

THE THREAT TO MONETARY POLICY FROM THE ELECTRONIC REVOLUTION IN BANKING

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Electronic advances in banking practices, including some already in hand and others not yet visible but plausibly just over the horizon, present opportunities as well as complications for central banks. They also threaten the efficacy of monetary policy influence over inflation and economic activity.

As is often the case when the matter at issue is a threat that lies mostly in the future, discussion of this subject to date has exhibited much confusion over just what the potential problem is. Parts of the recent discussion have addressed possibilities that, while conceivable enough as a theoretical matter, have little prospect of coming into reality within the now foreseeable future. Perhaps a result, much of this discussion has failed to address those concerns that more plausibly threaten some central banks' ability to carry out an effective monetary policy over a horizon of, say, the next quarter century.

It is perhaps useful to begin, therefore, by noting a few examples of what is not the plausible source of concern: It is not the possibility that nobody will use currency for ordinary economic transactions, nor that no one will use bank checks to execute transactions. It is not that no bank will hold balances at the central bank. It is not that the central bank will be unable to control the size of its own balance sheet. It is not that the central bank will be unable to influence the price--that is, the interest rate--at which its own liabilities exchange for other claims that private transactors regard as assets. Finally, the issue is not that the central bank will be unable to influence some short-term nominal interest rate.

This paper draws on two previous papers, Friedman (1999) and Friedman (2000), cited below; a fuller development of the arguments can be found there. I am grateful to the Harvard Program for Financial Research for research support.

What, then, is the issue? Broadly stated, the question is whether technological innovations will impair the central bank's ability to carry out operations that reliably affect economic activity in the usual sense of real output and price inflation. More specifically, the threat to monetary policy from the electronic revolution in banking is the possibility of what in Friedman (2000) I have called a "decoupling" of the operations of the central bank from the markets in which financial claims are created and transacted in ways that, at some operative margin, affect the decisions of households and firms on such matters as how much to spend (and on what), how much (and what) to produce, and what to pay or charge for ordinary goods and services. The list of extreme circumstances noted above, which seem to capture the imagination in much of the discussion of this issue--nobody will use currency, and so on--would of course be sufficient to bring such a decoupling about. But they are no more necessary in this context than they are likely to occur. The threat to monetary policy is more subtle.

All standard theories of how monetary policy works have some explicit coupling mechanism that connects the purely financial operations of the central bank to the nonfinancial decisions made by households and firms: For example, banks are legally required to hold reserves at the central bank in order to issue the claims that the public uses for everyday transactions. Or, banks are required to hold reserves at the central bank in order to create money, which doesn't matter in and of itself; but only by issuing money can banks create the credit that the public needs. Or, banks have to hold settlement balances at the central bank in order to carry out their business, and the settlement balances needed are naturally related to the banks' own size of operations. Each of those stories has in it a mechanism that links the operations of the central bank not just to financial quantities, interest

rates and other asset prices but, via well understood accounts of household and firm behavior, to the evolution of real output and prices in the nonfinancial economy.

What, then, would “decoupling” mean in this context? There is both a quantity and a price interpretation.

The quantity interpretation is that at the margin increases or decreases in the size of the central bank’s balance sheet, which the central bank can of course bring about at its discretion, become less tightly (in the limit, not at all) related to increases or decreases in the volume of assets and liabilities that the public needs to carry out its own business--namely, money and credit. For this notion to have practical relevance, the idea that it applies at the margin of expansion or contraction is crucial. It has long been known that the size of the central bank’s balance sheet does not matter in this context. What matters is the relationship not at the average but at the margin of expansion or contraction. For example, the fact that some people will presumably continue to use currency for some classes of transactions is not the cutting edge of the issue. What matters is, instead, how closely the expansion or contraction of this activity requiring currency matches the expansion or contraction of the overall economy that the central bank seeks to influence.

Alternatively, the price (or interest rate) interpretation of what it would mean to decouple the central bank’s operations from the expansion or contraction of the economy is that the interest rate that the central bank can set, on the exchange of its own liabilities for other claims, becomes less tightly (in the limit, not at all) connected to the interest rates and other asset prices that matter for ordinary economic transactions. Here again, a specific example may help to illustrate the central idea: Within the past year an unusually wide spread has opened up between the interest rate on long-

term U.S. Treasury securities and interest rates on similar instruments like high-grade corporate bonds and securities collateralized by insured mortgages. The apparent reason is the projected scarcity of long-term Treasury bonds. If the U.S. Government continues on its currently projected path, in which all outstanding Treasury obligations are to be retired within another decade or so, this scarcity value will become progressively greater. When there is only, say, \$100,000 of long-term Treasury bonds left outstanding, it will be very easy for the Federal Reserve--or anybody else, for that matter--to drive the interest rate on these bonds arbitrarily close to zero (or even below zero, should anyone choose). But by that time this interest rate will have become completely disconnected from the interest rates that matter for the public's ordinary economic transactions.

