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Volume Author/Editor: Michael Michaely

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GERMANY

1. Policy Instruments

MONETARY POLICY

Monetary policy in Germany is conducted by the Deutsche Bundesbank, which was established by the Bank Act of July 1957. The Bundesbank is headed by a Central Bank Council, which consists of the president, the vice president, and the presidents of the Central Banks in the states (Länder). All of these are appointed by the President of the Federal Republic. The *Länder* Central Banks are, in fact, branches of the Bundesbank. Before 1957, central banking in Germany was conducted by the Bank Deutscher Länder [BDL], which was established in November 1948. This bank differed somewhat in concept from its successor by having a more decentralized structure. It was conceived as the coordinating body of the Länder Central Banks, and its president was elected by their directors. However, the differences in mode of operation between the Bundesbank and its predecessor, the BDL, were of minor significance.

The Bundesbank is autonomous, and is not subject to any direction by the federal government. The 1957 Bank Act provides for participation of government representatives—without voting rights—in meetings of the Bundesbank Council, and of the Bundesbank president in the government's deliberations on monetary policy. But the Bundesbank is not bound in any way by the government, nor is it committed to fulfill any government request or requirement. The Bundesbank does, of course, act as the government's banking agent. The federal government and the *Länder* are committed to hold their deposits at the Bundesbank. They may hold deposits at other banks only with the Bundesbank's consent. Under this provision the latter has granted the Länder governments rights to hold deposits, within specified

quotas, at certain financial institutions. The Bundesbank is entitled to grant the federal government, the *Länder,* and certain public Special Funds short-term credits within quotas specified in the Bank Act. This does not mean, however, that the Bundesbank is committed to extend these credits. Decisions on credits within the quotas are made at the Bundesbank's discretion.

The Bundesbank has at its disposal all of the major conventional tools of monetary policy and has used them extensively. These instruments will be surveyed here briefly.

Discount Rate. The Bank buys and sells short-term bills (up to three months) which fulfill certain requirements at the fixed discount rate. These include, among others, Treasury bills and bills issued by the *Länder* or other public authorities. The discount rate has in fact been uniform, at any given point of time, for all the bills; but the Bank, in principle, has the right to discriminate among various categories of bills.

The Bank also makes loans to commercial banks against collateral. The securities eligible for collateral are government bills and bonds or other debentures listed by the Bank. The interest rate applied to such loans is usually 1 per cent above the discount rate. Lending in this form is not automatic; it is presumably intended to meet short-term liquidity gaps at the commercial banks. The interest rate charged by banks on loans to their customers is tied by law to the discount rate, which it cannot exceed by more than a specified percentage. As long as the difference between the two rates is this maximum, any reduction of the discount rate leads directly to an equivalent reduction in the interest rate charged by banks on their lending (although this would not necessarily hold true for an increase). Often, however, the gap between the two rates is less than the specified maximum, so that the effect of discount rate changes on rates charged by the banks is not automatic and is less direct.

The Bank is entitled, and has consistently used its right, to specify a maximum rediscount quota for each individual bank. This quota is usually determined on the basis of the bank's capital: it is a certain coefficient of the size of the capital, but the coefficient may vary among classes of banks. The Bank has used changes in this coefficient, and

thus in the individual quotas, as an instrument of monetary policy on a number of occasions.

Open-Market Operations. The Bundesbank is entitled to buy and sell all the bills eligible for rediscounting at the Bank, as well as other bills or bonds issued by the federal government, the *Länder,* and other public authorities, and also private bonds quoted on the stock exchange.

In fact, open-market operations were of minor significance in the earlier years, since the central bank (at that time, the BDL) had had almost no portfolio of marketable securities. By mid-1955, however, the central bank reached an agreement with the government, which in 1957 was incorporated in the Bank Act, putting a substantial amount of such securities at the Bank's disposal. This was done by transforming the character of the "equalization claims," i.e., the Bank's claims on the government resulting from the Bank's assumption of the government's obligations towards the commercial banks, which in turn were a product of the currency reform of 1948. Originally, these claims carried an interest rate of 3 per cent, and could be sold only at their nominal value; in fact, this provision meant that the claims were not marketable. The agreement under consideration freed the Bank to sell (and buy) these claims at other prices. The claims, which subsequently became known also as the "Mobilization Paper," originally amounted to some eight billion marks. Open-market operations, which since 1956 have assumed large proportions, have been conducted primarily in this paper.

An agreement between the Bank and the commercial banks leads, in fact, to excluding the nonbank private sector from participation in the market for the paper in which the Bank's open-market transactions are conducted; that is, open-market operations are made only between the Bank and commercial banks, without any *immediate* effect on the nonbank sector.

An important attribute of open-market operations in Germany is that the Bundesbank directly determines not quantity but *price* in these transactions. The Bank specifies an interest rate—that is, by implication, prices of securities—at which the Bank is willing to buy or sell eligible securities offered to it or demanded from it. The interest rate varies, as a rule, with the length of maturity of the security (Mo-

bilization Paper has been issued with various maturities). This, of course, is a procedure quite similar to determining the Bank's discount rate. Indeed, the open-market rate has, as a rule, been quite close to the discount rate; but variations in the open-market posted rate have been much more frequent than in the discount rate.

Reserve Requirements. Minimum reserve requirements have been in effect since 1948, and are incorporated in the Bank Act of 1957. The Bundesbank is entitled to require that the commercial banks hold reserves in the form of current balances at the Bundesbank. The requirements may vary among classes of banks and according to the type of liability against which reserves are held. The maximum ratios provided for in the act were 30 per cent for sight deposits, 20 per cent for time deposits and 10 per cent for savings deposits. In addition to the distinction as to the type of liabilities, the Bundesbank requirements distinguish between banks in "bank places"—that is, places in which branches of the Bundesbank are located—and other banks; the former are subject to higher reserve requirements. Likewise, banks are divided into six categories according to the size of their liabilities; the larger the bank, the higher the reserve requirements. The number of different reserve-ratio requirements existing at any moment of time is, thus, quite substantial (approximately fifteen to twenty). As a rule, this structure moves in a coordinated way, and the proportional differences among the various ratios remain about constant.

Most of the time, reserve requirements were put on an average (or total) basis for each class of bank and liability. During a short period, however, *marginal* reserve ratios were added. In July 1960, all increases in liabilities above their average level of March–May 1960 were subject to the maximum reserve requirements, while liabilities of the average size of March–May 1960 were subject to lower requirements. This situation lasted until December 1960, when the marginal reserve requirements were withdrawn.

Shortages of reserves are subject to penalty rates of 3 per cent above the rate in force for the Bank's advances against collateral. This means, as a rule, an interest rate 4 per cent over the discount rate.

