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Some Stubborn Problems For Central Bank Policy*

By ALFRED HAYES

President, Federal Reserve Bank of New York

It is again a pleasant experience for me to meet with this group. I particularly look forward to these sessions as an opportunity to review developments and exchange ideas relating to our mutual concern with banking and the general well-being of our economy. When I considered possible topics for these remarks, a number of timely subjects came to mind, each deserving of thorough exploration. Rather than concentrate on any one of these to the exclusion of the others, however, I propose to address myself briefly to several stubborn questions which have been with us for some years and do not seem amenable to easy or quick solution.

Some of these problems are in the area of banking organization—relating to the development of an ever more efficient and healthy banking system in keeping with our developing economy. Some others are concerned with how best to apply our instruments of general monetary policy, through the existing banking structure, to foster the kind of sustained economic growth and viable system of world payments that we all want to achieve. The common strand that I believe we must keep in mind in approaching all these problems is that we are living in a world of change, calling for continual reappraisal of institutional arrangements and techniques of monetary control.

BANKING STRUCTURE

My first comments, then, concern banking structure. We might note that in the Second Federal Reserve District alone, during the past year, we have processed forty applications for merger or holding company acquisitions. This is clear evidence, I think, of existing strong pressures to adjust our banking structure to new requirements and conditions. In the face of these pressures, I have been troubled, as I know you have, by the absence of clear guideposts

pointing out the direction in which the nation's banking structure might be expected to develop. We are all aware of the vast changes that have occurred over several decades in the nation's organization for the production and distribution of goods and services to the consumer. In these developments we have seen a clear tendency toward larger, more flexible, and more efficient enterprises operating in extended market areas which seldom respect "banking district" or even state lines. Against this background there has been an understandable feeling on the part of commercial bankers that they, too, must adjust to long-range trends of this kind and must be prepared to offer the most complete and efficient banking services possible to these larger industrial and commercial units as well as to the public at large.

Indeed, before the recently increased concern at the Federal level with regard to banking concentration, natural economic forces had already resulted in a considerable consolidation of banking resources and organizations, where legislation made this possible—especially in areas of rapid economic growth. Many of the mergers and holding company acquisitions which took place almost unnoticed ten or fifteen years ago would probably be seriously questioned or even denied today. And yet there is little or no evidence that these past consolidations have had any adverse effect on the public interest or, in any meaningful sense, diminished competition. Instead, great gains have been made in the variety and extent of banking services, and competition is still very keen not only among commercial banks but between banks and a wide array of other savings and lending institutions.

Admittedly, we need to know a great deal more about the actual and specific effect of consolidation of banks on the scope and quality of banking services, if only to allay the fears of those who view it as a vague evil. It may even be the case that the geographical limitations on banking expansion have produced more actual concentration in certain areas than is either necessary or desirable. Perhaps one hopeful line of approach to the problem of banking

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structure would be to emphasize the "trading area" as an appropriate field of banking operation.

A similar regional concept was recognized at the time of the organization of the Federal Reserve System, with its twelve districts cutting across state lines. Specifically, I think a good case might be made for allowing any bank considerable freedom to operate branches (or affiliates if it were to prefer a holding company setup) throughout the economic area in which its head office is located—ultimately, perhaps, throughout its Federal Reserve District.

Of course, even if this were accepted as a valid longer term goal, progress toward it would necessarily be gradual and would have to take careful account of the views of the state authorities concerned in each case. It is important, however, for purposes of discussion and study to have some clear objectives in mind. And I suspect that, if a measure of agreement on broad objectives could be reached among banking authorities, banks, legislators, and the public they all serve, we would make some progress toward clarifying the present extremely muddled situation.

DECENTRALIZING SUPERVISION

I am wondering, too, whether the current uncertainty and confusion resulting from so much divided authority on bank supervisory matters might not be reduced through a greater degree of decentralization, whether or not accompanied by a concentration of authority in a single organization at the Federal level, as has been suggested. I would hope that, whatever the ultimate solution at a national level, perhaps a way might be found to place with a regional authority the initial responsibility for ruling on all questions of mergers, new branches, holding company acquisitions, and bank charters in a given area. There is a rough analogy, at least, for this kind of decentralization in our Federal court system, where only the most important issues involving matters of principle are carried to Washington for decision.

The kind of regional grouping I have in mind might include representatives of state banking authorities as well as of national authorities, and it might be possible to reach solutions that would be satisfactory to most of the major interests within the area. If these solutions differed in one or another respect from those reached under similar circumstances in another part of the country, there is no reason to assume that this would necessarily be damaging to the national economy. In fact, it would be quite in keeping with the long tradition under which each state has an important voice in the way banking facilities are expected to develop in its territory. State-wide branching, for example, need not be wrong for California just because

Illinois permits no branching at all. The consistency we should seek first should be with respect to the decisions that affect banks and other financial institutions which compete directly with each other.

RESERVE REQUIREMENTS

The consistency of rules applying to competing institutions is also involved in the question of Federal Reserve membership, with the somewhat more burdensome obligations of members to maintain reserves against demand and time deposits than are generally required of nonmember banks. I am heartily in sympathy with the view that the proper levels of reserves required for member banks should be under constant scrutiny and that changes should be made when necessary for reasons of equity as well as monetary policy. I hope, however, that commercial bankers will never lose sight of the primary purpose of reserve requirements—namely, to provide a convenient lever whereby the monetary authorities can influence the availability of bank credit. Were it not for the effectiveness of this highly impersonal and general mechanism, the authorities would have to fall back on a far more detailed and bureaucratic system of scrutinizing and regulating various classes of assets or liabilities, or even of individual transactions. This sort of control would be as objectionable to me as I know it would be to you.

I would hope, too, that sight not be lost of the fact that, if a reserve requirement system of this kind is to have any meaning, it must embrace a very large proportion of the nation's bank deposits, and no important bank should expect to be excluded from its coverage. I would hasten to add my hope that such banks will always find the obligations of membership substantially offset by its advantages and therefore in their own best interest; but in improving our services to emphasize these advantages, we must be careful not to interfere unduly with established bank-to-bank correspondent relationships as well as be mindful of the fact that our funds must be used only for purposes that clearly promote the public interest.

Recently there has been some particularly lively discussion about the Federal Reserve System's reserve requirements against time deposits. It has been pointed out, quite rightly, that many institutions which are in direct competition with the banks for such deposits are entirely exempt from reserve requirements. Recognition of this fact was one of the reasons lying behind the Board of Governors' recent reduction in time deposit reserve requirements from 5 per cent to 4 per cent. Perhaps more should be done eventually along these lines for the same reason. We must, nevertheless, keep in mind that the

relative size of the demand deposit component in the country's aggregate bank deposit structure has been shrinking and may continue to do so in the light of the growing tendency for all types of depositors to hold working balances to a practicable minimum in order to take advantage of interest-earning opportunities.

RATES ON TIME DEPOSITS

A closely related subject is that of official regulation of the maximum rates of interest that may be paid on time deposits of various maturities. The origin of these regulations lay, of course, in the fear of abuses, but I believe that with our improved bank examination procedures we need no longer rely on this method of combating whatever tendency may exist in some few banks to seek higher returns by sacrificing quality standards. Moreover, I am a little concerned with what seems to be a tendency for maximum rates to become the actually prevalent rates. I should think that a reasonable goal would be elimination of mandatory ceilings on time deposit interest rates, although there is a good deal to be said for having the Federal Reserve System and Federal Deposit Insurance Corporation retain the right to impose such ceilings if unusual circumstances might seem to call for it.

Turning from these more or less regulatory and administrative matters to some problems of current monetary policy, let me say first that I regard the Federal Reserve System's credit policies over the past year—and in fact over the past two and a half years—as being easy. The System has provided reserves liberally to support solid expansion in the reserve base, although it has avoided pushing out funds much faster than the economy could use them. Member bank free reserves, which can be taken as a rough clue to the current climate of reserve availability, have been maintained in a substantial positive position, necessitating only minimal use of the "discount window" by member banks. The total reserves of member banks, after adjusting for the effect of the reduction in reserve requirement ratio against time deposits, increased about 3 per cent from December 1961 to December 1962. Over the same period, the earning assets of all commercial banks increased nearly 9 per cent and by the largest dollar amount since World War II. The wide divergence between the rapid growth rate of total bank credit and the more moderate growth in total reserves can be explained largely by the very rapid expansion of time deposits which followed the changes in Regulation Q, since time deposits of course require a much lower ratio of reserves in back of them.

