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THE ECONOMIC DISTRIBUTION OF DEMAND DEPOSITS

by
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Demand deposits could be distributed according to size, banks, geographical regions, or by types of depositors. The present paper is concerned with the last mentioned type of distribution. The distribution of deposits by type of holder is a new field on which data have only recently become available, and the results which I shall present shortly must be regarded as tentative. They do, however, for the first time permit us to ascertain the approximate distribution by broad economic categories of the bulk of the money supply of the country.

Information of this character, could it be made detailed, accurate, and frequent, would, I believe, permit an advance in monetary and business cycle analysis. It appears indispensable if any vitality is to be imparted to the concept of velocity of money as a tool of analysis. It would give quantitative content to such concepts as "liquidity preference", "excess saving", and has some bearing on "the propensity to consume". It would pave the way for a fruitful marriage between the two strands of theory centering on the one hand around the velocity of money, and, on the other, the demand for money,

Both these strands have proved disappointingly barren despite their long history. The attempt to give statistical content to V in the $MV = PT$ equation of exchange, while it stimulated monetary thinking, has nevertheless proved, I think we may now say, to have been a false

lead. The rate of turnover of money for every purpose must be related to a price level that has no reality nor economic significance. A great deal of effort has gone into demonstrating something in which we find after all we have no interest.

In more recent years there has been a tendency to relate the concept of velocity to something that has very real significance, the value of the net product of the community, or the national income. I have myself constructed an income velocity series by dividing national income by the volume of money, and this shows approximately the rate of turnover of the total stock of money in terms of income or the net value of production. This concept has proved useful for certain broad purposes such as, for example, demonstrating what the national income would be on the basis of a given amount of money if certain previously attained income velocities should be reestablished. It has called attention to a rather surprising stability in this particular relationship throughout the Twenties. It also brings the concept of velocity of money much closer to that of the demand for money, since a velocity of say, three, is merely another way of stating that the stock of money is equal to four months' value of production, or one-third the annual value.

Perhaps the basic objection to the concept of velocity is that it appears to be a *deus ex machina* peculiar to monetary theory and removed from the motivations customarily dealt with in general economic theory. As Hawtrey remarks, no one ever decides what the velocity of his money shall be, but rather this emerges as a by-product of the decision to hold a certain sized balance in relation to income. Some people have so far

forgotten this by-product characteristic of velocity as to argue that all that is needed in a recession is to supply more money and this new money will promptly "acquire a certain velocity". Similar habits of thinking in connection with the "multiplier" come to mind.

A necessary step in an intelligent discussion of the motivating forces that bring about changes in velocity is to examine changes in individuals' and firms' money holdings in relation to their incomes and other factors. This brings us back to the other strand of theory I mentioned centering around the concept of the demand for money to hold. This concept has a long and honorable lineage, Marshall tracing it back to Sir William Petty, and has greatly influenced English and particularly
1_k Cambridge monetary thinking. It was represented by the term kR in Pigou's equation of exchange, and the term k in the equation Keynes presented in his Tract on Monetary Reform. By applying the apparatus of demand and supply to units of currency, it has, as Edwin Cannan argued, the expository merit of showing that the theory of the value of money is but one application of the general theory of value.

There has been a great deal of discussion of a qualitative nature of the factors affecting variations in the size of business deposits, financial deposits, and income deposits. A major difficulty here, however, has been the lack of any quantitative data which might indicate the relative importance of these various types of balances, and hence the actual importance of their variations. I hope that the tentative results now

presented will at least allow some idea to be gained of the approximate magnitude of different types of balances and of their variation during one stage of a particular recovery movement.

It is perhaps advisable to emphasize that information on the economic distribution of demand deposits cannot in itself be used as an indication of the demand for money, which can only be expressed in relation to something else. It can, therefore, tell us nothing in itself of the velocity of money. A given distribution of money could be consistent with either a high or a low velocity depending on the relation of the balances to the value of output. The same point applies to a change in the deposit holdings of a group. Before the significance of such a change can be determined, additional information is necessary on the sources and causes of the change in relation to changes in other holdings and in the total volume of money.