Changes in reserve requirements were made about as often as they were in the discount rate; they were, thus, much less frequent than variations in the Bank's open-market rates. It seems that the Bundes-

bank regarded open-market operations as the main instrument for effecting gradual changes in bank liquidity and in interest rates; while changes in the discount rate and in reserve ratio requirements were made at longer intervals as a means of consolidating and reinforcing the effect of open-market operations.

Reserve requirements were used by the Bundesbank on a few occasions to directly influence commercial banks' policy towards holding assets or borrowing abroad. This was done by subjecting foreign deposits in German banks, and the latter's borrowings from abroad, to special reserve requirements and by varying these requirements. Likewise, German banks' holdings abroad were regarded as a reserve asset held against liabilities to foreigners on a number of occasions when the Bundesbank considered short-term investments of German banks abroad to be desirable.

FISCAL POLICY

For most purposes of analyzing fiscal policy in Germany, the category "government" should include the *Länder* as well as the federal government. The reason is that the budgets of these two bodies are quite closely integrated, particularly on the revenue side. The German Constitution specifies the allocation of the various tax revenues. In some cases (such as the business tax), all tax proceeds belong to the *Länder*. In others, they belong to the federal government. The proceeds of the income tax are divided between the two—about two-thirds to the *Länder* and one-third to the federal government. In addition, revenues are reallocated among the *Länder*—those with higher tax proceeds transfer part of their revenues to the others. Likewise, most of the tax laws of each *Land* have to be approved by the appropriate federal bodies. All of this would indicate the need to add the *Länder* to the federal government in discussions of budgets and budgetary policy.

In the federal government, budgetary policy is left in the hands of the executive branch to a probably greater extent than in most other Western countries. The Cabinet (and within it the Chancellor and the Minister of Finance) has a veto power over budgetary decisions. The executive branch's leeway is particularly large in "negative" acts; that is, the Cabinet is quite free not to make certain expenditures,

or not to raise revenue from certain taxes, even though it is entitled to do so by the budgetary law of that year.

The federal budget is divided into "ordinary" (above the line) and "extraordinary" (below the line) components. In principle, "ordinary" budget expenditures should be covered by tax revenues, while expenditures of the "extraordinary" budget could be covered by loans as long as they result in the acquisition of "self-liquidating" assets. In fact, this requirement is interpreted in a way which puts very few restrictions on the type of expenditures in the latter budget. Yet, the declared policy of the German government has been to maintain a (cash) balance in the over-all budget; and this indeed has been the policy over long stretches of time.

2. *Statistical Analysis*

The analysis of policy reactions to balance-of-payments disturbances seems particularly complicated in Germany due to the largely one-sided nature of the imbalances. During the years 1952–58, that is, for about half of the total period covered, there was a continual surplus in the balance of payments, and foreign exchange reserves kept accumulating. This makes it impossible to examine policy reactions to changes in the balance of payments from deficits to surpluses, and vice versa, during these years. To overcome this difficulty—to some extent, at least—several approaches may be explored.

First, one might analyze just the years remaining after the 1952–58 period is subtracted, in which periodic changes in the direction of the imbalance did occur. Two periods of downward movement can be distinguished prior to the continuous upward movement of reserves which started in 1952; they took place in late 1950 to early 1951, and a year later. These can certainly be viewed as periods of disturbances. Upward movements of reserves during most of 1950 and most of 1951, on the other hand, may not have been regarded as disturbances. They may have been part of the general strong upward trend of reserves which lasted until the end of 1958; that is, the German government may have considered these upward movements desirable, rather than as indicative of disturbances. From 1959 on, each downward or upward movement could be considered a disturbance; a slight over-all rising trend in reserves is still found in these years but the trend fac-

tor is not large in comparison to the size of the periodical fluctuations. The subperiods are determined by both the series of foreign exchange reserves and, since 1958, of balance-of-payments surpluses or deficits. By and large, the two series give the same indications for the years covered by both. Sometimes, the two may differ by one quarter in their indication of the turning point. In the very few cases of clear conflict between the two series, the turning point was selected by reference to the series of balance-of-payments surpluses and deficits.

Table 6 shows subperiods of disturbances. The table covers two periods of downward disturbances prior to 1952, and all the post-1958 period—the latter containing three subperiods of downward and two subperiods of upward disturbances. Altogether, seven subperiods of imbalances are represented in Table 6. This is not a large number of observations, yet it provides quite a strong impression of the policy behavior pattern—at least in the negative sense.

A look, first, at the discount rate (column 2) shows clearly that this instrument has not been used generally for balance-of-payments adjustment. In only two downward disturbances, the one following the outbreak of the Korean war and the one which started in mid-1964, was the discount rate manipulated in the direction that balance-of-payments adjustment would require. During the other disturbances, the discount rate was either kept stable or moved in both directions within each subperiod of imbalance.

The posted rate for open-market operations (column 3) shows much the same behavior. Again, in one recent imbalance only—the downward movement of mid-1964 to early 1966—was this rate changed in the direction required for balance-of-payments adjustment. Thus, open-market operations do not appear to have been intended to serve generally the target of balance-of-payments equilibrium.

The same impression is conveyed by the fluctuations of reserve ratio requirements, which are shown in column 4. Once more, only during the 1950–51 and the 1964 and subsequent disequilibria did reserve ratio requirements move in the direction necessary for adjustment.

It thus appears that all the three major direct instruments at the disposal of the German central bank—changes of the discount rate, open-market operations, and changes of minimum reserve ratio requirements—have not been used, as a rule, for balance-of-payments

TABLE 6

Germany: Movements of Policy Variables
During Subperiods of Disturbances

Subperiod	*Gold and Foreign Exchange Reserves (indication of disturbance)* (1)	*Discount Rate* (2)	*Open-Market Rate* (3)	*Reserve Ratio Requirements* (4)	*Central Bank Claims on Commercial Banks* (5)
III 1950–I 1951	fall	+ raised	[a]	+ raised	− rise
III 1951–I 1952	fall	* stable	[a]	* stable	* no trend
IV 1958–III 1959	fall	* no trend	* no trend	* stable	* stable
III 1959–II 1961	rise	* no trend	* no trend	− raised	* no trend
II 1961–I 1962	fall	* stable	− reduced	− reduced	* stable
I 1962–I 1963	stable	stable	raised	stable	rise
I 1963–II 1964	rise	* stable	* stable	* stable	+ rise
II 1964–	fall	+ raised	+ raised	+ raised	− rise

	Central Bank Net Claims on Government (6)	*Central Bank Total Domestic Claims* (7)	*Commercial Bank Lending to Public (rate of change)* (8)	*Money Supply (rate of change)* (9)	*Budgetary Balance* (10)
III 1950–I 1951	* stable	− rise	+ falls	+ falls	n.a.
III 1951–I 1952	+ fall	+ fall	* stable	* stable	balanced
IV 1958–III 1959	− rise	− rise	n.a.	+ falls	− large deficit
III 1959–II 1961	− fall	− fall	n.a.	− falls	no trend
II 1961–I 1962	− rise	− rise	+ falls	− rises	− small deficit
I 1962–I 1963	no trend	rise	stable	falls	small deficit
I 1963–II 1964	* no trend	+ rise	* stable	* stable	+ deficit
II 1964–	− rise	− rise sharply	* stable	* stable	* deficit

Note: + indicates a movement in the direction required for balance-of-payment adjustment.
− indicates a movement in the opposite direction.
* indicates no movement or a very slight one.
n.a. = not available.
[a] not applicable.

adjustment. There are only two instances which *may* be exceptions, i.e., the downward disturbances of late 1950 and early 1951 and of mid-1964 to early 1966.