MONEY SUPPLY AND LIQUIDITY

Now, I recall that when I joined the Federal Reserve System I was intrigued and puzzled by the differing views of economists as to just what should be included in the term "money supply" and as to the economic significance of changes in the money supply, however defined. It is true that in recent years we have added a good deal to our general knowledge and statistical coverage in this field, yet I am almost as puzzled as ever as to the precise relationship between changes in money supply, or in total liquid assets, and in economic activity. For example, the money supply proper—that is, currency plus demand deposits—has risen only very moderately during the past two years. On the other hand, the picture is quite different if we add time deposits at commercial banks, or more generally all savings deposits as well; and the expansion is also very substantial if we measure the total of liquid assets, including short-term Government securities, held by the nonbank public. In fact, if we use the total of such liquid assets in relation to the gross national product as a measure of overall liquidity, we find that the country's total liquidity has been much better sustained in this expansion period than in any of the comparable postwar periods. This would seem to fit in with the common-sense view, which I share, that the general experience of bankers, businessmen, and the public at large suggests no dearth of available credit and in fact points to a very ample degree of liquidity.

Thus, while we cannot measure precisely to what extent our operations affecting money supply, total liquid assets, and general credit conditions are bringing results in increased consumer and investor spending, I do believe we have contributed to a financial climate that is generally encouraging to the economy. There are those who argue that our monetary policy has been unnecessarily restrictive and therefore harmful to the growth of the economy; but I can find no persuasive evidence to support this contention, and I suspect that, if money had been even easier, it would not have had any appreciable beneficial effect on business activity and might have encouraged undesirable speculative excesses in some directions. These conclusions seem to me valid, entirely apart from the obvious drawbacks of an easier policy from the standpoint of our international responsibilities, on which I shall have more to say later.

While I think we are justified in feeling that monetary policy has been making a significant contribution, I must also say that the total performance of the economy has not been so robust as this nation should be able to achieve with its ample resources and growth potential. In particular, I find it disappointing that our sluggish business

expansion of the past year has made no more appreciable dent in unemployment. The unemployment rate was down to about 6 per cent at the end of 1961, and it has hovered in a narrow range around 5½ per cent during the past year. It is also disappointing that we have seen thus far no stronger pickup in capital expenditures by businesses, although I believe that the tax credit plan enacted last year and the important revision of depreciation rules for tax purposes are already providing stronger incentives in that area.

TAX CUTS AND DEFICITS

Beyond these useful tax revisions which are already in effect, I believe that it would be extremely helpful, and indeed imperative for our economy, to have some significant tax reductions to stimulate both consumer and business spending. The Administration's current proposals for tax reductions, and the recent similar suggestions of various business and labor groups, reflect a growing awareness that, if economic growth and employment are to be stimulated by additional governmental measures, it is fiscal policy rather than monetary policy that should be looked to at this point. Let me emphasize, however, that in supporting a more stimulative fiscal policy I am not thinking in terms of higher Federal expenditures; any substantial tax reduction should be accompanied by strenuous efforts to restrain increases in Federal spending and to achieve material reductions wherever possible.

An effective stimulus to the economy as a result of tax reduction, I believe, would significantly ease the difficult problem faced by the Federal Reserve System in trying to meet its international and domestic responsibilities. With fiscal policy playing a more positive role in the domestic economy, the System would have greater scope as needed for actions conducive to a better international balance, while at the same time avoiding the excesses that may arise—and that in the past have arisen—when monetary ease is pushed too far.

Tax reduction would not only stimulate private spending and credit formation, but would also temporarily enlarge the Federal deficit. Both of these developments would tend to have some firming effect on interest rates, which would be helpful in checking capital outflows. The extent of this firming effect would depend, among other factors, on the degree to which a temporarily enlarged deficit would be financed within or outside the banking system. This is a matter on which I would not want to offer any hard and fast rules, particularly since so much depends on the volume of savings that may be channeled through commercial banks, but some rough limits can be

noted. Certainly, it is clear that, if the Federal Reserve System automatically provided the banks with all the reserves they needed to take up any Federal deficit, this process would not only vitiate the firming effect on the money market of increased Treasury borrowing, but—more important—could set in motion a highly inflationary chain of events. At the other extreme, to force a financing of the entire deficit outside the banking system might produce too great an offset to the stimulative effect of tax reductions—although of course the beneficial impact of tax rate reductions on incentives to spend and invest would still remain. In the final analysis, the appropriate extent of bank financing of a given deficit can be determined only in the context of what is happening to total bank credit and total liquidity, to the degree of slack in the economy in terms of unused manpower and capacity, to prices, and to the balance of international payments; but in all probability a large proportion of the budget deficit will have to be financed out of current savings.

Before leaving this question of tax cuts and deficits, let me underscore the point that I do not envisage here an unending stream of large Treasury deficits; this would be a disturbing prospect indeed. On the contrary, I would expect that rising national income would gradually produce a greater volume of revenues to make up for lower tax rates.

BALANCE OF PAYMENTS

Whatever merit a more aggressively easy credit policy might have for our domestic economy—and as indicated earlier I am doubtful that net gains would accrue even on that side in the present circumstances—I am convinced that such a policy would be highly injurious to our balance of payments. In viewing the United States balance-of-payments deficits of the last few years it is easy to reach conclusions that are either too optimistic or too pessimistic, depending on which elements are emphasized. I believe that we have made some progress toward solving the problem, but not nearly enough progress—and in some directions practically none at all. While we have come a long way from the time when few businessmen or even Government officials thought of the balance of payments as a subject entitled to high priority consideration, there is still a dangerous tendency in this country to feel that we can afford to orient our economic and financial policies almost entirely to domestic conditions with only perfunctory acknowledgement of the international risks that may be involved.

The full record for 1962 is still being compiled, but we do know that our total payments deficit last year—in the neighborhood of \$2 billion—was not so far below the \$2.5

billion level of 1961 as was hoped earlier, although it was substantially below the \$3¾ billion average of 1958-60. It is particularly disappointing that the deficit did not shrink further in the light of certain special transactions, such as the early repayment of long-term debts by some of our allies, which worked to reduce the deficit through means that cannot be counted on to continue year after year. Clearly, there is still a major job to be done.

In some respects the past year's results have been heartening. I find encouragement, for example, in the notable degree of cost and price stability achieved in this country in the past year or so, at a time when unit labor costs have been advancing rapidly in the principal countries of Europe. Yet it would be a mistake to rely on these trends, important as they are, to bring about as large an increase as is needed in our favorable trade balance. For one thing, there are limits—and they may not be very distant—beyond which some of the other industrial nations may be unwilling to go in permitting cost-price inflation in their economies. There is already a good deal of evidence of concern on this score on the part of the monetary and other governmental authorities in a number of European countries, and if these cost trends persist we can doubtless expect credit restriction or other measures to be used to counter them. Also, with stronger demand at home, it is not clear to what extent our business and labor leaders would adhere to a conservative policy with respect to wage settlements and pricing policies; yet the need for cost stability will be as great or even greater as domestic demand strengthens, given the typical stimulating effects on imports of an acceleration in business activity. In this connection it is sobering to note that United States imports increased by more than 10 per cent last year while our exports rose not much more than 2 per cent.

Turning to another major component of our payments problem, a laudable degree of progress has been made in reducing the heavy burden of our net Government outlays overseas, especially in the military segment. However, much remains to be done in this field, as well as in the area of a better sharing of economic aid burdens by the major industrial nations—a number of which have now achieved strong balance-of-payments positions. Larger contributions to the common cause by our allies are all the more essential in light of the new demands for aid that are constantly arising and that must be given sympathetic consideration.

CAPITAL FLOWS

While the two areas I have mentioned, i.e., the trade balance and Government outlays, are of unquestioned importance with respect to our long-run balance-of-

payments prospects, it would be a great mistake to neglect the contribution of private capital flows to the current deficit problem. Of course the outward flow of long-term investment funds carries with it the building of an ever stronger asset and income-earning position abroad; and it would be short-sighted indeed to ignore this useful aspect of our foreign investments, particularly where capital is flowing into productive investment channels. On the other hand, there is no denying that capital outflows, whether short-term or long-term, are adding importantly to the size of our deficit right now; nor can we deny that some of these flows are sensitive to relative levels of interest rates and credit availability, as well as to the comparative climates for profitable business investment. Since it would be wholly contrary to our basic economic goals to place any direct obstacles in the way of a free international flow of capital, we must give consideration to those factors that can be expected to influence the flow through normal market forces.

