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THE EURODOLLAR MARKET

PART II: INTEREST RATE RELATIONSHIPS

The first article in this series on the Eurodollar market concentrated on the structure of the market as an example of a money market within a supranational environment. This article discusses the interest rate structure of the market and outlines the national money and capital market instruments that are competitive with Eurodollars. In addition, the risks of Eurodollar market participation and the term structure of Eurodollar rates are examined. Finally, rates on three-month Eurodollars are compared with rates on three-month certificates of deposit (CDs) and three-month Treasury bills in the United States. A third article will consider the ramifications of the Eurodollar market on the world economy.

In an attempt to compromise between the obvious tendency to concentrate on United States involvement in the Eurodollar market and the need to select an international focal point, the series was written from the viewpoint of the overall market rather than from that of any specific market participant. Because the United States dollar is the currency traded in the Eurodollar market, however, some of the discussion focuses solely on the United States involvement in the market.

IN THIS ISSUE

FACTORS AFFECTING MARKET PARTICIPATION

The rates of return offered on alternative investments and the costs of using alternative sources of funds largely determine the profile of interest rates in the Eurodollar market. In addition, institutional factors and the requisite compensation for varying degrees of risk are significant. This is not to say that supply and demand factors on the deposit and loan sides of the market are unimportant, but arbitrage possibilities keep a broad spectrum of rates in balance, with major developments in any one national market tending to be transmitted very quickly to other markets, including the Eurodollar market.[1]

Investment Alternatives. Arbitrage possibilities are best explained by considering alternative loans and investments that are competitive with Eurodollars. On the supply side of the market, a wide variety of dollar and foreign currency investment opportunities are available to individuals and businesses that are potential investors in the Eurodollar market. Because of the nature of the Eurodollar market, most competing forms of investment are alternative short-term money market instruments, including treasury bills, bankers' acceptances, commercial paper, local authority deposits, CDs, various forms of day-to-day and call money, and, in some countries, time deposits. In the United States, the principal competing instruments would seem to be Federal funds, U. S. Treasury bills, prime commercial paper, and dollar certificates of deposit issued by banks in New York—all of these investments are highly liquid, relatively risk-free outlets for short-term funds. Any potential Eurodollar investor only needs to know the institutional or legal restrictions on the various forms of investment and to compare the relative rates of return before deciding which money market instrument to buy, based on his portfolio needs and his attitude toward risk. Moreover, an investor is not limited to alternative *dollar* investment opportunities in the United States (or possibly in the newly emerging Asia dollar market). There are alternatives in foreign currency markets, although potential investors must consider the relatively limited scope of these markets. For example, there are call money markets in Amsterdam, Brussels, London, Paris, Ottawa, Zurich, and Frankfurt. There are markets for Dutch, Belgian, British, Canadian, French, German, and Swiss treasury bills. Finance company paper is available in Canada, while local authority and hire purchase paper as well as sterling CDs are available in the United Kingdom.

The decision to enter the Eurodollar market is more complicated for a potential investor who normally keeps idle funds denominated in a foreign currency or wishes to consider non-dollar alternatives, than for the potential investor who considers only dollar-denominated alternatives. In addition to the constellation of interest rates and possible restrictions on investment, the potential investor, or his bank, must consider the state of the foreign exchange market. That is, a potential Eurodollar market investor, with assets denominated in a foreign currency, must elect whether or not to hedge his dollar investment to protect himself against adverse exchange rate developments.

In order to place funds in the Eurodollar market (or the United States money market), the foreign

[1] For an alternative statement concerning the integration of national money markets by means of the Eurodollar market, see Ira O. Scott, Jr., "The Euro-Dollar Market and its Public Policy Implications," Paper No. 12, Materials Prepared for the Joint Economic Committee, 91st Cong., 2nd Sess., February 25, 1970, pp. 17-27.

currency asset holder or his bank would have to purchase dollars at the spot rate; that is, for delivery within two days, in the foreign exchange market. The acquired dollar funds, which would generally be in the form of a demand deposit at a United States bank, could then be invested in the Eurodollar market. If this investor were to repatriate his funds at some definite time in the future, he would have to decide *when* to set the reconversion terms. That is, the investor has two possible courses of action. He could wait until his Eurodollar investment matured and could sell his dollars for another currency in the foreign exchange market, or he could sell dollars forward to coincide with the maturity of the Eurodollar investment. For example, if in the latter case the original investment were made for three months, the investor would agree to deliver a certain amount of dollars three months later for another currency at the prevailing three-month forward rate.[2]

The first course of action is basically speculative in nature because the Eurodollar investor does not know what the exchange rate will be when he will want to repatriate his Eurodollar investment. The second action is a form of hedging known as interest arbitrage.[3] Because both the spot rate of exchange (for conversion into dollars) and the forward rate of exchange (for reconversion into another currency) are fixed when the contract is made, an investor electing to hedge his investment knows the exact costs of entering the foreign exchange market. Therefore, to calculate the rate of return on a Eurodollar investment, the foreign currency asset holder, whether he hedges or not, must account for the costs of entering the foreign exchange market before deciding if a Eurodollar investment is more lucrative than an investment in his domestic money market.