Until recently it has not been possible to attempt a distribution of demand deposits by economic categories as no basis existed for an estimate of the composition of the single item of cash reported by corporations in the Statistics of Income. In addition, banks were included with other finance groups in the reported figures. Through the cooperation of the Treasury both these difficulties have been removed. The Bureau of Internal Revenue forms for corporation balance sheet returns, starting with December 31, 1935, contain separate headings for demand deposits, time deposits, and other cash. In addition, separate figures of the cash holdings of financial groups other than banks were made available.

In the early part of 1936 the Federal Reserve banks, at the request of the Board of Governors, sent questionnaires to the large banks, asking for information relative to their large deposit accounts on October 25, 1932 and November 1, 1935, classified by economic types. It was discovered that the percentage composition as between demand and time deposits obtained from this questionnaire for 1935 agreed very well with the percentage composition obtained from the Bureau of Internal Revenue's special compilation for the same economic groups of those corporations that reported a breakdown of their cash item. This strengthened the presumption that the questionnaire sample was representative and the percentage composition of demand and time deposits was therefore applied to the cash item of corporations by industrial groups in the 1933 Statistics of Income. Estimates were made of non-corporate demand deposits and figures for other categories were obtained directly from banking reports.

ECONOMIC DISTRIBUTION OF DEMAND DEPOSITS
(Amounts in millions of dollars)

	Deposit balances		Percent to total		Percentage increase
	Dec. 31 1933	Dec. 31 1935	Dec. 31 1933	Dec. 31 1935	
Total demand deposits	<u>17,470</u>	<u>26,600</u>	--	--	<u>+52.3</u>
Less items in transit:					
In process of collection by banks	1,200	2,370	--	--	+97.5
In transit between depositors	1,200	2,370	--	--	+97.5
Total demand deposits, adjusted for transit items	<u>15,070</u>	<u>21,860</u>	<u>100.0</u>	<u>100.0</u>	<u>+45.1</u>
Business:	<u>6,120</u>	<u>7,640</u>	<u>40.6</u>	<u>34.9</u>	<u>+24.8</u>
Corporations engaged in:					
Manufacturing, mining, construction	2,800	3,450	18.6	15.8	+23.2
Transportation, public utilities	980	1,080	6.5	4.9	+10.2
Trade, service	1,070	1,420	7.1	6.5	+32.7
Miscellaneous <u>1/</u>	50	80	0.3	0.4	+60.0
Non-corporate enterprises <u>2/</u>	1,220	1,610	8.1	7.3	+32.0
Finance:	<u>2,670</u>	<u>5,390</u>	<u>17.7</u>	<u>24.7</u>	<u>+101.9</u>
Corporations:					
Insurance	560	920	3.7	4.2	+64.3
Other finance	820	1,740	5.4	8.0	+112.2
Non-corporate:					
Security brokers	200	200	1.3	0.9	--
Banks' trust departments	440	1,060	2.9	4.9	+140.9
Foreign banks	130	440	0.9	2.0	+238.5
Other foreigners <u>3/</u>	240	600	1.6	2.7	+150.0
Large personal accounts <u>4/</u>	280	430	1.9	2.0	+53.6
Public bodies:	<u>2,690</u>	<u>4,130</u>	<u>17.9</u>	<u>18.9</u>	<u>+53.5</u>
U. S. Treasury	1,020	1,460	6.8	6.7	+43.1
Other public bodies	1,670	2,670	11.1	12.2	+59.9
Unclassified - consumer balances, etc.	<u>3,590</u>	<u>4,700</u>	<u>23.8</u>	<u>21.5</u>	<u>+30.9</u>

1/ Includes agricultural corporations and corporations not reporting nature of business.

2/ Excludes professional service, agriculture, finance, transportation and public utilities.

3/ Includes foreign bank deposits with nonmember banks.

4/ Accounts with balances of \$100,000 and over reported by the 98 largest member banks.

