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FEDERAL RESERVE BANK OF CLEVELAND

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REPURCHASE AGREEMENTS: THEIR ROLE IN DEALER FINANCING AND IN MONETARY POLICY

Repurchase agreements (RPs) are more specialized than other money market instruments, such as Treasury bills or commercial paper. Moreover, RPs are not used by a particularly large number of individual participants in the market. RPs are, in fact, designed to meet the needs of a limited number of investors and an even more limited number of borrowers. However, the importance of RPs in the money market should not be underestimated. Much of their significance lies in their special characteristics and the types of institutions that use such arrangements.

In practice, a repurchase agreement involves the sale of securities (usually other money market instruments) with the condition that after a stated period of time the original seller will buy back the same securities at a predetermined price or yield. The essence of these arrangements is to adjust the original maturity of the particular instrument to suit the needs of buyers and sellers (i.e., investors and borrowers). For example, an investor may be seeking to place funds that he knows are only temporarily available—say, for three days. As a first choice, he may attempt to buy a Treasury bill maturing three days later. Often, however, such bills may not be available. Second, he can buy a Treasury bill with any maturity, e.g., 90 days, keep it for three days and then resell it in the market. The problem here is risk; during the three day interval, bill prices might have fallen, in which case the investor will realize a capital loss. Finally, the investor can buy a 90-day Treasury bill with the condition that three days later the seller will repurchase it at a certain price. The risk of capital loss is bypassed, and the investor is assured a certain return in much the same way as if he had obtained his first investment choice. This arrangement is a repurchase agreement.

Strictly speaking, then, a repurchase agreement is not really a "new" or a "separate" instrument, but rather the end result of an act under which the original maturity of an already existing money market instrument is changed (shortened) to meet the requirements of the lender and to avoid the risk of changing yields. In this sense, RPs are certainly different from other short-term investments.

From the standpoint of the temporary seller of the securities, an RP represents a source of borrowed funds that can in effect be used to finance the same securities or to acquire other types of securities. U. S. Government securities

dealers have utilized such borrowing arrangements extensively. Such arrangements often provide a large part of the funds needed to finance dealer inventories. In addition other financial institutions—most notably, commercial banks—use RPs to raise short-term funds, but the extent to which these institutions rely on RPs for borrowing purposes cannot be precisely established because data on RPs other than those related to U. S. Government securities dealers are extremely limited.

Another aspect of RPs that is discussed later is their use as a technique through which the Federal Reserve System can bring about temporary changes in member bank reserves. Clearly then, much of the importance of RPs is derived from the type of public and private institutions that use these arrangements.

Thus, an understanding of the nature and significance of RPs in the nation's financial system requires the discussion of several functions. Two of these—RPs in dealer financing and RPs in monetary policy—are associated with the instrument *per se.* Another significant aspect of RPs is institutional and covers the dealer market for U. S. Government securities. The discussion should, of course, also include the role of RPs at financial institutions, such as commercial banks, but as already noted, information in this regard is limited. Therefore, this article is confined to a discussion of the role of RPs in dealer financing and in monetary policy. The institutional framework of the dealer market is reviewed in the Appendix.

THE ROLE OF RPs IN DEALER FINANCING

Although U. S. Government securities dealers act as principals in buying and selling securities, they use very little of their own capital. The relationship between dealer (net) positions and dealer financing is indeed close (see chart in Appendix) and reflects the heavy reliance that securities dealers place on borrowed funds to finance inventory positions. Nonbank dealers can usually borrow money from banks on a 2-3 percent margin of equity capital when purchasing intermediate- and long-term Treasury coupon issues and on a margin closer to zero for Treasury bill purchases.[1]

Dealer sources of short-term funds vary in terms of type and location of lender. Moreover, the relative share contributed by each source of funds also varies. During the 1961-1968 period, dealers—both bank and nonbank—borrowed an average of $3.3 billion per day to finance securities held in inventory. In 1968 alone, borrowings averaged nearly $4.0 billion a day, compared with $2.7 billion in 1961 (see Table I).

The bulk of dealer funds are supplied by commercial banks, which, as a group, accounted for about one-half of dealer borrowings during 1961-1968. Other important lenders include nonfinancial corporations, insurance companies, state and local governments, and the Federal Reserve System. As shown in Table I, during the 1960's, commercial banks increased their share of dealer financing, while corporations became less important as a source of dealer funds.

Bank dealer positions are financed in large part through funds allocated to the dealer department

[1] William G. Colby, Jr., "Dealer Profits and Capital Availability in the U. S. Government Securities Industry, 1955-1965," Staff study prepared for the *Report of the Joint Treasury-Federal Reserve Study of the U. S. Government Securities Market*, (Washington, D. C.: Board of Governors of the Federal Reserve System, May 5, 1967), p. 52.

TABLE I

Sources of Dealer Financing
1961–1969

Year	Total From All Sources	Commercial Banks						Corporations*		All Others	
		Total		New York City		Outside New York City					
		Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
	(mil. of $)	(mil. of $)		(mil. of $)		(mil. of $)		(mil. of $)		(mil. of $)	
1961	$2,725	$1,289	47.3%	$ 675	24.8%	$ 614	22.5%	$1,177	43.2%	$259	9.5%
1962	3,359	1,542	45.9	888	26.4	654	19.5	1,461	43.5	356	10.6
1963	3,559	1,705	47.9	942	26.5	763	21.4	1,465	41.2	389	10.9
1964	3,503	1,812	51.7	979	27.9	833	23.8	1,317	37.6	374	10.7
1965	3,546	1,738	49.0	959	27.0	782	22.0	1,336	37.7	471	13.3
1966	2,666	1,238	46.5	668	25.0	570	21.4	1,018	38.2	411	15.4
1967	3,366	2,014	59.9	995	29.5	1,019	30.3	854	25.4	499	14.8
1968	3,985	2,145	53.8	1,049	26.4	1,096	27.5	1,142	28.6	698	17.5
1969†	2,810	1,085	38.6	643	22.9	442	15.7	1,012	36.0	714	25.4
Average 1961-1968	3,339	1,685	50.2	894	26.7	791	23.6	1,221	36.9	432	12.8

NOTE: Data are averages of daily figures based on the number of calendar days in the period.

* All business corporations, except commercial banks and insurance companies.
† Through August.

Source: *Federal Reserve Bulletin*

by the parent institution, with some funds raised through RPs. *Nonbank* dealers, who account for well over half of the inventories and transactions in the market for Treasury issues,[2] rely mainly on bank loans and RPs for their borrowing needs.

Collateralized Bank Loans. During the 1930's and 1940's, dealers relied heavily on bank loans for financing, reflecting in part the greater availability of credit in that period than in the 1950's and 1960's. Most of the funds were obtained from New York City banks. During the 1950's, however, as other demands for bank credit increased, dealers turned to borrowed funds from banks outside New York City and from corporations.

Bank loans to dealers are collateralized; that is, the dealer generally uses the securities that are being financed as collateral. The title for the securities stays with the dealer. Bank loans are usually arranged on a daily basis and can be terminated either by the dealer or the bank. There are about six banks in New York City that regularly make loans to nonbank dealers. The banks post two types of interest rates daily: one rate for renewal of outstanding dealer loans and another for new loans. These banks rarely refuse to grant a loan; instead, they can discourage dealer loans by adjusting the loan rates, particularly the rate for renewals.

As shown in Table II, in 1961, the volume of bank financing of dealers (either in the form of collateral loans to nonbank dealers, or in the form of allocations to the dealer departments of the banks that make markets in Government securities) averaged nearly $1 billion a day, or about 37 percent of the funds used to finance dealer positions. In 1968, the average dollar volume had grown to $1.5 billion a day. RPs accounted for the remainder of dealer financing needs—averaging 63 percent of the total for the 1961-1968 period (see Table II).

CHARACTERISTICS OF REPURCHASE AGREEMENTS

In general, RPs are arranged with corporations and certain banks outside New York City; New York City banks rarely provide RPs to dealers. Payments for RPs are usually made in Federal funds. That is, if the buyer of the securities under a repurchase agreement is a commercial bank, the dealer receives a check drawn on the commercial bank's account with the Federal Reserve; if a corporation is the buyer, the dealer receives a check on the Federal Reserve account of the bank in which the corporation maintains balances. In either case, the dealer has "immediate" (same day) money rather than clearing house funds, which are "next-day" money.[3]

Types and Maturities. There are two distinct types of repurchase agreements: those *contracted for a specified period* of time and those *without a fixed maturity* date. RPs with a fixed maturity cannot be terminated before the date stated in the contract, although the dealer often has the right to substitute another issue for the one initially sold in

[2] Paul Meek, "The Changing Structure of the Dealer Market in Government Securities," Staff study prepared for the *Report of the Joint Treasury-Federal Reserve Study of the U. S. Government Securities Market*, (Washington, D. C.: Board of Governors of the Federal Reserve System, August 1967), p. 22.

[3] In clearing house funds the dealer receives a check that must go through the New York clearing house, and the reserves of the member bank are not reduced until the following day. For this reason, clearing house funds cannot be used until a day later. Bank loans to dealers by New York banks are made in either Federal funds or clearing house funds.

TABLE II

Dealer Financing By Type
1961–1968

Year	Outstanding Volume (mil. of $)				Percent of Total Financing			
	Collateral Loans and Own Bank Funds	Repurchase Agreements			Collateral Loans and Own Bank Funds	Repurchase Agreements		
		Total	Short	Long		Total	Short	Long
1961	$ 997	$1,716	$ 902	$ 814	36.7%	63.2%	33.2%	30.0%
1962	1,230	2,129	1,063	1,066	36.6	63.4	31.6	31.7
1963	1,318	2,241	1,099	932	37.0	63.0	36.8	26.2
1964	1,314	2,162	1,304	858	38.3	61.7	37.2	24.5
1965	1,342	2,203	1,346	857	37.9	62.1	38.0	24.2
1966	937	1,729	1,048	681	35.1	65.8	39.3	25.5
1967	1,358	2,008	1,438	570	40.3	59.6	42.7	16.9
1968	1,480	2,504	1,722	782	37.1	62.8	43.2	19.6
Average 1961-1968	1,310	2,087	1,332	876	37.2	62.8	37.9	24.9

NOTE: Data are annual averages of daily figures. Short repurchase agreements are defined as those with maturities of 15 days or less; long repurchase agreements are those with maturities of more than 15 days.

Source: Federal Reserve Bank of New York

the agreement. Most RPs with fixed maturities (varying in duration from overnight to several days or even months in some cases) are made with corporations.

RPs without specific maturities are, in effect, demand obligations in much the same way as bank loans to dealers. Either party can terminate the RP without advance notice. Such borrowing agreements bypass the need to renew overnight RPs as long as both parties have a continuing interest in the arrangement. Many banks outside New York City and some corporations use RPs without fixed maturity dates.

The maturity distribution of outstanding RPs at U. S. Government securities dealers is shown in Table II. During 1961-1962, the dollar volumes of short (maturing in 15 days or less) and long (maturing after 15 days) RPs were similar. Although the distribution between the two maturities has varied in recent years, there has been a trend toward shorter RPs. In 1968, the volume of short RPs averaged $1.7 billion a day and accounted for nearly 70 percent of outstanding RPs.

The reverse RP is another type of transaction. Reverse RPs, which are employed less frequently than regular RPs, involve dealer purchases of securities and a concurrent dealer commitment to sell the securities to the original owner at a future date. The dealer, of course, can turn around and sell a similar issue under an RP of the same maturity and thus "hedge" the resale agreement against changes in price or yield.

Relative Merits of Repurchase Agreements. Perhaps the unique and most interesting feature of an RP is that it can be used to modify (shorten) the actual maturity of a particular security to meet an investor's maturity needs. This feature makes RPs particularly attractive for corporations and commercial banks outside New York City. These

investors could, of course, buy an issue with a period to maturity that was longer than the period the funds would be available, and in many instances, the issue could be sold in the secondary market before maturity. However, the investor would risk the possibility of a capital loss if the price of the issue were to decline in the interim. With an RP that fixes the selling price at the maturity of the contract, the investor knows his rate of return at the time the agreement is made.

For most banks, an alternative to investing in RPs would be to sell the surplus funds in the Federal funds market. In addition to rate differences between RPs and Federal funds, however, Federal funds are usually traded in blocks of $1 million; therefore, a bank with less than $1 million in excess reserves might find it difficult to use the Federal funds market.

Corporations have several outlets for short-term funds—notably, Treasury bills, commercial paper, and CDs—but such alternatives generally require investment longer than one day. In addition, these outlets have timing limitations. For example, regular three- and six-month Treasury bills mature every Thursday; thus, corporations have a limited opportunity to match investment in bills with an expected or contracted cash outflow during other specific days in the week. The investor can choose the investment period in commercial paper, but this choice is usually limited to maturities of five days or longer. The corporation can also choose CD maturities, but Federal Reserve Regulation D does not allow member banks to issue CDs with maturities of less than 30 days. Moreover, because of Regulation Q ceilings, banks find it impossible at times to issue CDs in any maturity. Unlike most commercial paper, however, CDs are traded in the secondary market, and an investor can within limits obtain the desired final maturity through purchases in this market, although one-day maturities are not generally available. Therefore, RPs often are the only alternative investment for very short-term idle corporate funds.

From the dealer's standpoint, RPs are a source of funds that, apart from cost considerations, also helps to develop and maintain contacts with potential customers. Most RP buyers are also important investors in U. S. Government securities.

Cost and Return Considerations. Interest rates on RPs are determined through negotiation between the dealer and the customer. As a result, data on this subject are quite limited. Unlike rates on other money market instruments, such as Treasury bills, Federal funds, etc., that are published daily, there is no regular series on RP rates. The information that is available on RP rates comes from reports that individual dealers have periodically submitted for special studies of the U. S. Government securities market. Limited data indicate that, in general, rates on RPs are lower than rates charged for collateral loans by New York banks.[4]

The range within which RP rates must be confined can, however, be readily determined. Although RPs offer some unique advantages to borrowers and lenders, RPs must also be competi-

[4]One special study, for example, presented data regarding rates on RPs and collateral loans based on reports by a "small number" of nonbank dealers. The data implied an average rate of interest on RPs a little short of 1/2 of 1 percent lower than the average rate on collateral loans for the period 1948-1958. The same study also suggested that rates charged on RPs by commercial banks and corporations are about the same. See, U. S., Congress, Joint Economic Committee, *A Study of the Dealer Market for Federal Government Securities* (Washington, D. C.: Government Printing Office, 1960), pp. 87-89.

tive with other short-term investments. The terms, therefore, under which RPs are contracted must bear certain relationships to alternative money market contracts.[5] Commercial banks, for example, do not usually provide RP funds to dealers unless the banks can earn at least as much interest as they would by selling their surplus reserves in the Federal funds market. Similarly, RPs must normally carry lower rates than bank collateral loans, not only because such loans are generally more convenient to obtain, but also because the dealer incurs additional costs with RPs, such as telephone charges in negotiating with lenders outside New York City and fees involved in clearing the securities transactions through a clearing bank.

Rates paid on RPs contracted with corporations are closely related to Treasury bill rates, particularly rates on RPs with maturities of several days or longer since, with such maturities, Treasury bills are a feasible investment alternative for short-term corporate funds. In some cases, however, the rate on corporate RPs may differ considerably from prevailing Treasury bill rates, depending upon the dealer's need for funds or upon the specific terms of the individual agreement; for example, whether or not the dealer is permitted to substitute another issue for the one sold originally in the repurchase contract.