Looking at the policy variables which involve the central bank's assets, similar indications appear, perhaps even more strongly. Central bank lending to the commercial banking system (represented in column 5 of Table 6) appears to be unrelated to balance-of-payments fluctuations. Central bank net lending to the government (in column 6) seems to move less often in the direction required for balance-of-payments adjustment than in the opposite direction; this is particularly true for the post-1958 period. Changes in this category are mainly due, in the case of Germany, not to changes in the central bank's gross lending to the government but to changes in the amount of government deposits at the central bank. As may be seen by comparing column 6 with column 10 (or the appropriate lines in Chart 4), fluctuations in the central bank's net lending to the government are to some extent related to the government's budgetary surpluses and deficits. But the correlation is not perfect due to the reflection of two other factors aside from the budgetary balance in the size of the government's net indebtedness to the Bank; namely, open-market operations and the distribution of government deposits between the Bank and other banks.

Since the Bank's lending to commercial banks does not move in conformity with the requirements of balance-of-payments adjustment, while net lending to the government moves most often in the direction opposite to these requirements, the Bank's total domestic assets—the combination of these two—most of the time moves counter to the requirements of balance-of-payments adjustment. This is shown in column 7 of Table 6. According to the Nurkse-Bloomfield yardstick, Germany is thus seen to follow a pattern of monetary policy, during the subperiods under observation, opposite to what the classical "rules of the game" would require.

Commercial bank lending (shown in column 8) does not seem to vary in any consistent way with imbalances of payments. In only one instance—the downward disturbance of II 1961–I 1962—did the rate of credit expansion change in conformity with the requirements for balance-of-payments adjustment: it was considerably below the rate in the preceding and succeeding periods, in which foreign exchange re-