For the more speculative investor, if the foreign currency/dollar exchange rate is below the current spot rate, when the Eurodollar investment matures, then the investor will lose money in the repatriation process and lower his effective rate of return. If the spot rate is above the current spot rate, then the investor's rate of return is increased. Although the exact potential loss or gain cannot be calculated, the investor must have an idea of the magnitude of his potential loss or gain to make a rational decision. On the other hand, by hedging, the investor protects himself from the risk of changes in the foreign currency/dollar exchange rate at a cost or profit determined at the beginning of the investment period. A rate of return adjusted to account for this profit or loss on the forward foreign exchange transaction is known as a *covered* rate of return. Similar decisions and comparisons must be made by a holder of United States dollar assets who is considering alternative investment opportunities in foreign financial markets. That is, potential investors must decide whether or not they will cover the foreign exchange risk. If investors do not cover the foreign exchange risk, they only have to consider the absolute interest rate differentials between Eurodollar investments and foreign currency investments, recognizing the

[2]Both spot and forward rates are determined by supply and demand factors. There is, in addition, a close relationship between the spot and forward rates of any given currency. The interrelationship is determined by arbitrage and speculative considerations, the discussion of which is beyond the scope of this article. Instead, see Alan R. Holmes and Francis H. Schott, *The New York Foreign Exchange Market* (New York: The Federal Reserve Bank of New York, 1965), especially pp. 51-64.

[3]*Ibid.*, pp. 47-49.

possibility of sustaining a loss or a gain when repatriating funds. If potential investors elect to hedge, then they would compare covered interest rates.

Loan Alternatives. The description of the demand side of the Eurodollar market is much harder to bring into focus because of the institutional diversity of the loan alternatives. Importers and exporters using the Eurodollar market to finance foreign trade do so chiefly as an alternative to bankers' acceptances and other forms of short-term bank loans. Much of the short-term financing related to foreign trade formerly arranged in the London sterling market (and more recently in New York) has been transferred to the Eurodollar market. Similarly, non-trade oriented Eurodollar borrowers (for example, corporations) would examine the costs of alternative sources of funds in the short-term loan markets. The actual alternatives depend on the proposed use of the funds. A corporation trying to overcome a seasonal shortfall in working capital might compare Eurodollar financing with short-term bank financing. A longer term borrower might compare the costs of entering the Eurodollar market with those associated with an attempt to expedite or to enlarge an equity issue or those associated with a long- or medium-term debt issue.

In 1969, United States banks relied heavily on the Eurodollar market in an effort to counteract the attrition in CDs experienced as market rates of interest approached and exceeded the maximum rates banks were allowed to pay on time deposits. Furthermore, since 1966 United States banks have remained in the short-term end (primarily overnight to six-month money) of the Eurodollar market to adjust their day-to-day liquidity positions, to obtain loanable funds, and to avoid the need to recall loans or sell assets in response to credit restraint. The primary competitive sources of funds have been the Federal funds and CD markets. More recently, nondeposit sources of funds, such as loan repurchase agreements and commercial paper, have emerged as important sources of funds.[4]

In a situation analogous to that of potential Eurodollar market investors, potential Eurodollar market borrowers must consider the effective costs of using alternative sources of funds, as well as the institutional constraints on using any of these sources of funds.[5] Of course, investment or borrowing decisions are not made solely on rates of return or costs, but these decisions generally account for all costs, whether implicitly or explicitly accounted for by the market rate. Two examples follow: the first is based on United States bank borrowing from the Eurodollar market, whether from their own branches or not, while the second examines a nonbank borrower's alternatives in the United States.

Since September 4, 1969, the effective cost of United States bank borrowing in the Eurodollar market is, in general, higher than the prevailing market rate because of a change in Federal Reserve regulations. Before reserve requirements were set on the banks' Eurodollar borrowings, the effective cost of such borrowings was the market rate of

[4]For an interesting discussion of this aspect of the Eurodollar market, see Robert E. Knight, "An Alternative Approach to Liquidity," *Monthly Review,* Federal Reserve Bank of Kansas City, February 1970, pp. 11-22.

