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MASTER

MEMORANDUM ON INTEREST RATES 1966-67

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This memorandum is not an attempt to forecast interest rates. It is an attempt to state some of the behavioral relations and institutional interrelations that affected the behavior of interest rates in 1966 and that can be expected to be operative in 1967.

H. P. M.

Interest Rates 1966-67.

Over the first 9 months of 1966 an exceedingly rapid run up of interest rates took place. This was accompanied by significant changes in the structure of many financial markets. With some justice the climax in late August and early September to the events of the year can be characterized as an incipient financial crisis.* Since late summer, first the rise in interest rates slackened and now at least money market rates seem to be in a precipitous decline.

The complete tale of the crisis 'brink' is not available to the author as this memorandum is being written.** A full disclosure of what the complex of regulatory and control organizations, that make up the United States Central Bank, did first to perhaps precipitate and then to control the developing situation is part of the tale that needs to be known. As a result of the lack of detailed information, what follows will of necessity be quite conjectural.

In many ways the events of 1966 may be of crucial importance for our understanding of system behavior and in particular of how monetary policy works. A full public disclosure of the events and acts of that period should be made as soon as possible.

* "Last August, monetary policy was probably as tight as it could get without risking financial disorder. Any further increase in over-all demand could not have been effectively countered by general monetary policy." The Annual Report of the Council of Economic Advisors, 1967 pg. 60.

** The speech by Governor Brimmer of the Board of Governors, Federal Reserve System, "Tradition and Innovation in Monetary Management," Tucson, Arizona, November 19, 1966, is revealing, particularly in the discussion of a sequence of not quite orderly financial markets.

It is an odd coincidence, for history does not fall into neat patterns, that August-September 1966 marked the end of the second third and that April 1933 marked the end of the first third of this century. If one looked at American experience from the perspective of 1933, ~~periods of~~ financial instability (financial instability is a general term covering financial crises, disorderly conditions in financial markets and epidemics of failures among financial institutions) ^{was} ~~was~~ a dominant characteristic of the economy. On the other hand the third of a century between Roosevelt's inauguration and this last summer was characterized by an unprecedented stability in financial markets. Following the Great Crash of 1929-33 much in the way of legislation reforming banking and other financial institutions was passed. Once the new control institutions set up by this legislation found their appropriate modes of operation, a very long period (over 30 years) passed during which finance operated smoothly. This unprecedented financial stability ruled until 1966 in spite of three wars, two demobilizations and an unprecedented period of economic growth.

It is necessary to note another aspect of the American economy of the second third of the twentieth century. In spite of an excellent record with respect to employment and the growth of income ^{no} ~~one~~ serious boom, and in particular no 'speculative' investment boom, took place until 1965-66. Until 1965 it seemed as if either the Great Depression had permanently affected business men so that they were no longer willing to believe in 'New Eras' of endless prosperity or the sophisticated reform and control legislation of the 1930's had made serious financial excesses or errors of the kind that feed such ^a boom impossible. However, in 1965-6 such a boom did develop. This take off

can be imputed to any one or more of a number of phenomena: the proclaimed success of the tax cut of 1964, which it was said validated the New Economics, the unprecedented duration of the expansion that had begun in 1961, and the fact that by 1965 some 30 years had passed without any serious depression or financial instability. By late 1965-early 1966 prophets were heard in the land proclaiming that depressions as they had been known were now a thing of the past. According to these oracles from now on the economy would be characterized by continuous growth and, cycles, if they occurred, would be in the positive rate of growth. As a result of these factors late 1965 and the first half of '66 saw a real boom develop: the economy became "euphoric".

The central attribute of an euphoric economy is an investment boom by non-financial corporations. Investment doubled between 1961 and 1966 - and in each of 1965 and 1966 investment by non-fama, non-financial corporations was by the order of magnitude of 20% greater than in the prior year. This rapid rise in investment was accompanied by a rise in the net external funds needed to finance investment ^{from} ~~to~~ \$1.4 billions in 1964, to \$6.6 billions in 1965 and to \$15.2 billions in 1966. (External funds as a % of the purchases of physical assets rose from 2.8% in 1964 to 10.77 in 1965 to 20.1% in 1966.)

It was this 'business demand' for external finance - rather than any undue constraint in the supply of bank reserves - that was responsible for the runup of interest rates in the first four months of 1966. Beginning in May, if the Federal Reserve Bank of Saint Louis is to be believed, the rate of increase in the supply of money fell sharply.

As a result of last summer, the question should be raised as to whether the ~~economy~~^{economy} can be expected to behave as it did during the second third of this century, or can it be expected to revert to the pattern of the first third of this century, during the period to come, the final third of the century.

