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CURVES OF EXPANSION AND CONTRACTION, 1919 - 1921.

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CURVES OF EXPANSION AND CONTRACTION, 1919 - 1921.

The economic vicissitudes through which the country has passed during the past year have brought to everyone a vivid and memorable experience of the actualities of expansion and contraction and have made the study of the conditions which eventuate in these violent alternations of the curves of business and credit, a matter of profound practical importance.

War, and its immediate aftermath of business inflations, made the credit expansion. After-war readjustment, with its inevitable liquidation, has made the credit contraction. So much is already clear from the outside point of view and is now admitted by most fair-minded people. But what is further revealed and how does the matter look when the operations of the banking system are viewed from the nearby or Federal Reserve point of view? For this whole recent experience raises some questions of great moment with regard to the functioning of the country's new credit mechanism.

It is not the purpose of this discussion to go into the economics of the expansion and contraction of 1919-1921. It is not at all concerned with questions of economic causation. No attempt will be made to determine whether expansion or contraction of credit caused expansion or contraction of business and the rise and fall of prices, or whether the movement of credit was determined by the movements of business and prices. The correlation of the business and financial factors involved in the economic developments of the past three years presents too complex a problem to be undertaken within the limits of this paper. For the assistance of any who are ambitious to penetrate the economic mysteries

of recent expansion and contraction, there is nevertheless appended to this article a collection of data covering most of the determinable factors involved in the problem. In order to make the fluctuations in the different items comparable, they are expressed in the form of index numbers based on the 1919 average. A second table shows the absolute figures upon which the index numbers of banking are based.

MEASUREMENT OF EXPANSION AND CONTRACTION.

The object of the present discussion is to ascertain what light recent experience throws on the question as to whether the Reserve System possesses a sensitive and accurate indicator of changes in the credit and business situation - or, let us say, of expansion and contraction.

The accompanying chart brings out the essential developments for this purpose. The two curves of credit on the chart show, respectively, changes in the bill holdings of the Federal Reserve Banks and changes in the loans and investments of the reporting member banks[1]. The third curve shows changes in the gold holdings of the Federal Reserve Banks, and the fourth, changes in the volume of the country's business[2].

The volume of business in general depends on four factors, or, in mathematical language, is a function of four variables: (1) physical

1. Consisting of some 800 of the largest banks of the country which report weekly to the Federal Reserve Board. These banks represent about 40 per cent of the banking resources of the country, and changes in their condition may be taken as typical of changes inthe banking situation in general.
2. As measured by debits to individual accounts in banks in about 150 leading clearing-house centers. In order to eliminate short-time fluctuations due to the difference in the number of business days in a month, to mid-month and end of the month payments, and to Treasury operations in connection with the quarterly installment of income taxes, the volume of business curve on the chart has been smoothed by means of a moving average which shows for each month the average volume of business for the month and the two preceding months.

volume of production; (2) price level; (3) activity of trade (rapidity of turnover); and (4) speculative and other transactions in securities, exchange, etc. A change in any one of these factors affects the total volume of business, and this, in turn, affects the total volume of credit required. In any exhaustive analysis of the business or economic situation to ascertain what factors are affecting the demand for credit facilities, or, let us say, the expansion or contraction of credit, careful attention must always, of course, be given to variations in any of the elements affecting the volume of business.

CHANGES IN THE BUSINESS SITUATION, 1919 - 1920.

Beginning about midyear, 1919, and extending to the end of the year, there was a pronounced expansion of business accompanied by great speculative activity involving commodities as well as securities. Increased activity of business (rapidity of turnover) and rise of prices were the important factors in this development. The index of the physical volume of production (for manufactures) shows no noteworthy change during this interval.