[5]A brief discussion of some of the constraints a foreign national may face when engaging in Eurodollar market activities can be found in Part I of this three-part sequence; see "The Eurodollar Market: The Anatomy of a Deposit and Loan Market, Part I: Market Structure," *Economic Review,* Federal Reserve Bank of Cleveland, March 1970, pp. 10-11.

interest paid by the branch on its deposits, since all of the borrowed funds could be used at the discretion of the borrowing bank. Member bank borrowings from their own branches above a base determined by the lesser of the dollar volume of their daily average Eurodollar borrowings in the four weeks ending May 28, 1969, or any specified four-week computation period beginning on or after September 4, 1969, are subject to a 10-percent reserve requirement.[6] Member bank time deposit borrowing (any deposit with a maturity of one day or more) from foreign banks (not their own branches) is subject to a 3-percent reserve requirement, as long as the borrowings do not exceed 4 percent of a bank's daily average deposits subject to reserve requirements. Such borrowings above the base are subject to a 10-percent reserve requirement. In general, the effective cost of borrowing Eurodollars today can be calculated as follows (where the reserve requirements are expressed as a percent):

$$\text{effective Eurodollar rate} = \frac{\text{market Eurodollar rate}}{1.00 - \text{reserve requirement}}$$

Examples of calculations based on the situations possible under the new Federal Reserve regulations are shown in Table I.

Two conclusions can be drawn from the table: (1) the effective cost of borrowing Eurodollars depends on the channel through which the Eurofunds are borrowed and the given bank's previous market participation; and (2) reserve requirements raise the cost of such borrowing. The reserve requirement does not add a constant markup to market rates; instead, the increase in the effective cost depends on the level of the market rate.

The calculation of the effective interest cost of obtaining funds from sources other than the Eurodollar market is similar in nature. The formula is as follows:

$$\text{effective alternative rate} = \frac{\text{alternative market rate}}{(1.00 - \text{required reserve on alternative}) \times A}$$

The factor A adjusts the cost for the number of days used to calculate the annualized rate of interest. For example, a United States bank's effective interest cost of attracting CDs at a market rate of 6 percent, when the CDs are issued on a 360-day basis and are subject to a 6-percent reserve requirement, can be calculated:

$$\text{effective CD rate} = \frac{6.00}{(1.00\text{-}0.06)\ (360/365)} = 6.472 \text{ percent}$$

That is, if 360-day CD money were available to United States banks at 6 percent, the effective cost would actually be 6.472 percent. If the same banks were to obtain Eurodollars at a market rate of 6.30 percent, the effective cost of the 365-day Eurodollar money would depend on which level of reserve requirement was applicable and the source of the funds. For example, if a member bank were *above* its Eurodollar base, the effective cost of borrowing that money from its own foreign branch for 365 days would be 7 percent. All other things being equal, it would be more profitable for the bank to secure CDs. If that bank were *below* its Eurodollar base, the effective cost of the Eurodollar funds would be 6.30 percent, and the bank would probably attempt to secure the lower cost Eurodollar funds.

The second example involves a nonbank business (United States or foreign) that is weighing the alternatives of borrowing in the Eurodollar market

[6] For banks not previously in the Eurodollar market or those banks whose participation had been quite limited, the base was set at 3 percent of their deposits subject to reserve requirements. See *Federal Reserve Bulletin*, August 1969, p. 657.

TABLE I

Effective Cost of Eurodollar Borrowing by United States Banks

	Required Reserve Ratio	Eurodollar Market Rate	Effective Cost
Member bank borrowings			
From own foreign branches			
Below base*	0.0%	10.25%	10.250%
Above base	10.0	10.25	11.389
From foreign banks other than own foreign branches			
Demand deposits	10.0	10.25	11.389
Time deposits			
Below base†	3.0	10.25	10.567
Above base	10.0	10.25	11.389
From brokers or dealers	0.0	10.25	‡
Nonmember bank borrowings	0.0	10.25	§

* The base is determined by a bank's daily average borrowing in the four-week period ending May 28, 1969, or any subsequent four-week computation period.

† The base amounts to 4 percent of a bank's daily average deposits subject to reserve requirements over the computation period.

‡ The effective cost of obtaining Eurodollars through brokers and dealers depends on the commission charged as well as the nature of the bank's relation to the broker and/or dealer. Consequently, this rate would vary from transaction to transaction even with the market rate steady at 10.25 percent.