The sensitivity of these capital flows to credit market conditions is particularly acute in the case of short-term funds, but while there seems to be a growing understanding of our need to maintain rates on United States Treasury bills and other short-term market paper at reasonably attractive levels compared with rates in foreign financial centers, there is less appreciation of the point that comparative interest rates and credit availability are also important in the area of bank loans. Nor can we neglect the fact that international differentials in interest rates and degrees of market accessibility also have some relevance with respect to long-term financing. We can hardly afford to ignore these points when they are so clearly considered important by our foreign friends, and when recent experience also seems to demonstrate their validity. In time, it is hoped that the further removal of restrictions in foreign capital markets, and the further development of long-term financing mechanisms in those markets, will reduce the tendency for international financing to be concentrated in our market. This would be particularly appropriate, and welcome, in the case of financing needs that arise in the more advanced countries abroad. However, it is clear that we cannot expect this to happen fast enough to be of much help in solving our immediate problem, which is to eliminate our balance-of-payments deficit in the shortest possible time.

In setting our sights on prompt elimination of the payments deficit, it is worth remembering that we have piled up deficits totaling more than \$15 billion in the past five years, of which some \$9 billion has been reflected in increased foreign holdings of liquid dollar assets. This kind of build-up leaves us no choice but to assure our

foreign "depositors", as affirmatively as we can, that they do not possess a wasting asset. In particular, we cannot set aside the possibility that, if an adequate and timely solution is not forthcoming from other sources, monetary policy may be called upon to play a much more decisive role. And while it is perhaps too early to conclude that other sources will not provide the remedy, the Federal Reserve System must remain entirely flexible and ready to do its part.

INTERNATIONAL COOPERATION

In speaking to you a year ago, I reviewed some of the steps that had been taken recently by the Federal Reserve System and the Treasury, in close cooperation with our counterparts in the major European countries, to reduce the threat of excessive speculative flows and other potentially disturbing movements of funds across international boundaries. I would not like to leave you today without some further comment on these highly useful arrangements to help assure the stability of our international financial structure. It goes without saying that the dollar, firmly fixed to gold at a \$35 price, is a keystone in this structure; but the stability of all of the major exchange rates is also a prime contributing element of strength, and I have been greatly encouraged to find complete unanimity among the central bankers and Government authorities of the leading industrial nations that we have a common interest in protecting this stability.

The very existence of this cooperative spirit, and its clear recognition by the world's financial community, have been of great help in enabling the international financial structure to weather, with a minimum of disturbance, such crises as the severe stock market slump last spring, the Canadian difficulties of the early summer, and the recent period of high international tension resulting from the

Cuban episode. Let me add, however, that we have no illusion that these arrangements can be regarded as a substitute for more basic balance-of-payments correctives, and in no sense do they excuse any of the participating countries from doing its utmost to keep its own financial house in order.

At the same time, I believe that these arrangements have a real value apart from their current significance in checking or preventing undesired speculative flows. Both for us and for our major partners in world financial relations, they represent cautious and careful experimentation in the mutual holding of currencies, and reciprocal extension of credit facilities, under special circumstances and limitations. I see no reason to believe that we have reached the end of this road. On the contrary, it seems to me quite likely that we may progress a good deal farther along these lines during the coming years, as our balance-of-payments situation improves. This may well prove to be an effective avenue for bolstering world liquidity, which seems ample for the present but of course must grow as our international economy develops further. I would like, on behalf of all of us engaged in these efforts, to dispel the notion that we are merely fitting in the parts of a preconceived pattern. The approach is more pragmatic and tentative than any such concept of a "grand plan" would imply. Suggestions are made from many different sources in many different countries, and those that seem worthwhile are tried out, while those that work well are retained and strengthened. In the process, we are encouraging not only a fruitful interchange of ideas, but also a much improved mutual understanding of the economic problems faced in different countries. Over a period, we may succeed in building a financial structure which will be proof against all foreseeable assaults and which will make the best possible contribution to the kind of economic world we are all trying to achieve.

The Business Situation

Business sentiment remained confident as the new year began. The pace of economic activity, however, appeared to show little change from recent months, and the demand for goods and services continued well below the economy's productive capacity.

In December, industrial production, nonagricultural employment, and retail sales had all held close to their levels of the previous month, while new orders for durable goods and housing starts had declined somewhat from their high November rates. Construction contract awards and residential building permits, on the other hand, had risen sharply to record highs. For January, production data at hand indicate that output of steel ingots moved up for the third consecutive month and that automobile assemblies continued at the high rate that had prevailed since July. At the same time, consumer spending seems to have strengthened slightly, despite the adverse influence of newspaper and transportation strikes in a number of major cities, with unit sales of new cars apparently registering a sizable gain.

The future course of the economy will, of course, be importantly influenced by Congressional and public reaction to the President's tax program. This program is designed to give a direct impetus to both consumer and business spending and to spark a more rapid rate of economic growth through its cumulative impact on incomes and expenditures as well as through a strengthening of incentives and expectations. In terms of current income levels, the President's proposals would cut annual personal and corporate income tax liabilities by about \$10 billion over a three-year period, after allowing for offsets of about \$3.5 billion through adoption of reform measures. In fiscal year 1964, according to Administration estimates, the proposed lowering of tax rates would reduce tax revenues by about \$5.4 billion, with half of the revenue loss to be recouped by the expected gains in economic activity, by a requirement that corporations pay their income taxes on a more current basis, and by the initial effects of the suggested tax reforms.

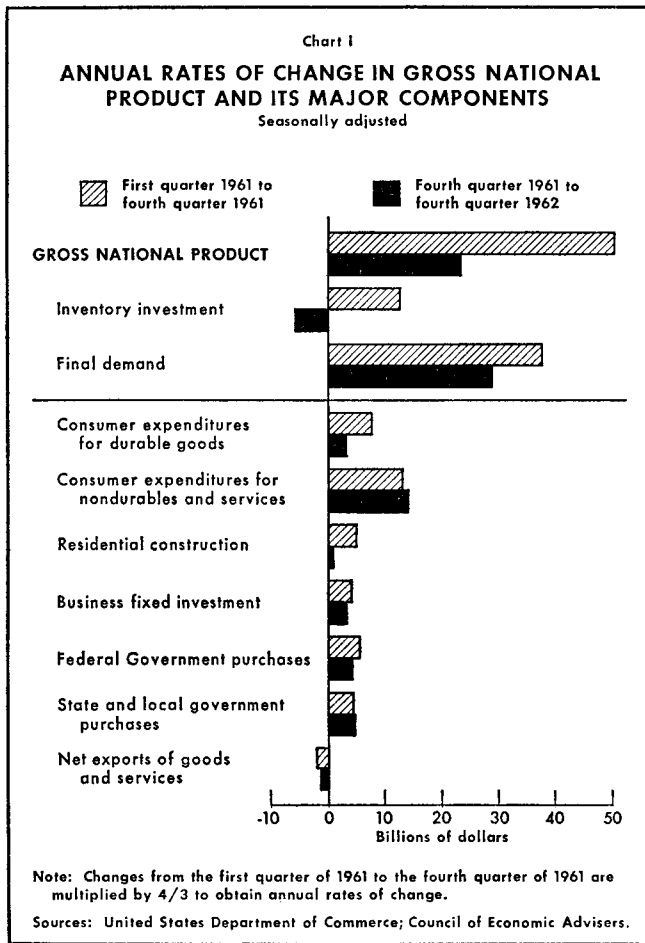
THE SECOND YEAR OF EXPANSION

Gross national product in the final quarter of 1962 reached a seasonally adjusted annual rate of \$562 billion, according to estimates by the Council of Economic

Advisers. The \$6.7 billion increase was twice as large as the modest advance registered in the third quarter, though it was not so large as the gains scored in the earlier part of the current business upswing. The pickup in the fourth quarter largely reflected a substantial rise in personal consumption expenditures, as the near-record rate of automobile sales pushed total purchases of durable goods up sharply. Government purchases of goods and services also rose at a somewhat faster pace than in the third quarter, in part because of the salary increase for Federal employees that went into effect in October. Total private investment outlays, on the other hand, continued to decline. Inventory accumulation was less than in the preceding quarter, even though the working-down of steel stocks was apparently no longer particularly significant, and outlays for both residential construction and business fixed investment edged downward.

The rise in GNP in the fourth quarter of 1962 brought total output for the year to an estimated \$553.6 billion, 6.7 per cent above the 1961 level. Such a full-year to full-year comparison, however, obscures the marked slowdown in the advance that occurred during 1962. Thus, GNP in the fourth quarter was only \$23.4 billion (or 4.3 per cent) higher than a year earlier in contrast to the \$50.4 billion (or 10 per cent) annual rate of rise in the final three quarters of 1961 (see Chart I). It has, of course, been typical of postwar cyclical upswings that the pace of advance during the second year lags behind that of the first year. And while this tendency has been even more pronounced in the recent period than in earlier postwar upswings, the recent pattern could at least in some measure be attributed to a more orderly forward movement and relative freedom from speculative excesses. However, given the fact that little progress was made in 1962 to narrow the gap between the economy's actual and potential output, the rate of advance in activity was clearly not satisfactory.