The various steps in building up these distributions were carried out mainly by Martin Krost and a detailed description written by him is available on request. In general the figures for corporations and public bodies are the most reliable, while there may be a considerable margin of error in the estimates for non-corporate holdings. The increase in business balances is probably understated on two counts. In the first place, the abolition of the privilege of filing consolidated returns in 1934 probably means that certain holding companies were listed under business categories in 1933 and under finance in 1935. This would also have the effect of overstating the increase in financial deposits. In the second place, a substantial part of the item "Checks in process of collection between depositors" which represent checks deducted by payers from their reported balances, and not yet credited by payees to their balances, should be credited to business balances. This item increased over one billion dollars between the two dates. Consequently the proportion of the total represented by business balances may actually have changed between these two dates much less than is shown in the table.

Broadly speaking, it appears that at the end of 1935 business held about a third of the deposit balances in all checking accounts; finance, including foreign individuals' firms and banks and large personal accounts, nearly a fourth; public bodies a fifth. The unclassified residue amounts to slightly more than a fifth but consumers' balances proper are probably not more than a sixth. If currency outside banks were added to checking accounts, the proportions would doubtless be raised for consumers and lowered for other groups. Present data appear too fragmentary, however, to permit a reliable distribution of currency.

In interpreting the significance of changes in the deposit holdings of a group it is necessary to know whether an increase, for example, represents a failure to spend current receipts derived from the disbursements of business, public bodies or consumers, or whether it arose from some source outside the current income-production stream. In the former case an increase would be a reflection of a restrictive development, though it may, of course, be more than offset by other developments. Similarly, a decline in the cash holdings of any group may either reflect an increase in current disbursements or it may reflect the purchase of capital assets, the proceeds of which may not be spent in current production.

A few examples of the varying possibilities may be cited. If consumers build up their balances by withholding a portion of their incomes the effect of this action is clearly restrictive. If, on the other hand, their balances are increased through the sale of capital assets, the increase by itself is not restrictive. The inquiry must be pushed back to the source of the increase in order to ascertain whether current disbursements have been diminished as a result of the transfer of capital assets.

Perhaps the best way to illustrate the possible ways in which information on the changes in cash holdings may aid in interpreting business developments will be to consider the significance of the actual changes shown between 1933 and 1935. This period is unique

in several respects. In the first place, the very large expansion in demand deposits was mainly attributable to the Government's borrowing and spending program. Member banks alone increased their holdings of direct and guaranteed Government issues by \$5 billion. The next most important single factor in increasing demand deposits was the addition to our gold stocks apart from the gold increment. Secondly, in this period business raised virtually no new money from banks or the capital markets and the problem of tracing the sources of the increase in business deposits is thereby simplified.

1. Consumer or income balances.

The unclassified demand deposits do not correspond with income balances since they include personal balances up to \$100,000, many of which might more properly be included in finance. They also include balances of non-profit institutions and other miscellaneous categories. In view, on the one hand, of the substantial increase in the large personal accounts classified under finance and, on the other, of the absence of any increase in currency outside banks, the bulk of which is probably held by consumers, it seems unlikely that small personal balances accounted for a very large proportion of the increase of \$1 billion in unclassified demand deposits. Whatever restrictive influence arose from the addition to demand deposits out of current income on the part of consumers, therefore, must have been of a fairly minor order.

The increase in the total unclassified category may very possibly reflect in large part the sales of securities, as banks, insurance companies and foreigners added considerably to their holdings of non-Government securities in this period despite the absence of any net increase in outstanding obligations of business and local bodies. The increase in deposits arising from net sales to these categories would not at that time have been restrictive.

Although consumers apparently did not retain in the form of demand deposits any considerable proportion of the increase in their incomes, they did increase their savings deposits by some \$2 billion. Ordinarily, because of the resulting lower reserve requirements, the banking system expands its earning assets and the bulk of the savings are thus passed back to the monetary stream. However, under the conditions prevailing in this period of already large excess reserves, it is doubtful if banks expanded their earning assets by any more than they would have had no growth in time deposits occurred. Consequently the growth in time deposits probably represented a restrictive development.