§ The effective cost would depend on whether the Eurodollars were borrowed directly or through a broker or dealer

Source: *Federal Reserve Bulletin,* August 1969, pp. 656-657

or from a United States bank. The effective cost of a loan negotiated with the United States bank will be higher than the contracted rate, because banks generally require borrowers to maintain compensating balances up to 20 percent of the amount of the loan. The effective cost of the Eurodollar loan is generally the rate negotiated with a Eurobank, since most Eurobanks do not require compensating balances. If a compensating balance is required, the effective cost of the loan is calculated by substituting the portion of the loan required as a compensating balance in the formulas given above. For example, if a nonbank business could get a loan at a cost of 8 percent per annum from a United States bank and if that bank required a 20 percent compensating balance, then the effective cost of the loan would be 10 percent.[7] If the same nonbank business could get a Eurodollar loan for the same period from a Eurobank at 9.67 percent with no compensating balance, then the effective cost of the loan would

[7] The effective cost equals the market rate divided by the quantity of one less the compensating balance requirement. That is, $\frac{8.00}{(1.00-0.20)} = 10$ percent.

be 9.67 percent. However, foreign nonbank borrowers who want to repatriate the dollar loan proceeds must account for the exchange rate risk in a fashion analogous to that described above.

In terms of both investment and loan alternatives, the Eurodollar market has facilitated arbitrage possibilities. Since the money markets of most industrialized countries now compete with the Eurodollar market for investment funds and loan commitments, competition between the national money markets takes place, if not directly, then through the Eurodollar market. Competition for investment funds should drive the covered interest rate differentials on similar instruments in different markets to approximately zero. The comparison of the costs of obtaining funds is more complicated than the comparison of rates of return, because prospective borrowers are primarily interested in the effective cost. Nevertheless, the competition between markets should tend to equalize the effective cost of borrowing money for a given class of borrower for a given maturity.

Risks Unique to the Market. Eurodollar interest rates normally quoted in the financial press are deposit rates. The spread between the Eurobanks' deposit and loan rates is set at their discretion, subject to supply and demand conditions on both sides of the market. The spread or differential is one way in which Eurobanks profit from their Eurodollar operations. The spread on loans for prime customers is generally estimated to be 50 basis points above the deposit rate for the same maturity, although the markup depends on the credit worthiness of the borrower as well as other factors normally affecting a bank's evaluation of a potential customer.

A bank's evaluation of a loan request must also consider various risks, some of which are unique to the Eurodollar and Eurocurrency markets. For one thing, Eurodollar nonbank and interbank loans are generally unsecured. The loan rate is set primarily on the basis of the borrower's reputation. The money being lent to a nonbank borrower will have undoubtedly been raised in the interbank deposit market as part of the pyramiding process,[8] thereby necessitating a credit appraisal at each step along the chain of borrowers leading to, and including, the final borrower.

Another risk for a Eurodollar lender involves portfolio management. Eurodollar operations, as is the case with non-Eurodollar lending operations, tend to lead banks into a position where the maturities of their liabilities and assets are unbalanced. That is, original Eurodollar deposits and funds secured by interbank deposits are generally shorter term than Eurodollar loans. Furthermore, Eurobanks are subject to the risks of imbalances in the currencies in which their foreign assets and liabilities are denominated. That is, a Eurobank may have more liabilities than assets denominated in United States dollars and, therefore, may be exposed to potential losses if exchange rates *vis-à-vis* the dollar move adversely. In other words, given the inherent volatility of the Eurodollar market, Eurobanks can overextend themselves by borrowing short and lending long and by making disproportionately large commitments to individual countries or in individual currencies, thus subjecting themselves to exchange market risks if they do not elect to hedge their foreign exchange commitments.

Finally, a lending risk exists because Eurobanks have no lender of last resort within the Eurodollar market. Although Eurobanks can turn to the

[8]For an explanation of the pyramiding process, see "The Eurodollar Market: The Anatomy of a Deposit and Loan Market, Part I: Market Structure," *op. cit.*, p. 13.

central bank of the country in which they are operating, there is no organization required by law to provide funds to a Eurobank having trouble in meeting its Euromarket generated commitments. In times of exchange market confusion, various central banks have helped to iron out violent swings in supply and demand; however, they are under no statutory obligation to do so. An individual central bank may wish to take positive action to calm the Eurodollar market or to provide funds to a particular commercial bank in its country, but its alternatives may be reduced or cut off by domestic considerations with greater priority. This risk, however, has been considerably overcome by various agreements between central banks to keep the foreign exchange market orderly. Because of numerous arbitrage possibilities and because the United States dollar is the major intervention currency, developments in foreign exchange markets are transferred to the Eurodollar market very quickly and *vice versa.* The leading central banks have worked in harmony, and there is every indication that such cooperation will continue to expand, providing the Eurodollar market with a group of lenders who will give support when market conditions so demand. The differences between this cooperative support function and the lender of last resort function is that the latter generally has the force of law and the costs and obligations of turning to the lender of last resort are specified. That is, the interest rate charged, the maturity, and the accessibility are known. Whereas, central banks providing funds to the Eurodollar market would do so at the rates prevailing at that time and in those maturity categories in demand by entering the market as a participant or by inducing commercial banks to enter the market by providing favorable swap arrangements.