Economic reaction set in early in 1920, and continued throughout the year. Business recession was much in evidence and gained in momentum after midsummer, 1920. In the first quarter of 1921 the reaction reached the stage of acute liquidation. Thereafter business pursued a steadier course. This period of reaction and liquidation was marked by diminished physical volume of production (for manufactures) after midsummer, 1920, and by the drop of wholesale prices. The index for manufactures declined from 102.3 in July to 77.9 in

December, 1920, and to 68.5 in July, 1921. The price index declined from 123.6 in July to 89.2 in December, 1920, and 69.8 in July, 1921. These changes in the business situation, 1919-1921 - that is, the rise and the fall in the volume of business transactions - are clearly reflected in the curve of business. Its trends are unmistakable.

How well are these changes in the business situation - in brief, the expansion and contraction of the volume of business - reflected in the curves of credit, first that of the member banks, and second, that of the Federal Reserve Banks?

MEMBER BANK CREDIT CURVE OF EXPANSION AND CONTRACTION.

The member bank credit curve reflects pretty faithfully the business expansion which went on in the second half of the year 1919, and again, the liquidation which was in process in the early part of the year 1921. It will be noticed that the liquidation of the loan account of the reporting member banks in the first six months of the year 1921 approximately cancels the expansion of the loan account of these banks in the second six months of the year 1919. Through the year 1920, however, it will be noticed that the curve of credit of the member banks shows a different trend from the curve of business. The business recession which was in process in 1920 is not at all reflected in the member bank curve of credit. There was no contraction of credit until the last quarter of the year. On the contrary, the banks were expanding their accommodation throughout the year and until after the crop-moving season was over. Agriculture was in distress, while business was in the midst of the crisis of readjustment and needed

assistance in effecting the transition from the period of expansion through the period of liquidation. That assistance was being extended by the banks, as both of the curves of credit clearly indicate, and thus was liquidation of business moderated and kept orderly by comparison with what it would have been, had it not been for the steadying and easing influence of our new credit machinery.

THE RESERVE BANK CURVE OF CREDIT.

Turning to the Reserve Bank curve of credit, it appears that the curve of credit of the Federal Reserve Banks parallels the curve of business more closely than does the curve of credit of the member banks, both in the period of rapid expansion in 1919 and in the period of acute liquidation in 1921. It will be noticed on the chart that the Reserve Bank curve of credit in the period under review twice cuts through the member bank curve of credit - once in October, 1919, on the upward swing of business, and again in April, 1921, on the downward swing of business. By comparison with the member bank curve, the ascent of the Reserve Bank curve was more pronounced on the rise, as was also its descent on the fall. On the other hand, throughout nearly the whole of 1920, when the business curve was showing a decided downward trend (until the last quarter, when a slight rise is shown due to seasonal influences) the Reserve Bank curve of credit showed an opposite, or upward trend. Both curves of credit in the critical year 1920, therefore, followed a different trend from the curve of business, but it is noteworthy that the difference is much more pronounced in the Reserve Banks' curve than in the member banks' curve.

THE GOLD INFLUX AND RESERVE BANK CREDIT CURVE.

There still remains to be considered the curve of gold reserves. The sharp and prolonged drop in the Reserve Bank curve of credit through the year 1921 and the liquidation which it reflects cannot be understood without reference to the great influx of gold into the country and into the Federal Reserve Banks, which has been in process during the past twelve months. Reference to the chart brings out the opposite movements in these two significant and related curves. Reference to the index numbers shows that the index of the Federal Reserve System's gold holdings rose from 94 in October, 1920, to 130 in October, 1921, while the index of bill holdings declined from 137 in October, 1920, to 63 in October, 1921. Over 45 per cent of the liquidation of the loan account of the Federal Reserve System, it appears, may be attributed to the increase of its gold holdings. The influence to be attributed to the gold factor in Federal Reserve Bank liquidation is still greater in the case of the Federal Reserve Bank of New York, which has been the chief recipient of the gold flowing from Europe to our shores. The index of bill holdings for that bank fell from 126 in October, 1920, to 37 in October, 1921. Its gold index for the same period shows a rise from 74 to 156. The gold factor is thus seen to account for over 73 per cent of the liquidation experienced by the loan account of the Federal Reserve Bank of New York.