Much of the slowdown in the rate of expansion in 1962 reflected the sag in inventory investment after the first quarter. This was, of course, strongly influenced by the liquidation of steel stocks following the steel wage settlement, although generally cautious inventory policies were another major factor holding down the over-all rate of accumulation. There was also some deceleration in the advance of final demands. Outlays for residential construc-



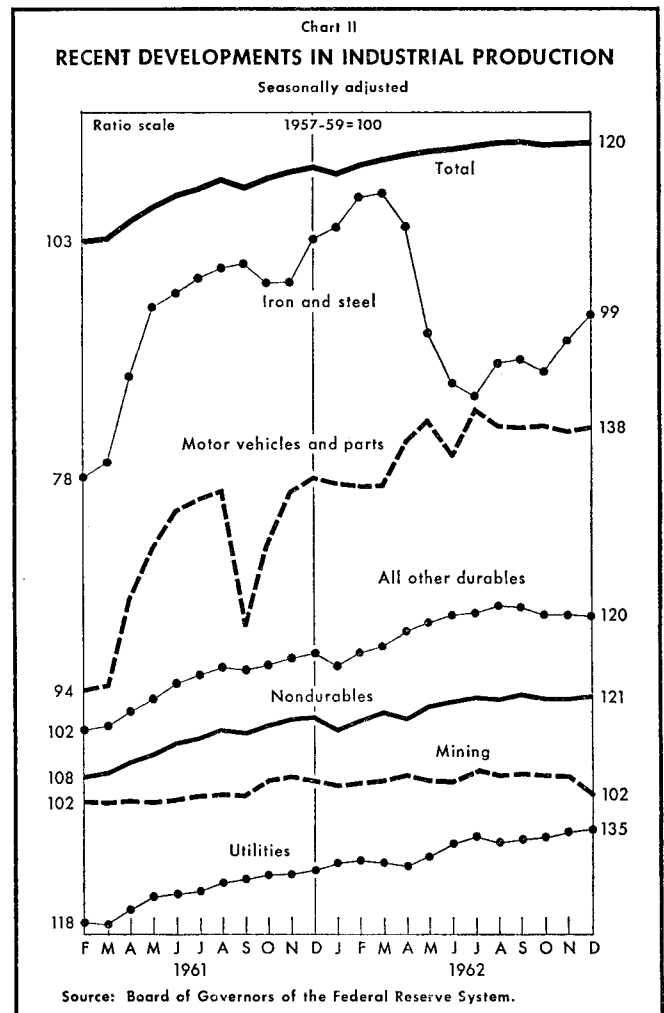
tion, for example, showed very little net increase during 1962 in contrast to a \$5 billion annual rate of gain during the final three quarters of 1961. The advance in government spending slowed slightly, and consumer purchases, limited by the slow growth in disposable personal income, rose by only \$17½ billion during 1962, compared with an annual rate of increase of nearly \$21 billion during the last three quarters of 1961. Business outlays for fixed investment in the fourth quarter of 1962 were \$3 billion higher than a year earlier. The rate of increase, however, slowed markedly after midyear. In the final quarter, as noted earlier, outlays showed a slight decrease.

RECENT TRENDS IN KEY INDICATORS

The index of industrial production, at 119.6 per cent of the 1957-59 average in December, continued to show virtually no change other than the usual seasonal variation. This index has fluctuated within a narrow range since July (see Chart II). In December, mining output—influenced

by severe weather conditions—registered a sharp decline, but this was offset by a sizable increase in steel production and by moderate, but reasonably widespread, gains in the output of other manufacturing industries. The continued rise in steel output would seem to confirm that the overhang of steel inventories, which had held back production for much of the year, has been largely—if not completely—eliminated. Indeed, there have been some reports that a few steel users are initiating plans to step up their rate of steel inventory accumulation in anticipation of a possible strike in August.

In January output of steel ingots rose further, largely in response to continued substantial ordering by automotive manufacturers. Automobile production (seasonally adjusted) remained close to the December level, as plants went on overtime schedules to make up for production time lost because of unusually severe weather. Whether the December decline in new orders for durable



goods—concentrated in industries other than steel—will significantly affect the production figures for subsequent months cannot as yet be determined. Month-to-month changes in the placement of new orders tend to be somewhat irregular, and thus the fact that the fourth-quarter average was quite high may have a larger impact on production than the December decline.

The employment situation also has shown little net change since mid-1962. Nonfarm payroll employment in December, according to the Bureau of Labor Statistics, remained at the level it had held since June. In January, the Census Bureau's series on seasonally adjusted total employment advanced for the second consecutive month, but still remained below the August record. Moreover, with the rise in the number of people looking for work, unemployment as a proportion of the civilian labor force went back up to 5.8 per cent. The unemployment rate

continues to be higher than at the comparable stage of any previous postwar business upswing.

The major stimuli to the economy continue to be consumer and government spending. Total retail sales in December remained at about November's record level, despite some seasonally adjusted decline in both automobile and department store sales. In January, weekly data on retail sales, available with year-ago comparisons for the first time, suggested a modest strengthening in consumer buying. Unit sales of new cars apparently rose significantly, while department store volume was somewhat below the high December rate, after seasonal adjustment. In the government sector, according to estimates made in *The Annual Report of the Council of Economic Advisers*, purchases of goods and services at both the Federal and the state and local levels are expected to increase this year at about the same rate as in 1962.

The Money Market in January

The money market was moderately firm in January, and the usual seasonal dip in short-term interest rates failed to materialize. Early in the month the market eased temporarily, as funds flowed to the money centers before the January 9 "country" bank settlement date. Subsequently the money market became firmer despite a modest expansion in nation-wide reserve availability, as reserve distribution shifted in favor of the country banks while dealer financing needs expanded. Later in the month, this firmness was maintained by a decline in reserve availability. The effective rate on Federal funds, which ranged from 2 per cent to 3 per cent through January 9, was generally 3 per cent over the remainder of the month. Rates posted by the major New York City banks on new and renewal call loans to Government securities dealers were quoted within a $2\frac{3}{4}$ to $3\frac{3}{8}$ per cent range through January 11 and within a 3 to $3\frac{1}{2}$ per cent range thereafter. During the month, dealers in bankers' acceptances raised their rates by $\frac{1}{8}$ per cent. The new rate on 90-day unendorsed paper moved to $3\frac{1}{4}$ per cent (bid).

In the market for Treasury bills, rates fluctuated narrowly during the month, as the impact of a substantial investment demand and the January 3 reduction in the British bank rate were counterbalanced by the spreading market view that monetary policy had become somewhat

less easy and by the firmer money market atmosphere during most of the month. The Treasury's announcement on January 22 that it would auction \$1 billion of 138-day tax anticipation bills on January 30, without permitting payment by credit to Tax and Loan Accounts, also tended to keep rates from moving lower. The June tax bills elicited good bidding interest, however, and the average issuing rate was somewhat below initial market expectations. On January 31 the newest three-month bill was bid at 2.93 per cent, unchanged from December 31.

In the Treasury bond market, interest in the early part of the month centered on the Treasury's successful auction of \$250 million of long-term bonds through competitive bidding by syndicates. Prices moved higher through mid-January in the wake of this successful sale. Around mid-month, a more hesitant atmosphere developed and prices declined, as market sentiment was affected by the prospect of large Federal deficits, by spreading concern about the balance-of-payments situation, and by the approach of the Treasury's February refunding. In late January a steadier atmosphere emerged in very quiet trading, as the market awaited the Treasury's refunding announcement.

After the close of business on January 30, the Treasury announced that holders of \$9.5 billion of Treasury securities maturing February 15 will have the right to exchange

them either for a new 3¼ per cent certificate of indebtedness to be dated February 15, 1963 and to mature February 15, 1964, priced at par, or for an additional amount of the outstanding 3¾ per cent Treasury bonds of 1968, originally issued April 18, 1962 and due to mature on August 15, 1968, also priced at par. The maturing issues eligible for exchange include \$5.7 billion of 3½ per cent certificates, \$1.5 billion of 2½ per cent notes, and \$2.3 billion of 3¼ per cent notes. No cash subscriptions for the new securities will be accepted. Subscription books were scheduled to be open February 4 through 6. The Treasury also revealed that the refunding operation would constitute the first step in a probable three-phase program. Subject to future market developments, the Treasury plans, upon completion of the February 15 financing, to announce a "junior" advance refunding adapted to the requirements of the market. The Treasury is also considering the employment for the second time of the newly developed technique for offering long-term bonds at competitive bidding. Subject to future conditions in the market, it appears likely that the bidding for the second such offering of long-term bonds will occur during the first half of April.