THE TERM STRUCTURE OF EURODOLLAR RATES

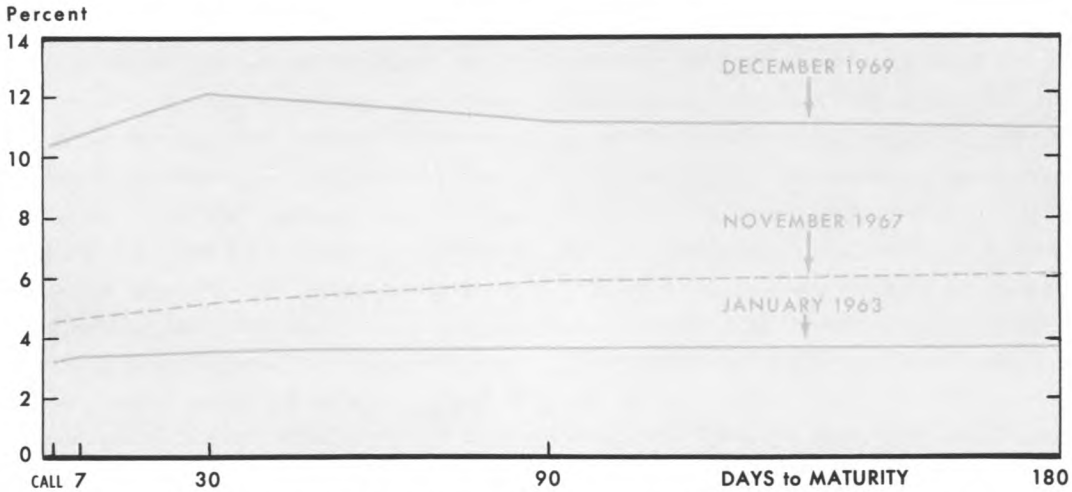
Maturities of Eurodollar deposits range from overnight to 360 days, with longer maturities open to negotiation, while the maturities offered on loans range from overnight to 5 years. The Eurodollar market itself is diverse, and alternative sources and uses of funds at any maturity are legion. It is, therefore, natural to assume that supply and demand factors may differ greatly within maturity categories. With this in mind, the discussion turns to an examination of the behavior of Eurodollar interest rates across maturity categories in the deposit market.

Deposit rates are normally quoted for overnight, call, 7-, 30-, 90-, 180-, and 360-day maturities. When the spectrum of rates at a given point in time is presented (as shown for the average Friday bid rates in January 1963, November 1967, and December 1969 in Chart 1), the curve made by connecting the rates for the various maturities is known as a yield curve. The yield curves show that a dramatic increase in Eurodollar rates for all maturity categories occurred over the 1963-1969 period; rates rose from a range of 3-4 percent to a range of 10-12 percent.

The November 1967 yield curve is an upward sloping curve; that is, the longer the maturity, the higher the rate of return paid on the Eurodollar deposit. Upward sloping yield curves are indicative of two factors: investors are demanding and generally receiving a premium for parting with liquidity; and investors are expecting interest rates to be higher in the future. The yield curve for December 1969, however, is a humped curve; the 30- and 90-day rates were above the 180-day rate, with the 30-day rate the highest. Although a downward sloping yield curve (high short rates and relatively lower long rates) is consistent with the

Chart 1

SELECTED YIELD CURVES for CALL to 180-DAY EURODOLLARS



NOTE: Consistent data on rates other than the 90-day rate are only available back to January 1963. Seven-day rates are only available over the 1963-1966 period; therefore, the November 1967 and December 1969 curves have only four points.

Sources of data: Board of Governors of the Federal Reserve System and Federal Reserve Bank of Cleveland

market's expectations of lower interest rates in the future, a number of factors can cause a humped curve similar to that apparent in December 1969. One of the most important factors reflects differences in the supply and demand conditions in each maturity category. For example, institutional constraints may direct market demands to one maturity category, driving yields in that maturity category up relative to the rest of the term structure, rather than dispersing the demand along the entire maturity range.

A second method of examining the information contained in yield curves is shown in Chart 2, where the spread between call and 180-day Eurodollar deposit rates on a quarterly basis over the period from the first quarter of 1963 to the fourth quarter of 1969 is plotted. The brief analysis of yield curves suggests that the yield spread should be negative if the market expects interest rates to rise and positive if the market expects interest rates to fall. As shown in Chart 2, the yield spread was negative in all quarters. Moreover, the patterns in the spread can be analyzed to gain some insight into the difference in the behavior of rates in the various maturity categories.

