow activity that defines the general case.

Keynes' stated that supply would not create its own demand when agents chose to hold money as a longrun store. Further, given the multiplier it can never be true that current saving exceeds current investment. Ergo, all current income not required to validate current investment is available for current consumption; therefore, if supply cannot create its own demand, then it must be true that current income is insufficient to honor ex-ante supply. Thus, Keynes' references to aggregate flows are logically consistent with our findings: in the periods of disinvestment, supply exceeds current period income.

However, Keynes' did not simply state that supply would not create its own demand, rather he stated that supply would not create its own demand when money could be held as a long run store. Thus, Keynes' general case is conditional on the actions of the money wealthholder.

In the period of bank financed investment, the willingness of agents to set aside their current rights to current output is required to produce the real resource—saving. Thus, the decision to save in money and thereby become a long- term creditor of the banking system is a choice made in a single accounting period, which produces a net economic benefit in that period. Although saving, like investment, is not a final decision with respect to the future. Saving creates financial stocks and all stocks influence future economic flows. However, because wealth is the end goal of the accumulation process, the influence of the money wealthholder on future economic activity, unlike that of the entrepreneur, is tacit. Wealthholders observe future economic flows; they do not actively create flows. However, this does not mean that the actions of the wealthholder are neutral. The decision to forego consumption is as important as the decision to consume. Keynes offered the following:

Consumption —to repeat the obvious—is the sole end object of all economic activity. Opportunities for employment are necessarily limited by the extent of aggregate demand. Aggregate demand can be derived only from present consumption or the present provision for future consumption. The consumption for which we can profitably provide in advance cannot be

pushed indefinitely into the future. We cannot, as a community, provide for future consumption by financial expedients but by current physical output.

(GT, p.104)

The references to “pushed indefinitely into the future” and “financial expedients” are a direct reference to the behavior of wealthholders in general and the demand to hold money as a longrun store in particular. When money wealthholders are unwilling to express a current demand for goods and entrepreneurs are engaging in the disinvestment of capital, current demand is insufficient to honor ex-ante supply.

Thus, when Keynes stated that supply would not create its own demand when money could be held time as a long run store, he was expressing a general truth in an economy where bank credit money is a rational store of value and entrepreneurs engage in the disinvestment of capital. If prior period income does not circulate against current goods, then supply will exceed demand by the magnitude of current period disinvestment. Conversely, if agents willingly substitute money wealth by current goods, then the disjoint created by the disinvestment of capital will be filled.

Importantly, in an economy where economic flows create real and financial stocks and stocks interact with current period flows, the dis-saving of money wealth is as significant to effective demand and the gainful employment of the labor force as the flow activities, investment and savings. The dis-saving of money wealth, like the disinvestment of capital, is the introduction of a stock into the current flow of economic activity. The dis-saving of money wealth is a one-sided flow that increases

the demand for goods without directly influencing the supply of goods. Disinvestment is a one-sided flow that increases the demand for income by directly influencing the supply of goods. When these two stock injections meet in the marketplace, the dis-saving of money wealth fills the structural demand gap created by the disinvestment of capital. Ergo, current economic activity is realized through the substitution of prior period income for current goods.

Conversely, if money wealthholders do not engage in dis-saving, then either the economy will contract, or the gap will be filled by debt financed demand. If we abstract from the government and foreign sectors, then the two alternative demand injections are current period dis-saving, i.e. ($C_t > Y_t$) or current period investment. Both of these injections create a demand for goods in the current period without concomitantly creating a current supply of goods available to be consumed. However, while both injections are similar to the dis-savings of money wealth, neither injection is a substitute for dis-saving.