Students of monetary policy have long understood that the coupling, at the margin, of operations by the central bank and the decisions of households and firms is crucial to monetary policy influence over output and/or prices. The issue today is whether new technological developments, over the foreseeable future, may plausibly threaten a decoupling at the relevant margin. In Friedman (1999, 2000), I have argued that this prospect is one that deserves to be taken seriously.

There are two basic ways in which such a decoupling could come about. The first is that various forms of e-balances--smart cards, stored value cards, and the like--may increasingly compete with bank checking accounts, and, further, develop to the point at which balances on the books of the nonbank entities that issue such cards are accepted in payment by third parties. What matters for the efficacy monetary policy is that the claims people exchange in order to execute transactions continue to be claims on the books of banks (or, equivalently, claims backed one-for-one by bank deposits).

The possibility that this may cease to be true is a key part of the threat that the e-revolution presents for monetary policy.

Once again, it is important to emphasize that the argument is one at the margin. The question is not whether bank deposits will disappear altogether (they won't), but whether plausible alternatives not backed by bank deposits (credits on the books of the telephone company, for example) will weaken the connection between the expansion or contraction of reservable bank deposits and the expansion or contraction of economic activity to an extent that threatens the efficacy of monetary policy.

In theory, of course, one can always get around this problem by simply defining as a "bank," for purposes of meeting reserve requirements, any entity in the business of providing such claims: the telephone company, the New York City subway system, Microsoft, in principle any firm whose product would be in sufficiently broad demand to render its liabilities generally valued. In Friedman (1999) I considered the possibility of a race between regulators seeking to contain this activity within the fence of such regulation and innovators seeking to escape it. I am skeptical of the regulators' prospects for success. History suggests that the innovators are likely to be fleet of foot. (A potential solution that I suspect has a greater likelihood of success is for the Treasury to require all tax payments to be made by checks against reservable bank deposits.)

The second way in which a decoupling of the central bank's operations from the markets that matter for monetary policy could come about is the possibility that banks' demand for central bank liabilities, for use as settlement balances, may wither. The main question here is whether the central bank will continue to have enough of a natural advantage in the provision of net interbank settlement

services so that banks will always need central bank liabilities for this purpose--and, if not, whether regulation can solve the problem. It is important to emphasize once again that nobody denies that the central bank can determine the quantity of claims outstanding on its own balance sheet, or, if it prefers, the interest rate at which those claims exchange for something else. Here too the issue is one of decoupling at the margin: whether the expansion or contraction of that quantity, or the increase or decrease of the exchange rate on central bank liabilities against some other asset, would continue to be connected to the expansion or contraction of economic activity and to the broader constellation of interest rates and asset values that matter for this purpose.

. What if either or both of these two technological possibilities were to become reality? There is a view, these days often expressed, that the central bank needn't do anything; that a mere expression of intentions is sufficient. The most fundamental point I sought to make in Friedman (1999), a point that stands independently of the setting of the current discussion focused on concerns stemming from the electronic revolution, is that stated intentions matter only if there is something credible to back them up--and, moreover, that whether the central bank can or can't back up its intentions is a matter of institutional arrangements, subject to change.

The image that I used in Friedman (1999) to dramatize this point (taken from a 1965 film directed by Harry Levin) is that of the 12th-century Chinese emperor Wang Wei-shao composing a poem in elegant Chinese calligraphy and explaining that the poem, if read carefully enough to catch the subtle nuance, expresses his displeasure with the Mongol barbarians who are currently creating a disturbance on the Chin empire's western frontier--and, further, that this veiled expression of disapproval on his part will be sufficient to cause the barbarians to desist and go away. The point of

the story, which becomes clear later in the film, is that Wang Wei-shao was the emperor defeated by Genghis Khan. There may once have been a time when a subtle poem in an emperor's elegant calligraphy was sufficient to make attackers break off, but by Wang Wei-shao's day that time had obviously passed.

The generic point applies to central banks as well. Alan Greenspan will not be the Wang Wei-shao of the 21st century. But circumstances change, especially when political institutions and advancing technology are central to the issue. Expressions of intent on the central bank's part may be sufficient if there exists the capacity to back them up. And if everybody has grown up in a world in which that capacity existed, people may continue for some time to behave in the same way even after it has atrophied or disappeared. But eventually objective reality catches up.

What if the market some day loses its presumption that the central could, or would, be able to do the job if the market did not simply act on its signals? With nothing to back up the central bank's expressions of intent, in time the market would cease to do the central bank's work for it. This prospect is ultimately what the threat posed to monetary policy by the electronic revolution is all about.

References:

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