From 1963 through 1966, the yield spread remained roughly between 50 and 90 basis points in favor of the 180-day rate, despite a 3 percentage point increase in the level of Eurodollar interest rates over the whole yield curve. Thus, although Eurodollar rates were rising, the factors causing the rise were operative throughout the entire maturity structure. In contrast, wider swings in the yield curve characterized the 1967-1969 period. In the fourth quarter of 1967 and in the third quarter of 1969, the yield spread reached more than 130

basis points in favor of 180-day money. Although the yield spread tended to widen during 1967, reflecting the relatively greater supply of (or relatively smaller demand for) very short-term funds, the reverse was true in 1968. In 1967, the stability of the United States dollar was questioned in conjunction with a series of crises concerning the pound sterling. Holders of dollars were relatively unwilling to leave funds on deposit for more than a few days; consequently, the call Eurodollar rate fell during the year, while 30-, 90-, and 180-day rates increased. When the two-tier gold market was established in March 1968, market confidence in the dollar returned. Although all Eurodollar rates increased, a relatively greater supply of funds (or relatively smaller demand for funds) flowed into the 90- and 180-day maturity categories; 180-day rates increased by 100 basis points from January to December, and call money rates increased 235 basis points, thus nearly eliminating the spread.

In 1969, the yield spread, measured on a monthly basis, moved erratically from a positive 8 basis points to a negative 170 basis points, primarily because the 180-day rate increased irregularly by 350 basis points partly as a result of the widespread implementation of monetary restraint and the world-wide trend to higher interest rates. Although the call rate rose less than the 180-day rate, the major portion of its increase led the increases in the longer rates and produced a humped yield curve in May 1969. The humped curve was, however, a premature signal of lower Eurodollar rates. On balance, in the 1967-1969 period, Eurodollar rate movements were primarily influenced by massive speculative flows engendered, in part, by foreign exchange market crises and the widespread move toward credit restraint on the part of the industrialized countries.

By studying the monthly yield curve patterns over time, the Eurodollar market's seasonal pattern can be identified. Many foreign banks invest in Eurodollar assets because of the relatively high yields. However, at the end of each calendar quarter and especially at yearend when the banks compile and publish their balance sheets, these banks prefer to show relatively smaller foreign currency positions than they hold on a day-to-day basis. This behavior on the part of banks is known as windowdressing. The influence of windowdressing is so predictable that various central banks, including the Federal Reserve System, take steps to mitigate the resulting pressures that develop in the Eurodollar and foreign exchange markets.

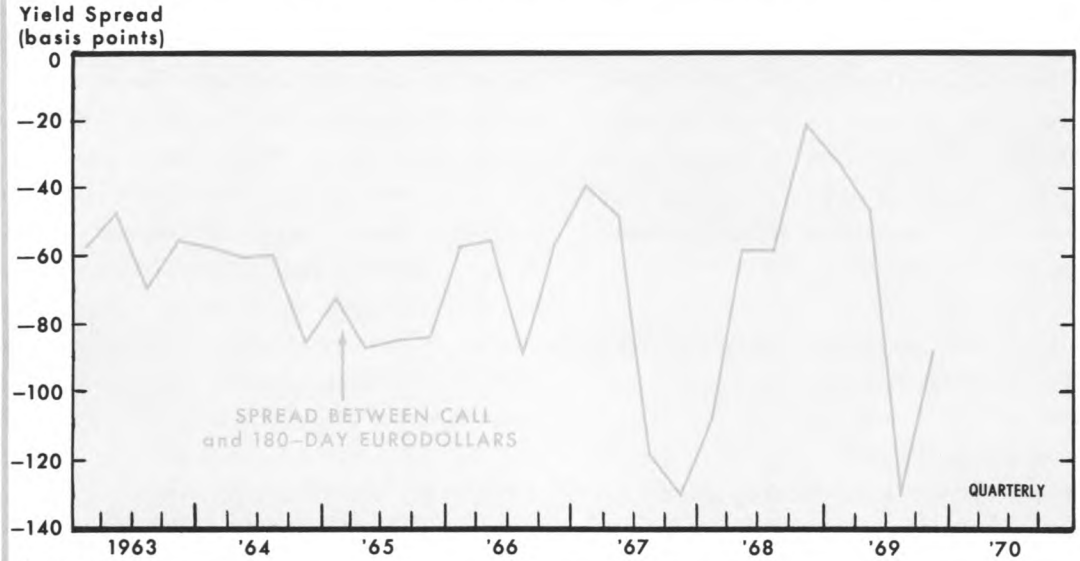
Because of the short-term nature of windowdressing, the greatest impact is generally most apparent on the 30-day rate.[9] For example, every December since 1963 the 30-day deposit rate has been higher than or within 7 basis points of the 180-day rate. As foreign banks seek to build up their positions in their national currencies, they become active borrowers of 30-day Eurodollars, and then use the dollars to buy their own currencies in the foreign exchange markets. In this way, the foreign banks decrease their net holdings of assets denominated in dollars and increase their net holdings of assets denominated in their own currencies without making any major or long-term changes in their foreign currency asset portfolios. Subsequently, Eurodollar rates generally ease during the first month of any quarter.