In the light of these two deeply different historical episodes we can 'visualize' two distinctly different modes of operation of monetary constraint. One mode is contained in the standard text book on macro-economic theory. It assumes that a stable negatively sloped relation between investment and interest rates exist. Monetary policy is a determinant of an infinitely elastic supply of finance at a market interest rate. By tightening credit, this infinitely elastic supply curve is raised. As a result some investments are priced out of the market. By varying monetary policy the 'economy' can slide up and down this investment curve and thus the quantity of investment, income and employment are determined (via multipliers).

The second view looks upon real investment as but one aspect of decision making with respect to portfolios under conditions of uncertainty. The essential uncertainty in any portfolio (inherently intertemporal) decision is that it deals with the future. Investment demand in this view is an offshoot of the pricing of the existing stocks of real capital assets as the prices are determined by the desires of holders of real and financial wealth to construct portfolios that reflect their fears and hopes. However, hard information on which to base these hopes and fears is scant; in particular there exist 'boom' and 'stagnant' subjective moods. The price that owners of real capital are willing to pay for either new or used real capital reflects both the stream of earnings that they 'expect' from such investments and the confidence with

which they hold these 'expectations'. Included in the measure of confidence is the range of adverse events they are willing to accept as possible. The expectational and confidence aspects, combined with some evaluation of the impact of adverse events if they do occur, are the major determinants of the price entrepreneurs are willing to pay for new capital.

As a result of these uncertainty discounts surrounding the valuation of earnings from real capital goods, a large differential exists between the internal rate of return from real capital assets and the interest rate on protected financial assets. The earnings from owning real capital under conditions of full employment cannot be quickly changed by accumulation. In addition, the price of used capital goods cannot get too much out of line with the production costs of new capital goods.* As a result, if uncertainty discounts are decreased due to a new evaluation of possible alternatives, the only way the market can adjust is by raising the rate on financial instruments including default ^{free} outside assets. In addition, if the future is no longer uncertain, the premiums upon short term financial instruments lose their reason for being.

The above can be used to explain 1965-6 developments.

The 'success' of the tax cut of 1964 in sustaining what even by then was a long expansion gave rise to what I call a 'euphoric economy'. In this state, the uncertainty discounts that stand between expected rates of return on real capital and the market rates of interest on default free paper were much too high. In addition, the prior subjective expected rates of return on real capital

* During mid year 1966 - at the time when the economy was most euphoric - the Wall Street Journal carried a lead article on how the prices of some second hand machine tools had risen well above the price of new tools. This, of course, was due to two phenomena; the long delivery time for new tools and very good near term profit expectations.

were too low for this euphoric mood, as they allowed for recession incomes, and, as stated earlier, recessions no longer were expected to occur.

In a world with certainty, no one outside a lunatic asylum will hold money - or treasury bills - as an asset unless the return on money - or treasury bills - is the same as on real assets. By early 1966 the equilibrium rate on treasury bills may have been as high as 15% to 20%.

However, the world is not born anew each day, and costless recontracting does not exist. Contracts entered upon in earlier years were generating cash flows in this euphoric period, and commitments to enter upon contracts during the period now characterized as euphoric, were made before the euphoria set in. That is, the cash flow commitments of this euphoric period reflected a prior assumption that the future will be like the then present. However, in fact this new era was unlike earlier remembered periods.

Under these circumstances particular financial institutions - especially those which hold long term assets and emit short term liabilities - were caught in a severe squeeze. This resulted in a disruption of the markets in which they usually lend, which will lead to a lagged decline in those components of demand financed by their lending. In addition to capital losses on long term contracts, the 'penal' terms upon which credit was rolled over as liabilities became due and the decline in some sectoral demands contributed to generalized financial losses - and a reluctance to take positions in some assets which were being marketed to obtain cash developed. Under these circumstances, with financial markets not functioning as usual, the desired balance sheet structure was re-examined and the expectations which led to the euphoric economy were, at least temporarily, abandoned.

Although the following is not a particularly apt way of describing the ^{second} recent view, it can be characterized as being based upon an inelastic investment-interest rate relation which is positioned by expectations. The financial world adjusts so that the necessary financing is available - in particular the supply of finance from a given reserve base is not completely inelastic with respect to interest rates. However, if interest rates ^{are} not too high, too fast, there is a feedback which affects some conventional financing channels. This 'crisis' that results as some financial institutions are hard pressed affects expectations and positions the investment demand function ~~and~~.

Two special aspects of ^{was} how central banking ~~is~~ administered in 1966 are worthy of notice. One was the substitution of even stricter administration of the discount window for a discount rate policy that kept the discount rate in "touch" with market rates. The second was the use of an effective ceiling interest rates on time deposits at commercial banks as a weapon to force a reduction in bank lending. Both of these items involve the use of direct rather than indirect central bank controls.