Current period dis-saving and current period investment financed by debt will solve today's structural demand gap but will, in turn, add to the demand gap in the period of debt repayment. In the period of repayment, the debtor's supply of current income exceeds their demand for current goods. Thus, debt repayment is a leakage that will add to, rather than mitigate, the structural demand gap. This having been said, debt financed demand, in each and every case, generates an even greater necessity for demand injections— financed by bank debt— in future economic periods. Moreover, because all investment resolves into disinvestment, all investment

is fated to create a disjoint between income and goods in subsequent economic periods. Therefore, debt financed demand is not a substitute for the dis-savings of money wealth. Ultimately, income is the factor that purchases goods; as a result, prior period income is the only factor that can close the structural demand gap.

When money wealthholders release prior period income into the marketplace, the structural demand gap will be closed and aggregate bank debt will decline. The money wealthholder, unlike the current period dis-saver or investor, has a pre-existing right to draw on the current flow of economic activity and to substitute non-transaction deposit liabilities by demand deposits. The wealthholders right to current money stems from their credit relationship with the bank. For the bank to remain a viable going concern, they must honor all requests to convert saving deposits into demand deposits. The wealthholders right to draw upon the current flow of economic activity is derived from their relationship with the entrepreneur. In the period of investment, the entrepreneur's claim to capital was made effective by the wealthholder's willingness to set aside current claims to current goods. At the end of the transaction, the entrepreneur secured the right to transform the newly produced capital into a flow of goods, the wealthholder, the right to demand the future output from capital. Therefore, the wealthholder has a pre-existing right to transform non-transaction deposit liabilities into demand deposits, then demand deposits into current goods.

If a money wealthholder exercises these dual rights, then real goods replace money wealth, the current increment of capital is realized, debt repayment substitutes

for bank deposit liabilities, and the banking sector experiences a net decline in both its deposit liabilities and its capital loan portfolio. Thus, the signal that current goods have substituted money wealth is a contraction in the balance sheet of the banking sector. This is a general statement.

There are two pivotal transactions: the replacement of prior period income by current goods and demand deposits by debt repayment. When a money wealthholder offers demand deposits into the marketplace, they are offering prior period income evidenced in the medium required by entrepreneurs to honor the current installment of their bank debt. Therefore, when wealthholders use bank deposit liabilities to obtain current goods, they have set in motion a chain of economic transactions that will validate the entrepreneur's investment in capital and in so doing, reduce the level of bank debt that encumbers the current capital stock and future economic activity.

5. Conclusion

The interrelationships between the entrepreneur, the banking system, and the money wealthholder define the general case. In the general case, supply does not create its own demand because prior period income held in time and savings deposits in commercial banks do not circulate against current goods. As a direct consequence, the economy requires demand injections, financed by debt, if it is to maintain the current level of economic activity.

There are three fundamental problems. In each and every case the capital that is the basis of the credit relationship between a bank and an entrepreneur is drawn from the current flow of economic activity. Bank credit money draws capital, it doesn't transfer capital, therefore, banks cannot activate wealth that is held as a longrun store in the banking system. Thus, the banking system cannot release income into the marketplace and it is ultimately income, not debt that purchases goods.

Secondly, when entrepreneurs are using capital in the production of goods, supply exceeds current period income by the magnitude of current period disinvestment. Finally, the offer of interest on deposits of bank credit money creates the possibility that the decision of the money wealthholder to postpone consumption in the period of investment can be transformed into a decision to postpone consumption in periods $(t+1)$, $(t+2)$, or $(t+n)$. As a result, the demand to hold money as a longrun store can permanently displace a demand for current goods. Thus, supply cannot create its own demand when time and saving deposits are a rational longrun store of value for the individual.

In truth, it is highly unlikely that Keynes would have advanced the theory of aggregate demand if it were not for the actions of the money wealthholder in concert with the banking system. If banks did not offer a rational longrun store of value, then all income would circulate against goods: there would be no other vent. This having been said, supply would create its own demand and Says' Law, rather than effective demand, would define the general case. However, banks do offer interest on savings and time deposits and, as a result, prior period income does not circulate against

current goods. As a direct consequence, ex-ante supply will be realized, if and only if, current income is augmented by demand injections financed by an increase in the flow of bank debt.

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