BANK RESERVES

Market factors provided reserves, on balance, during the five weeks ended January 30. Reserves released by the effects of a heavy seasonal decline in currency in circulation and a contraction in required reserves were only partially offset by a post-holiday decline in float that was both later and smaller than usual and by a rise in Treasury deposits at the Federal Reserve Banks. System open market operations, however, virtually absorbed the net reserves released by market factors. Outright System holdings of Government securities declined on average by \$514 million from the last statement period in December through the last statement week in January, although holdings under repurchase agreements increased by \$127 million. Net System holdings of bankers' acceptances (both outright and under repurchase agreements) rose by \$2 million. From Wednesday, December 26, through Wednesday, January 30, outright System holdings of Government securities maturing in less than one year declined by \$293 million while holdings maturing in more than one year contracted by \$35 million.

Over the five statement weeks ended January 30, free reserves averaged \$344 million, compared with \$308 million (revised) in the four weeks ended December 26. Average excess reserves rose by \$93 million to \$569 million, while average borrowings from the Federal Reserve Banks increased by \$58 million to \$225 million.

CHANGES IN FACTORS TENDING TO INCREASE OR DECREASE MEMBER BANK RESERVES, JANUARY 1963

In millions of dollars; (+) denotes increase,
(-) decrease in excess reserves

Factor	Daily averages—week ended					Net changes
	Jan. 2	Jan. 9	Jan. 16	Jan. 23	Jan. 30	
Operating transactions						
Treasury operations*	+ 29	- 95	- 54	- 69	- 13	- 202
Federal Reserve float	- 158	+ 44	- 336	- 85	- 692	- 1,227
Currency in circulation	+ 132	+ 317	+ 328	+ 333	+ 281	+ 1,391
Gold and foreign account	- 70	+ 54	- 21	- 28	+ 5	- 60
Other deposits, etc.	- 52	+ 76	+ 19	+ 37	- 22	+ 53
Total	- 118	+ 396	- 64	+ 189	- 442	- 39
Direct Federal Reserve credit transactions						
Government securities:						
Direct market purchases or sales	- 11	- 74	- 177	- 329	+ 77	- 514
Held under repurchase agreements	+ 99	- 120	-	-	+ 148	+ 127
Loans, discounts, and advances:						
Member bank borrowings	+ 407	- 651	+ 16	+ 91	- 71	- 208
Other	+ 1	-	- 1	+ 1	-	+ 1
Bankers' acceptances:						
Bought outright	+ 5	+ 7	+ 2	- 2	+ 2	+ 14
Under repurchase agreements	+ 27	- 25	- 5	+ 3	- 12	- 12
Total	+ 529	- 862	- 166	- 235	+ 144	- 590
Member bank reserves						
With Federal Reserve Banks	+ 411	- 466	- 230	- 46	- 298	- 629
Cash allowed as reserves†	+ 343	- 317	+ 35	- 140	+ 14	- 65
Total reserves†	+ 754	- 783	- 195	- 186	- 284	- 694
Effect of change in required reserves†	- 281	+ 187	+ 280	+ 147	+ 164	+ 497
Excess reserves†	+ 473	- 596	+ 85	- 39	- 120	- 197
Daily average level of member bank:						
Borrowings from Reserve Banks	714	63	79	170	99	225
Excess reserves†	1,034	438	523	484	364	569
Free reserves†	320	375	444	314	265	344

Note: Because of rounding, figures do not necessarily add to totals.

* Includes changes in Treasury currency and cash.

† These figures are estimated.

‡ Average for five weeks ended January 30, 1963.

THE GOVERNMENT SECURITIES MARKET

Treasury bill rates fluctuated within a narrow range through most of January. A strong interest was shown in the special January 9 auction of \$2.5 billion of one-year bills which raised \$500 million in new cash, and the average issuing rate of 3.015 per cent was somewhat below earlier market estimates. After the regular bill auction on January 7, the Treasury ceased to add to the weekly supply of new bills, and this also tended to reinforce the downward rate influences. As the month progressed, investor demand for bills remained good but apparently fell short of dealers' expectations. Dealer bill inventories continued high longer than is normal for January. At the same time, there appeared to be a growing

belief in the market that monetary policy had become somewhat less easy. Market caution was reinforced by official comments on the balance-of-payments and the prospect for additional gold outflows in early 1963. These suggested to the market the possibility of further changes in credit policy. Meanwhile, the firmer money market tone which emerged prior to midmonth at times caused the marginal cost of financing dealer inventories to exceed the yield on securities carried. In this environment, Treasury bill rates tended to move higher beginning at midmonth. Toward the end of January, however, a continuing customer demand succeeded in reducing dealer inventories and bill rates stabilized.

In the final regular auction of the month on January 28, average issuing rates were set at 2.917 per cent for the new three-month issue and 2.972 per cent for the six-month bills, virtually unchanged from the rates established in the last auction in December. On January 30, as noted above, the auction of \$1 billion of June tax anticipation bills attracted a good interest, with the average issuing rate set at 2.929 per cent.

In the market for Treasury notes and bonds, attention focused early in the month on the above-mentioned auction of \$250 million of long-term Treasury bonds. (Details of the auction, in which the two top bids were only \$275 apart, were presented in last month's *Review*.) The new 4 per cent issue of 1988-93 was accorded an enthusiastic investor response when reoffered by the winning syndicate at par and was reported to be oversubscribed only a few hours after the auction. The bonds immediately moved to a premium in "when-issued" trading, and by January 11 had risen to $100\frac{1}{32}$ (bid).

Prices of outstanding intermediate and longer term issues moved irregularly higher in early January, strengthened by the success of the Treasury bond auction, the reduction in the British bank rate, and a moderate investment demand which encountered only a limited volume of offerings. Prices generally receded from about January 17 to 23, however, as the market weighed the implications for interest rates of a large Federal deficit in fiscal 1964 and later years which was foreshadowed by the President's State of the Union and Budget messages. Market caution was also fostered by the monetary and balance-of-payments considerations already mentioned, news of a decline in the gold stock, and the approach of the Treasury's February refunding operation. By January 22, the new 4 per cent bonds were bid at $99\frac{30}{32}$, and most longer term bond issues had moved $\frac{1}{32}$ to $\frac{1\frac{1}{2}}{32}$ below their midmonth highs.

In the last few days of the month, a steady to firm atmosphere returned to the market, where activity was relatively quiet as the refunding terms were awaited.

Market reaction to the refunding announcement was generally favorable, with rights moving to premium quotations of $\frac{1}{32}$ to $\frac{1}{2}$, while maturities close to the reopened 1968 issue showed small declines. Over the month as a whole, prices of Treasury notes and bonds generally ranged from $\frac{1}{32}$ higher to $\frac{2}{32}$ lower.

OTHER SECURITIES MARKETS

Prices of tax-exempt bonds changed little in the first half of January. Corporate bond prices edged up, in response to the success of the Treasury bond auction, coupled with sizable reductions in dealer inventories. Subsequently, however, the prospect of a substantial fiscal 1964 deficit induced considerable hesitation in these markets. The tax-exempt sector was also adversely affected by an expanding calendar of forthcoming issues and by the rapid accumulation of dealer inventories that resulted from the large volume of recent flotations. Against this background, prices of tax-exempt bonds generally receded after midmonth while corporate issues were generally steady. For the month as a whole, the average yield on Moody's seasoned Aaa-rated corporate bonds declined by 1 basis point to 4.21 per cent, while the average yield on similarly rated tax-exempt bonds rose by 3 basis points to 2.97 per cent.

The total volume of new corporate bonds reaching the market in January amounted to approximately \$345 million, compared with \$245 million in the preceding month and \$270 million in January 1962. The largest new corporate issue marketed during the month consisted of \$70 million $4\frac{1}{4}$ per cent Aaa-rated refunding mortgage bonds maturing in 2000. Reoffered to yield 4.21 per cent, the bonds—which are not redeemable for five years—were accorded a fair reception. New tax-exempt flotations during the month totaled roughly \$890 million, as against \$455 million in December 1962 and \$885 million in January 1962. The Blue List of advertised dealer offerings of tax-exempt securities rose by \$47 million during the month to \$570 million on the final day in January. The largest new tax-exempt offering during the period consisted of \$193 million of various-coupon municipal revenue bonds. The offering was made in two parts comprising \$104 million of Aaa-rated bonds due in 1965-85 and reoffered to yield from 1.70 per cent in 1965 to 3.00 per cent in 1985, and \$89 million of A-rated bonds due in 1964-81 which were reoffered to yield from 1.65 per cent in 1964 to 3.10 per cent in 1981. The combined offering was well received. Other new corporate and tax-exempt bond issues marketed during the period were accorded mixed receptions.