CHART 4

Germany: Time Series of Selected Variables

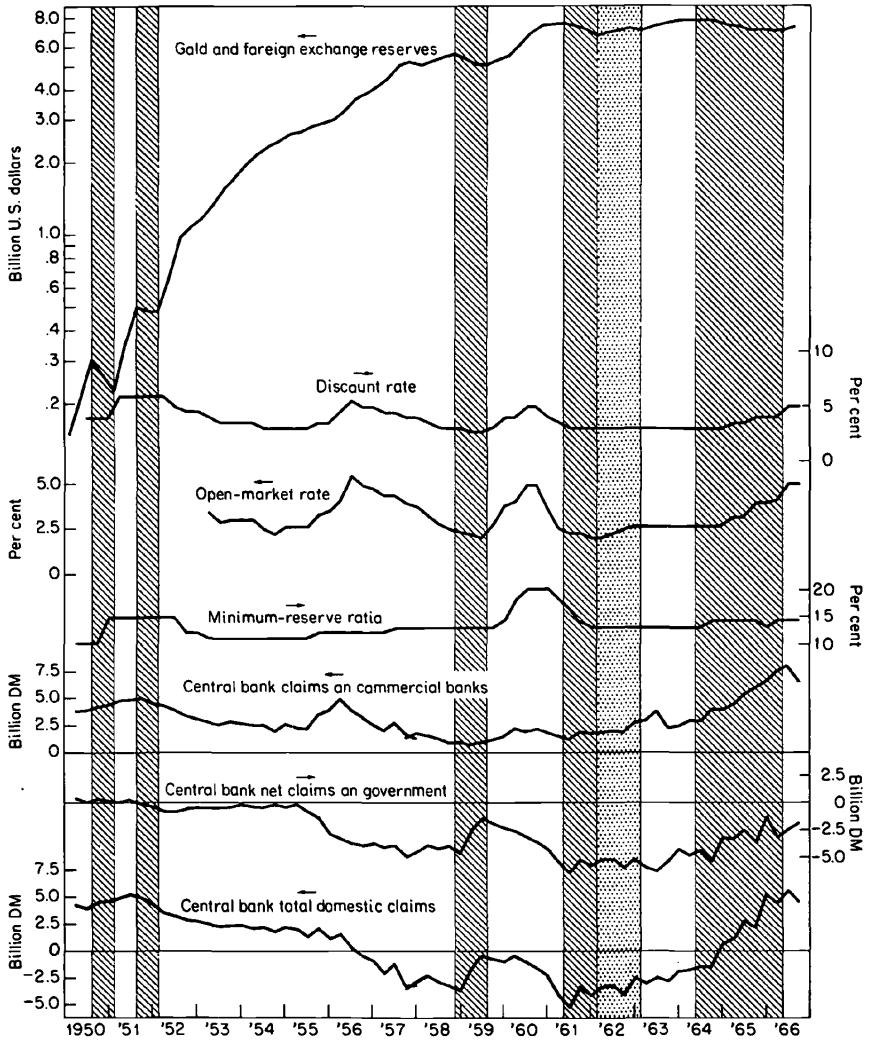

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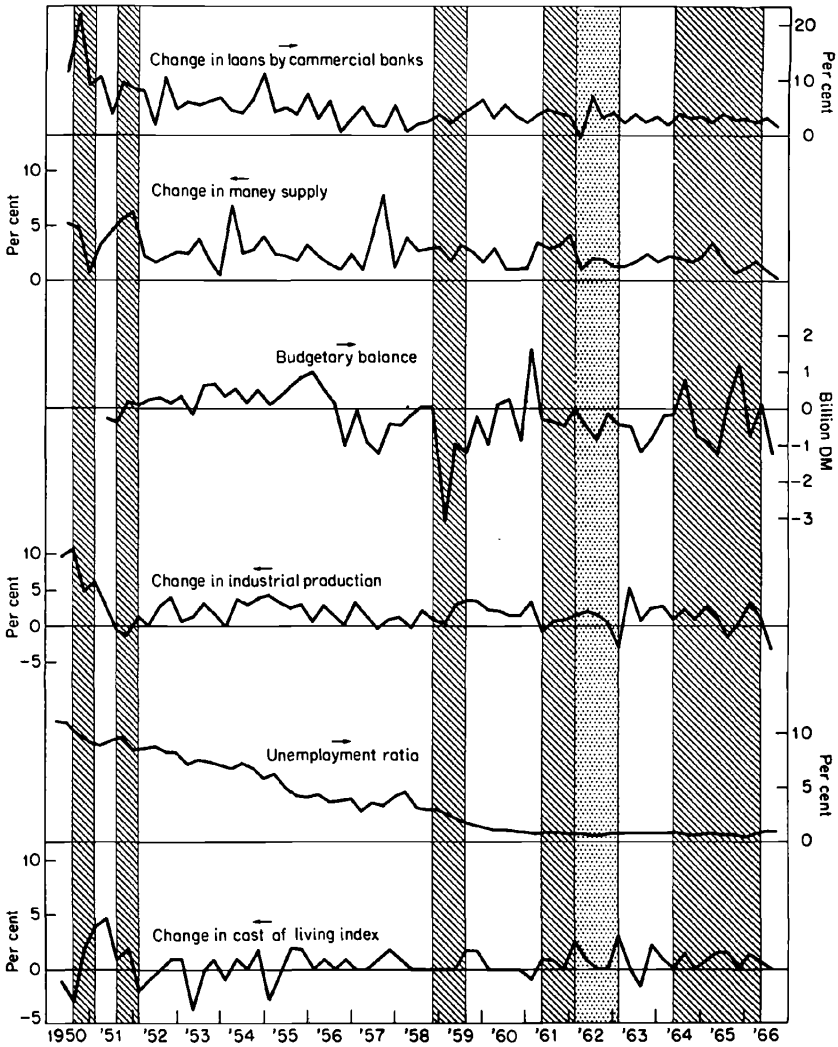
CHART 4 (*concluded*)



Note: Diagonal-line areas represent periods of downward imbalances; gray areas represent stability; and white areas represent upward imbalances.

serves increased. In other instances, the rate of credit expansion remained usually rather stable. Thus it may be deduced that the amount of credit (or, more precisely, its rate of expansion) was not manipulated in accordance with the requirements for balance-of-payments adjustment, although it cannot be said that an opposite pattern emerges either. The rate of expansion of money supply (represented in column 9) gives a similar indication. This rate is quite stable most of the time, and the modest changes in it move as often in the adjusting direction as in the opposite. Thus, although it cannot be argued that money supply changed consistently in a disadjusting direction, it seems fairly obvious that this variable did not move, in any general way, in the direction required for balance-of-payments adjustment. By this yardstick too, monetary policy in Germany did not conform to the classical "rules of the game."

Turning finally to the fiscal area, the conclusions are similar. As may be seen from column 10 of Table 6, the budgetary (cash) balance did not fluctuate in any consistent way with imbalances of payments. Moreover, it should be added that the balances (surpluses or deficits) were in general too small, in comparison with components such as the GNP, changes in foreign exchange reserves, etc., to be expected to have any appreciable effect on the economy. It is thus most probable that budgetary balances were not manipulated at all as a means of achieving either balance-of-payments adjustments or any of the other major economic targets.

We now turn to the period of continually rising foreign exchange reserves, from early 1952 to the end of 1958. Let us examine a few critical policy variables for this period to see whether their behavior is consistent with the assumption that they were manipulated in accordance with the requirements of balance-of-payments adjustment. These variables are: (1) The direct monetary instruments—the discount rate, the open-market rate, and the minimum-reserve ratios; (2) the rate of expansion of money supply; (3) the budgetary balance.

To assist in balance-of-payments adjustment, the discount rate, the open-market rate, and the minimum-reserve ratio would have to move downward during a period of accumulating reserves. Such a movement did not, in fact, take place—or if it did, was only slight—as may be seen from Chart 4. The discount rate went down from 1952 to 1954, up from 1955 to mid-1956, and down again until mid-1959. The over-

all trend of the rate was indeed downward, but it appears insignificant in comparison with the extensive movements of the rate within these years. Moreover, to the degree this trend existed, it went on during later years and thus cannot be assumed to be a response to accumulating reserves. The open-market rate is a relevant variable, it will be recalled, only after mid-1955. Starting then, it went up until mid-1956 and thereafter moved downward until mid-1959—in close relationship to the movements of the discount rate. The required reserve ratio was much more stable than the former two rates. It went slightly down in 1952–53, and up in 1955–57; over-all, it can probably be regarded as having been stable during the years under review. By this evidence, therefore, these three monetary variables are found to have played a neutral role, on the average, with regard to balance-of-payments adjustment: they were manipulated neither in the direction required for adjustment nor in the opposite direction.

The rate of expansion in the money supply conveys a similar impression. This rate was, on the average, much lower during 1952–58 than during 1950–51 and only slightly higher than during 1959–65. On the other hand, balance-of-payments adjustment policy would have required this rate to be particularly high during 1952–58. Taking into account the fact that the GNP's rate of increase has shown a downward trend, a fact which may account for a desire on the part of the monetary authority to gradually slow down the expansion of money supply, it cannot be argued that money supply was manipulated in a way which would contradict the need for balance-of-payment adjustment. However, the evidence certainly would not support the opposite assumption, i.e., that the supply moved in a way which would be consistent with the requirements for balance-of-payments adjustment during 1952–58.

The budgetary balance, as may again be seen from Chart 4, gives a similar indication. From 1952 to mid-1956, the budget had a consistent surplus—in fact, only in a single quarter (II 1953) was this not the case. From mid-1956 to the end of 1958, the budget had mostly deficits. For the period under review as a whole, the budgetary balance was positive, while for the following years—1959–65—the budget had deficits during most of the time and a net deficit for those years as a whole. The substantial budgetary surplus for 1952–55—at least for

most of the period—is alleged to have arisen accidentally.[1] It may well be so, but this would still not contradict the conclusion that during a period in which balance-of-payments adjustment would have required a budgetary deficit, the budget showed, in fact, mostly a surplus. It may thus be inferred that budgetary policy during the period 1952–58 was not employed as an instrument of balance-of-payments adjustment.

Thus, during 1952–58 neither monetary policy nor budgetary policy seem to have been manipulated in a way consistent with balance-of-payments requirements. This conclusion is similar to the one reached before in reference to earlier periods of imbalances, as well as to the later years 1959–65. The over-all finding which emerges is that monetary instruments and the budget were, by and large, not employed in Germany for balance-of-payments adjustment during the period covered in the present study.