The great stream of gold which has poured into the United States from Europe during the past year has come in liquidation of foreign indebtedness to us, and has been turned over by member banks to the Federal Reserve Banks in liquidation of their own indebtedness. The

pronounced and continuous downward trend of the Reserve Bank loan curve during the past year is therefore seen to be due largely to foreign liquidation. The course of business shows considerable steadiness after the first quarter of 1921, and the member bank curve of credit, after the second quarter; but the Reserve Bank curve of credit continues its downward course in 1921 without abatement in quick and close response to the continuously upward course of the curve of gold reserves. As an indicator of the degree and rapidity of domestic liquidation, the Reserve Bank curve of credit is misleading, owing to the disturbing influence of the gold factor.

THE RESERVE BANK CURVE OF CREDIT
THE MORE SENSITIVE INDICATOR OF CREDIT CHANGE

Comparing the two curves of credit with one another, it is clear that while both curves are influenced by the same changes in the business situation, their response is not the same. A glance at the chart brings out the fact that the Reserve Bank curve moves very much more readily and markedly than the member bank curve. The member bank curve appears flat by comparison with the Reserve Bank curve, and gives a less lively impression of the business and credit developments and changes which were in process. What is the explanation of the difference, and which of the two curves is the better index of expansion and contraction?

The relative flatness of the member bank credit curve during the year 1920 as compared with the Reserve Bank curve is due to several circumstances, some transitory in character. It will be recalled that the loan and investment account of the banks of the country was greatly swollen during the War by heavy investments in Liberty bonds and

Certificates of Indebtedness, and by accommodation granted subscribers to government war loan issues. After the War, the process was reversed. There has been constant liquidation of bank holdings of government securities and of loans collateraled by such securities. Reporting member banks' holdings of government securities dropped from 3,083 millions in May, 1919, to 1,938 millions in January, 1920, and 1,318 millions in January, 1921. Figures of holdings of paper secured by government securities are not available until December, 1919, when they amounted to 1,337 millions. From this point they declined to 899 millions in December, 1920, and 577 millions in October, 1921. The liquidation in the loan and investment account of the member banks from these sources has therefore been very considerable. But it does not appear to be reflected in the movement of the member bank curve of credit in 1920. That curve was ascending in spite of liquidation from these sources. But had it not been for this liquidation, it is altogether reasonable to assume that it would have ascended still more. The credit thus released by liquidation of warloan securities and paper was apparently being used to expand the commercial and speculative loan accounts of the banks.[3]

When we come to the period of liquidation in the autumn of 1920 and the following winter, there appeared an influence of an opposite character to that just described - namely, the so-called "frozen credit". By "frozen credit" is meant credit that has continued its existence beyond

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3. Something similar occurred in the early autumn of 1919, when it will be noticed the member bank curve was rising, while the Reserve curve was declining, the banking expansion then in process being able to proceed without increased borrowings from Federal Reserve Banks. This is explained by the fact that the floating debt of the government was reduced at this time by almost 500 millions of dollars, the banks using the funds thus made available to them for the expansion of their commercial loans.

the time when the transactions which gave rise to the credit should normally have liquidated themselves. It is made up of credits which have not been liquidated because the transactions underlying the credits have not been able to run their course and liquidate themselves. It is well known that large volumes of goods produced last year have been carried by the producers for lack of satisfactory markets. Prices were falling, markets were collapsing, and there was congestion of goods at points of primary production and distribution. The owners of these goods had to be "carried". There is no means of approximating the amount of these frozen credits, but there is reason to believe that they constitute a very substantial fraction of the total loans and discounts carried by the commercial banks of the country.