Since October 1968, it has been the rule rather than the exception to see a humped yield curve in

[9]The influences of windowdressing undoubtedly show up in the pattern of the 7-day rate also; however, a consistent time series over a time period long enough to isolate that pattern is not available.

Chart 2

YIELD SPREAD BETWEEN CALL and 180-DAY EURODOLLARS: 1963–1969



Last entry: 4Q '69

Sources of data: Board of Governors of the Federal Reserve System and Federal Reserve Bank of Cleveland

Eurodollar rates. Although at the end of each quarter this phenomenon is partly associated with windowdressing, various foreign exchange crises during late 1968 and 1969 greatly influenced all Eurodollar rates. In late 1969, the development of humped yield curves may also have been indicative of growing expectations that Eurodollar rates may have reached a peak.[10]

THE THREE-MONTH EURODOLLAR RATE

Generally, the most closely watched Eurodollar rate is the three-month deposit rate, which is considered the most representative market rate. However, as noted in the discussion on the term structure of interest rates, different maturity categories are subject to varying supply and demand pressures at one point in time, especially during periods of market unrest. From the point of view of United States banks, one of the most important Eurodollar rates is that on overnight money. In the 1967-1969 period, United States banks actively used Eurodollar funds on an overnight basis for reserve adjustment purposes; consequently, the overnight Eurodollar market was in direct competition with the Federal funds market.

United States banks made use of the overnight market for another reason. If a foreign branch of a United States bank borrowed dollars from a foreign branch of another United States bank and the lending branch instructed its head office to transfer the funds to the head office of the borrowing branch, the head office of the lending

[10]The behavior of Eurodollar rates in the January-April 1970 period have tended to confirm this analysis.

branch would issue a "London check" on behalf of its branch. The head office of the borrowing branch would accept the check, classified as a cash item in the process of collection, and deduct it from the amount of deposits requiring reserves. The head office of the lending branch also would not be liable for reserves on the amount of the check, for the check was classified as "bills payable." When the loan was repaid, the bookkeeping process was reversed.

This maneuver on the part of member banks with foreign branches caused much of the Eurodollar activity to fall in the overnight maturity category. For the entire United States banking system, such activity freed reserves because a pool of outstanding funds was maintained within the banking system at all times. This activity often subjected overnight rates to influences not associated with developments in the rest of the market. On July 31, 1969, Federal Reserve regulations were amended and London and bills payable checks were reclassified as deposits against which reserves are required. Because of this ruling, much of the activity in the overnight money segment of the market has declined.

The only existing data on the maturity structure of Eurodollar deposits are gathered by the Federal Reserve System on United States member bank deposits and direct borrowings from the Eurodollar market. Data have been gathered since June 1969, and to the extent that the data are representative of the general activity of United States banks in the market, they emphasize the short-term nature of the market.

As shown in Table II, the average maturity of Eurodollar deposits in the one- to twelve-month category at foreign branches of United States banks ranged from 2.65 months to 2.10 months during the June-December 1969 period. Furthermore, Table II suggests that there may have been a shift away from overnight activity associated with the reclassification of London and bills payable checks. In June 1969, overnight deposits accounted for 11.1 percent of the Eurodollar deposits in foreign branches of United States banks. By December, the share of such deposits in the overnight category had fallen irregularly to 6.0 percent. These portfolio shifts appear to have moved into the one- and two-month categories; an increase in the share of liabilities in the under one year category (not including call and overnight deposits) and a fall in the average maturity of the one- to twelve-month borrowings, from 2.65 to 2.10 months, tend to substantiate this.

A partial justification for isolating the three-month Eurodollar rate for analysis is given by the data in Table II—the three-month rate is the closest to the average maturity of the Eurodollar borrowings reported by United States banks. Note, however, that the three-month *deposit,* not *loan,* rate is shown in Chart 3. The chart compares the behavior of the three-month Eurodollar deposit rate with the three-month U. S. Treasury bill rate and the three-month CD rate. These rates were selected because both represent prime United States dollar investment alternatives for any potential Eurodollar investor.[11] Chart 3 is plotted using the assumption that a potential investor in the United States wanted to compare the market behavior of the three-month Eurodollar deposit rate, U. S. Treasury bill rate, and the CD rate over time. Therefore, market rates are plotted since they reflect the actual rate of return that could have accrued to the United States investor.

