

## The Mysterious Money Machine

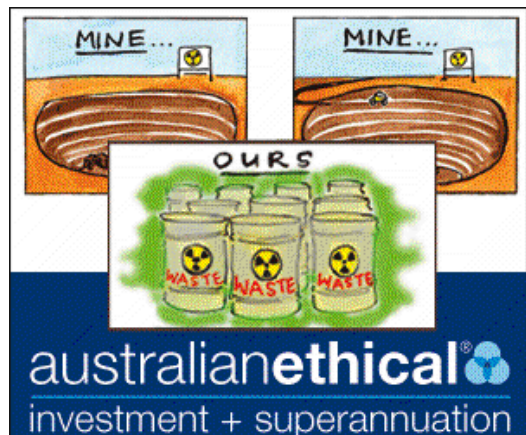
Friday, August 04, 2006

Steve Keen

Non-economists might hope that one thing economists know about is how money is created. They would be disappointed. Though money is the quintessential element of economics, it is one whose nature is forever disputed by economists. And though there is a widely accepted model of money creation, it is contradicted by the empirical data.

This model, in brief, is that money creation begins with the government either printing money, or borrowing from the Reserve Bank. I'll simplify my argument by just considering the former, calling the money so created "Base Money", and using the example of a billion dollars of new money created in this way.

This Base Money is paid by the government to individuals and companies, who in turn deposit it in their bank accounts. Now begins the second, "Credit Money" stage of money creation—according to the conventional view.



Advertisement

Banks record the \$1,000 million as depositors' funds, and then lend most of this out to borrowers, while holding some fraction in reserve to meet anticipated demand from depositors for withdrawals. If they hold on to twenty per cent (or \$200 million) to meet depositors' expected needs, that leaves them with \$800 million to lend.

This they duly do, and the recipients of those loaned dollars in turn deposit them in their own bank accounts—increasing the recorded level of depositors' funds to \$1,800 million. \$800 million of Credit Money has thus been created by the banking system.

Deposits now total \$1,800 million, and banks have assets of \$1,000 million in notes, and \$800 million in loans. Banks then repeat the lending process with the newly deposited \$800 million—lending out \$640 million, and keeping \$160 million in reserve to meet calls on their accounts by depositors.

The process continues with each new wave of lending, depositing and re-lending, until in the end it peters out with \$1,000 million in "Base Money" and \$4,000 in Credit Money, matched by \$4,000 million in loans by banks to borrowers. The total money supply is thus \$5,000 million, which equals the

amount of Base Money initially issued, divided by the fraction that banks retain for depositors—in this example, 0.20 or 20 per cent. This ratio is called the “Money Multiplier”.

In this conventional view, deposits are needed to create loans, and the money supply operates like a two stage rocket: the government sets off stage one by creating deposits with Base Money, and the private banking system amplifies that in stage two by creating loans and Credit Money.

This analysis can make either the Government or the Banks the villain in monetary crises, depending on the perspective of the person pointing the finger.

To most conventional economists, the government is the villain because it controls the money supply—either by controlling the issue of Base Money, or fine tuning the Money Multiplier. Since, in this view, inflation is caused by “too much money chasing too few goods”, it is the government's fault. The same argument also works in reverse: any serious downturn such as the Great Depression is also the government's fault, because it could be overcome by creating more Base Money, or increasing the Money Multiplier.

But to some critics, the private banking system is the villain, because it charges interest on money that it has created with little or no effort. Geoff Davies put this argument forward in his “Malign Money” article, in which he commented that “There is no justification for charging interest on the new money, because the bank has incurred only trivial expense in creating it”. He further argued that charging interest on this new money necessarily required debt to increase, “because the debt is then the sum of the original principal plus the interest accumulated, which is larger than the original amount of currency issued via the loan”.

The conventional model of money creation thus lets you take either a conservative or radical position on money. Unfortunately, empirically, the conventional model doesn't stack up.

If it were correct, then changes in Base Money would occur before changes in Credit Money—since banks couldn't create new loans until they received new deposits of Base Money. However, a [very careful analysis of US data](#) by two highly conservative economists, 2004 Nobel Prize winners Kydland and Prescott, found that changes in Credit Money actually *preceded* changes in Base Money by up to one year (see page 15 of their paper). The causal process actually seems to work in reverse: “Credit Money” comes first, and “Base Money” comes second.

A European group of monetary theorists, known as the Circuitists, have made sense of this empirical data by reversing the direction of causation: rather than “Deposits Create Loans”, they argue that “Loans Create Deposits”.



Thanks to [Bill Leak](#).

Their money creation story begins with a bank lending to a borrower (typically, a firm with an investment plan). When the bank lends, it opens two accounts: one in which the money is deposited, and the second recording the debt the firm owes to the bank. Base Money—or Fiat Money as they call it—isn't needed in this picture, so long as sellers accept a cheque drawn on a bank account as full payment for any purchase.

That, of course, is the case in a modern economy: the vast majority of purchases don't involve payment by currency, but by cheques, and now even by electronic fund transfers.

Government money creation, in this view, is an independent way of creating money; but it is also the only form of money that can be held outside a bank account—in the form of government-backed currency. This is why it plays a crucial role, since pure credit money only works if people implicitly trust cheques (or electronic fund transfers) from private banks. If trust evaporates—either in an individual bank, or the entire system—then there will be a rush to convert bank accounts into “cold hard cash”, and this panic can bring the financial system to a halt.

The government's role, in this view, is to ensure that such panics don't happen, by providing a sufficient proportion of trusted currency “Fiat Money”, relative to the amount of Credit Money created by the banks. As a result, “Loans Create Deposits”, which in turn forces the government to produce the amount of currency needed to meet depositors demands for cash. This explains the empirical reality that changes in Credit Money precede, and empirically cause, changes in Fiat Money.

This “Loans Create Deposits” analysis doesn't lend itself to a conservative interpretation of monetary

crises. Instead, the government is largely captive to the credit creation activities of the financial system, and all it can do is cushion any crisis, should one occur, by producing “Fiat Money” liquidity when private money creation comes to a halt.

But nor does this view support some of the more radical proposals that Geoff Davies put forward in “Malign Money”. For a start, there is nothing inherently wrong in charging interest on loans. Our system is fundamentally one of credit money, and banks make a profit out of providing credit. There may be a question about whether this profit is too high, or whether what they finance is actually desirable; but that they do make a profit on the spread between loan and deposit rates is a necessity of our system.

Secondly, it is true that “there is never enough currency in circulation to repay the loans when they are due”, but this is a furphy in a credit-money system. Loans are repaid, not with currency, but with money, and this can occur even in a pure credit money system, so long as profits exceed debt servicing requirements. The danger arises when debt is used to finance not investment, but asset speculation—and that certainly has happened extensively in Australia since financial deregulation.

Finally, non-fractional banking isn't possible: a requirement that banks have enough cash on hand to meet all depositors demands amounts to a requirement that banks don't lend. A “100% reserve” requirement isn't a reformed banking system, but the abolition of banks.

Some may argue that such a system would be superior to our current credit money system. Perhaps: but it could also make funding of new ventures more difficult. An entrepreneur who wanted to establish some new line of business would only have the avenue of an equity float in such a system. Whether this would work, or be any less risky for the general public, is a moot point: after all, that was largely the way things were during the South Sea Bubble, when even Isaac Newton lost his shirt.

There is no doubt that debt has risen inexorably, and that debt presents a major challenge to economic prosperity. But the causal mechanism behind rocketing debt levels is far more complex than simply the charging of interest on new money.

---

## **About the author**

**Steve Keen**, School of Economic & Finance, University of Western Sydney.