REPURCHASE AGREEMENTS IN OPEN MARKET OPERATIONS

The Federal Reserve Bank of New York (operating for the Federal Reserve System) is also a source of RPs. The most important difference between RPs from the Federal Reserve Bank of New York and RPs from other lenders is that the prime motive behind corporate and bank RPs is generally profit-making, while RPs emanating from the Federal Reserve Bank of New York are based entirely on monetary policy considerations. These transactions are undertaken at the initiative of the Federal Reserve Bank, unlike RPs from other sources that usually involve two-way negotiation.

The Securities Department in the Federal Reserve Bank of New York—commonly known as the Trading Desk—carries out RP transactions, and only nonbank dealers can participate in Desk RPs.[6] Although Desk RPs may carry maturities that vary up to 15 days, either party can terminate the agreement at any time before maturity. Moreover, unlike many corporate RPs, the Desk does not allow the dealer to substitute another issue for the one initially involved in the agreement.

Desk RPs involve a repurchase price that affords a return to the Federal Reserve System—or a cost to the dealer—that is usually equal to the discount rate of the Federal Reserve Bank of New York. However, Desk RPs have been transacted at rates below and above the New York discount rate. In the late 1950's and early 1960's, the System made RPs at less than the discount rate, while in recent years, some RPs have been made at a yield above the discount rate. (During periods when such RPs were made, money market rates were generally substantially higher than the discount rate.)

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[5] For a thorough discussion from both the theoretical and institutional standpoints of dealer financing rates and their relationships in the money market, see Louise Freeman Ahearn, *The Financing of U. S. Government Securities Dealers 1960-1963,* (Unpublished Ph.D. dissertation, Columbia University, 1965).

[6] From the standpoint of the dealers, Desk RPs represent a means of borrowed funds. Thus, an important reason for the exclusion of bank dealers from Desk RPs is that banks can borrow at the discount window of the Federal Reserve Bank.

TABLE III

Federal Reserve System Repurchase Agreements and Dealer Financing
1961–1968

Year	Volume of System Repurchase Agreements	System Repurchase Agreements As Percent of All Repurchase Agreements	System Repurchase Agreements As Percent of All Dealer Financing
	(mil. of $)		
1961	$ 50	2.9%	1.8%
1962	59	2.8	1.7
1963	115	5.1	3.2
1964	102	4.7	2.9
1965	159	7.2	4.5
1966	118	6.8	4.4
1967	138	6.9	4.1
1968	108	4.3	2.7
Average 1961-1968	106	5.1	3.2

NOTE: Figures include U. S. Government securities and Federal agency issues. Data are annual averages of daily figures.

Source: *Federal Reserve Bulletin*

The magnitude of System RPs in overall dealer financing is relatively small. As shown in Table III, the average daily volume of outstanding RPs originating from the Trading Desk amounted to about 5 percent of the daily volume of all dealer RPs in the 1961-1968 period. For individual years, the average ranged from 2.8 percent in 1962 to 7.2 percent in 1965. In terms of *total* dealer financing, System RPs accounted, on average, for only 3.2 percent of daily financing requirements during the 1961-1968 period. Because only nonbank dealers are eligible for System RPs, and the data in Table III are based on the financing requirements of all dealers, the significance of Desk RPs to nonbank dealers is probably greater than the data suggest.

Federal Reserve open market operations can provide reserves to the banking system either through outright purchases of securities in the open market or through repurchase agreements.[7] The two methods of adding to bank reserves are not considered perfect substitutes, especially in terms of the supposed effects on interest rates. As Table IV indicates, the Trading Desk has relied heavily (but not systematically) on RPs to implement monetary policy objectives. In the 1961-1968 period, the volume of Desk RPs exceeded the volume of outright transactions during

[7] System purchases, either outright or under RPs, are paid by crediting the bank dealer's account at the Federal Reserve Bank or the reserve account of the nonbank dealer's clearing bank. System sales, therefore, reduce member bank reserves.

TABLE IV

Federal Reserve System
Open Market Transactions
1961–1969

Year	Outright (Purchases plus Sales)	Repurchase Agreements (Purchases plus Sales)
	(bil. of $)	(bil. of $)
1961	$15.2	$ 9.5
1962	16.6	12.0
1963	13.3	18.1
1964	15.9	18.0
1965	14.1	30.0
1966	25.9	19.2
1967	16.2	34.1
1968	51.2	31.8
1969*	37.9	31.1

NOTE: Transactions data are for U. S. Government securities only and do not include redemptions.
* Through August.

Source: *Federal Reserve Bulletin*

four years.[8] Whether bank reserves are supplied by outright purchases of Government securities or through RPs largely depends on conditions in the money market and on the objectives of the Federal Reserve System. The System usually engages in outright transactions when it wishes to provide or absorb bank reserves on a long-term basis. In contrast, RPs are designed to supply reserves for a limited time only. Outright System purchases followed after a few days by System sales of equivalent volume would have the same effect on bank reserves as RPs contracted for the same time interval. However, in an outright transaction, the securities dealers and other market participants do not know, as they do with an RP, if the transaction will be reversed. Consequently, RPs and outright purchases are likely to have different impacts in the market, especially in relation to expectations and dealer inventory positions. Therefore, some observers believe that outright purchases provide greater downward pressure on market yields than do RPs.[9]

Matched Sale-Purchase Transactions. The technique known as a "matched sale-purchase" is a relatively recent (July 1966) innovation in Federal Reserve open market operations.[10] Matched sale-purchases are conditional sales of Government securities from the System's Open Market Account. Parties to the transaction agree in advance that the System will repurchase the securities at a predetermined price within a few days of the original sale. The original buyers are the securities dealers with whom the Federal Reserve System conducts its open market transactions. When the Trading Desk sells securities, the dealers pay, in effect, with member bank reserves that are returned to the banking system when the matched sale-purchase contract expires.

In many respects, matched sale-purchase transactions are the opposite of RPs. The former are designed to withdraw reserves from the banking system temporarily, while the latter aim to inject reserves for specified and short periods of time. In addition, the methods of allocating the two types of transactions among the dealers differ. Matched transactions are entered into with all dealers, bank as well as nonbank; in contrast, only nonbank dealers are eligible for RPs. Moreover, RPs are

[8] This also suggests that RPs are probably more important as an instrument of monetary policy than as a means of dealer financing.

[9] See, for example, Stephen H. Axilrod and Janice Krummack, "Federal Reserve Security Transactions, 1954-63," *Federal Reserve Bulletin,* July 1964, p. 828.

[10] For a broader discussion of this technique, see "Federal Reserve Open Market Operations: Matched Sale-Purchases," *Economic Review,* Federal Reserve Bank of Cleveland, May 1968, pp. 2-6.

contracted at a fixed rate, while matched sale transactions involve competitive bidding.[11]

Matched sale-purchase operations were originally employed to eliminate the reserve effects of increased float associated with a labor strike against five major airlines in 1966. At that time, the usual method of withdrawing reserves—outright sales—was not considered suitable. According to the Manager of the Open Market Account "...Treasury bill rates were rising sharply...[therefore] the market was not expected to be receptive to large outright sales of bills...[and moreover] any such sales might have had to be followed quickly by outright purchases if the strike were suddenly settled."[12] Thus, the System decided to utilize matched operations to maintain monetary restraint at a time when outright sales could not have been carried out in the necessary volume in such a short period of time.

The main advantage of matched sale-purchase contracts is that the disruption in interest rate levels associated with a given change in bank reserves is thought to be smaller than it would be if the reserves were reduced or added through outright open market transactions. In a weak or weakening market, when a dealer buys securities outright, he undertakes the risk that prices might decline further, in which case he will suffer a capital loss if he has to sell at lower prices. In matched sale-purchase agreements, the price for future delivery is fixed and the risk of capital loss on the part of the dealer is accordingly removed. The dealer's task is instead to find a profitable source for financing his temporary holdings—and this is usually feasible at some rate close to the Federal funds rate. Furthermore, by providing automatically for the replenishment of reserves after a fixed interval, the matched sale-purchase transaction avoids the need for large outright purchases of securities that might artificially drive prices up and rates down in a thin or uncertain market.

The dollar volume of matched sale-purchase contracts has varied considerably from year to year. In the second half of 1966—the era of the "credit crunch"—the System undertook more than $4 billion of matched sale-purchases. As credit conditions improved somewhat in 1967, the volume of matched transactions fell to a total of $1.3 billion for the year. However, after the resumption of restrictive monetary policy in late 1967, matched sale-purchases increased and, in 1968, totaled more than $17 billion—an amount that, for the first time, exceeded the annual volume of System purchases under RPs. The volume of matched contracts up to mid-September 1969 has amounted to $27 billion.

Much of the increased use of matched sale-purchases in 1968 and 1969 can be attributed to restrictive monetary policy in the presence of high and volatile interest rates that resulted in the need to absorb bank reserves frequently with a minimum impact on market rates. On the other hand, if monetary policy had been expansionary, the System would have been supplying reserves (i.e., buying securities), in which case matched sale-purchases would have played no role. The causes

[11] Under matched sale-purchase contracts, the Desk in effect sets the price at which it is prepared to sell the particular securities and then asks the dealers to submit bids on the price at which they would be willing to sell back the securities a few days later. The Desk in turn chooses to do business with those dealers that offer to resell the securities at the lowest prices.

[12] *Annual Report,* Board of Governors of the Federal Reserve System, 1966, p. 241.

or sources of redundant reserves during this period have varied. Unexpected increases in float and changes in the procedures for calculating member bank required reserves have contributed to unanticipated changes in reserves. However, a major cause of short-term and partly unanticipated reserve variation in 1969 was changes in Treasury cash balances. During April and especially in September 1969, Treasury direct borrowing from the Federal Reserve System temporarily supplied a considerable amount of bank reserves that had to be absorbed through matched transactions.

APPENDIX

THE DEALER MARKET FOR U. S. GOVERNMENT SECURITIES

The U. S. Government securities market—and the dealers in that market—provides important services to both private and public institutions. On the public side, both the U. S. Treasury and the Federal Reserve System use the assistance of the dealers, the Treasury in connection with marketing and refinancing the national debt and the Federal Reserve in connection with open market operations. At the same time, private institutions, such as commercial banks, insurance companies, savings and loan associations, and nonfinancial corporations, among others, rely heavily on the dealers to execute transactions in U. S. Government securities.

At present, there are approximately 20 firms acting as primary dealers in U. S. Government securities. The number of firms has expanded since the beginning of World War II, largely as a result of the $200 billion increase in the volume of outstanding marketable U. S. Government obligations. Some of the dealer firms are special departments of commercial banks and are accordingly classified as bank dealers. The rest are securities houses that are designated as nonbank dealers. In addition to handling U. S. Government securities, some nonbank dealers trade other types of securities, such as negotiable CDs and Federal Agency issues. Although the main offices of most dealer firms are in New York City, several dealers maintain branches in leading metropolitan areas throughout the country.

The dealer market for U. S. Government securities is an *over-the-counter-market*—as opposed to an *organized* market such as the New York Stock Exchange. Transactions are consummated on the basis of individual negotiation between the dealer and the buyer or seller of the securities or some agent for the buyer or seller, such as a commercial bank or a securities broker. Almost invariably, transactions are first contracted through telephone or teletype and then confirmed in writing. The terms the dealers quote for buying or selling securities are the market—hence the expression "the dealers make markets." Such terms are constantly readjusted and, in general, tend to reflect the desire of dealers to add to or to reduce positions in light of their reading of current business and financial developments. Dealer quotation terms differ according to the issue under consideration. Treasury bills are quoted on a discount or yield basis; e.g., a three-month issue may be quoted 5.85 "bid" and 5.80 "asked," which means that a dealer is willing to purchase three-month bills with a given maturity value at a

price that would yield him 5.85 percent for the holding period, or to sell the same bills at a price that would yield 5.80 percent to the buyer. The difference, or spread, between the buying and selling price constitutes a source of income for the dealer. In contrast, coupon issues, such as Treasury bonds and Treasury notes, are quoted in terms of prices rather than yields. For example, a 10-year bond may be quoted at 81.24 bid, 82.8 asked. The figures after the decimal point are thirty-seconds, i.e., the above quotation should be read as 81 24/32 bid and 82 8/32 asked, which in dollars is $81.75 bid and $82.25 asked, respectively, per $100 of maturity value of the particular bond.

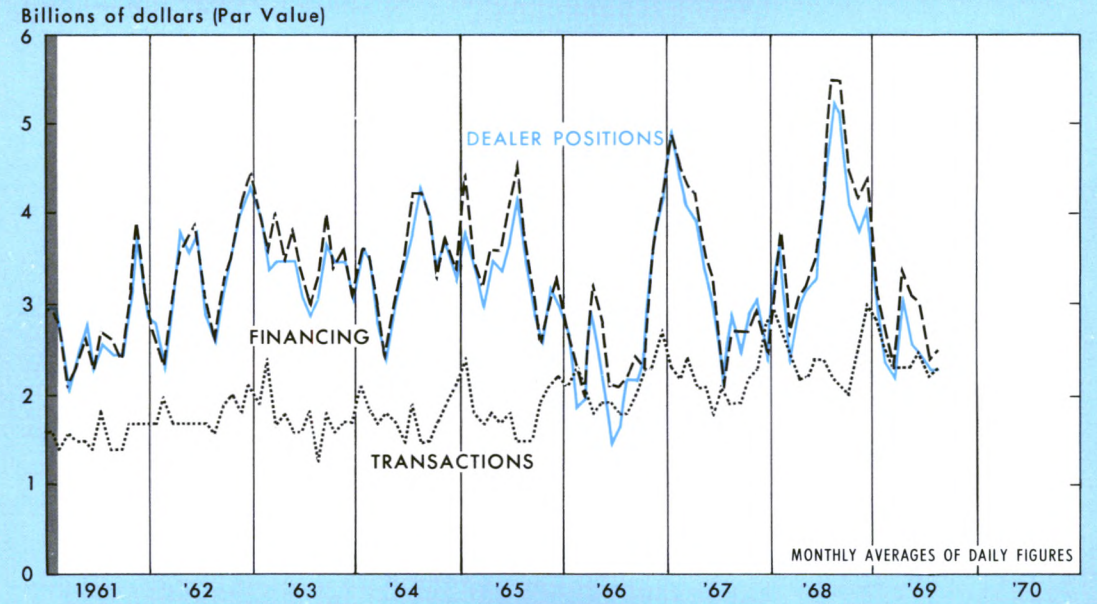
In general, most dealer firms stand ready to execute transactions in some size in all maturity ranges of U. S. Government securities. Some—usually the smaller firms—confine most of their trading to short-term issues, primarily because they cannot afford the capital risk involved in longer maturities and prefer instead to concentrate in the most active sector of the market in which there is less risk of large capital losses.

The volume of dealers' transactions and inventories are widely recognized as key measures of the performance of the dealer market for U. S. Government securities. A large and increasing volume of transactions suggests an active market with "depth and breadth." Dealer inventories or positions also reflect the dealers' appraisals of prospective interest rate trends. Unlike brokers for registered stocks who as a rule act only as middlemen, dealers in U. S. Government securities also buy and sell for their own account; that is, they act as principals rather than brokers. As a result, dealer holdings of securities are subject to capital gains and losses due to changes in interest rates. Therefore, dealers are reluctant to carry inventories in periods when security prices are declining (and rates are rising), or when there is uncertainty about the future course of interest rates in general.