The member bank loan curve shows resistance to the forces of liquidation. It was this retarded or "orderly" liquidation which kept the curve from descending as swiftly as it otherwise would have if it had been influenced merely by the volume of current business transactions. Moreover, the liquidating power of a dollar paid in by a member bank to its Reserve Bank in a period of liquidation appears, on the basis of the past two years, to be very much less than the credit-supporting power of a dollar loaned by a Federal Reserve Bank

to a member bank in a period of active expansion.[4] And furthermore, the Federal Reserve Bank loan curve, as has already been pointed out, represents in a peculiar degree the liquidating effect on the Federal Reserve loan account of the huge influx of gold which has been continuous during the past twelve months. Besides these transitory influences which have helped to give the member bank loan curve a relatively flat character, there is the additional important and regular influence exercised by the far greater volume of member bank loans compared with Reserve Bank loans. Owing to the fact that the base figure is much larger for member banks than for Reserve Banks, the same change in absolute amounts will result in a much larger percentage change and, consequently, in a much steeper movement in a reserve bank curve than in a member bank curve. But this arithmetical fact does not fully explain the discrepancy. There is a further reason of an economic character to be noted in a study of the curves of expansion and contraction.

The great bulk of the loans of the member banks at any time represents loans incident to the ordinary volume and requirements of

4. During the period of expansion between 1919 and 1920 (dates for which information is available being June 27, 1919, June 25, 1920, and June 29, 1921) the increase in the loans of the member banks was 6.7 times as great as the increase in the discounts of the Federal Reserve Banks, while during the following year the decrease in the loans was only 2.3 times as large as the decrease in Federal Reserve Bank discounts. For the reporting member banks, for which data on more significant dates are available (July 25, 1919, before the speculative expansion began, October 15, 1920, when the peak was reached, and November 2, 1921, the latest date for which data are available) their investment and loan account increased 3.2 times as fast during the period of expansion as their borrowings from the Federal Reserve Banks, while during the period of liquidation the reduction in the investment and loan account of the reporting member banks is 1.6 times as large as the corresponding reduction in their borrowings from Federal Reserve Banks.

business, and exercises, even in times of marked changes in the business situation, a steadying influence on the member bank credit curve. The situation of the Reserve Banks is different. Their loan account does not reflect the normal volume of credit in use. Under normal conditions, their operations are not large. It is not the absolute amount of credit in use, but the ebb and flow of credit, which affects the loan account of the Federal Reserve Bank. The Federal Reserve Bank has little part in the ordinary credit business of the country. It does not deal with business borrowers directly. The relations of the business man are with his member bank, the member bank in turn dealing with the Reserve Bank as occasion may necessitate. The Federal Reserve loan is not the first line of credit, but the second line of credit. The expansion and contraction of the Reserve Bank loan account are twice removed from the expansion and contraction of the volume of business as reflected in commercial bank loans.

The Federal Reserve is called into activity when the supply of ordinary credit facilities is inadequate. It supplements the resources of its members. It is, so to speak, the increments and decrements in the country's credit requirements that are reflected in the upward and downward movement of the Federal Reserve loan account. It is when business is speeding up beyond their normal credit capacity that the commercial banks must resort to the Federal Reserve Banks for accomodation. When business is receding and liquidating in a period of economic reaction, slackening of credit requirements will result in a marked reduction of borrowings from Federal Reserve Banks. The Reserve Bank curve consequently reflects movement, change - the <u>more</u> or <u>less</u> of

credit required, - and not the actual total volume of credit in use by business. On a relative basis the Reserve Bank curve has a tendency to magnify what is in process in times either of rapid expansion or of acute liquidation; in other words, to give an exaggerated or heightened impression of these movements.

A GUIDE TO CREDIT POLICY

Therein consists its importance as an administrative guide. While it may be faulty as a guage of the degree of credit expansion or contraction, its very sensitiveness gives it a peculiar value as a quick indicator of what changes in the business and credit situation are in process or even impending. For while the Reserve Bank curve, during the period under review, has been oversensitive and gives an exaggerated impression of credit developments, the member bank curve, for reasons already discussed and primarily because, at any moment, it is more influenced by what has taken place than by what is taking place, tends to give an inadequate impression of changes which are in process, at least so far as they affect the credit situation. In times of rapid expansion or contraction, it is not the total volume of outstanding bank loans which is significant, but additions to that volume, or reductions in it. From this point of view, the Reserve Bank curve is a truer index of business and credit development than the member bank curve, and a better guide to credit policy.