2. Public balances.

The increase in the Federal Government's balances did not arise from the excess of current receipts over expenditures but rather from borrowings. Since there is no reason to believe that these increased deposits would have been expended if the Government had not borrowed them, the increase should not be regarded as restrictive. The increase in the balances of other public bodies, however, may have in part represented a diversion of tax receipts into sinking funds and other

accounts. The indebtedness of public bodies other than the Federal Government remained virtually unchanged in this period.

3. Foreign balances.

The increase of \$600 million was probably associated with the inflow of gold and hence was not restrictive.

4. Financial deposits.

Although, as previously indicated, the increase in financial deposits may be overstated owing to the change in classifications arising from the abolition of consolidated returns in 1934, still the increase was substantial. It does not appear that it can be attributed to a net sale of securities or by redemptions. Life insurance company holdings of the securities of non-public bodies increased by over \$500 million in this period. There is some indication that business redeemed more bonds than it issued, although not to an amount comparable with the indicated increase in financial deposits. It is possible that a part of the increase in financial deposits may be attributed to the refinancing of mortgages by Government agencies but the bulk of such refinancing took the form of exchanges of Government guaranteed bonds rather than cash for mortgages. Even allowing for these and other types of debt redemptions it would still appear that a substantial portion of the increase in financial deposits must be attributed to some individuals' failure to spend all of their large salaries, the failure of insurance companies to invest all of their current receipts, and the failure of

individuals and institutions to spend or invest all of their interest and dividends. In other words, the increase in these balances represented in part a withdrawal of funds from the monetary income-disbursement stream and was a restrictive factor.

5. Business Balances.

In accounting for the increase in business balances we may proceed by a process of elimination:

(a) It was not attributable to increased borrowings from banks or from other sources. The net long-term indebtedness of all business units probably declined in this period. A comparison of the funded debt of 530 industrial corporations on December 31, 1933 and December 31, 1935, indicated a decline of \$251,000,000. The holdings of marketable securities of the same corporations, however, also declined by \$356,000,000. The cash holdings of this particular group of corporations increased from \$1.6 billion to \$2 billion.

(b) It is highly doubtful if the repatriation of capital on the part of American business could have occurred in an amount sufficient to account for more than a small part of the increase in business deposits. It is believed that the great bulk of the inflow of capital was for the account of foreigners.

(c) Finally, in view of the recovery movement and the extension of time and installment sales, it appears improbable that any excess of cash could have come about through a decline in the net indebtedness of individuals to corporations.

We arrive, therefore, at the conclusion that the major part of the indicated increase in business deposits must be attributed to the retention of receipts from sales of goods and services. It is perhaps possible to push this stage of the analysis one step further. Current receipts of business cover costs and profits, if any. Since labor and material costs, representing actual out-of-pocket expenditures, increased in this period, it would appear that the increase in business deposits is either a reflection of a failure to disburse money to the full amount represented by such costs as depreciation, bad debts, and loss on sale of capital assets, or to the full amount represented by profits, or both.

We may now seek to relate the above discussion of the sources of increases in different classifications of balances to a broad interpretation of business developments in the period under discussion.

The Federal Government disbursed funds which came in part from consumer, business and financial deposits, and in part from deposits newly created by the banking system. These disbursements were partly for refinancing purposes but mainly for purposes which directly increased the buying power of individuals. A previous unpublished study by Mr. Martin Krost and the present writer indicated that the net activity-increasing expenditures of the Federal Government amounted to over \$6 billion in this period. This figure was obtained by adding together those expenditures of the Government which appeared to increase spending and business activity

directly and subtracting tax receipts (except estate and gift taxes) which might be held to decrease spending and business activity. The actual net activity-stimulating figure is doubtless higher, since it is unlikely that the collection of corporate and personal income taxes in this period decreased private spending correspondingly.

Those funds disbursed by public bodies which went directly into people's incomes were probably used in large part to purchase goods and services, in part used to liquidate past indebtedness and in part "saved". Of the part saved, in turn, a portion was probably added to demand deposit balances, a portion to time deposits, and a portion went into financial deposits via insurance companies and purchases of stocks and bonds. A part of the resulting increase in financial deposits was again borrowed by the Government and respent.