Dealer transactions, positions, and financing during the 1961-1968 period are shown in the accompanying chart. As the chart shows, the volume of transactions experienced considerable, but irregular growth during the period. In 1968, the total of dealer purchases and sales averaged $2.4 billion a day, compared with $1.5 billion a day in 1961. To support the increased volume of transactions, dealers were required to carry—and finance—substantially larger inventory levels. Inventories increased from an average of $2.7 billion in 1961 to $3.8 billion in 1968. As the chart shows, fluctuations in dealer positions are of greater magnitudes than those in transactions. The actual trend of interest rates as well as expectations about future interest rate trends generally influence dealer positions. This point can be understood better by considering the technical aspects of dealer positions.

A dealer may take two types of positions: a *long* position and a *short* position. A dealer takes a *long* position when he buys securities outright for his own account. In a *short* position, the dealer sells securities that he does not have in his account. The dealer borrows the securities from a customer and, of course, must buy back the securities and return them to the lender at a later date. Not surprisingly, risks are involved in both types of positions. For example, if a dealer takes a position and securities prices rise (interest rates fall), capital gains will be realized on securities in the long position and capital losses in the short position. In the latter case, the dealer will have to pay a price that is higher than his original selling price to buy back the borrowed securities.

TRANSACTIONS, POSITIONS, and FINANCING of DEALERS in U. S. GOVERNMENT SECURITIES



NOTE: Transactions and positions data are averages of daily figures based on the number of trading days in the month; financing data are averages of daily figures based on the number of calendar days in the month. Transactions data represent combined totals of dealer purchases and sales, but do not include RP's or reverse RP's. Positions figures are on net basis, i.e., short sales have been deducted from long positions; RP's, unless matched by equivalent amounts of reverse RP's, are included in long positions and, therefore, are reflected in net positions.
Last entry: August 1969
Source of data: *Federal Reserve Bulletin*

If interest rates are rising and are expected to continue to rise, dealers tend to reduce long positions and increase short positions in anticipation of capital gains. The dealer cannot, however, always find a source from which he can borrow the securities needed to make a short sale. In addition, the dealer must pay interest on the borrowed securities (usually 1/2 of 1 percent). It is, instead, easier for the dealer to control commitments in long positions. Nevertheless, the chart clearly indicates that in periods of rising interest rates, dealers do in fact reduce their net—the difference between long and short—position (see, for example, the period of summer-fall 1966 in the chart).

Another important influence on positions is the dealer's need to hedge. To avert possible losses from changes in interest rates, dealers often attempt to cover a long position in a certain issue having a given maturity with a short sale of another issue of similar maturity. In this way, if interest rates change in the future—either up or down—the dealer's capital losses in one issue will be at least partially offset by capital gains in the other. By hedging, the dealers not only protect themselves against capital losses, but they also contribute to improvement in the market. In effect, dealers sell an issue that they do not have against one that they do and thereby satisfy a customer's need. In fact, many of the hedged positions result from security swaps with customers.

CORPORATE STOCKS

At the end of 1968, the estimated market value of outstanding corporate stocks amounted to $761 billion, or 80 percent greater than the value at the end of 1960. Corporate stocks account for the largest share of individuals' holdings of all financial assets as well as an increasingly important share of the assets of financial institutions. Although stocks are an important financial asset, few investors are aware of all the factors influencing share prices. This article examines the basic characteristics of corporate stocks as well as the supply of and demand for stocks. The article also reviews the stock market and technical factors in the market. The discussion focuses on equities during the 1960's.

BASIC CHARACTERISTICS

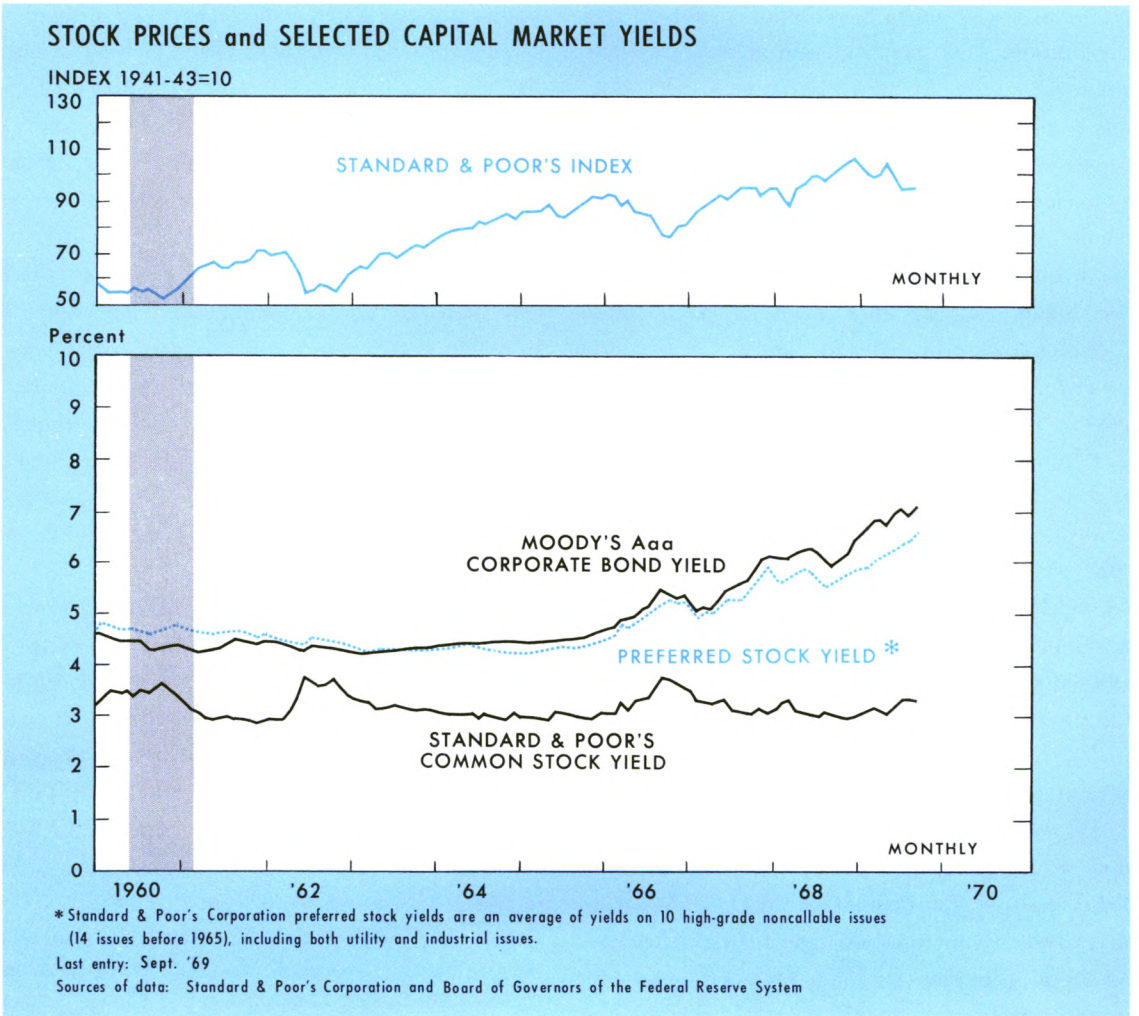
There are two general types of corporate securities, debt instruments and equities or corporate stocks. Debt instruments are obligations of the corporation, in contrast to equities which represent ownership of the corporation.[1] There are two classes of equities—preferred stocks and common stocks.

Preferred Stocks. Preferred stockholders have prior claim over common stockholders to dividends and assets if the company is dissolved. Preferred stocks generally pay a stated dividend, frequently expressed as an equivalent rate or percent of the par value of the stock. For example, a 5 percent preferred ($100 par value) is equivalent to a $5 dividend. In contrast, dividends on common stocks are not stated. Although preferred stockholders are owners of the corporation, frequently they do not have the right to vote on corporate matters.

Several characteristics of preferred stocks are similar to those of bonds. In addition to fixed dividend rates, some preferred stocks have call, conversion, and sinking fund features. Because the dividend rate is fixed, the market price and interest rate behavior of preferred stocks is similar to that of bonds; that is, the market price tends to vary inversely with the trend in interest rates. As shown in Chart 1, both preferred stock yields and corporate bond yields moved in a similar fashion and were at about equal levels until 1967, when yields on corporate bonds outpaced yields on preferred stocks. Corporations that hold stocks enjoy certain tax advantages on the dividend income from preferred stocks. As a result, preferred stocks offer such investors some of the

[1] For a discussion of corporate debt, particularly corporate bobds, see "Corporate Bonds, 1960-1968," *Economic Review,* Federal Reserve Bank of Cleveland, September 1969, pp. 3-16.

Chart 1.



benefits of tax exempt municipal bonds.[2]

[2]By law, corporate investors can deduct 85 percent of the dividends received on certain preferred stockholdings. The 85 percent deduction is applied to issues of public utility operating companies if the preferred stock was issued on or after October 1, 1942. These preferreds are referred to as "new money" issues. If the preferred was issued prior to that date ("old money"), the tax deduction amounts to about 62.5 percent. Preferred stock of all other issuers receives the full 85 percent deduction. For further details, see "Preferred Stock Guide, 1969 Edition" (New York: Salomon Brothers & Hutzler).

Unlike bonds, however, preferred stocks have no maturity date or principal amount to be repaid. Dividends on preferred stocks are paid after corporate taxes; in contrast, the interest on bonds is paid before taxes. If the dividends are not paid, the preferred stock goes into arrears rather than into default. That is, some preferred stockholders have a claim on the company for the dividends that were omitted.

Common Stocks. The common stockholder is a residual claimant, because both creditors and

preferred stockholders have senior claims on the corporation. Thus, the common stockholder provides risk capital. If the corporation is successful, the common stockholder may benefit from dividends (which are not contractual) and stock price appreciation. As shown on Chart 1, dividend yields on common stocks are substantially lower than yields on preferred stocks. The difference between the yields suggests that many investors hold common stock principally for capital appreciation, while they may hold preferred stocks primarily for yield.

Common stockholders generally have the right to vote on matters of corporate importance, such as electing directors, approving mergers, etc. However, some classes of common stock do not have voting rights. Frequently, when common stocks of a company are classified A and B, the Class B stock does not have the right to vote, whereas the Class A stock does have voting power.

A SOURCE OF CORPORATE FUNDS

Corporate nonfinancial businesses meet most of their financial needs through *internal* sources of funds that include retained earnings and depreciation. They fulfill the remainder of their financial needs through *external* funds obtained by issuing stocks, bonds, and other forms of debt.[3] During the 1960-1968 period, stocks accounted for an average 1.6 percent of total sources of funds and 5.1 percent of external sources of funds raised by corporate nonfinancial businesses (see Table I).

Because stocks represented such a small portion of the funds raised by corporations, some observers conclude that corporations apparently avoid issuing stock as much as possible.[4] The difference in corporate tax treatment of bond interest and dividend payments is an important factor. Baumol offers some other compelling reasons why corporations avoid the issuance of stocks.[5] First, there are heavy flotation costs associated with "going public," and the company may be required to divulge confidential information. Moreover, there may be a six-month delay between the time the issue is decided upon and the date of issuance. Additionally, stock financings are "lumpy," because they are used to raise large sums of money infrequently, rather than to meet day-to-day financial needs. Finally, existing stockholders may not want to dilute their equity by having additional shares issued.

Stock Offerings. As shown in Table II, during the 1960-1968 period, the dollar volume of total gross proceeds of corporate stock offerings varied widely from year to year. Common stocks accounted for 78 percent, on average, of total stock offerings. The large dollar volume of common stock offerings in 1961, 1964, and 1968 surpassed the volumes in other years by a wide

[3] Other forms of debt include mortgages, bank and other loans, trade debt, profits tax liabilities, and other liabilities.

[4] This is the point of view expressed in the following works: Gordon Donaldson, *Corporate Debt Capacity* (Boston: Division of Research, Harvard Business School, 1961), p. 56; Roger F. Murray, "Interest Rates and Their Influence on Equity Prices," *Readings in Financial Management,* Eugene M. Lerner, ed. (Homewood, Illinois: Richard D. Irwin, Inc., 1963), pp. 63-68; William J. Baumol, *The Stock Market and Economic Efficiency* (New York: Fordham University Press, 1965), pp. 66-83. An additional explanation is that nonfinancial corporations are at a mature stage of development and can rely less on stock issues and more on internal sources of funds.

[5] Baumol, *ibid.* Only the more obvious reasons are presented here. Baumol also discusses the issuance of stocks in terms of cost of capital and retained earnings.

TABLE I

Sources of Funds Raised by Nonfinancial Business Corporations
1960–1968

	Total Sources*	External Sources†	Stocks	Stocks As Percent of Total Sources	Stocks As Percent of External Sources
	(bil. of $)	(bil. of $)	(bil. of $)		
1960	$ 47.3	$12.9	$1.6	3.50%	12.40%
1961	54.7	19.1	2.5	4.57	13.08
1962	63.3	21.5	0.6	0.94	2.79
1963	65.9	22.0	– 0.3	–	–
1964	70.2	19.7	1.4	1.99	7.10
1965	88.4	32.7	‡	–	–
1966	99.2	38.1	1.2	1.20	3.14
1967	94.1	32.5	2.3	2.44	7.07
1968p	101.7	37.7	– 0.3	–	–
Average				1.63%	5.06%

* External and internal sources of funds.
† External sources of funds include: stocks, bonds, mortgages, bank and other loans, trade debt, profits tax liabilities, and other liabilities.
‡ Less than $50 million.

Source: Board of Governors of the Federal Reserve System, *Flow of Funds Accounts*

margin. However, stock offerings by one company, American Telephone and Telegraph, accounted for 28 percent of the common stock offerings in 1961 and 45 percent in 1964. There are also some interesting similarities between 1961 and 1968. As shown in Table III, a large *number* of new issues were sold in both years. (These data actually understate the number of issues because only stocks registered under the Securities Act of 1933 are included. The *Investment Dealers' Digest* estimated that nearly 1,200 common stock issues were offered in 1961.) In addition to the large number of issues and large dollar volume of common stock offerings, 1961 and 1968 also stand out as years when there was strong demand and speculation in the new issue market.

The data in Table II reveal that no single type of issuer dominated common stock offerings in the 1960-1968 period. Manufacturing industries, however, did account for the largest dollar volume in four of the nine years. The communications industry, principally due to the American Telephone and Telegraph offerings, and real estate and financial industries issued the largest portion of the volume in four of the remaining years. In 1968, commercial firms accounted for the largest share of the offerings.

The dollar volume of preferred stock offerings increased markedly during the 1960-1968 period. Because there were wide swings in the dollar volume of common stock offerings, preferred stocks accounted for as little as 12 percent of corporate stock offerings (1961), or as much as 32 percent (1965). On average, new preferred issues accounted for 22 percent of corporate offerings during the period reviewed.

TABLE II

Estimated Gross Proceeds of New Corporate Stock Issues*
1960–1968
(Mil. of $)

	Total	Manufacturing	Commercial and Other	Transportation	Public Utilities	Communication	Financial and Real Estate†
Common and Preferred Stock							
1960	$2,073	$ 633	$ 280	$ 16	$568	$ 74	$502
1961	3,722	741	388	20	692	1,128	753
1962	1,754	404	274	14	562	43	458
1963	1,364	318	156	9	419	152	309
1964	3,091	228	220	38	620	1,520	466
1965	2,272	705	251	60	604	139	514
1966	2,513	1,209	257	116	549	189	193
1967	2,844	1,164	466	117	718	193	186
1968	4,583	1,311	1,579	116	873	43	662
Common Stock							
1960	1,664	586	271	15	314	58	421
1961	3,273	666	360	16	442	1,088	700
1962	1,318	354	261	14	250	26	413
1963	1,022	271	140	9	218	93	290
1964	2,679	186	202	38	300	1,514	440
1965	1,547	593	230	60	138	92	435
1966	1,939	1,136	228	105	160	136	174
1967	1,959	933	438	107	181	123	177
1968	3,946	1,246	1,552	107	357	40	644
Preferred Stock							
1960	409	47	9	1	254	16	81
1961	449	75	28	4	250	40	53
1962	436	50	13	–0–	312	17	45
1963	342	47	16	–0–	201	59	19
1964	412	42	18	–0–	320	6	26
1965	725	112	21	–0–	466	47	79
1966	574	73	29	11	389	53	19
1967	885	231	28	10	537	70	9
1968	637	65	27	9	516	3	18

* Offered for cash in the United States.
† Excludes investment companies.