Forecasting Float*

In the implementation of credit policy it is important for the Federal Reserve System, and particularly the Manager of the System Open Market Account, to obtain the best possible estimates of day-to-day changes in bank reserve positions. For this reason, the Federal Reserve Bank of New York has for many years made estimates of the daily changes in each of the principal factors which supply or absorb bank reserves.¹ One of the more important of these factors is Federal Reserve float—credit extended to member banks as a by-product of the check collection process—since float is subject to large and often erratic fluctuations. It is not unusual, for example, for the amount of float outstanding to change by as much as \$200 million in a single day. In mid-December, moreover, the daily variation in float may be as much as \$500 million.

The Federal Reserve System currently processes more than four billion checks a year, with a total value of over \$1.3 trillion. It would be a superhuman task for the Reserve Banks to keep track of each individual check and to credit the account of the bank which deposits it for collection at the time when payment is actually received from the paying bank. Instead, the Reserve Banks grant credit for checks deposited for collection according to a time schedule based primarily on the location of the drawee banks relative to their Reserve Bank office. The number of categories varies somewhat from Reserve District to Reserve District, but in general the time schedules provide that credit is to be granted immediately, or with a one- or two-day deferment. In line with this procedure, banks presenting checks for collection through the Federal Reserve System are required to sort them not merely according to destination but also according to the time schedule. The banks then receive credit automatically for the total amount of checks in each category on the days set by the schedule, even though not all the checks in a particular sort

are collected by the time credit is granted. It is the granting of credit for such checks in advance of collection that constitutes Federal Reserve float.

The System's inability to collect all checks according to schedule usually reflects one or more of several influences. In some cases it is not possible to collect the checks within the time limits set, even if there are no unusual processing or transit delays (time schedule float); in others the Reserve Banks are unable to process the checks on the day of receipt (holdover float); and in still others bad weather, strikes, or other factors delay the delivery or payment of the checks (transit float).

Time schedule float develops primarily when a bank in one District deposits for collection checks drawn on a "country" bank in another District. Under the present time schedule, credit for checks drawn on banks in areas where no Federal Reserve Banks or branches are located is granted two business days after such checks are presented to a Federal Reserve office. (These checks are known as "two-day deferred items".) If the depositing and drawee banks are located in the same Federal Reserve District, the checks can normally be collected in the allotted time. But if they are in different Districts, it takes at least three business days after the checks are deposited to collect them, given present transportation facilities.² Thus, one-day time schedule float is necessarily created for all such items. On the day they are deposited, the checks are generally processed by the receiving Federal Reserve office and, as a rule, then sent by air to the appropriate Reserve Bank. If flying weather is normal, the checks will arrive early the following morning. If the checks are processed and transmitted by the Reserve Bank office that day, they will generally arrive at the drawee bank the following business day, the day on which the original depositing bank automatically receives credit from its Federal Reserve office. But still another day must elapse before the presenting Federal Reserve Bank can receive payment from the drawee bank.

Holdover float arises because the Reserve Banks, for reasons of economy and efficiency, generally attempt to keep the number of employees in their check collection de-

* Irving Auerbach had primary responsibility for the preparation of this article.

¹ For a description of the use of the reserve projections by the Manager of the System Open Market Account, see Robert V. Roosa's *Federal Reserve Operations in the Money and Government Securities Markets* (Federal Reserve Bank of New York, 1956) Chapter VII.

² These checks are commonly called inter-District country items.

partments at a level sufficient to process more-than-average work volume but less than the peak loads. Since the daily volume of checks deposited for collection fluctuates widely, holdover float is created in peak periods.

Bad weather is usually the main factor behind transit float. Since air transport is used extensively to ship checks between Federal Reserve offices, inclement weather can and does result in large increases in float. But schedules may also be disrupted by strikes or other factors.

PREDICTABILITY OF FLOAT MOVEMENTS

The problems in forecasting float stem not so much from the fact that the daily swings are large³ as from the erratic nature of many of these swings. Float moves within a reasonably predictable pattern from year to year and month to month, but day-to-day movements are difficult to anticipate. Although daily average levels of float in the different months have in recent years ranged between about \$800 million and approximately \$2.2 billion, it is usually possible to predict such levels within \$50 million. By contrast, the differences between actual and projected levels for particular days are frequently large and at times amount to as much as \$200 million or even more.

One reason why it has proved difficult to make more accurate forecasts of changes in float is the uncertain behavior of the weather. Each month of the year characteristically has a number of days of inclement weather which disrupt airline schedules and delay the delivery of checks, consequently increasing float. Needless to say, it is impossible to pinpoint in advance the particular days within the month when the weather will behave in this fashion.

Another source of difficulty is the fact that each day's volume has to be completed in time to meet certain outgoing plane, train, or truck schedules. Even if the check collection departments at various Federal Reserve Banks work late hours on heavy volume days, float will increase by the amount of the checks that were not processed in time to be dispatched that day by the available transportation.

Holdover float also depends to some extent upon the day of the week when the peak monthly volume occurs. Float tends to be lower if the largest influx of checks occurs on a Friday rather than on a Monday since more overtime work can be scheduled on week ends. However, experience with the various possible combinations of peak levels of float falling on different days of the week is not sufficient to offer much assistance to the forecaster.

³ In 1962, daily float levels ranged between a low of \$740 million and a high of \$3,107 million.

FORECASTING TECHNIQUES

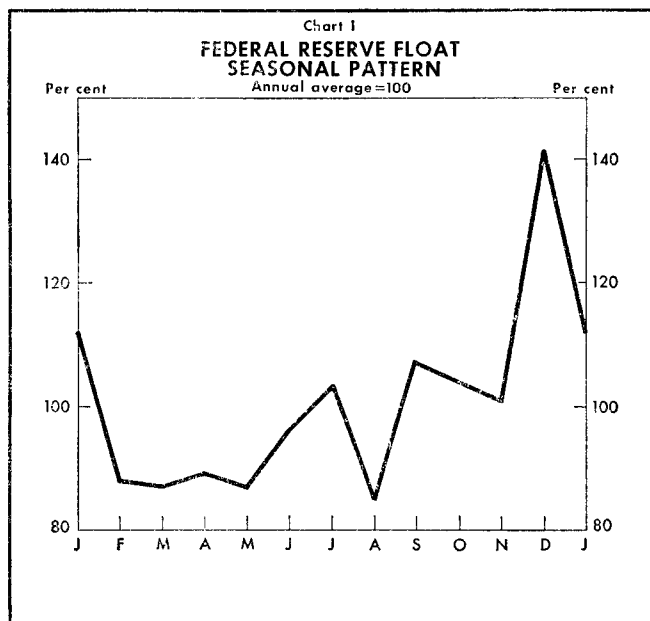
The procedure used to forecast daily fluctuations in the level of float begins with an estimate of a base (i.e., the daily average level) for the year. Seasonal factors calculated by standard statistical methods are applied to the base to derive monthly estimates. Intramonthly and intraweekly patterns are applied to the monthly average to obtain estimates of the daily levels—and ultimately of the daily changes in levels. However, in the final stages considerable subjective judgment is introduced, since no purely mathematical procedure has been evolved which would make a satisfactory allowance for year-to-year shifts in the day of the week on which a particular day of a month falls.

DERIVING THE BASE LEVEL. The base level is generally selected by extrapolating the observed trend, unless there is reason to believe that basic changes have occurred or will emerge in the future. The trend or cyclical fluctuation in float does not closely parallel the secular growth or changes in the volume of checks being cleared and collected through the Federal Reserve System. For example, during 1956 and 1957 the average daily amount of float outstanding over the year was reasonably close to \$1.1 billion. It dropped to about \$1.0 billion during the next two years, rose to a level of \$1.2 billion in 1960, and advanced to \$1.3 billion in 1961. However, the number and dollar amount of checks flowing through the Reserve Banks rose in each of these years.⁴

The long-term fluctuations in float are primarily related to such factors as changes in the deferred-availability time schedule, technological improvements in the check processing operation, and the capacity of the Federal Reserve offices to process checks. On the infrequent occasions when modifications in the time schedule occur, their effect on the trend is allowed for in preparing the estimates. Improvements in processing capacity or in the productivity of the check departments are difficult to gauge in advance, but once made their effects can be taken into consideration.

