

Research Department
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Space Age Monetary Theory

In a recent article in the *Journal of Economic Literature*, Robert Hall of Stanford University, discussed the work of those questioning the theories of more conventional economists by applying the principles of micro-economic efficiency to monetary theory. Labelled "free market" monetary theorists, they claim that the financial and transactions industries would function smoothly in the absence of government intervention. To counter claims that regulation is a necessary stabilizing influence on the economy, these economists have had to suggest various policy alternatives for a deregulated environment when money as commonly defined ceases to exist.

The recent moves toward financial deregulation and the increasing sophistication of the financial system have led many to suspect that significant changes in theory and policy might, at some point, be necessary. This *Letter* will look briefly at the various recommendations of free market economists who project recent trends in financial and technological innovation to the extreme—to a point where the distinction between money and other financial assets is clearly meaningless. In their world, the Federal Reserve could not expect to control the price level by limiting the growth of a group of assets called the money supply because defining such a grouping would not be possible. Some other method then must be found to keep control over the price level.

Deregulation and technology

The free-market advocates contend that any identifiable relationships between money and prices will at some point disappear because they are the result of a particular regulatory structure. They cite, as examples, required reserves behind bank deposits, which have the effect of stabilizing the supply and demand for money at the cost of taking large amounts of capital out of the intermediation industry, and the restriction

of private substitutes for currency (e.g., small denomination bearer bonds, interest earning traveler's checks), which help maintain the concept of money as the medium of exchange at the cost of making currency more expensive to use.

Some economists who do not share this iconoclastic perspective have expressed similar worries on the difficulties deregulation and innovation have created for defining and controlling the money supply. Those who believe in money's continued usefulness debate what is appropriate to include in each monetary aggregate, and which of the various definitions of money is most useful for policy purposes. The Federal Reserve is itself concerned with the problems in interpreting the meaning of changes in the money supply. In the past year, it warned the public that surges in money may be more the result of the changing financial structure than of a loosening of policy.

Many economists think that such problems with money will be sorted out when the financial system has adjusted to recent far-reaching regulatory changes. They reason that if most of the structural change has been the result of deregulation, then an end to further significant legislative change should restore stability to money's relationship with prices. The growth rates of assets will regain their meanings for monetary analysis as the public finishes incorporating the recently created financial assets into its portfolio.

Less optimistic economists claim that changing technology will result in the continued evolution of the financial system even in the absence of further deregulation. New technology will increase the ease with which any financial asset can be converted into so-called "base money" or "high-powered" money, which is made up of bank reserves and currency. This conversion is critical for giving an asset its "moneyness,"

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i.e., acceptability as a means of payment. Checks, for example, must in effect be converted into reserves to clear between banks.

Cash management services, now commonly offered by brokerage houses, mutual funds, and money market funds, are using wire transfers and automated clearing houses to connect their customers to financial institutions holding reserves. As such systems improve the speed with which transactions can be conducted and as they become less costly, an increasing number of assets will take on the exchange characteristics of money because they will easily be converted into the medium needed for making transfers. The financial system might evolve to a point where technology, rather than complete deregulation, could destroy the present concept of money. For instance, funds for any purchase could be electronically moved from an individual's bond market fund to a merchant's mutual fund with the use of a debit card. The assets would take the form of reserves for only as long as it took to send the information of the transfer between institutions.

Prices without money

How will the price level be determined if the economy reaches a point where money consists of a wide array of financial assets, all of which can be used for spending purposes? And what will this mean for controlling inflation when adjusting the money supply will make no more sense than manipulating the holdings of stocks or bonds?

Free market economists propose two solutions. One group argues that the dollar may be given meaning by tying it to a commodity standard, that is, its value could be defined in terms of the quantity of real goods. Stabilizing the value of money in terms of the commodity standard then would ensure a stable price level. Others believe that a dollar of currency or reserves will have an intrinsic value, or can be given a real value by linking it to production. For these economists, the major policy tool for

stabilizing prices would consist of controlling the nominal quantity of such reserves or currency.

Commodity standards

A familiar version of a commodity standard is the use of gold to define the value of the dollar. The gold standard was successful at keeping the inflation rate down, and even produced some periods of deflation. But it did not prevent the 40 percent cumulative erosion of the dollar's purchasing power that occurred from 1879 to 1914 (although it probably contributed to stability by keeping expectations of inflation under control). Gold's major drawback today as a commodity standard is its unstable demand. The U.S., for example, would have experienced excessive inflations and deflations if it had been on a gold standard the past few years because gold's value fluctuated so sharply in the interval.