Source: Securities and Exchange Commission

TABLE III

Number of Common Stock Issues
1960–1968

1960	646
1961	878
1962	603
1963	280
1964	324
1965	376
1966	324
1967	466
1968	1,009

Source: Securities and Exchange Commission

Although the dollar volume of preferred stock offerings has increased in recent years, preferred stock issues have become less important as a source of corporate funds. One reason is interest cost. Some preferred dividend rates exceed the yields on some corporate bonds.[6] More importantly, as mentioned earlier, preferred dividends are paid *after* corporate taxes, while interest on bonds is paid *before* taxes. Thus, it costs a corporation more than twice as much to pay a dividend on preferred stock as it costs to pay interest on bonds.

As shown in Table II, public utilities consistently issued the largest volume of preferred stocks. Interestingly, this industry issued more preferred stock than common stock in recent years. Public utilities are a regulated industry and are only allowed to earn a limited amount on each dollar of assets.[7] Nevertheless, public utilities are becoming less dependent on preferred stocks as a source of funds. At yearend 1967, preferred stocks accounted for 9.6 percent of the capital and surplus of privately owned electric utilities in the United States, down two percentage points from the same point in time ten years earlier.[8]

Manufacturing concerns issued the second largest, but smaller, dollar volume of preferred stocks. In 1965 and 1967, the volume of these offerings increased sharply, reflecting in part the increased use of convertible preferreds to finance corporate mergers and acquisitions.[9] In 1968, however, convertible preferred stocks were used less intensively for that purpose because an Opinion of The Accounting Principals Board suggested

[6] For example, during the 1960-1968 period, the average yields on preferred stocks of utilities (both new and old money issues) exceeded the average yield on discounted Aa utility bonds. See "Preferred Stock Guide," *op. cit.*, pp. 8-9. The data were calculated by Salomon Brothers & Hutzler and are not strictly comparable with the preferred stock yield series shown in Chart 1.

[7] For a discussion of this point see: Plum, Humphrey, and Bowyer, *Investment Analysis and Management* (Homewood, Illinois: Richard D. Irwin, Inc., 1961), Chapter 12. Part of the argument centers on the fact that the cost of obtaining new money should be lower than the rate of return that the company is allowed to earn. The cost of issuing preferreds, in terms of yields and dividend payments, is frequently more expensive than the cost of issuing bonds. Thus, the expected rate of return has to be raised to cover the increased cost of the new money. For a further discussion on the use of preferred stock financing, see Hussein H. Elsaid, "The Function of Preferred Stock in the Corporate Financial Plan," *Financial Analysts Journal* (July-August 1969), pp. 112-117.

[8] *Statistics of Privately Owned Electric Utilities in the United States,* 1967, Federal Power Commission (September 1968), p. xx.

[9] Corporate merger activity increased sharply in 1965 and 1967. For a discussion of merger activity, see "Corporate Merger Activity in the Fourth Federal Reserve District, 1950-1967," *Economic Review,* Federal Reserve Bank of Cleveland, October 1968, and other articles contained in the *Economic Review,* January, March, and May 1969.

that common stock earnings per share *after* conversion of the convertible preferred stock should be reported.[10] From the corporations' point of view, this change in accounting procedure would result in reporting the dilution of per share earnings, which in turn might depress stock prices and displease some common stockholders. Accordingly, the dollar volume of convertible preferred issues declined in 1968.

Retirements. Each year, corporations retire a substantial volume of common and preferred shares. Frequently, this occurs as a result of mergers and acquisitions. In other cases, corporations may reacquire their own common stock for retirement or pension plans, stock options, investment purposes, or to increase earnings per share. They may also "call" or purchase preferred issues to reduce costly dividends and to remove preferred stocks from their balance sheets. Because of these retirements, there is a substantial difference between the gross volume of stock offerings and the net change in outstanding corporate stocks (see Table IV). In three of the years shown, retirements exceeded the gross volume of new stock offerings; as a result, there was a reduction in the dollar value of shares outstanding.

Investment Companies. Because investment companies are the largest issuers of stocks in terms of dollar volume, and because of their unique nature, they are treated separately in this article. In broad terms, investment companies invest their shareholders' funds in other securities to achieve a specific investment goal. Investment companies may be open-end (commonly called mutual funds) or closed-end. The major distinction between the two types is that the mutual funds will redeem their shares at asset value but the closed-end investment companies will not. The objectives of the investment companies vary widely and range from concentrating on achieving speculative capital gains to preserving capital and income.[11]

TABLE IV

Net Change in Outstanding Domestic Corporate Stock
1960–1968
(Mil. of $)

1960	$1,696
1961	2,650
1962	697
1963	– 249
1964	1,432
1965	– 37
1966	1,170
1967	2,268
1968	– 900

Source: Securities and Exchange Commission

During the 1960-1968 period, the number of registered investment companies increased from 570 to 967.[12] Mutual funds accounted for nearly 60 percent of the total in 1968. The dramatic growth in the number of investment companies is reflected in the volume of their own new issues. As shown in Table V, the volume of investment company offerings increased from $2.7 billion in 1960 to $9.9 billion in 1968. These numbers are particularly impressive when compared with the gross proceeds from all other new corporate stock offerings shown in Table II. For example, in 1960,

[10] See Frank J. Weston, "Increased Emphasis on Reporting Earnings Per Share," *Financial Analysts Journal*, July-August 1967, pp. 45-53 for a discussion of Opinion No. 9 ["Reporting the Results of Operations"].

[11] For greater detail, see *Investment Companies* (New York: Arthur Wiesenberger Services), published annually.

[12] Data are for yearend and are for investment companies registered with the Securities and Exchange Commission under the Investment Company Act.

TABLE V

Volume of Investment Company Stock Issues and Net Change in Outstandings
1960–1968
(Bil. of $)

	New Issues	Net Change In Outstandings
1960	$2.7	$1.9
1961	3.9	2.7
1962	3.4	2.3
1963	3.1	1.6
1964	4.4	2.5
1965	5.6	3.5
1966	6.5	4.5
1967	7.0	4.3
1968	9.9	6.1

Source: Securities and Exchange Commission

the gross dollar volume of investment company issues exceeded the total dollar volume of other corporate stock offerings by about 35 percent; in 1968, investment company issues were more than double the dollar volume of corporate stock offerings. Even when mutual fund redemptions were considered, the net change in outstandings for investment companies far surpassed the gross proceeds of other corporate stock issues.

INVESTORS

Net Acquisitions. During the 1960-1968 period, financial institutions were the dominant buyers of corporate stocks. As shown in Table VI, private noninsured pension funds acquired more corporate stock than any other type of buyer, with the dollar volume increasing sharply after 1964. In fact, in 1968, pension funds acquired more common stock than the remaining financial institutions and foreigners, as a group. Investment companies and life insurance companies were the next most important investors in corporate stock. Moreover, net acquisitions by all three types of institutions have increased substantially in recent years. In 1968, for example, noninsured pension funds, investment companies, and life insurance companies purchased $10.3 billion of corporate stock, or more than three times the volume of their purchases eight years earlier. Increased acquisitions in recent years were associated with the growth of the institutions, the desire to hedge against inflation, and the opportunity for capital gains.

In contrast, individuals consistently sold corporate stocks during the period under review. In fact, 1968 was the eleventh consecutive year for which individuals were reported as net sellers of stocks. Because the data for "individuals" include college endowment funds and nonprofit organizations that were probably net buyers of stocks, actual liquidations by individuals were probably even larger than the data suggest. Available data indicate that estates and large trusts accounted for most of the sales.[13] Individuals dispose of stocks for several reasons, such as to raise funds to pay taxes, to take advantage of rising stock prices, to reinvest funds in tax-free issues, and to diversify portfolios. At the same time, the number of individual shareholders is increasing, suggesting greater public participation in the stock market. For example, the Securities and Exchange Commission and the New York Stock Exchange report that there were about 24 million individual stockholders in 1968, compared with 17 million in 1962 and 6.5 million in 1952.[14] Individuals have

[13] *Institutional Shareownership,* a research report by the New York Stock Exchange, 1964.

[14] Securities and Exchange Commission. *34th Annual Report* (Washington, D. C., 1968), p. 3. Also, New York Stock Exchange, *1969 Fact Book* (New York, 1969), p. 43.

TABLE VI

Net Change in Ownership of Corporate Stock
1960–1968
(Bil. of $)

Type of Buyer	1960	1961	1962	1963	1964	1965	1966	1967	1968
Private noninsured pension funds	$1.9	$2.3	$2.2	$2.2	$2.2	$3.1	$3.7	$5.2	$ 6.1
Investment companies*	1.0	2.1	0.9	0.9	0.7	0.2	1.2	2.8	2.9
Life insurance companies	0.3	0.4	0.4	0.2	0.5	0.7	0.3	1.1	1.3
Property and casualty insurance companies	0.3	0.3	0.2	0.2	0.2	0.2	0.5	0.4	1.0
Other financial institutions†	0.2	0.3	0.4	0.5	0.5	0.7	0.6	1.0	1.3
Foreigners	0.2	0.3	0.1	0.2	– 0.4	– 0.5	– 0.3	0.8	2.3
Individuals	– 2.0	– 2.6	– 3.4	– 4.3	– 2.4	– 4.3	– 4.9	– 8.7	– 15.7
TOTAL	$1.8	$3.0	$0.8	–$0.2	$1.2	–$0.3	$0.9	$2.5	–$ 0.5

NOTE: Details may not add to totals because of rounding. Totals include net foreign stock issues.

* Open-end and closed-end.
† Includes state and local trust funds, mutual savings banks, and fraternal organizations.

Source: Securities and Exchange Commission

offset a substantial part of their direct stock sales by acquiring investment company shares and corporate bonds, many of which are convertible into common stocks. In 1968, for example, individuals acquired $5.7 billion of investment company shares and $4.2 billion of corporate bonds.[15] In contrast, individuals acquired only $2.7 billion of investment company shares and $1.6 billion of corporate bonds in 1967. Individuals have also increased their indirect investments in corporate stocks in recent years. Specifically, they have increased their deposits in financial institutions, such as life insurance companies and pension funds, that invest heavily in corporate stocks. For example, individuals' additions to insured and noninsured pension fund reserves amounted to $10.4 billion in 1968. About one-half of pension fund reserves are invested in corporate stocks. Individuals also added about $4.7 billion to private life insurance reserves. Therefore, individuals' direct and indirect investment in the stock market may have actually risen because their indirect stock purchases through investment companies and other financial institutions more than offset their sales of directly held corporate stock.

Holdings of Outstanding Stock. As shown in Table VII, individuals held $582 billion, or 76 percent, of the corporate stock outstanding in 1968. Although individuals were net sellers of stocks in 1968, the dollar value of their stock-holdings increased substantially because of higher stock prices. During the 1960-1968 period, indi-

[15] Data are from the Securities and Exchange Commission report "The Volume and Composition of Individuals' Savings."

TABLE VII

Ownership of Corporate Stock*
Yearend 1960–1968
(Bil. of $)

	1960	1961	1962	1963	1964	1965	1966	1967	1968
Private noninsured pension funds	$ 16.5	$ 22.9	$ 21.9	$ 27.7	$ 33.5	$ 39.7	$ 38.5	$ 49.5	$ 59.6
Investment companies	20.5	29.3	26.3	30.8	34.6	41.2	37.4	51.0	59.6
Life insurance companies	5.0	6.3	6.3	7.1	7.9	9.1	8.8	10.8	12.8
Property and casualty insurance companies	7.5	9.3	8.6	9.9	11.4	12.0	11.0	13.0	14.7
Banks	1.0	1.1	1.3	1.5	1.6	1.8	1.9	2.1	2.3
State and local trust funds	0.6	0.8	1.0	1.3	1.7	2.4	2.8	4.2	4.8
Foreigners	13.4	16.2	14.9	17.3	18.9	19.9	18.1	21.5	25.5
Individuals†	356.9	435.9	380.9	452.2	510.2	549.3	469.9	555.7	582.0
TOTAL	$421.2	$521.4	$461.0	$547.3	$619.2	$674.6	$587.3	$707.8	$761.3

NOTE: Details may not add to totals because of rounding.

* Estimated market values of preferred and common stock. Excludes investment company shares but includes foreign issues outstanding in the United States.
† The term individuals includes fraternal organizations, certain trust funds, and nonprofit organizations.

Source: Securities and Exchange Commission

viduals' corporate stock holdings appreciated by $177 billion.[16]

Investment companies held the next largest dollar volume of corporate stock. However, in 1968, private noninsured pension funds held the same dollar volume of stock as investment companies. The data reveal some interesting differences over time between holdings of private pension funds and investment companies. For example, price appreciation of stocks accounted for a much greater share of the growth of investment company holdings than of pension fund holdings. During the 1960-1968 period, the market value of investment company holdings appreciated by $26.9 billion, while pension fund holdings appreciated by $16.2 billion. That is, net acquisitions of corporate stock accounted for a larger share of the growth of pension fund holdings than of the growth of investment company holdings. These differences, of course, reflect the different investment objectives of pension funds and some investment companies.

Property and casualty insurance companies and life insurance companies accounted for slightly less than 2 percent of the corporate stock outstanding in the 1960-1968 period. Banks and municipal trust funds accounted for the smallest proportions of corporate stock holdings.

[16] An approximation of the total appreciation of corporate stocks equals the market value of total outstanding shares in 1968 (yearend), less the market value of total outstandings in 1959 (yearend), less net new issues. The data used in this article were compiled by the SEC and probably understate the market value of equities because of the methods of computation. A similar, but not strictly comparable, series appears in the Federal Reserve System's "Flow of Funds Accounts." The values used for equities in the Flow of Funds Accounts exceed those used by the SEC by a wide margin.

TABLE VIII

Registered and Exempted Stock Exchanges

Registered

American Stock Exchange
Boston Stock Exchange
Chicago Board of Trade
Cincinnati Stock Exchange
Detroit Stock Exchange
Midwest Stock Exchange
National Stock Exchange
New York Stock Exchange
Pacific Coast Stock Exchange
Philadelphia-Baltimore-Washington Stock Exchange
Pittsburgh Stock Exchange
Salt Lake Stock Exchange
Spokane Stock Exchange

Exempted

International Stock Exchange (formerly Colorado Springs Stock Exchange)
Honolulu Stock Exchange
Richmond Stock Exchange

THE MARKETPLACE

Corporate stocks are traded on organized stock exchanges or in the over-the-counter market. At yearend 1968, there were thirteen stock exchanges registered under the Securities Exchange Act of 1934 and three that were exempt from registration (see Table VIII).[17] The New York Stock Exchange (NYSE) is, of course, the largest exchange. At yearend 1968, the market value of outstanding stocks listed on the NYSE amounted to $692.3 billion and constituted more than 90 percent of the market value of stocks listed on all stock exchanges. In addition, the NYSE accounted for the bulk of both the dollar value and share volume of sales effected on stock exchanges, although both proportions have been shrinking. For example, the NYSE accounted for 73.8 percent of the dollar value and 62.1 percent of the volume of shares sold in 1968, down 10 percentage points and 6 percentage points, respectively, from 1960 proportions. In contrast, trading activity on the American Stock Exchange, the second largest stock exchange, has picked up noticeably in recent years. In 1968, the American Stock Exchange accounted for 17.7 percent of the dollar value of all sales and 29.6 percent of the volume of shares sold, an increase of 8 percentage points and 7 percentage points, respectively, over 1960 proportions.