Were these instruments used, instead, to achieve alternative targets? An attempt to analyze this question will be made with the aid of the reference cycle method. Here, the "cycle" is determined by fluctuations of the *policy variable;* and movements of each target variable are examined separately to see whether any of them could explain the cyclical pattern of the policy variable. This will not be done for the budgetary variable; as was mentioned before, the size of the budgetary balance—surplus or deficit—appears to be rather small most of the time, and it is apparently not meaningful to discuss "cycles" of this variable. The reference cycle analysis will be confined, thus, to the direct monetary instruments: the discount rate, the open-market rate, and the minimum-reserve ratio. These show a clear "cyclical" pattern, and the question analyzed is whether this pattern can be associated with the movement of any target variable. The reference dates will therefore be determined by the turning points of these policy variables. As was mentioned before, and as may be verified again by observing

[1] This is the famous "Juliustrum," or the "Julius Tower" war chest. It resulted, allegedly, from the accumulation during the early 1950's of funds intended to finance Germany's participation in the planned European Defense Community—a plan which was eventually scrapped. It is hard to believe that the German authorities indeed based their policy on a rule which says that surpluses should be created during certain years in order to finance deficits in later years, without regard to the effects of the surpluses and deficits at the time in which they are maintained. It is possible, on the other hand, that in each of these individual years actual military expenditures were lower than had been anticipated and provided for in the budget, thus leading to a surplus.

Chart 4, these three rates fluctuated in close coordination; very rarely did they move in opposing directions. This makes it possible to define a combined reference cycle for all three instruments. The turning points, or reference dates, will be determined, whenever just one variable moves while the others are stable, by that variable which moved. The trough of such a cycle will be at the point in which the discount rate, the open-market rate, and the minimum-reserve ratio are at their lowest; while the peak will occur when they are at their highest. The results are shown in Chart 5, where the behavior of each of the alternative target variables—the balance of payments, the price level, the unemployment rate, and the rate of expansion in industrial production—is shown along the reference cycles. The turning points of these cycles are as follows:

Period	*Trough*	*Peak*	*Trough*
1950–54	IV 1950	I 1952	III 1954
1954–59	III 1954	II 1956	II 1959
1959–62	II 1959	III 1960	I 1962
1962–66	I 1962	III 1966	

Chart 5, part A, shows the movement of foreign exchange reserves. As could be expected from the previous analysis, no regularity can be seen here. Conformity with balance-of-payments adjustment would require this variable to fall during the trough-to-peak phase—that is, where the discount rate and the other rates are rising—and to rise during the peak-to-trough phase. In fact, nothing resembling such a pattern can be discerned.

It may be worthwhile to examine alternative definitions of the balance-of-payments target in order to see whether they can give a better clue to policy measures than the simple change in foreign exchange reserves (that is, the simple balance-of-payments surplus or deficit as these are usually defined). Thus, it is conceivable that monetary measures were taken in reaction not to changes in the balance-of-payments as a whole, but to movements in the trade account alone. This is examined in Chart 5, part B, where the balance of trade (in goods) is represented. Again, no regular pattern appears. This balance was continuously positive after about mid-1952. An assumption that movements of this variable determined the direction of movement of the policy variables would require the balance to have been negative along the

CHART 5

Germany: Patterns of Target Variables
During Monetary Policy Cycles

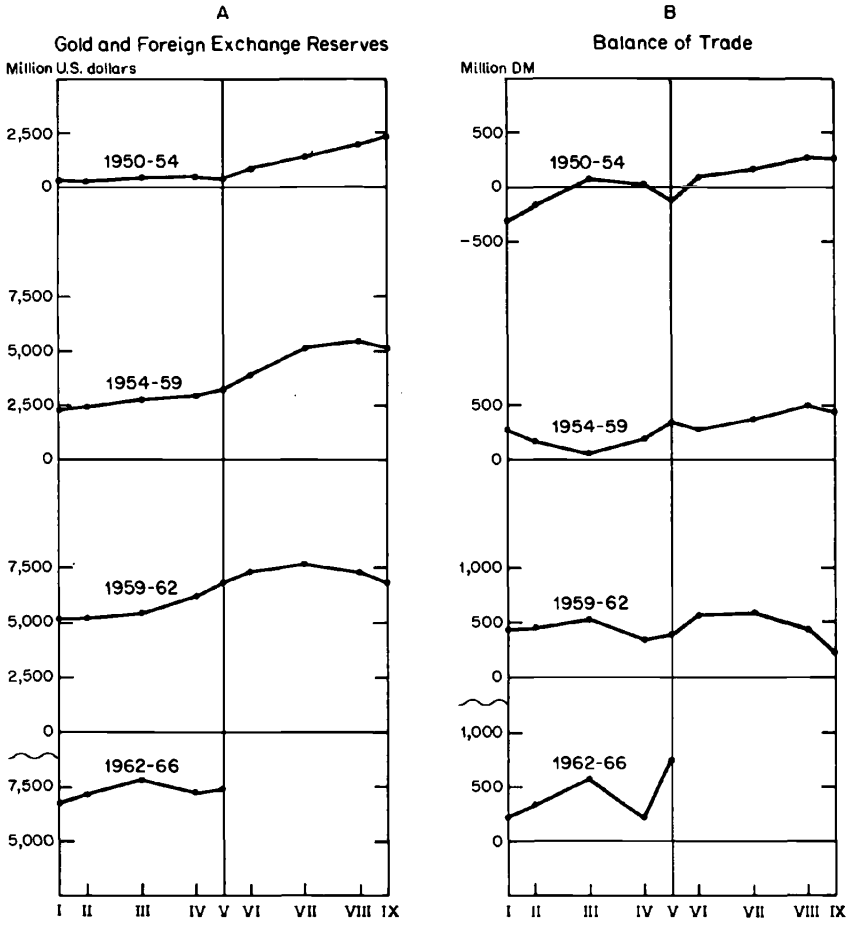


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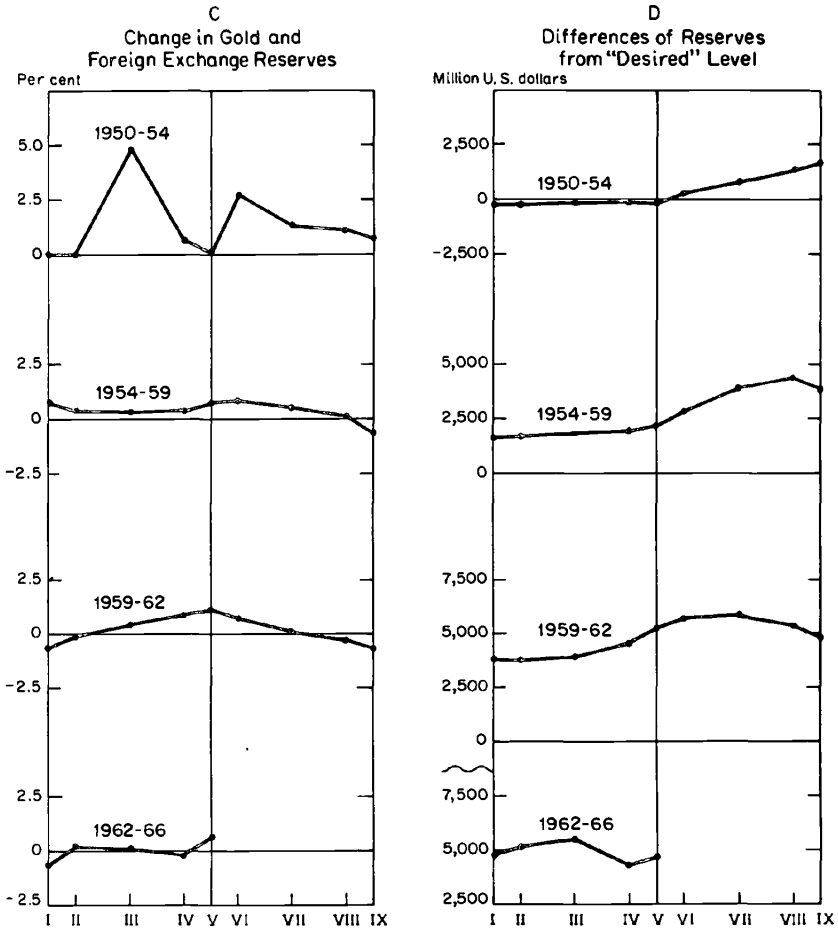
CHART 5 *(continued)*