OBTAINING MONTHLY AVERAGE LEVELS. The monthly average levels which are used in this Bank's forecasting procedures are derived by multiplying the base level by the monthly seasonal factors shown in Chart I. The seasonal variations in float are pronounced and reflect several different influences. Float is at its lowest level in August, because business activity is then at a seasonal lull. It reaches its annual high in December—running at levels that are

⁴ Between 1955 and 1961 the annual volume of checks processed by the Reserve Banks rose by 25 per cent in terms of dollars and 24 per cent in terms of number of items.



about 40 per cent above the year's average—principally because of the mail delays around Christmas.⁵ The relatively high average level of float for January is largely attributable to the carry-over of a heavy volume of checks from December. Bad weather, of course, also frequently contributes to the volume of float during these two months.

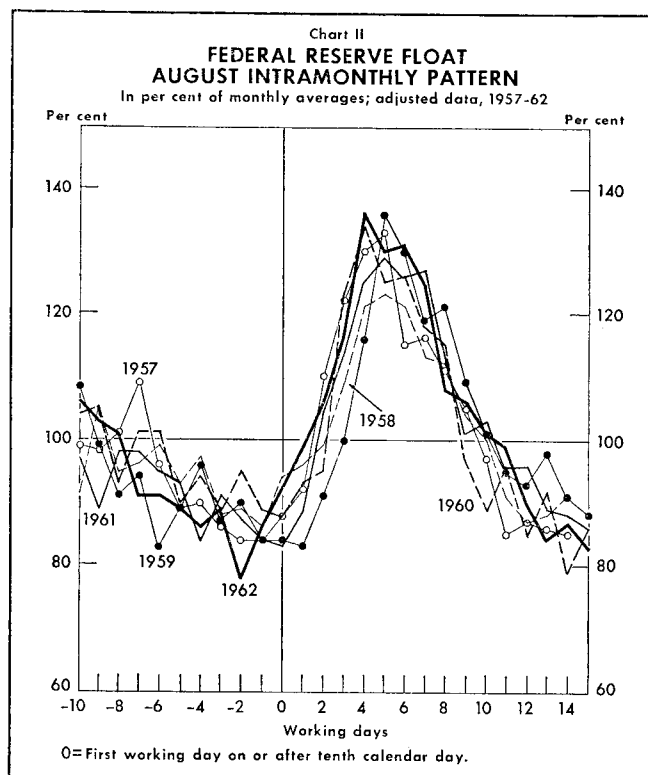
Float rises sharply in June and September, when Federal Reserve clearing facilities are congested by the combined influx of checks for corporate and individual income taxes. In the latter month, there is also the added influence of the seasonal revival in business activity. During March, float remains relatively stable for, although corporate tax checks are large in dollar amount, they are comparatively few in number and do not by themselves unduly overburden the System's check collection facilities. A slight increase in float occurs in April, owing to the payment of final and first-quarter individual income taxes. The number of checks associated with this payment is much larger than those written to pay corporate taxes. The increase in float for April is generally considerably less than the one associated with June, however, since in April the System does not have to process both corporate and individual tax checks simultaneously.

⁵ December is the "high" month despite the fact that, both in numerical and in dollar terms, more checks are generally cleared in November. Apparently, the redemption of Christmas Club deposits in November accounts for an important part of this difference in check volume between the two months.

Float generally increases in July, despite a decline in check volume, because this is the beginning of the vacation season for the experienced high-output personnel on the Reserve Banks' staffs and the time when new high school graduates are added to the force. Both factors tend to reduce the production rates of the Reserve Banks' check departments.

INTRAMONTHLY PATTERNS. Within each month, float typically follows a bell-shaped curve, with the peak falling around the middle of the month and either a plateau or a slight upturn developing around the close (see Chart II).⁶ This pattern chiefly reflects the influence of hold-over and time schedule float. Many business firms bill their customers for outstanding accounts receivable at the end of each month and allow a discount if the debt is paid within ten days. Otherwise, the full amount is due at the end of the next month. Apparently, a majority of the bills are paid shortly before the tenth of each month. Thus, given the mail or delivery times to the payee, to the commercial bank, and to the Reserve Bank, float begins to rise on the tenth and reaches a peak around the fifteenth. If

⁶ The bell shape is not fully apparent in this chart, since the chart begins with the data for the closing days of the preceding month in order to illustrate the transition between the two months.



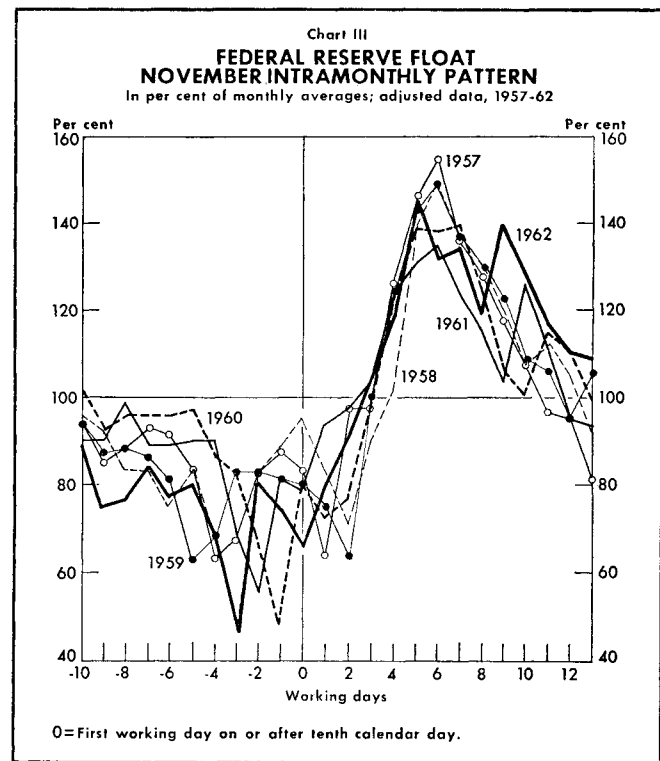
tax checks are due, as noted above, the midmonth peaks are elongated. Float either rises again at the end of each month—though only slightly—or levels off, and then drops slowly in the succeeding month (except in January) until a trough is reached shortly before the tenth.

Each month of the year, however, is subject to a number of unique influences which affect the basic bell-shaped monthly pattern differently. Therefore, special intramonthly “seasonal” patterns have been developed for each month of the year. The month-to-month differences stem primarily from the effects of holidays that are observed nationally or in particular regions of the country and from the influence of tax collections. In addition, the very large amount of holdover and transit float that develops in December and carries over into January causes the latter month to be the only one in which float is higher at the beginning of the month than in the middle.

Each of the quarterly tax months has a somewhat higher peak at the middle of the month than is common for the other months and a second but more moderate peak around the twenty-second. The latter rise is attributable to the influence on float of certain large tax checks drawn on out-of-town banks which temporarily retain all or part of the funds by crediting them to the Treasury’s Tax and Loan Accounts. In June and September (when both corporate and individual income taxes are payable), the midmonth peaks tend to be higher than those for the two other tax months. Also, as a result of individuals’ tax payments, April’s pattern diverges from the bell-shaped curve in that float tends to remain at a plateau for a number of days after the middle of the month. In October, due to the influence of the Columbus Day holiday, float drops precipitously shortly after the tenth of the month and rises sharply over the next few days. Finally, in December, when float reaches unusually high levels, sharp declines can be expected on each of the last three Mondays of the month, or on the next working day if Monday is a holiday. This results from the additional time available over the week end to catch up on any backlog of work and to allow delayed checks to reach their destination.

In making estimates for a particular month, the daily levels of float (adjusted by the reciprocal of the intraweekly “seasonal”) for the past six years are plotted on a chart in the form of percentages of the daily averages for the month.⁷ The data are plotted in terms of the number of

⁷ Relative values are used instead of absolute amounts in order to have the curves reasonably close to each other. If there were any marked changes in the absolute levels from year to year, the curves would be distributed over different areas of the chart and would be unsuitable for preparing patterns.



working days preceding and following the tenth calendar day of the month (see Charts II and III).⁸ This arrangement provides the most uniform alignment of each year’s peak and trough with those of other years.

In deriving an estimate of the daily level of float, the daily figures for several past years are studied and the mode of the various observations for each day is determined by inspection. Points that are substantially above or below the others are ignored, especially if the observation is known to have been the result of a storm, strike, or some other special circumstance.⁹ If the observations are not clustered in a narrow area, greater weight is given to the values for the more recent years.

There are, however, always a number of days when the spread between observations is rather wide—even in August, the month with the most consistent year-to-year float behavior. For example, in Chart II, which shows the intramonthly pattern for August, the highest value on the third working day after the tenth is 23 percentage points above the lowest value. (In absolute terms, this amounts to about \$290 million.) When there is such a large spread,

⁸ The tenth of the month is relevant because of the pattern of bill paying outlined earlier.