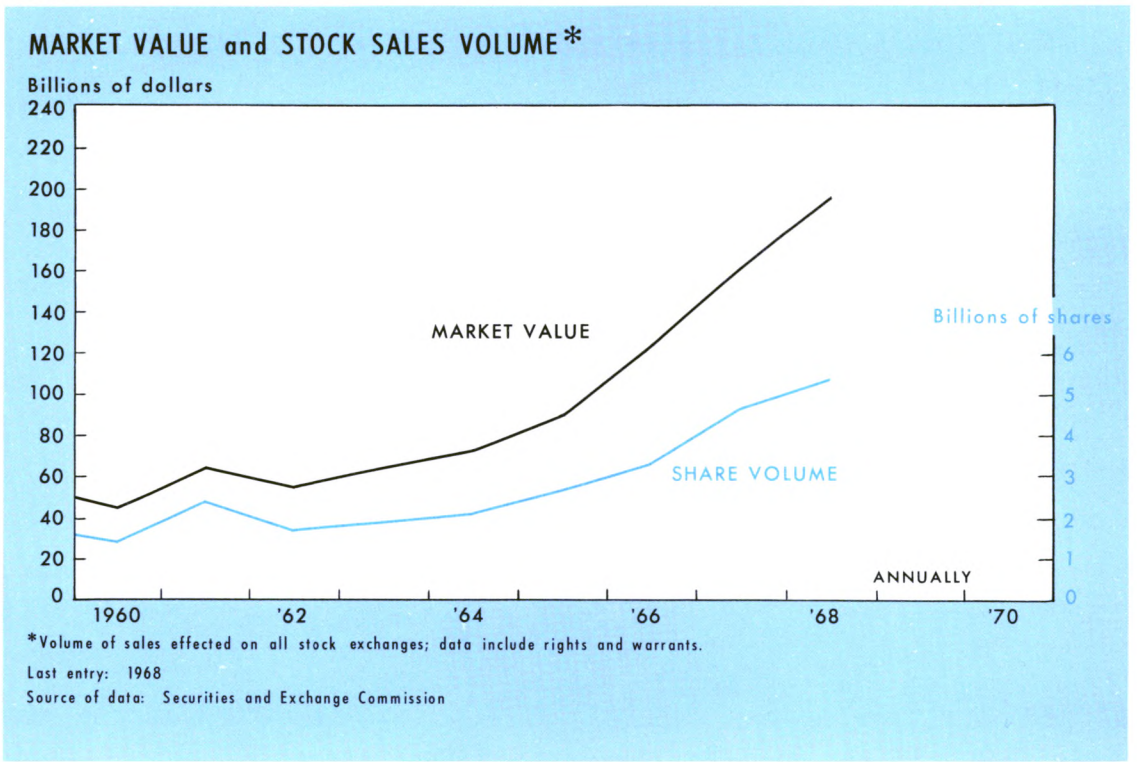
The over-the-counter (OTC) market consists of a large number of securities firms located throughout the country that act as brokers and dealers. (A broker acts as an agent, whereas a dealer also buys and sells for his own account.) There are no recent data on the dollar value or volume of shares traded in the OTC market.[18] In 1961, however, the Securities and Exchange Commission reported that OTC sales accounted for about 35 percent of the dollar value of stock transactions (OTC and all exchanges) and were equivalent to 75 percent of all exchange sales.[19]

[17] During fiscal year 1968, registration of the San Francisco Mining Exchange was terminated.

[18] Some limited data are available in *Over-the-Counter Markets Study,* prepared by Booz, Allen, and Hamilton, Inc., for the National Association of Securities Dealers, Inc., August 22, 1966.

[19] U. S., Congress, House, Securities and Exchange Commission, *Report of Special Study of Securities Markets, Part 2,* 1963, 88th Cong., 1st Sess., p. 714.

Chart 2.

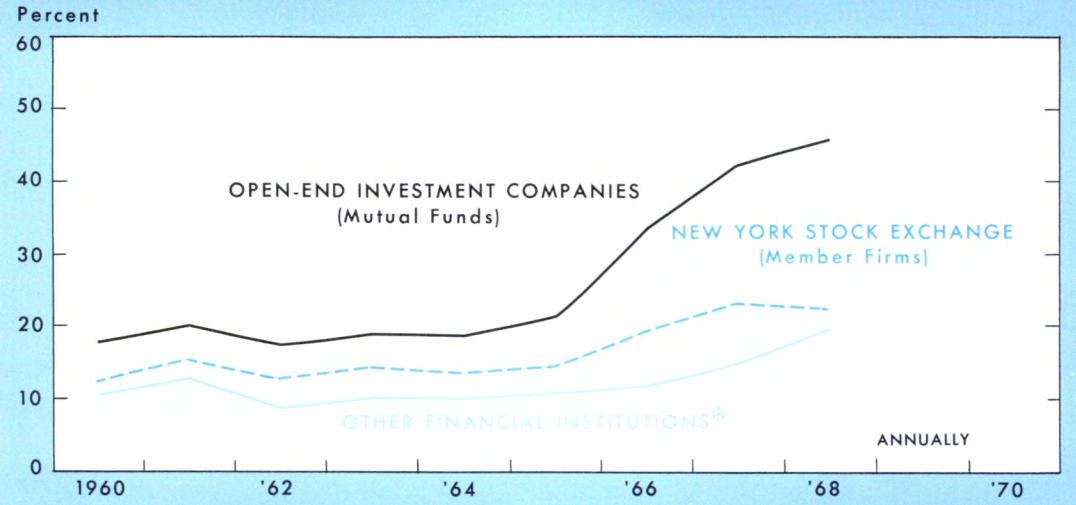


Trading Activity. During 1960-1968, trading activity on all stock exchanges increased substantially, particularly in the last three years of the period. As shown in Chart 2, 5.4 billion shares were traded in 1968, or nearly four times the volume traded in 1960. The market value of the shares traded in 1968 was $197 billion. The volume and dollar value of shares traded rose considerably more in the 1966-1968 period than in previous years, largely reflecting the increased emphasis that financial institutions put on performance—buying and selling stocks to take advantage of short-term price changes.

The common stock activity rates of market participants are another indicator of trading activity and also reflect the recent emphasis on performance. (The activity rate is the average of purchases and sales divided by the average market value of stockholdings at the beginning and end of the year). As shown in Chart 3, the activity rate for open-end investment companies (mutual funds) remained virtually unchanged during the 1960-1965 period and then increased sharply. In 1968, the mutual funds' activity rate was nearly 47 percent, or more than double the 1965 rate. The activity rate of member firms of the New York Stock Exchange also increased appreciably after 1965, due in part to the influence of trading by mutual funds. In 1968, the activity rate on the New York Stock Exchange was 22 percent. This activity rate was slightly lower than the rate in 1967, but substantially higher than the average for the 1960-1965 period. During the 1960-1968 period, the activity rate for other financial institutions (private noninsured pension funds, life insurance companies, and property and casualty insur-

Chart 3.

COMMON STOCK ACTIVITY RATES FOR SELECTED FINANCIAL INSTITUTIONS



* Data for Other Financial Institutions are the average activity rates for private noninsured pension funds, life insurance companies, and casualty insurance companies.

Last entry: 1968
Source of data: Securities and Exchange Commission

ance companies) averaged 12 percent, a rate that was substantially lower than the rate for mutual funds and for New York Stock Exchange firms.

A NYSE study gives some indication about the composition of trading activity on that exchange.[20] The study discloses that individuals accounted for the largest proportion of the volume of shares traded on the Exchange on selected dates in the 1952-1966 period. Nevertheless, the proportion of trading volume accounted for by individuals declined markedly over the period. In 1966, for example, individuals accounted for 43 percent of the volume, in contrast to about 57 percent in 1952. On the other hand, financial institutions' share of trading activity increased about 8 percentage points during the period studied and amounted to nearly one-third of the total volume in 1966. NYSE member firms accounted for the remaining proportion of the volume of trading.

Data on *dollar* volume for selected dates in the 1960-1966 period show similar patterns to that of *share* volume. In 1966, individuals accounted for 38 percent of the dollar value of transactions, and financial institutions and NYSE member firms accounted for 35 percent and 27 percent, respectively. In turn, mutual funds accounted for about one-fourth of the institutional activity.[21]

During the 1960-1968 period, stock market credit, which is the amount borrowed to finance stock transactions with New York Stock Exchange member firms, also increased. In December 1966, customers' net debit balances amounted to $5.3

[20] "14th Public Transaction Study, October 19, 1966," New York Stock Exchange, 1967.

[21] "Institutional Activity: Week of October 24-28, 1966 on the New York Stock Exchange," New York Stock Exchange (July 1967).

billion, or an increase of 65 percent over December 1960. (Net debit balances exclude balances secured by U. S. Government securities.) By yearend 1968, customers' net debit balances had risen to $9.8 billion, or 85 percent greater than the 1966 level. As a general matter, the increases in stock market credit, activity rates, and trading volume are indicative of the increased demand for corporate equities.

RECENT PERFORMANCE OF SELECTED INDEXES

It is reasonable to conclude that in recent years strong demands for equities, increased emphasis on performance, and other factors, such as the growth of corporate earnings, have benefited some groups of stocks more than others. To examine this point in detail, the analysis focuses on developments since January 1966, when the Standard & Poor's Index reached an interim peak (see Chart 4).[22] The January 1966 peak ended a rise in the stock market that began in 1962, and in the months following the peak, a substantial "correction" occurred. The market did not turn around until late 1966. Following a marked recovery in stock prices during most of 1967, a fairly sizable adjustment occurred early in 1968, and then the market advanced irregularly until late that year. Stock prices moved in a narrow range in early 1969 and then declined sharply, reaching an interim low in August.

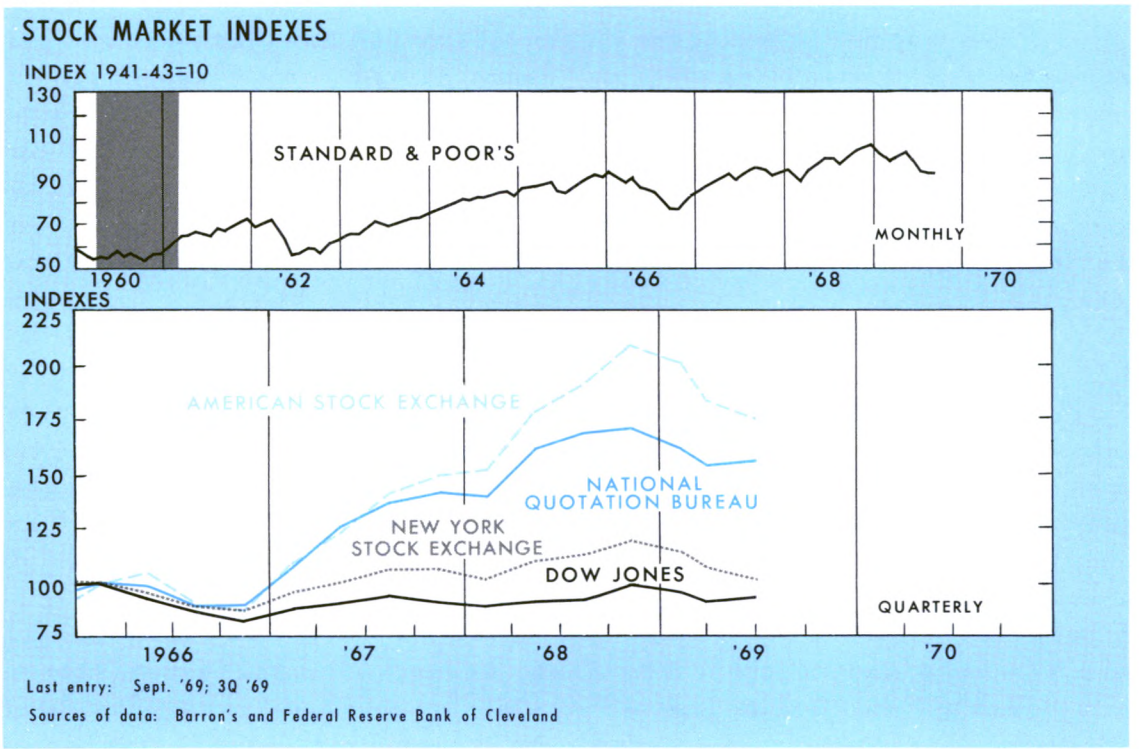
Chart 4 also shows how various segments of the stock market, measured by four popular stock market indexes and averages, have performed since the first quarter of 1966.[23] Since the first quarter of 1966, the Dow Jones Industrial Average (representing "blue chip" securities) has remained below the level reached in that quarter. In fact, in the third quarter of 1969, the Dow Jones Industrial Average was substantially below the level of the first quarter of 1966. If the recent emphasis on glamour stock issues is considered, the lackluster performance of blue chip securities should not be surprising. The New York Stock Exchange Composite Index, which provides a comprehensive measure of all common stocks listed on the Exchange, had the same general contour as, but outperformed, the Dow Jones Industrial Average. In the third quarter of 1969, the New York Stock Exchange Index was 4 percent higher than the level it had reached in the first quarter of 1966.

Unseasoned and somewhat speculative securities are frequently associated with the American Stock Exchange. During the 1966-1969 period, the American Stock Exchange Index outperformed the seasoned issues on the New York Stock Exchange by a wide margin. In the third quarter of 1969, the American Stock Exchange Index was 175 percent higher than its level in the first quarter of 1966, 81 percentage points higher than the Dow Jones Industrial Average, and 71 percentage points higher than the New York Stock Exchange Index. The National Quotation Bureau Index of selected over-the-counter stocks almost

[22] See "An Economic Evaluation of the Stock Market," *Economic Review,* Federal Reserve Bank of Cleveland, August 1968.

[23] The various indexes and averages were converted into an index using the first quarter of 1966 as the base period. Dow Jones Industrial Average is a weighted price average for 30 industrial stocks listed on the New York Stock Exchange. National Quotation Bureau Index represents price averages for 35 quality over-the-counter industrial stocks. The New York Stock Exchange Index includes all stocks listed on the exchange. The American Stock Exchange Index includes all stocks traded on the exchange, expressed in dollars.

Chart 4.



matched the performance of the American Stock Exchange Index in 1967, but was much lower than the American Stock Exchange Index in the fourth quarter of 1968 and the first three quarters of 1969. In summary, the data suggest that in the past few years investors and speculators have favored unseasoned growth stocks over the well-seasoned blue chips; that is, the emphasis was on performance.

FACTORS AFFECTING THE STOCK MARKET

Stock prices have been considered an indicator of business activity for many years. Specifically, it is believed that changes in stock price averages anticipate changes in business activity. In fact, this was the basis of the popular "Dow Theory."[24] There is some foundation for this belief. A study by the National Bureau of Economic Research reveals that stock prices led three-fourths of the business cycle turns during the 1871-1966 period, by an average (median) of four months.[25]

Examination of stock market performance during the 1960-1969 period, however, raises some question about the use of the market as an

[24] A discussion of the origins of the Dow Theory can be found in George L. Leffler and Loring C. Farwell, *The Stock Market* (New York: The Ronald Press Co., 1963), pp. 534-535.