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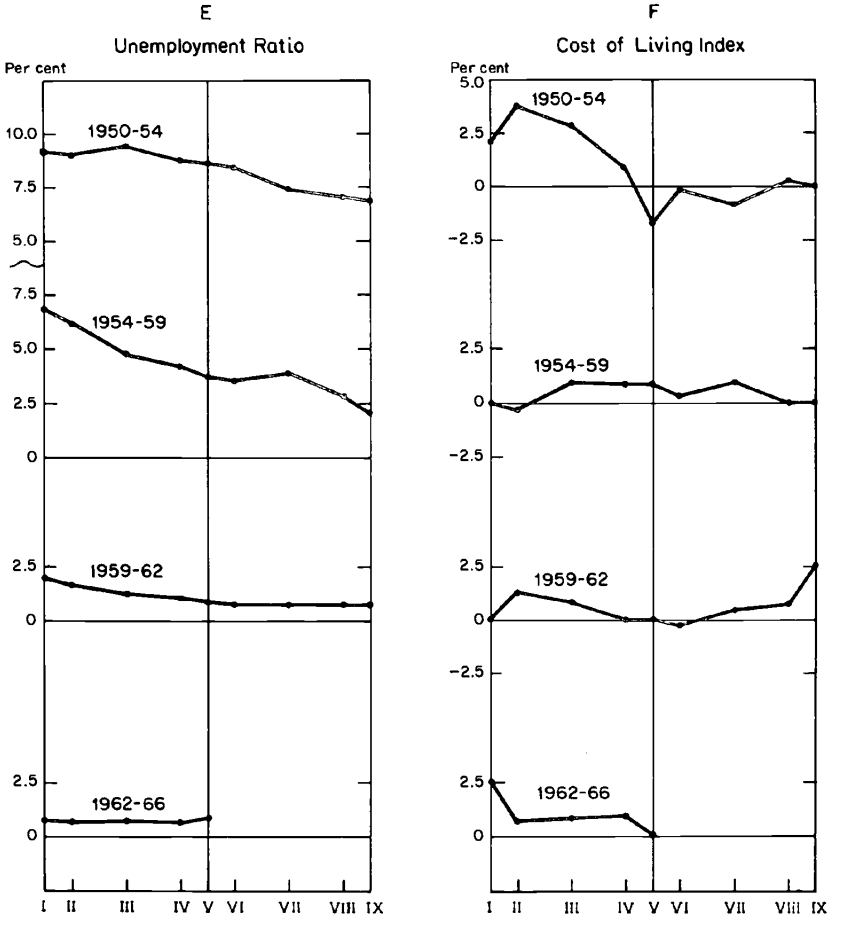

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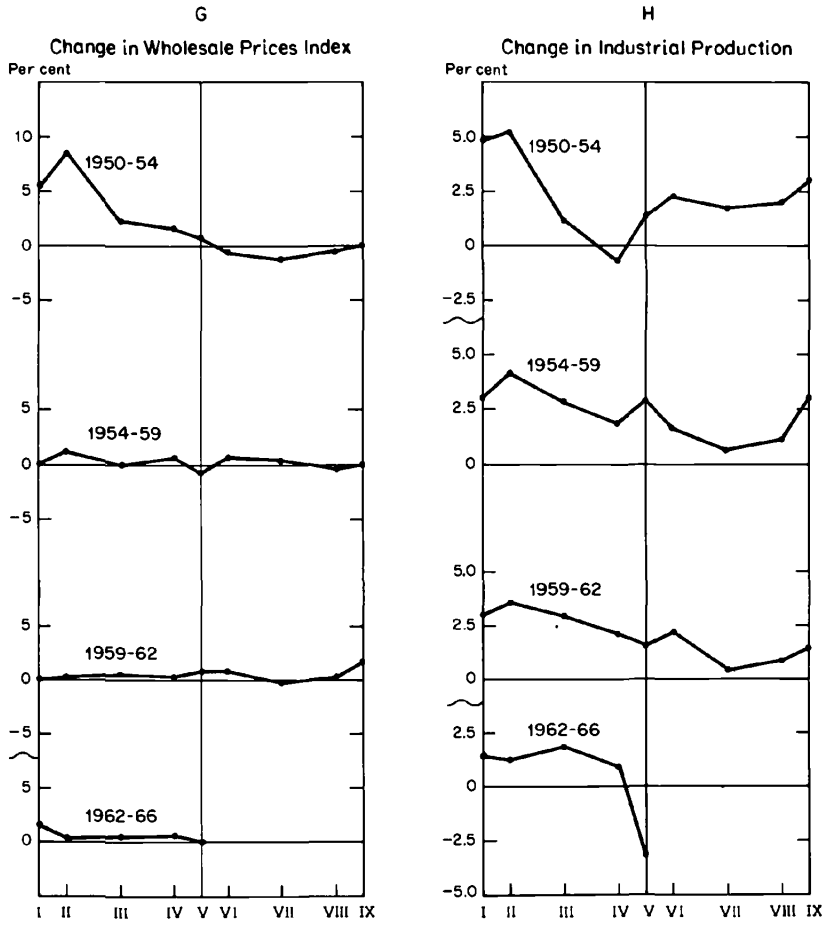


trough-to-peak phase, or at least to be lower than during the peak-to-trough phase, when it would be expected to be higher and rising. In fact, no such regular pattern could be observed.

Another possibility is that it was not the direction of change (i.e., rise or fall) of foreign exchange reserves which guided policy measures, but the *rate* of their change. That is, it may be assumed that whenever the *rate of increase* in reserves accelerated, monetary policy became expansionary; while whenever the rate of increase fell, monetary policy became restrictive. This assumption is examined in Chart 5, part C. By the evidence of this chart, it must be rejected. In fact, for part of the period the opposite is true: from the peak of the 1954–59 cycle (that is, from mid-1956) the rate of increase of reserves goes down during the downward phase and up during the rising phase. That is, when the rate of increase of foreign exchange reserves falls, monetary policy becomes more expansive rather than more restrictive.