There was a 'political' reaction, quite unwarranted by the importance of the act, to the rise in the discount rate in December, 1965. As a result, the discount rate remained unchanged throughout a year in which a money market rate, such as the Federal Funds rate, rose from the neighborhood of 4.5% in January of 1966 to 6.0% in the week ending Friday, September 9. Obviously if banks were making their position by ^{borrowing} ~~making~~ Federal Funds at 6%, they were not able to borrow the reserves needed to make their position from the Federal Reserve Banks at 4.5%. It is also obvious that when the gap between the discount rate and a position making rate is 1.5%, the window is being administered much more tightly than when the gap is a small fraction of one percent.

It is now apparent from the annual report of the Federal Reserve System that the Federal Reserve banks were more eager to 'keep the discount rate' in touch with the money market rates than the Board of Governors. A query as to whether the difference in views reflected a difference in constituency might be in order. The District Bank Presidents may have been more aware of how a tightly administered discount window was disordering the operations of the commercial banks. The Board of Governors were perhaps more aware of the effect that ever rising interest rates would have upon the non-bank financial intermediaries. It may very well have been a 'damned if you do, and damned if you don't' situation. If the window was administered tightly there would be a short and rapid run up of interest rates and the appearance of 'disorganization' in markets as banks fought for reserves by trying to sell other assets. If the discount rate was increased and if Reserve Bank credit were freely available at the rate, then the continuation of the euphoric economy would have induced further increases in rates, which in turn would have affected even more seriously the non-bank deposit institutions than they were in fact affected.

There are two pure policy strategies the central bank can adopt: one is an interest rate and the other is a quantity of money (or reserves) strategy. Under an interest rate strategy, the central bank sets an interest rate at which without limit eligible paper will be discounted. If this interest rate is lower than the rate that would equilibrate the inherited supply and demand for money, then in effect the supply of money and bank finance becomes infinitely elastic at this rate. Under this strategy the disruption of bank financial markets could be minimal: credit is always available and finance market terms are constrained by the changing discount rate.

In a period of euphoria, the discount rate will need to be flexible. Short term, money market rates considerably higher than those realized in 1966 may be needed to constrain demand for bank credit once the only way in which reserves are rationed is by price. If the financial structure were simple, such a run up of interest rates would affect aggregate demand only to the extent that the demand for expenditure to be financed by borrowing was itself responsive to interest rates. However, in a complex financial world, the rise in interest rates also affects other financial institutions by affecting the market value of assets in their portfolio and their cash flows. It is the impact upon these other financial institutions - and the effect that any disorganization in their markets has upon demand - that makes it inadvisable to use a pure interest rate policy as a constraint in an euphoric economy.

What the Federal Reserve seems to have adopted in 1966 was a 'strict' quantity of money view. The discount window was closed 'tight', and no apparent help was given to commercial banks and money market operations as banks tried to obtain reserves by 'selling' investments as well as short run securities and by running off loans. Bank lending and commitment markets were disorganized in the credit squeeze. As a result a swift run up in interest rates occurred, and this run up disrupted not only bank financing markets but also non-bank financial intermediary markets.

With the particular institutional arrangements of 1966, there was no way for the Federal Reserve System to constrain demand without simultaneously risking a financial crisis. If the domain within which monetary policy can be used is to be expanded, it will be necessary to modify the portfolio of the depository financial institution. One obvious way is to tie mortgage interest rates to the discount rate, and to use a flexible discount rate to determine the term upon which short term credit is freely available.

The phenomenal growth ^{Large} CD's was an attribute of the Kennedy-Johnson expansion. The growth of these CD's, along with the expansion of the market in Federal Funds, was heralded as marking a new era in banking. In this new era banks determined their ability to lend by actively buying reserves rather than being passive reactors to reserves and reserve ratios as determined by the Federal Reserve. However, the ability to lower the effective reserve ratio depended upon the relatively attractive terms banks were able to offer on time deposits. Evidence has accumulated that the Board of Governors felt that the $5\frac{1}{2}\%$ ceiling on time was so high that in effect they were eliminating the ceiling when they set that rate.

The large denomination C.D. is a volatile instrument. The quantity demanded is subject to fluctuations due to variations in corporate cash receipts and payments. If a "borrowed" ability to acquire positions is a major characteristic of a financial market, then a guaranteed source of re-financing is necessary. In the case of banks which borrow their ability to lend, provision for an infinitely elastic supply of reserve to banks at an interest rate penal with respect to the market rate for borrowed reserves seems like a sensible safety valve. However, this was not the way the Federal Reserve chose to operate in August-September, 1966. They kept the nominal discount rate low and the discount window closed. They stood by passively as market rates rose relative to the C. D. rate, thus forcing a run off of C. D.'s.