[25] Geoffrey H. Moore and Julius Shiskin, *Indicators of Business Expansions and Contractions* (New York: National Bureau of Economic Research, 1967), p. 39.

economic indicator. As shown in Chart 4, the Standard & Poor's Index, which is a broad measure of stock market activity, rose at the end of 1960, dipped noticeably in 1962, showed a brief adjustment in 1965, declined sharply in 1966, showed another brief adjustment in 1968, and declined sharply in 1969. If stock prices are accepted as a reliable business indicator, the recent record would suggest that there were six business recessions in the last nine and a half years. During this period, however, the NBER recognized only one recession—that in 1960-1961. Thus, the false signals in stock prices in 1962, 1965, 1966, 1968, and 1969 should be explained in order to evaluate the usefulness of stock prices as an economic indicator.

Clearly, developments other than business cycles can seriously affect stock market prices. Often, these developments are exogenous and/or noneconomic. Some of the reasons given for stock market weakness in recent years can be used as examples. Many observers believe that in 1962 the market was in a technically weak position because of high price-earnings ratios, a concurrent squeeze on corporate profits, and diminishing concern about inflation. All three factors tend to depress stock prices, other things being equal. The brief market dip in 1965 was also blamed on overpricing, as well as public reaction to the increases in United States military strength in Vietnam. The drop in stock market prices in 1966 coincided with a change in expectations about business conditions and the now famous credit squeeze. It is generally held that the Vietnam situation caused the break in stock prices in early 1968 and that expectations about business and credit conditions contributed to the sharp break in 1969. It appears that at least three additional influences should be considered when reviewing the recent behavior of stock market prices—the money and credit situation, the extent of inflation, and investor psychology.

There is some question if these factors can be identified precisely enough to avoid misinterpreting their effects as a warning of a change in business activity. One study attempted to determine the link between monetary growth and stock prices.[26] It was found that changes in monetary growth led changes in stock prices by about 15 months before a bear market and by about 2 months before a bull market, over the long run. One way in which monetary policy affects stock prices is by influencing corporate cash flow and, ultimately, dividend payments.[27]

TECHNICAL FACTORS IN THE STOCK MARKET

Many observers rely on technical indicators of the stock market to help forecast the direction and extent of stock price movements. As discussed earlier, investor psychology, which is perhaps the single most important technical factor affecting stock market performance in the short term, cannot be measured precisely. Indirectly, however, investor psychology can be observed in short-term changes in the level of stock prices.

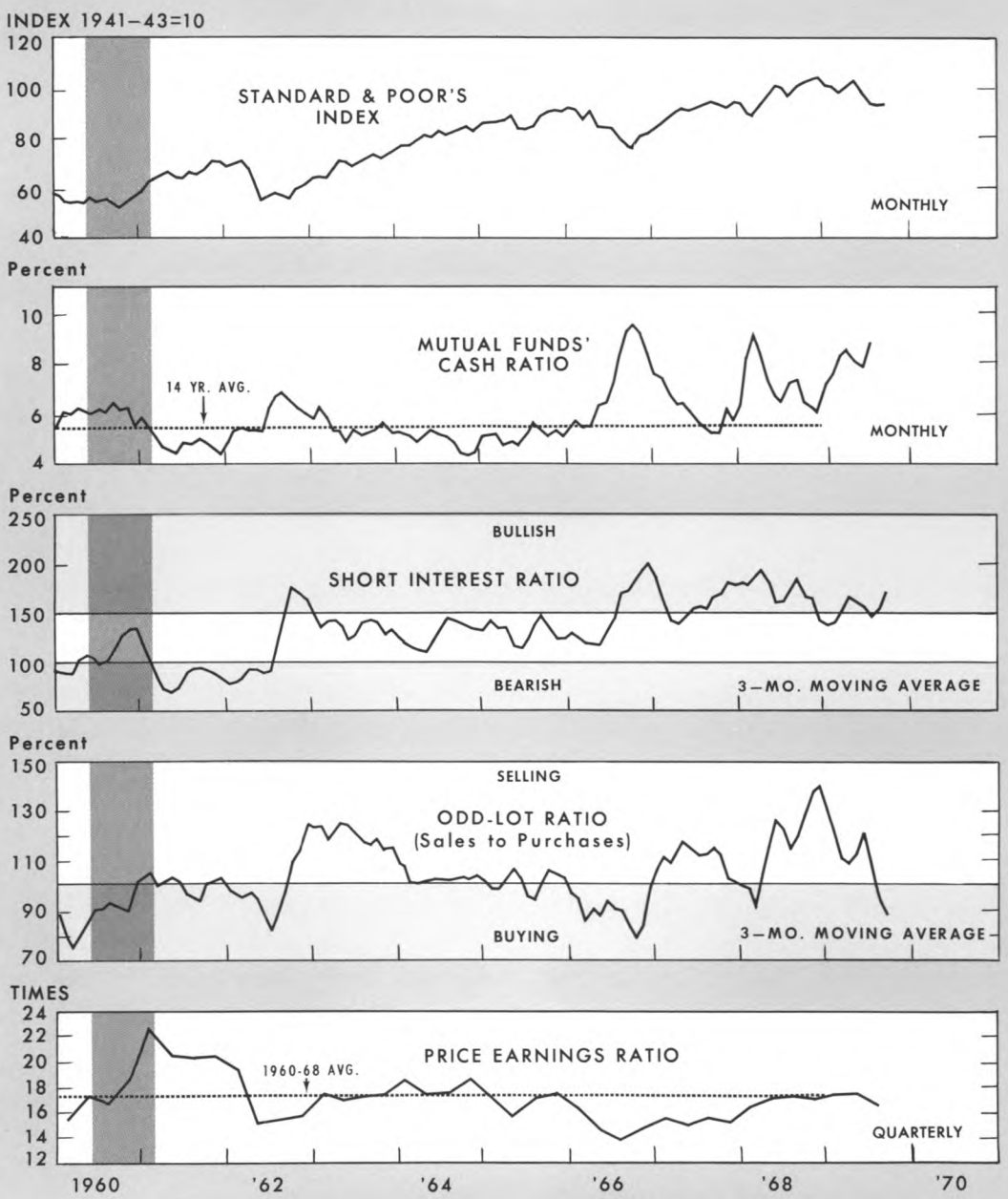
Four widely used technical indicators of the stock market are shown in Chart 5. The *mutual funds' cash ratio,* which relates liquid assets to total (net) assets of these institutions, gives some indication of the ability of mutual funds to invest in the stock market, with a high cash ratio

[26] Beryl W. Sprinkel, *Money and Stock Prices* (Homewood, Illinois: Richard D. Irwin, Inc. 1964). The definition of the money stock used includes demand deposits adjusted and currency (seasonally adjusted).

[27] See, for example, Frank de Leeuw and Edward M. Gramlich, "The Channels of Monetary Policy," *Federal Reserve Bulletin,* June 1969, pp. 481-482.

Chart 5.

STOCK MARKET TECHNICAL INDICATORS



Last entry: Sept. '69; July '69; 3Q '69

Sources of data: Barron's; Investment Company Institute; Standard & Poor's Corporation; Federal Reserve Bank of Cleveland

considered bullish for the market. There is little doubt that mutual funds and other financial institutions can influence share prices.[28] As shown in Chart 5, there appears to be a strong inverse relationship between the cash ratio and stock prices. That is, there is a tendency for the cash ratio to decline when stock prices increase. The peaks in the cash ratio in 1960, 1962, 1966, and 1968 coincided with the troughs in the Standard & Poor's Index, and the troughs in the cash ratio almost coincide with the peaks in the Index.

On balance, mutual funds are net buyers of common stocks, which lends support to a secular rise in stock prices. Nevertheless, periodically the funds are net sellers of stock. During the 1960-1968 period, mutual funds were net sellers in five of the thirty-six quarters.[29] Specifically, the funds were net sellers in the third quarter of 1962, the third quarter of 1966, the fourth quarter of 1967, the first quarter of 1968, and the third quarter of 1968. The level of stock prices declined during three of those five quarters. Moreover, four of the five quarters occurred in the last two years (1967 and 1968), reflecting the funds' increased willingness to trade stocks actively. Perhaps this also explains why the cash ratios of mutual funds peaked at substantially higher levels in 1966 and 1968 than in earlier years.

The *short interest ratio* relates the total number of shares sold short on the New York Stock Exchange to the average stock volume for about a 30-day period (for example, February 15 to March 15). The logic behind this technical indicator is that speculators and others sell stocks "short" at high prices in anticipation of buying them back at lower prices.[30] When stock prices rise, those who sold short attempt to maximize profits (or minimize losses) by buying stock—or covering short positions—at the lowest possible prices, which in turn forces stock prices to rise further. A short interest ratio above 150 percent is considered bullish, and a ratio below 100 percent is considered bearish. As shown in Chart 5, there have been wide swings in the level of the short interest ratio in recent years. Nevertheless, several important features are clearly discernible. First, the peaks in the short interest ratio in 1960, 1962, 1966, 1968, and 1969 virtually coincided with the low points in the Standard & Poor's Index. In contrast, the short interest ratio was only bearish twice, signaling the declines in the stock market in 1960 and 1962. The behavior of the short interest ratio before the stock market declines in 1966, 1968, and 1969 was, however, by no means bearish.

The *odd-lot ratio,* which relates odd-lot sales to odd-lot purchases, is a third technical indicator. Some stock market technicians believe that the small investors do the right things, but at the wrong times. Available data do not completely support that position. As shown in Chart 5, odd-lotters bought when the Standard & Poor's Index declined in 1960, 1962, 1966, 1968, and 1969. Moreover, they sold heavily in the early

[28] For discussions of the effects of institutional investors on share prices, see Sidney Robbins, *The Securities Markets* (New York: The Free Press, 1966), Chapter 7. Also, U. S. Congress, House Committee on Interstate and Foreign Commerce, *Report of Special Study of Securities Markets of the Securities and Exchange Commission, Part 2,* 88th Cong., 1st. Sess., 1963, Chapter 8.

[29] Data on net purchase of common stock by mutual funds are available in the *1969 Mutual Fund Fact Book* (New York: Investment Company Institute, 1969), pp. 84-85.

[30] A short sale is the sale of a security that the seller does not have, or a sale affected by the delivery of a borrowed security. At some time, the short seller must buy the stock, or deliver his own stock to cover the short position.

stages of the subsequent advance in stock prices, particularly in 1963 and 1967. In the latter cases, it can be argued that small investors sold too soon because the stock price index continued to rise and the odd-lot ratio declined. As shown in the chart, the stock price index declined in the first half of 1969. Thus, odd-lotters sold at the right time in 1968.

The usefulness of these three technical indicators as indicators of changes in stock prices is questionable. Statistical analysis that used the mutual funds' cash ratio, the short interest ratio, and the odd-lot ratio as independent variables and the Standard & Poor's 500 Stock Index as the dependent variable revealed little association between stock prices and the technical indicators.

Another technical indicator—the *price earnings ratio*—shows how some investors appraise the growth potential of individual stocks. In the fourth quarter of 1968, for example, investors paid an average of 43 times earnings for office and business equipment stocks and less than 12 times earnings for retail food store stocks.[31] Aside from the possibility that one group of stocks may have been overvalued and the other undervalued, these ratios imply that investors expected prices of office and business stocks to grow at a substantially higher rate than retail food store stocks. In addition, investors' valuations of the same group of stocks change over time. For example, investors paid nearly nine times earnings for automobile stocks—excluding General Motors—in the fourth quarter of 1966, 34 times earnings one year later, and 11 times earnings in the fourth quarter of 1968. More importantly, price earnings ratios measure risk, with high ratios suggesting high risks. As shown in Chart 5, during the period reviewed, there were wide swings in the level of the price earnings ratio of the Standard & Poor's 500 Stock Index. In the third quarter of 1969, the ratio was 17 times earnings, which was appreciably higher than the low of 13.9 times earnings reached in 1966, but well below the record 23 times earnings reached in 1933 and, more recently, in 1962.

CONCLUDING COMMENTS

The fundamental determinant of share prices is, of course, supply and demand. During the 1960's, the supply of new corporate stocks increased moderately, while the demand for such instruments rose sharply; by definition this resulted in higher levels of share prices. Strong demand stemmed from the increased number of institutional investors that had become *equity* oriented. Underlying the demand for stocks was the widespread belief that corporate stocks are a good hedge against inflation and offer exceptional opportunities for capital gains. Along this line, there has been considerable emphasis on *performance* in recent years. Equally important, this article was written against a background of the longest economic expansion in United States history. Thus, continued economic growth and higher corporate earnings were important factors that influenced the demand for stocks. More subdued economic growth and price stability in the future may contribute to a slackening in the demand for stocks.

[31] The price earnings ratios are the high price earnings ratios of the Standard & Poor's industry stocks for the fourth quarter of 1968.

RECENT ECONOMIC DEVELOPMENTS IN WEST GERMANY

In a relatively short time, West Germany has emerged from a state of collapse at the end of World War II with the strongest economy in Europe. Rapid economic growth, accompanied by exceptional stability in domestic prices, enabled West German businesses to improve their efficiency and compete effectively in foreign markets. The nation's balance of payments has generally shown large surpluses. In addition, massive inflows of short-term capital have periodically threatened to add to domestic inflationary pressures, often at critical economic and political junctures. Reflecting the high national priority on maintaining price stability, the West German authorities raised the exchange parity of the Deutschemark in 1961 and again in October 1969. This article traces the economic developments that have contributed to the persistent and, at times, outstanding strength of the West German economy and considers some implications of the latest revaluation.

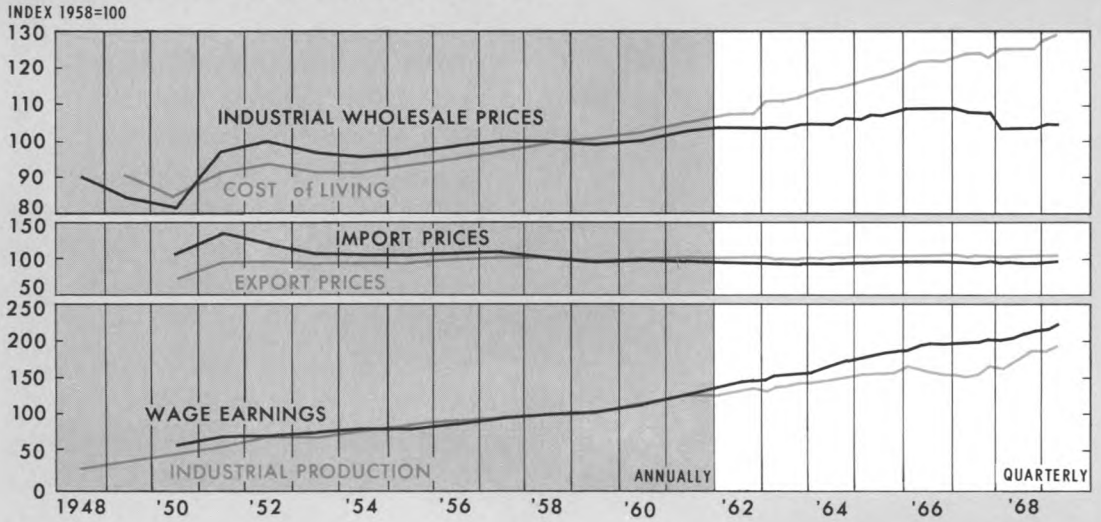
PRICE STABILITY AND ECONOMIC GROWTH

West Germany's rapid economic recovery in the postwar period began with a currency reform in June 1948. An overriding concern of the national government since then has been to preserve the stability of the Deutschemark to avoid a repetition of the runaway inflation that had severely disrupted the German economy after both world wars. The extent to which this public policy has been successful is illustrated by the performance of the nation's cost of living index shown in Chart 1. From 1949 to 1968, the West German cost of living rose 37 percent, or 1.7 percent a year. (This compares with an average annual rate of increase of just over 2 percent in the United States Consumer Price Index during the same period.) Average annual rates of gain in industrial wholesale prices and export prices were even smaller, amounting to slightly more than 1 percent.