Still another possibility which may deserve examination is that the German authorities paid attention not to the actual movement of foreign exchange reserves but to the divergence in the size of reserves from some desired level. This "desired" level could be determined by a probably infinite amount of assumptions, or models. The two simplest assumptions would be: (1) that the "desired" level is that indicated by the trend (which, in turn, can be identified in a variety of ways—a moving average, a linear or log-linear regression, etc.); or (2) that the "desired" size of reserves is a given proportion of imports (or of current transactions). The assumption of a "desired" level of reserves was tested only by the use of the latter variant. This is done in Chart 5, part D. "Desired" reserves were assumed to be a constant proportion of annual imports of goods, equal to the average of 1950–51. Discrepancies between the actual level of reserves and the "desired" level are represented in this chart.

It appears, from Chart 5, part D, that in this sense, i.e., compared with the "desired" level, reserves were increasing throughout most of the period, that is, the ratio of foreign exchange reserves to imports increased continuously. This process went on almost without interruption until 1961. It thus cannot be maintained that monetary policy was designed to preserve a stable ratio of foreign exchange reserves to imports. On the other hand, it may also be seen that until the middle of the trough-to-peak phase of the 1959–62 policy cycle—that is, until

1960—the excess of actual reserves over the "desired" level tended to rise more slowly during the trough-to-peak than in the opposite phases. This would be consistent with an assumption that during the 1950's a given rate of continuous rise in the ratio of foreign exchange reserves was desired and that monetary policy became restrictive when this rate was not achieved, whereas it became expansionary when it was exceeded.

In Chart 5, part E, the target of high employment is examined. The unemployment rate appears, from this chart (as from even a casual look at Chart 4) to be continuously and markedly falling throughout the period. However, no consistent association between this movement and the cycles of monetary measures can be distinguished. It thus does not appear that monetary policy was geared to this target. It may also be mentioned in this connection that the large budgetary surpluses observed during most of the first half of the 1950's were achieved at a time of high unemployment, so that it cannot be assumed either that budgetary policy was employed in pursuance of the target of full or high employment.

In Chart 5, parts F and G, the stable price level target is examined. This is done by using the rates of change in the cost of living and wholesale price indexes, respectively. These rates showed considerable fluctuations only at the beginning of the period, during the Korean crisis and shortly afterwards, while for most of the remaining period the price level appears quite stable. The rates of change in the indexes, in particular of wholesale prices, are quite close to zero and do not fluctuate greatly. What is particularly relevant, however, is the apparent lack of any cyclical regularity. Had monetary policy been intended to maintain price stability, we would expect to find a relatively high rate of price increase during the trough-to-peak phase—that is, when monetary policy becomes restrictive—and the opposite during the peak-to-trough phase. In fact, no such regularity appears at all in the two parts of the chart. Oddly, the cyclical patterns of 1954–59 and 1959–62, especially with regard to the cost of living index, even appear almost as mirror opposites of each other.

The target of a high rate of growth, as measured by the rate of increase of industrial production, is examined in Chart 5, part H. Here some pattern appears, although it is rather weak. It seems that, at the beginning of the trough-to-peak phase, the rate of increase in indus-

trial production rises. However, shortly afterwards it starts falling and this fall continues until about the middle of the peak-to-trough stage, when the rate starts rising. This pattern would certainly be inconsistent with an assumption that monetary policy was intended to maintain a stable rate of increase of production. Monetary policy appears to be restrictive usually when the rate of increase in production falls, whereas the opposite policy would be appropriate for achieving the target under examination. This pattern would be consistent, on the other hand, with an assumption that monetary policy *affected* the growth rate—that restrictive monetary policy led, with a time lag, to a decline of the rate of increase of production, while expansionary monetary policy induced—again with some time lag—a faster rate of increase of production.

3. Summary and Interpretation

From the evidence just analyzed it appears that none of the major targets under examination was, with any consistency, the variable with which monetary policy (and, it should be added, most probably budgetary policy as well) was concerned. The only assumption which did not seem to be refuted was that monetary policy during the 1950's was intended to maintain a steady rate of increase in the ratio of foreign exchange reserves to imports. While such a policy rule is conceivable, the support given to this possibility from the present analysis is probably not strong enough to establish a valid claim for it.

This may lead to one or more of these possible interpretations: (1) The policy instruments under review were manipulated, as a rule, in the service of another target than those examined here; (2) the instruments were used to achieve one of the investigated targets, but this could not be revealed by the present analysis; or (3) policy instruments were indeed used "inconsistently" or, rather, not in adherence to a fixed pattern of rules. They were used on certain occasions for balance-of-payments adjustment, while on others they were used with the object of maintaining price stability or in pursuance of alternative targets.

The first possibility cannot be conclusively rejected. The number of potential target variables is infinite, and it is always possible that one of those which have not been investigated is the real villain of the piece. Likewise, it could always happen that some variant of the

targets that have been examined would yield better results. Monetary policy, for instance, might be found to be consistently associated with shifts of foreign exchange reserve levels (or prices, or employment, etc.) away from certain "desired" paths of change in these magnitudes which have not been explored here. Any assertion one way or the other must thus be based only on conjecture and judgment. On these grounds, it would seem highly unlikely that monetary policy was indeed employed consistently in the pursuance of some other untested target. This assertion is supported by the lack of any suggestion of such other policy targets in the literature of German monetary developments. This possibility must, therefore, be dismissed—although no attempt can be made here to offer definitive proof that such a dismissal is warranted.