There is, however, nothing sacred about using gold as the commodity standard. The dollar instead could be defined by a standard composed of a number of common goods, such as various raw materials and agricultural products. Each dollar would not need to be backed by warehouses of these goods, just as the gold standard did not require the gold in Fort Knox. Rather, the dollar would be defined as a unit of account whose value is determined by the real value of the commodity bundle. The public would then know what a dollar was worth when making a contract or completing a transaction because it would know the value of the commodity bundle.

A group of common commodities would be an improvement on gold if the value of the bundle chosen were more stable in comparison to the general price level. In addition, the number of goods involved and their importance in the production process would minimize the effect of any shifts in demand, caused by speculation on relative prices.

The ultimate extension of this idea would be to include all goods in the standard. The

result would be the same as if the government indexed the entire economy against inflation. A paycheck defined as so many units of money would always have the same purchasing power in such a world.

These examples are nothing more than ways to define the problem of inflation away by creating a standard unit of account in which all transactions can be denominated. Nevertheless, a commodity standard would not guarantee zero inflation under all circumstances unless the government clearly had no incentive to devalue the standard.

Reserves or currency

Some free market economists argue that the government also could affect prices by manipulating the supply of reserves or currency. A parable used by Eugene Fama of the University of Chicago may help explain this concept. Suppose that in the distant future, a country operating under a successful commodity standard decides to try a different approach. Because spaceships perform a valuable service, policymakers decide that owners of such vehicles will be required to hold reserves as an additional cost of operation (just as banks are required now). The value of spaceship travel creates a real demand for a dollar of reserves. The central bank can then maintain the desired price level in dollars by controlling the supply of reserves available to back spaceship operations. The problem of determining prices in this case is solved by regulating something other than the transaction and intermediation industries.

There are two extremes to which this logic can be taken. Some economists have suggested that both currency and reserves perform special services that give them an intrinsic value, so that government does not have to impose regulations like reserve requirements to give them value. Since currency has a comparative advantage for small purchases, they claim it will be in demand in an unregulated world because of its convenience. Similarly, reserves will have real

value because of their usefulness in the daily operation of the financial system, e.g., they facilitate the actual movement of funds between institutions. These intrinsic advantages mean that there will be a well-defined demand for reserves and currency. Consequently, the monetary authority can control the price level by manipulating the supply of those assets.

But if regulation were needed, then any industry could be required to hold reserves. Taken to the extreme under one of the more unusual proposals, a reserve dollar would be issued for each dollar of value-added calculated in the Gross National Product. In order to produce a dollar of output in each subsequent period, a firm would have to have a corresponding reserve dollar. Increasing real output, or raising prices, would require the purchase of a reserve dollar from another producer. Inflation would be controlled because the *nominal* amount of output would forever be the same by government decree. In this world, increasing production would automatically be accompanied by a falling price level.

Conclusion

This Letter has looked at some suggestions by economists who have concerned themselves with a very advanced financial system in which the present worries about the usefulness of money for policy are fully realized. Without the present concept of money, some alternative must be created to control the price level in their world. Their analysis, while extreme, is valuable because it forces conventional monetary economists to study the problem of controlling inflation from a different perspective.

Thomas Klitgaard

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 10/12/83	Change from 10/5/83	Change from year ago	
			Dollar	Percent
Loans (gross, adjusted) and investments*	162,219	408	- 1,231	- 0.8
Loans (gross, adjusted) — total#	142,217	464	- 493	- 0.3
Commercial and industrial	43,060	53	- 2,722	- 5.9
Real estate	57,166	69	- 216	- 0.4
Loans to individuals	24,894	121	1,493	6.4
Securities loans	2,919	175	69	2.4
U.S. Treasury securities*	7,464	- 15	889	13.5
Other securities*	12,537	- 41	- 1,627	- 11.5
Demand deposits — total#	44,054	- 42	2,986	7.3
Demand deposits — adjusted	31,164	1,320	2,236	7.7
Savings deposits — total†	66,568	- 328	34,451	107.3
Time deposits — total#	67,367	855	- 34,526	- 33.9
Individuals, part. & corp.	61,850	815	- 29,837	- 32.5
(Large negotiable CD's)	17,024	151	- 22,085	- 56.5
Weekly Averages of Daily Figures	Week ended 10/12/83	Week ended 10/5/83	Comparable year-ago period	
Member Bank Reserve Position				
Excess Reserves (+)/Deficiency (-)	75	93		66
Borrowings	24	72		12
Net free reserves (+)/Net borrowed(-)	51	21		53

* Excludes trading account securities.

Includes items not shown separately.

† Includes Money Market Deposit Accounts, Super-NOW accounts, and NOW accounts.

Editorial comments may be addressed to the editor (Gregory Tong) or to the author . . . Free copies of this and other Federal Reserve publications can be obtained by calling or writing the Public Information Section, Federal Reserve Bank of San Francisco, P.O. Box 7702, San Francisco 94120. Phone (415) 974-2246.