The difficulties of keeping inflation in check while promoting high rates of growth since World War II have been readily apparent in many major industrial countries, including Germany. The nation's real Gross National Product (GNP) rose by an impressive average of nearly 4½ percent a year between 1950 and 1968, but GNP tended to follow a cyclical pattern that averaged four to five

Chart 1.

WEST GERMANY: PRICES, EARNINGS, and OUTPUT



Last entry: 2Q '69

Source of data: International Monetary Fund

years in length. The cyclical pattern was,in part, the result of public policy actions to counter the recurring emergence of inflationary pressures. For example, growth in industrial production leveled in 1953 and 1958 as a result of rigorous deflationary policies designed to restore domestic stability (see Chart 1). A similar plateau in industrial output is apparent in 1966-1967.

Until 1955, postwar increases in West German wages were fairly moderate and were held down in part by the influx of displaced persons and refugees from Eastern Europe that prevented an early occurrence of labor shortages. At first, wage gains more or less kept pace with advances in productivity and thus did not constitute an inflationary threat. Since 1955, however, wage increases have averaged almost 8 percent a year, outstripping annual gains in output per employee by a substantial margin. In more recent years, the ability of West Germany to attract and absorb large numbers of workers from Southern Europe—over 1.3 million at the seasonal peak in both 1966 and 1969, or 6 percent of the total labor force—has not prevented large increases in wage rates.

The existence of this reservoir of foreign labor partly explains why Germany can operate at much lower average rates of unemployment than other industrialized countries before pressures on available resources become a serious problem. That is, the total supply of labor in West Germany has tended to be more elastic than in most other industrial countries. West German officials regard an unemployment rate of 0.8 percent as an indication that full employment has been reached.[1]

[1] Edward F. Denison, *Why Growth Rates Differ* (Washington, D. C.: The Brookings Institution, 1967), pp. 307-309.

West Germany
Percent Distribution of Gross National Product
at Current Prices
1961-1968

GNP by Sectors	1961	1962	1963	1964	1965	1966	1967	1968
Consumer expenditures	57.3%	57.6%	57.2%	56.3%	56.5%	57.2%	58.0%	56.2%
Government current expenditures	14.1	15.0	15.7	14.9	15.4	15.7	16.6	15.7
Gross domestic fixed investment	24.7	25.4	25.2	26.4	26.3	25.4	22.8	23.1
Private	(21.3)	(21.4)	(20.9)	(21.7)	(21.8)	(21.1)	(18.8)	n.a.
General government	(3.5)	(4.0)	(4.4)	(4.6)	(4.5)	(4.2)	(4.0)	n.a.
Change in inventories	1.8	1.0	0.6	1.1	2.0	0.4	−0.7	1.6
Exports of goods and services	20.2	19.4	19.9	20.2	20.2	21.4	23.0	23.8
Less: Imports of goods and services	18.1	18.4	18.5	18.9	20.3	20.1	19.6	20.3
Total GNP	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
GNP in billions of Deutschemarks	326.2	354.5	377.6	413.8	452.7	480.8	485.1	528.8

n.a. Not available.

Sources: Bundesbank, *Reports for the years 1967 and 1968* and Organization for Economic Cooperation and Development, *National Accounts of OECD Countries, 1958-1967*

Although the increase in the number of employed persons was the major source of economic growth in West Germany between 1950 and 1955, since then, capital investment in plant and equipment has assumed the dominant role.[2] Gross fixed capital formation has generally exceeded 25 percent of GNP (see table). If, for the sake of comparability with United States statistics, government investment is excluded, the average annual ratio was 21 percent of GNP from 1961 to 1967 (latest data available); the United States ratio averaged about 14 percent during this time. Residential structures accounted for 5½ percent, on average, of total capital investment in West Germany, compared with 4 percent in the United States. Investment in business plant and equipment, particularly after 1955, contributed more to economic growth in West Germany than in the United States or the other major countries of western Europe.[3] The higher rate of business investment enabled West Germany to reduce the average age of its capital equipment to a greater extent than in the United States,[4] and the more modern plants in turn have probably improved the country's productivity relative to that of other countries.

FINANCIAL INVESTMENT

A second aim of recent financial public policy in West Germany—second to the maintenance of price stability—has been to ensure adequate financing for the high rate of capital investment and the expansion of production. Nevertheless, the greater part of business investment was financed through depreciation and retained earnings. During the

[2] *Annual Economic Report of the Federal Government for 1969,* the Federal Republic of Germany, Bonn, 1969.

[3] Denison, *op. cit.,* pp. 310-328.

[4] *Ibid.,* p. 147.

1960's, for example, gross savings of businesses, including depreciation allowances, equaled more than 70 percent of total business investment. In 1967, gross business savings exceeded total business investment.[5] Fiscal incentives for businesses to provide for the expansion of capacity out of their own resources were important factors. On the other hand, because labor costs have risen faster than productivity since 1955, profit margins have been eroded; this, along with other developments including some tax changes, tended to hold down the growth in retained earnings and threatened to cut back this type of financing corporate investment.

The large dollar volume of consumer savings, typical of many European countries, constitutes a potential source of business investment funds, but the greater part of personal savings finds its way into the deposits of financial institutions rather than being placed directly into the securities markets. Recently, individuals have placed some of their savings in investment funds that specialize in West German fixed interest securities, but personal savings are usually deposited in *savings* banks that traditionally do not lend directly to industry. In contrast, *commercial* banks provide large amounts of capital to industry, not only by making bank loans but also by purchasing an equity interest in industrial enterprises. Some savings are placed in time deposits at commercial banks, although the largest owners of such deposits are corporations. In fact, time and savings deposits constitute over 70 percent of total bank deposits and help to explain the relatively long-term commitments the banks make in financing business and industry.

The West German banks are also important as underwriters and traders in securities. They both buy or sell securities for their customers and trade for their own accounts; the banks are also free to purchase an ownership participation in a nonfinancial corporation.[6] In floating new capital issues, underwriting syndicates are headed by a bank and joined by other banks to distribute the new shares. However, there are a number of practical difficulties in raising new capital through stock issues, one being the comparative thinness of the West German stock markets. Therefore, direct bank financing remains as the chief external source of business funds to be used for additions to productive capacity.

FISCAL AND MONETARY POLICY

Since 1961, fiscal and monetary policy in West Germany have shared the long-term goal of promoting rapid but stable growth in a free market economy. However, on occasion, there have been conflicts between the two types of policies in the short run. Such a conflict arose between 1965 and the second quarter of 1967. Federal taxes were cut and expenditures increased for the election year of 1965, even though an economic boom had prevailed throughout 1964. In contrast, the Bundesbank (the West German central bank) pursued a restrictive monetary policy throughout 1965. Rediscount quotas for commercial banks were reduced, and both the bank rate and the Lombard rate at which the Bundesbank purchases securities from the commercial banks were raised. However, the Bundesbank found that credit policy measures were being "thwarted by trends in the public

[5] "OECD Economic Surveys: Germany," Organization for Economic Cooperation and Development, Paris, April 1969, p. 42.

[6] David E. Spray, Editor, *The Principal Stock Exchanges of the World* (Washington, D. C.: International Economic Publishers, Inc., 1964), pp. 117-140.

finances" that tended to delay credit restraint,[7] and the commercial banks were able to expand credit at a rapid rate, in response to strong demand. At the same time, the money supply increased more slowly in 1965 than in 1964 because an overall balance of payments deficit depleted foreign currency balances held by West German banks.

During 1966, the effects of fiscal and monetary policy were reversed. The federal spending stimulus to the economy was progressively reduced during the year. The Bundesbank continued to act during the first half of 1966 to contain the inflationary pressures that persisted. As late as May 27, 1966, the Bundesbank raised its bank rate by a full percentage point to 5 percent. Market interest rates peaked around mid-1966. The combined fiscal and monetary restraint culminated in a recession that reached a trough in the first half of 1967.

In the second half of 1966, the West German balance of payments moved into surplus as the trade balance recovered sharply, and the Bundesbank allowed the resulting increase in commercial bank liquidity to work through the economy instead of neutralizing the increase in available funds. However, the banks were slow to react to the increase in their lending capacity; as a result, the Bundesbank gave an overt indication of a change in monetary policy by reducing bank reserve requirements in December 1966 and again in February-March 1967. Between January and May 1967, the Bundesbank also reduced the bank rate in four stages of one-half of 1 percent to a level of 3 percent.

Thus, from 1965 to early 1967, fiscal actions, especially at the state and local government levels, tended to accentuate the business cycle. With the adoption of the Law for Promoting Stability and Growth of the Economy in June 1967, the government obtained a number of instruments that enabled it to give greater counter-cyclical flexibility to both fiscal and monetary policy.[8]

BALANCE OF PAYMENTS

The success of monetary and fiscal policy in promoting relative price stability, as well as conditions favorable to rapid economic growth, has contributed to large and persistent surpluses in West Germany's merchandise trade with the rest of the world. That is, the surpluses reflect the ability of the West German economy to produce large quantities of quality goods at attractive prices. In turn, the overall balance of payments has derived much of its strength from the trade surpluses (see Chart 2).

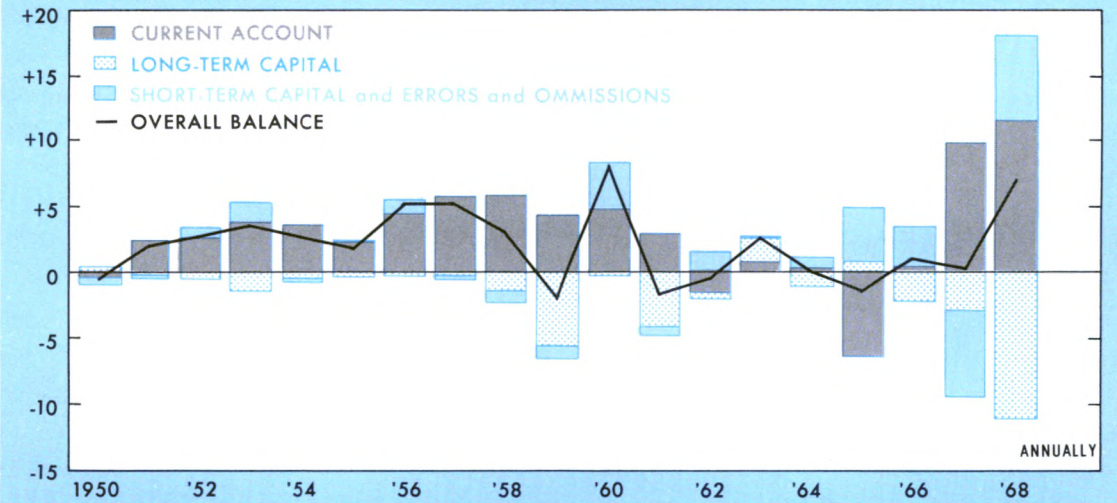
The service account, which was in surplus during the 1950's, has since reflected net outpayments. Transfer payments have shown a fairly substantial deficit since 1953 for several reasons. West Germany paid large sums under World War II indemnification agreements with European countries and international organizations; until 1965, payments were made under an agreement with Israel for restitution to individuals. The payments made under the Common Agricultural Policy of the European Economic Community (EEC) have also added to the deficit in recent years. Furthermore, the homeward remittances of foreign workers employed in West Germany have tended

[7] *Report of the Deutsche Bundesbank for the Year 1965,* Frankfurt, 1966, p. 22.

[8] *Report of the Deutsche Bundesbank for the Year 1967,* Frankfurt, 1968, p. 25.

Chart 2.

WEST GERMANY: BALANCE of PAYMENTS



Last entry: 1968

Source of data: Deutsche Bundesbank

to be very large. On the other hand, the balance of payments (and the federal budget) has benefited because a major part of West Germany's defense costs are borne by its partners in the North Atlantic Treaty Organization.

In regard to capital flows in the balance of payments, long-term capital moved out of West Germany in 16 of the 19 years between 1950 and 1968, mainly because of large outflows of official funds to other countries. Short-term capital movements have tended to be very volatile; for example, short-term flows swung from an outflow of over 6 billion D.M. in 1967 to an inflow of nearly 5 billion D.M. in 1968. As a result of *all* balance of payments transactions, West German official reserves (including gold, foreign exchange, and the IMF position) have increased since 1950, reaching a level of $12 billion by September 1969.

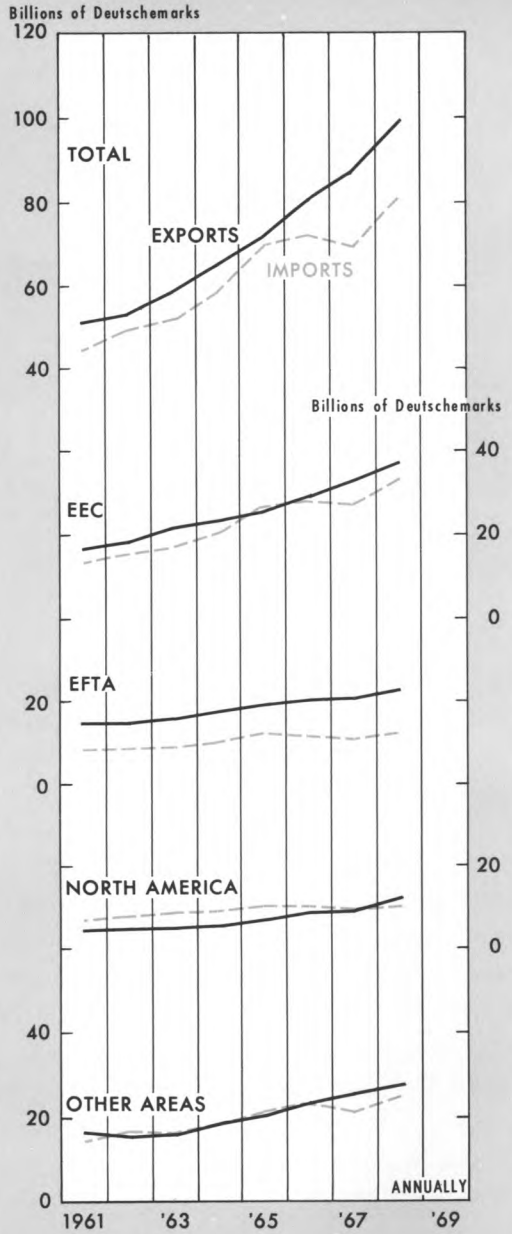
Merchandise Trade. The persistent West German merchandise trade surplus has been the main factor in the postwar buildup of the nation's official reserves and has had an important influence on short-term capital movements. The upward revaluation of the Deutschemark in March 1961 was intended to reduce domestic inflationary pressures (1) by encouraging imports and (2) by discouraging both exports and the inflow of short-term capital that had surged in 1960. The response of merchandise trade to the 1961 revaluation can be seen in the top panel of Chart 3. Specifically, in 1962, the value of imports rose by 5 billion D.M., or about 3½ billion D.M. more than in 1961; at the same time, exports rose only 2 billion D.M., compared with an increase of 3 billion D.M. in 1961. In addition, short-term capital flowed out of West Germany in 1962.