As C.D.'s are run off, they are transformed into demand deposits. This causes a rise in required reserves equal to the reserve ratio differential times the amount run off. If the reserve base is invariant, the only recourse for banks is to sell off assets or to allow loans to run off. There actually was a slight run off of business loans at large commercial banks, of about \$1 billion* (reasonably adjusted), between August 10 and September 14, 1966.

C. D's at large commercial banks reached a peak of \$18.5 billions* in the week ending August 24. Within the next four weeks the total fell by \$1.2 billions, and the total of such C.D's reached a trough of \$15.4 billions on December 14. Since then a very rapid rise has occurred and in the week ending February 8 the amount of such C.D's outstanding once again stood at \$18.5 billions.

It seems obvious that the ceiling on C.D's plus the tight discount window leads to the possibility of sharp increases in credit available through specified bank channels followed by precipitous declines. The 'availability' and 'non-availability' of finance becomes a part of the environment of financial managers of non-financial corporations. It seems worth considering whether a financial environment subject to such periodic instability in the supply of funds and radical changes in the terms upon which funds are available is conducive to smooth, high level performance of the economy.

The Outlook 1967

One difficulty in estimating the outlook for interest rates during 1967 is the proven unreliability of forecasts as to the costs of the war in Viet Nam. From a narrow view in which only the private economy is considered, the echo of last summer's trauma should be felt in a decreased demand for finance by business; however the strong underpinning to demand due to the war makes it likely that business will return to the market for finance sooner than they would have in the absence of the war.

The short run behavior of money market interest rates is very much determined by demand conditions. Whereas it is not good banking practice to 'reach for yield', i.e. short money should not go long, it is possible for long money

to go short. In particular both banks and financial intermediaries decreased the liquidity of their portfolios during 1965-6, and after the August-September escapade the desirability of increasing liquidity even at the expense of earnings became apparent. In the aftermath of a 'great crisis', such a shift toward financial conservatism can offset marked increases in bank reserves; rising reserves can be accompanied by decreases in loans.

August-September, 1966 was not by any stretch of the imagination a great crisis. The effect of the tremor will, I expect, soon wear off. The open question is whether a change in economic policy that is directed to encouraging domestic expansion, such as would accompany peace in Viet Nam, will offset the decline in Government demand due to the war. It may be that the stop-go nature of economic policy in the past year or two - due to the combination of the investment boom and Viet Nam - has so affected businessmen's views that a quick resurrection of euphoric moods is not likely to occur once the war is liquidated.

The behavior of interest rates since June 1966 is of interest in any effort to estimate what may happen. In June 1966 the Treasury Bill rate was about 4.5% and Corporate Acc Bonds were at about 5%. In late September through early November both the Treasury Bill rate and the yield on Corporate Acc Bonds were about 5.40%. In early February 1967 both Treasury Bills and Corporate Acc Bonds were back to their yields in June 1966 - 4.5% and 5.0%, respectively. We can expect continuing downward pressure on short term rates as banks and other financial institutions seek more 'liquid' portfolios. We can also expect a flow of long term issues now that long term rates have moderated for both business and state and local governments. After all, increasing the weight of long term debt in a liability structure, makes the liability structure more liquid.

The incipient financial crisis of 1966 should have the effect of increasing the gap between longs and shorts over what they were in the period prior to the crisis; i.e. the 'constitutional' weakness of financial markets reflects 'uncertainty' and the events of 1966 have generated a rise in 'uncertainty'.

A rate structure with wide differentials between long and short rates, especially a structure with low short rates, implies balance of payments difficulties. Foreign short term dollar holdings are sensitive to international interest rate differentials. Thus, if market conditions drive the short rate too far down, the Federal Reserve will operate to twist the rate structure: to achieve long rates that are low relative to short rates at the same time as the short rates are high enough to attract and hold foreign short term balances.

The experience of 1965-6 indicates that there are dangers in operations designed to twist the rate structure. The increase of shorts in bank portfolios means that portfolio transformations which finance 'boom' expenditures are possible. In addition, if the relatively low long rates are maintained in spite of market pressures tending to raise long rates, then, if the operation is ever abandoned, a sharp run up of long rates will occur. If this occurs, great pressure will once again be placed upon the savings intermediaries.

Obviously the operation of monetary policy in a complex financial environment is fraught with dangers. This is so even in the absence of a foreign exchange constraint. The presence of a foreign exchange constraint so complicates the matter that it may be necessary to opt for a stable set of money market interest rates, allowing money supply to adjust. In this case a large share of the burden for constraining boom or euphoric expansions will need to rest upon the 'constraining' aspects of the built in fiscal stabilizers.