The larger portion of Government disbursements to individuals which was spent directly for goods and services was in part disbursed in turn by business in the production of more goods and services, in part used by business to liquidate indebtedness, and in part was added to business balances. The same was doubtless true in the case of direct disbursements of public bodies for supplies and materials. Thus, business was able to add to its balances, refrain from borrowing, and at the same time increase its production and its disbursements to the factors of production. A portion of business disbursements was retained by consumers, finance and possibly non-Federal public bodies.

The increased disbursements of business increased incomes and the demand for goods, but the increased disbursements were in response to previous increases in demand. The process may be viewed as (a) an increased demand for the products of industry arising from the incomes earned by the factors of production, plus the incomes derived from Government spending, and (b) a further increase in demand resulting from the increased disbursements of business in response to the initial increase in demand. The wave-like movements of business were doubtless due largely to inventory changes, but we are here concerned with the broad upward movement. The continuation of activity-stimulating expenditures of the Government was necessary because the initial impetus of Government spending quickly lost its momentum in the conditions prevailing in this period. A portion of the receipts of both business and consumers remained unspent.

This interpretation of business developments is consistent with (a) the indicated increase in consumer, business and financial deposits, (b) the increase in the national income and production, and (c) the failure of business to borrow and spend the current savings of the community. The increase in deposits of all groups was made possible in very large part by the borrowing and spending by the Government of newly created deposits. Business was able to increase both its disbursements and its balances because a substantial portion of the income devoted to the purchase of the products

and services of business was not derived from the disbursements of business but from those of the Government. The failure of business to borrow the current savings of the community did not lead to a decline in incomes, since the current savings were in large part borrowed by the Government and passed back by it into the income stream. The collection and spending of corporate and personal income taxes and estate taxes by the Government resulted in a reduction of idle balances in the hands of taxpayers rather than a reduction of taxpayers' expenditures.

Unless we account for the excess of business sales over disbursements in terms of the increase in incomes due to Government spending, we will be forced to the view that consumers not only spent all their incomes derived from business on the products of business, but, in addition, drew down their balances and/or borrowed, and/or sold securities to institutions or savers -- in short, that the savings of consumers were a negative quantity. In view of (a) the direct evidence that Government spending increased some persons' incomes and (b) the indirect evidence of saving on the part of consumers, we are forced to reject the hypothesis that increased business disbursements constituted the motivating force in the recovery movement. The assumption that throughout all this period the fiscal policies of the Government were causing the income of the community to be in excess of the disbursements of business to the factors of production plus the payment of taxes, appears to be necessary to explain the concomitant increase in consumption and unexpended savings.

There were, of course, other factors in the situation. We are here, however, concerned with the broad picture and it is difficult to reconcile the various observable facts without placing heavy emphasis on the part played by the Federal Government in bringing about an increase in incomes and expenditures in the period under discussion.

My main purpose in the preceding discussion has been not so much to interpret a particular period as to illustrate how information of the character under discussion might be useful. If space permitted, other illustrations might be offered bearing upon the adequacy of a given volume of money to support an anticipated level of activity, upon the course of interest rates, upon the shifts in balances as between different economic groups that may be expected to occur in different phases of the business cycle, and the implications and repercussions of such shifts. For instance, if it is found that the balances of public bodies and finance are abnormally high in the depression phase of the cycle it may be anticipated that they will be gradually drawn down to more normal levels and shifted into industrial and personal holdings as recovery proceeds. Thus, the increasing monetary requirements of business and consumers incident to an expansion of production and incomes may be met without necessarily entailing a rise in interest rates or the creation of new money. Similarly, a shift into financial deposits in the peak or early recession phases of the cycle may be a very deflationary development taking place under cover of an unchanging volume of money. This

brings us back to the remarks at the beginning of this paper to the effect that data on the distribution of money would permit a significant advance in the understanding of the factors reflected in changes in income velocity.