Unfortunately, the effects of the 1961 revaluation gradually subsided during 1962. In 1963,

Chart 3.

WEST GERMANY: MERCHANDISE TRADE

By Area



Last entry: 1968

Source of data: Deutsche Bundesbank

exports resumed a strong upward trend, while imports increased relatively little. Even in the domestic boom which ended in the first half of 1966, imports did not grow substantially. They declined during the 1967 recession (see Chart 3). On balance, in the past eight years imports rose faster than exports only in 1965. Even at the very high level of economic activity that was achieved in 1968-1969, the accompanying substantial increase in imports was outpaced by the rise in exports. This occurred despite tax measures taken in November 1968, that in effect taxed exports and subsidized imports. (The significance of the leveling in both exports and imports in the third quarter of 1969 remains to be judged.)

The areas mainly responsible for the recent growth of the West German trade surplus were the European Free Trade Area and North America (see Chart 3). Within the EFTA, West Germany increased its trade surpluses with, in descending order of increase, Switzerland, Portugal, and the United Kingdom. The increase in West Germany's surplus with North America was concentrated entirely in trade with the United States.

The Bank for International Settlements recently concluded that the strength in West German exports in 1968 largely reflected an unexpected expansion of world demand during the year.[9] The overall demand arose partly from abnormal influences, including the threatened and actual strikes in United States metals industries, a spurt in British consumer spending before the United Kingdom's fiscal restraints were imposed early in the year, and a steep rise in French imports in the second half of 1968. The rapid expansion of world economic activity in general

[9] *Thirty-Ninth Annual Report,* April 1, 1968-March 31, 1969, Bank for International Settlements, Basel, 1969, p. 8.

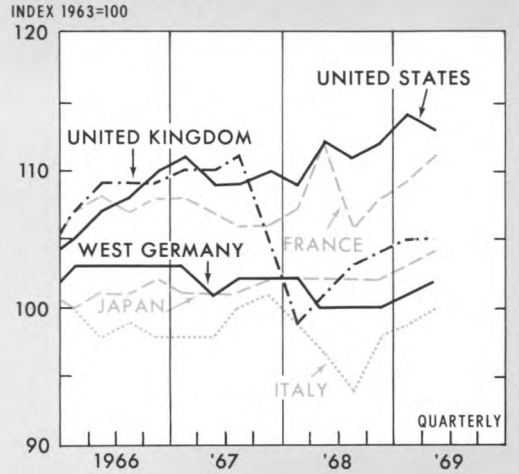
intensified demand for West German exports. Speculation in the fourth quarter of 1968 about an upward revaluation of the Deutschemark added impetus to rising exports. Moreover, as mentioned earlier, the announcement of the export tax speeded up export deliveries from West Germany toward the end of the year; in turn, exports dropped sharply, but temporarily, in the first quarter of 1969.

The general expansion in world trade has been of more benefit to West Germany than any other major exporter because of the greater competitiveness of the nation's industry. In 1968, the productivity gains that accompanied the increase in output exceeded the rise in labor costs, and much higher profits per unit of output were realized during the year.[10] In addition, industrial wholesale prices and export prices declined in the first half (see Chart 1). Admittedly, Chart 4 shows that export prices of the United Kingdom and Italy (expressed in terms of United States dollars and computed as an index) declined to a greater extent in early 1968 (compared with 1967) than West Germany's, but the British price changes reflected the devaluation of the pound in November 1967. By the second quarter of 1969, only West German and British export prices had not surpassed the levels that existed in 1966 and early 1967.

Chart 4.

EXPORT PRICES of MAJOR INDUSTRIAL COUNTRIES

In Terms of United States Dollars



Last entry: 2Q '69

Source of data: International Monetary Fund

PRESSURES IN FOREIGN EXCHANGE MARKETS

A critical period in international finance for West Germany and the rest of the world began in 1968 and continued into 1969. The West German economy experienced a recession in 1966-1967, and fiscal and monetary policy began to move in step. In late 1967 and 1968, West German production revived strongly, mainly because of the surge in exports. The resulting rise in incomes helped maintain strong economic activity in the election year of 1969. In some respects, the situation in 1968-1969 resembled that of the period that preceded the national elections in 1964-1965, but the design and implementation of fiscal policy had been altered after the passage of the Stability and Growth Law in 1967. The situation culminated in an upward revaluation of the Deutschemark in October 1969. Consequently, it may be valuable to examine the West German economy and public policy in some detail to provide a meaningful background to the change in the parity value of the mark.

Under the requirements of the Stability and Growth Law, the federal and provincial authorities

[10] Organization for Economic Cooperation and Development, *op. cit.*, p. 17.

drew up fiscal plans that incorporated declining budget deficits after 1968. Moreover, the federal budget for 1968, according to the OECD's assessment, turned out to be "neutral or even slightly restrictive" in impact, even though more unused productive capacity was available than in the previous economic expansion in 1964.[11]

The Bundesbank was in accord with this fiscal policy, and monetary policy was varied in line with changes in the domestic economy. To accelerate the recovery from the 1967 recession, the Bundesbank had allowed an increase in the liquidity of credit institutions in the first half of 1968, that mainly originated from the large balance of payments surplus. In the second half of 1968 however, when a massive inflow of short-term capital developed in response to expectations of a revaluation and threatened the stability of domestic costs and prices, the Bundesbank tried to check the inflow of capital and encouraged the repatriation of foreign-owned funds that had been deposited in West Germany.

Throughout 1968, attempts were made to encourage additional long-term capital outflows from West Germany. In the first nine months of the year, the outflow of long-term capital virtually offset the combined current account surplus and inflow of short-term capital. Nevertheless, the nation's official reserves increased during the period because of enormous inflows of unrecorded funds. These funds probably were associated with rumors of a revaluation of the mark that were, in turn, based on the continuing surge in West German exports and the rapid buildup of official reserves. Additional signs of weakness in the French economy after the domestic disorders in May and June of 1968 encouraged the rumors that the French franc would be devalued and the Deutschemark revalued.

West German officials convened a meeting of the Group of Ten ministers in Bonn in November 1968 in an attempt to resolve the foreign exchange crisis that had developed in Europe. The day before the conference convened, the West German government announced adjustments in border taxes on exports of nonagricultural products.[12] At the same time, the monetary authorities imposed a 100 percent reserve requirement (noninterest bearing) on new bank deposits owned by foreigners.

On November 23, 1968, French officials announced that the franc would not be devalued. This announcement and the West German border tax adjustments quieted foreign exchange markets for a short time. In fact, in December 1968 and to a much greater extent in January 1969, short-term funds left the country, probably moving into the Eurodollar market. West German official reserves actually declined in the first quarter of 1969, reflecting capital outflows and a temporary decline in the merchandise trade surplus from the unusual level reached at the end of 1968.

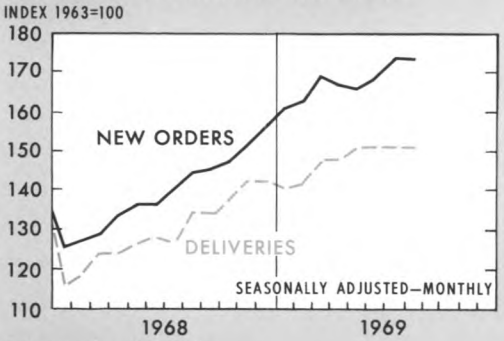
The West German authorities became increasingly concerned that inflation would develop in 1969 as it had in 1965, even though the federal budget moved into surplus in 1969. Manufacturers' new orders rose sharply through the first quarter, outpacing industrial production and shipments (see Chart 5). In addition, a substantial

[11] Organization for Economic Cooperation and Development, *op. cit.*, p. 12.

[12] According to a law of December 1, 1968, which was to apply until March 31, 1970, a 4 percent rebate was allowed on imports and a 4 percent special turnover tax was to be imposed on exports. However, the export tax was not actually imposed until after December 22, 1968, a concession that led to a surge in exports that month.

Chart 5.

WEST GERMANY: NEW ORDERS and DELIVERIES in MANUFACTURING



Last entry: Aug. '69
Source of data: Organization for Economic Cooperation and Development

increase in the number of foreign workers to a new record level only partly alleviated the growing tightness in the labor market. The upward trend of wage and salary payments became steeper. Therefore, in March 1969, the West German financial authorities acted in concert to curb internal demand by accelerating corporate tax prepayments, deferring some federal expenditures, and cutting rediscount quotas for commercial banks. In mid-April, the Bundesbank raised both the bank rate and the Lombard rate by a full percentage point. In order to reduce strains in the relatively thin capital market, new foreign issues were postponed.

The financial authorities also had to cope with the persistent strength in the balance of payments, reflecting a basic merchandise trade surplus. However, there were disagreements among the nation's policymakers about the duration of the payments surpluses. The Bundesbank held the view that some West German merchandise exports were the result of outflows of capital in the form of foreign aid and direct investment. Thus, capital exports had had a "boomerang" effect on the trade balance.[13] The Bundesbank also argued that, in view of domestic investment and consumption requirements, capital outflows from West Germany were probably not sustainable in a size sufficient to offset the basic trade surplus for the long run. With these views, plus the central bank's emphasis on maintaining domestic price stability, the Bundesbank appeared to favor revaluation of the mark in preference to a mild degree of domestic price inflation to stimulate imports and discourage exports. The Minister for Economic Affairs, who was one of the leaders of the Social Democrat (SPD) minority party in the coalition government, also favored revaluation in 1969. On the other hand, the Chancellor and the Minister for Finance, both members of the Christian Democrat (CDU) majority party, firmly opposed revaluation. Thus, when another international crisis developed in late April and early May, the West German Federal Cabinet decided that the mark's parity value would not be changed.

The financial crisis abated, but the division of opinion among the West German authorities suggested that the final revaluation decision had not yet been made. However, the approach of national elections on September 28, 1969, precluded any change in parity value until after that date. In the interim, the Bundesbank tightened monetary policy further by raising commercial bank reserve requirements on both June 1 and August 1, and by increasing both the bank rate and the Lombard rate in July by a full percentage point to levels of 6 percent and 7½ percent, respectively.

Widespread expectations of a revaluation triggered a heavy inflow of short-term funds in the

[13] *Report of the Deutsche Bundesbank for the Year 1968,* Frankfurt, 1969, p. 18.

week before the elections, and West German foreign exchange markets were closed on September 26. Because neither the CDU nor the SPD received an absolute majority in the federal election, a new coalition government had to be formed. In the intervening period, the mark was traded in the foreign exchange market without official support, and the exchange rate quickly rose to a premium of about 5 to 6 percent above the former parity level. One of the first actions of the new coalition government that took office on October 21 was to revalue the mark upward by 9.3 percent, effective at midnight October 26, 1969. At its new value, one Deutschemark equals $0.27322 at par.

The immediate effects of the revaluation were to trigger substantial outflows of funds from West Germany and to introduce what appears to be a period of relative calm and stability in international foreign exchange markets. The capital outflow proceeded to such an extent that early in November, in an effort to balance tightening liquidity pressures, the Bundesbank reduced the minimum reserve requirement for commercial banks by an average of 10 percent; a similar reduction was put into effect in December. The central bank also removed the 100 percent reserve requirement on foreign-owned bank deposits. Effective December 5, 1969, the Lombard rate was increased from 7½ percent to 9 percent to discourage investment by the commercial banks in the Eurodollar market; the bank rate was not changed.

THE IMPLICATIONS OF REVALUATION

In summary, the unwillingness to revalue the Deutschemark before October 1969 seemed to have been politically determined. That is, the persistent competitive strength of West Germany as an exporter, the large and continuing trade surplus, the recurring inflows of short-term capital, and the growing pressure on domestic resources argued strongly for revaluation on economic grounds. For example, in November 1968, conditions seemed very appropriate for raising the value of the mark because the West German economy was experiencing a cyclical upswing.

The use of a floating rate in the fall of 1969 was a short-term expedient, but one that was unpopular with the other Common Market nations. Under the Common Agricultural Policy of the EEC, a policy hammered out after years of negotiation, agricultural products were to be sold at prices quoted in terms of an unchanging common unit of account. The West German action seems to have undercut the common policy that had already been weakened by the effect of the French devaluation. Moreover, West Germany felt it necessary to provide special compensation to its agricultural sector, which would have suffered from the revaluation in comparison with the other sectors of the economy. Thus, the federal government imposed a tax on all imports of farm products, thereby offsetting the effects of the floating rate of exchange and protecting West German farm income. In subsequent negotiations within the Common Market, adjustments through direct subsidies to West German farmers were agreed upon.

Indeed, the revaluation of the Deutschemark seemingly was undertaken not only as a means of easing tensions in international finance and trade, but also because this was the most effective way of pursuing the key West German objective of internal price stability. As in 1961, revaluation offered the prospect of reducing pressures in the domestic economy without producing severe deflation and

the risk of recession. The clear implication is that the maintenance of price stability continues to be the guiding policy principle.

The immediate effect of establishing a higher parity for the Deutschemark has been to improve West German terms of trade, automatically raising the real income of the country as a whole. However, the underlying characteristics of the nation's economy remain unchanged. Industry, supported by high rates of capital formation, will probably remain competitively efficient. Over time, the means of mobilizing and channeling the large volumes of personal savings into productive investment may improve further. Since the redesign of fiscal policy in 1967, fiscal and monetary policies have worked more harmoniously to counteract cyclical fluctuations. The prospects are for a continuation of a high rate of economic growth under even more stable conditions than in the past. In brief, unless the main trading nations of the world hasten to use the realignment of the value of the mark to obtain lasting improvement in their own trade positions, the whole problem of West Germany's surpluses may reoccur as it did after 1961. To preserve a reasonable equilibrium in international trade and world payments, the major nations will have to try to match, each taking account of its own circumstances, the success in controlling inflation that has been achieved in West Germany.

NEW PUBLICATIONS

The second editions of *Statistical Profile: Counties of the Fourth Federal Reserve District* and *Statistical Profile: Standard Metropolitan Statistical Areas of the Fourth Federal Reserve District* are available from the Federal Reserve Bank of Cleveland. *Statistical Profile: Counties of the Fourth Federal Reserve District* presents data for all Fourth District counties on population, employment, unemployment, production, distribution, banking, income, agriculture, natural resources, and government. *Statistical Profile: Standard Metropolitan Statistical Areas of the Fourth Federal Reserve District* presents data for all Standard Metropolitan Statistical Areas in the Fourth District on population, employment, unemployment, production, distribution, construction, finance, income, government, and transportation.

Copies of the books are available from the Research Department of the Federal Reserve Bank of Cleveland, P. O. Box 6387, Cleveland, Ohio 44101.

ANNUAL INDEX TO ECONOMIC REVIEW—1969

MONTH	ARTICLE TITLE
JANUARY	Some Reflections on Recent Monetary Policy
	Corporate Merger Activity in Selected Fourth District Cities, 1950—1967
FEBRUARY	Much Ado About International Monetary Reform
	Money Market Instruments: Characteristics and Interest Rate Patterns in the Current Economic Expansion
MARCH	Bank Merger Activity in the Fourth Federal Reserve District, 1960—1967
	A Note on Corporate Merger Activity in Selected Fourth District Cities, 1950—1967
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	The Paper and Allied Products Industry in the Fourth District
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JUNE	The Role of U. S. Government Demand Deposits in the Monetary Process
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