⁹ Such facts are noted on the charts.

it is difficult to obtain a reliable forecast for that day. Even when the observations for a given day are very close, there is still no certainty that the next year's level will be in the same area. Nevertheless, a general pattern is evident for the month of August and a similar one is apparent for each of the other months, even those where the deviations from "normal" are larger or more frequent.

HOLIDAYS. Special problems arise in months that include national or important regional holidays. Each holiday has a distinctive influence on float. In general, however, holidays affect float as follows: a moderate decline on the holiday (if it is observed in only parts of the country), a sharp decline the day after, and a steep rise for a few days thereafter. The additional time available to collect and possibly process checks accounts for the decline, but the subsequent accumulation of checks after the holiday results in an increased workload at the Reserve Banks and consequent increases in holdover float. Since many holidays do not fall on the same days of the week each year and may affect different workdays within the month, no clear-cut

pattern of float behavior emerges on the regular monthly charts for periods affected by such a holiday. This is evident in Chart III which shows the intramonthly fluctuations for November, a month which has three holidays—Election Day, Veterans Day, and Thanksgiving Day.

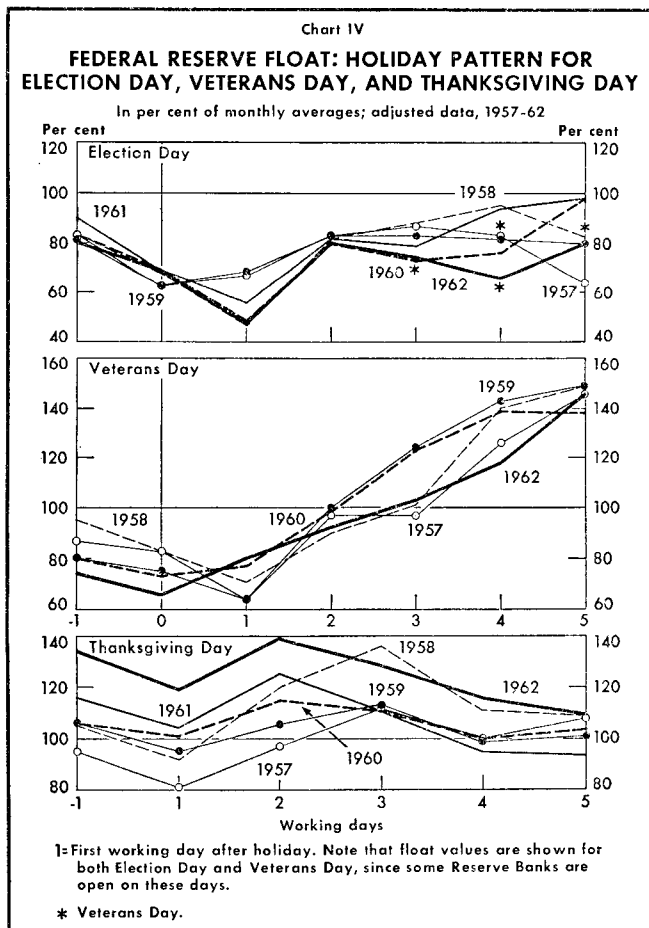
The effect of each of the major holidays may be analyzed more effectively if the figures on the amount of float outstanding around the holiday are aligned in terms of the days preceding and following the holiday (compare Charts III and IV). In making allowances for holiday influences in the float projections, the patterns derived from special holiday charts, such as Chart IV, are superimposed on the monthly charts.

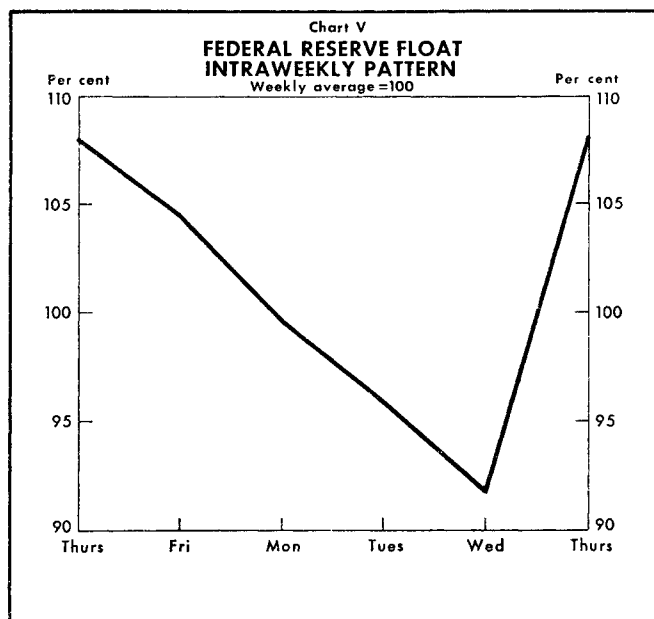
After the modal points for each day of the month (adjusted for any holidays) have been selected, the values are adjusted so that their average equals 100. These daily relatives are then multiplied by the estimated daily average for the month, to arrive at an estimated level for float for each day of the month.

ADJUSTING FOR INTRAWEEKLY FACTORS. As a final step, the daily levels obtained from the monthly charts are adjusted for an intraweekly "seasonal". This intraweekly pattern is indicated in Chart V. The intraweekly high is reached on Thursdays when the level tends to be 8 per cent above the daily average for the week, and the low occurs on Wednesdays when it is about 8 per cent below the week's average.

Time schedule float is partly responsible for the weekly pattern. The remainder is attributable to the effect of the week end on check flows. Over the week end the number of checks mailed increases, as does the time in which these checks have to arrive at their destination before the next normal working day. Consequently, banks receive the largest influx of checks for the week on Mondays. In turn, Tuesdays are the peak volume days for the Reserve Bank offices. Since each inter-District country item automatically gives rise to float two business days later, there is a marked increase in float on Thursdays. On Fridays, float tends to decline moderately, reflecting the collection of the checks that give rise to float on Thursdays, offset in part by the float increase caused by the country items that enter the Reserve System on Wednesdays.

Mondays, on which float used to decline sharply, now have a tendency to show a more moderate contraction. This behavior reflects differing Reserve Bank practices with respect to counting Saturdays for credit availability in intra-District sendings. In Reserve Districts where Saturday is counted as a business day, a large number of banks are now closed on Saturdays. Consequently, checks sent to these banks on a Friday are not processed until Monday and the Reserve Banks do not receive payment until Tues-





day. But since the Reserve Banks are obligated to give reserve credit on Monday, a large increase in float generally occurs on this day in these Districts. In Districts where Saturdays are not counted as business days, but where some commercial banks are open, the opposite situation occurs. The proceeds for some checks sent out on Friday are received by the Reserve Banks on Monday but reserve credit is not granted until Tuesday. This provides some offset to the float which is created by the Saturday closings in the first group of Districts. In the remaining Districts, virtually all commercial banks are closed and the Reserve Banks in these Districts do not count Saturday as a business day. However, their check operations also

tend to reduce float on Mondays because of the extra work and delivery time available over the week end.

The decline on Tuesdays reflects mainly the influence of the collection of Fridays' intra-District sendings by the Reserve Banks that count Saturday as a business day. A decline in the volume of new checks entering the System's collection facilities after the week-end peak is the primary reason for Wednesdays being the low point in the week.

When a full holiday falls on a work day, the intraweekly pattern must be realigned. If the holiday occurs on a Monday, for example, Tuesday's behavior is comparable to Monday's and Friday's to Thursday's. Accordingly, each adjustment factor other than Friday's is shifted forward one day, and the change that would be allowed for Friday is integrated into the estimate for the following Monday. On the other hand, if there is a holiday on which some Reserve offices remain open, the adjustment factors are themselves adjusted to the extent that the intraweekly pattern is interrupted by the holiday. For example, if the Reserve offices that are closed for the holiday account for 40 per cent of float, then the adjustment used on the day of the holiday would be 60 per cent of its regular value and the remainder would be transferred to the following business day.

ADJUSTING FOR FORECASTING ERRORS. Since actual float figures become available with only one day's lag, it is possible to reappraise float estimates daily to take account of current developments. If the estimates should deviate sharply from the actuals, a continuing comparison of estimates and actuals provides some clue as to whether the monthly average level needs to be revised or whether adjustment is needed only in the estimated changes for the days ahead. Nevertheless, determining whether a large error is due to a faulty estimate of the monthly average or is only a temporary aberration is largely a subjective judgment based upon experience and "feel" for the data.