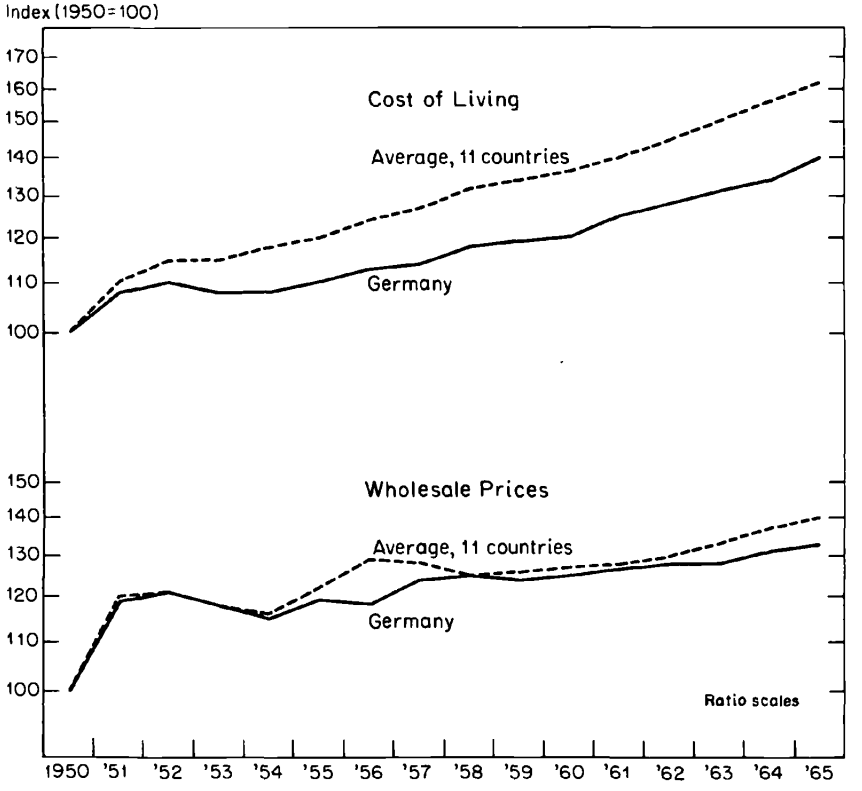
The two remaining explanations seem to be more probable. A possible deficiency in the method of analysis, it will be recalled, is its failure to distinguish between realized and anticipated values. Thus, if avoiding fluctuations of a certain magnitude is the purpose of policy measures, and these fluctuations are correctly anticipated and successfully averted, the data would not show correlations of policy measures with movements in the target. In the case of Germany, something of this sort may have occurred for price stability. According to frequent and emphatic statements of German policy makers, price stability has been by far the most important target of monetary policy in Germany during the period under review. As will be recalled, the present investigation does not show this. No consistent reaction of monetary policy to changes in the degree of price stability can be detected. This may conceivably be due to the fact that price increases were anticipated accurately, and counteracting policies were taken quickly and decisively enough to prevent these anticipated increases from materializing. The virtually complete stability of prices from 1952 to 1957 might be explained in this way, for instance. It is, of course, very difficult to test such an assumption rigorously, since the process by which policy makers' anticipations were formed is not likely to be easily uncovered. It should be recalled, however, that price fluctuations were not entirely absent. On a number of occasions, price increases were large enough and persistent enough to suggest that further price rises must have been anticipated at those periods; and yet, no restric-

tive monetary measures are found to have been taken consistently in such periods. A prime example is the period from early 1961 to mid-1962, when monetary policy was expansive despite a relatively high rate of price increase—particularly in the cost of living.

Longer-term observations, on the other hand, lend more credibility to the opinion that price stability was indeed a prime target. In Chart 6, movements of the two price levels (wholesale and cost of living) in Germany are compared with the movements of price levels (arithmetic unweighted averages) in the aggregate of eleven countries: the Group of Ten and Switzerland. It is immediately apparent that prices in Germany tended to rise considerably less than the average—although

CHART 6

Germany: Comparisons of Price Movements



this holds true more for consumer prices than for wholesale prices, and applies more to the first half of the period studied than to the latter half. In the first half of the period, up until around 1957–58, the rate of unemployment in Germany was particularly high (though declining), and the accumulation of foreign exchange reserves persisted throughout these years. Had either full employment or balance-of-payments equilibrium been the overweening target, expansionary monetary and fiscal measures would have been called for; the fact that such measures were not taken suggests that during these years, at least, price stability was a major target in Germany. In other words, it seems probable, by this evidence, that monetary and budgetary policy would have been more expansive throughout the 1950's had not the maintenance of price stability been a prime target for policy makers in Germany. Thus, for instance, the discount rate and other interest rates would have been expected to be generally lower had it not been for this target. At the same time, the former evidence suggests that in formulating changes in short-term monetary and budgetary policy the preservation of stable prices was not invariably, or even in the majority of instances, the guiding rule.

In formulating these short-term reactions it seems most likely, indeed, that no single target consistently dominated the use of monetary policy in Germany. This policy was thus less dogmatic and more flexible than might be inferred from various analyses or statements of policy makers in Germany. On occasion, the policy was aimed at preventing price increases. This is probably true, for instance, for the period 1955–56. On other occasions, such as during parts of 1959 or in late 1960 and in 1961, it must be interpreted as being intended to correct imbalances of payments; while on still other occasions it might have been used to counteract a slump in business conditions.

This analysis was carried somewhat beyond the immediate question of balance-of-payments adjustment. In the light of its mainly negative and inconclusive results, it is time to ask again what *was* the balance-of-payments policy in Germany. The probable answer seems to be, in summary form, as follows.

In the devaluation cycle of September 1949, Germany—although not devaluing the mark to the same extent as the British pound was devalued—established an exchange rate which proved later to have been

higher than the rate required for balance-of-payments equilibrium. Thus, for most of the following decade, Germany's balance of payments showed a persistent surplus, and foreign exchange reserves accumulated. There was no attempt to counteract this accumulation owing, presumably, to two considerations. First, starting from a low level of reserves and realizing a fast growth in the amount of trade, the increase in reserves must have been seen by Germany as desirable. Second, a policy to correct imbalances of payments would have called for price increases, while the maintenance of price stability must have been regarded a prime target in view of Germany's earlier inflationary experience. At the same time, temporary downward movements of reserves in the late 1950's were not a cause for major concern in view of the large size of reserves, and thus did not call necessarily for an adjusting policy. This largely "neutral" policy was changed in the early 1960's. At that time, the relatively high level of interest rates in Germany, combined with expectations for revaluation of the mark which were formed by the persistent German surpluses, attracted large amounts of short-term capital from abroad. Monetary policy reacted first in a restrictive way, that is, in a disadjusting direction. At that stage, however, such a policy was self-defeating, since the increased interest rates acted more to increase liquidity by attracting more foreign capital than they contributed to the reduction of liquidity by reducing domestic borrowing. Also, foreign resistance to the persistent large-scale accumulation of reserves in Germany became much more severe than it had been earlier. In late 1960, as a result, monetary policy was changed in the expansive direction required for balance-of-payments adjustment. In March 1961, this was combined with an upward revaluation of the mark by 5 per cent. In the following years, policy reaction to upward disturbances mainly took the form of special measures intended to influence capital movements—that is, to discourage the flow of capital to Germany—such as the tax on income from German bonds held by foreigners, which was announced in 1964. Balance-of-payments adjustment does not appear to have been a major target in these years either: an accumulation of reserves still does not seem to be considered a disturbance, while temporary falls in reserves were not of major concern due to the high level of reserves. The assumption of policy makers in Germany appears to have been that in-

come and price developments independent of Germany's monetary policy, and in particular developments in Germany's major trading partners, would restore equilibrium to Germany's balance of payments before an unduly large decline of reserves took place. Over-all monetary and fiscal policy thus has not been primarily tied to balance-of-payments requirements.