[11]The CD rate plotted in Chart 3 is that for prime negotiable CDs in the secondary market.

TABLE II

Maturity Structure of the Eurodollar Market Liabilities of Selected United States Banks
1969

Month	Percent of Total in Maturity Category				Average Maturity of One to Twelve Month Category
	Overnight	Call	Between One and Twelve Months	More than One Year	
June	11.1%	7.5%	79.6%	1.8%	2.65 months
July	7.7	8.3	82.6	1.4	2.63
August	6.3	8.5	84.0	1.2	2.47
September	5.6	7.9	85.2	1.3	2.40
October	3.4	7.8	87.5	1.3	2.40
November	7.2	7.2	84.5	1.1	2.25
December	6.0	5.9	86.9	1.2	2.10

NOTE: In order to calculate the average maturity on deposits maturing between one and twelve months, it was assumed that all deposits matured mid-month.

Source: Board of Governors of the Federal Reserve System

In 1960, both Eurodollar and U. S. Treasury bill rates fell, although the decline in the Treasury bill rate was sharper than that in the Eurodollar rate. In the fourth quarter of 1960, Eurodollar rates turned up, as would be seasonally expected. The Eurodollar rate resumed its decline, but the Treasury bill rate stabilized near 2.3 percent in response to general money market conditions associated with the recession in the United States and public policy designed to counteract it. Both rates turned up seasonally at the end of 1961.

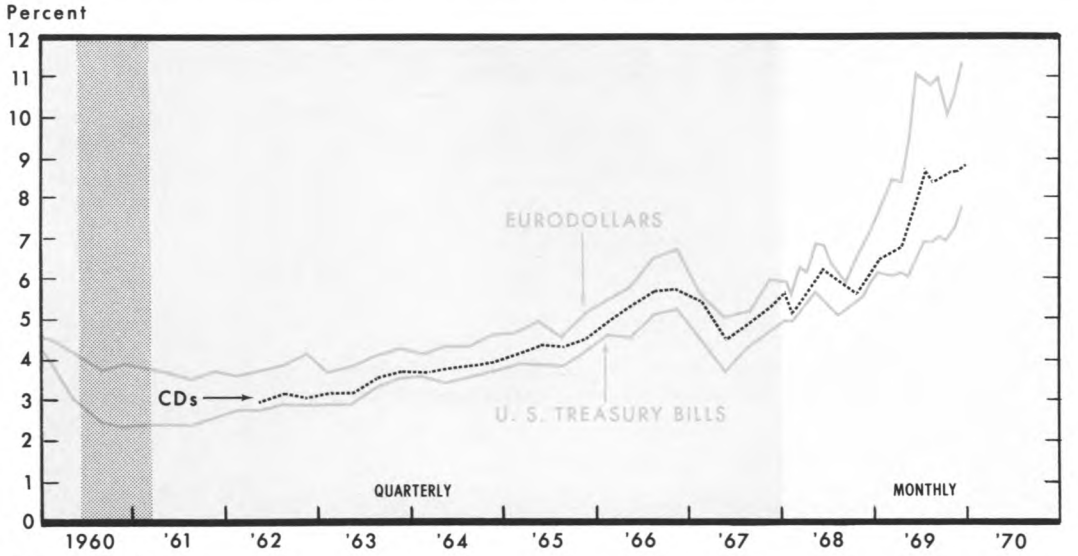
The end of 1961, however, also appears to have signaled the beginning of a five year period characterized by rising interest rates. The increases in Treasury bill rates, on balance, paralleled those in the Eurodollar market over the 1962-1963 period, except for the second quarter of 1963 when Regulation Q ceilings were raised. As a result, the yield spread in favor of Eurodollars narrowed, but not to the levels experienced in late 1959 and early 1960.

After mid-1963, rate increases in both markets tended to abate until the British sterling crisis in October 1964. At that time, Eurodollar rates began to increase more rapidly with the general move toward tighter credit in Europe and the United Kingdom. U. S. Treasury bill rates began to climb in anticipation of the balance of payments program started in 1965, a program that served to inhibit the flow of United States capital to the Eurodollar market and which, in turn, added upward pressure on Eurodollar rates. Official intervention in the market has been credited with softening the sharp increase in Eurodollar rates during the last quarter of 1964.

Rates continued to climb during the first half of 1965 as the United States economy began to overheat, fueled by a capital goods boom. Although regulations prohibited the flow of American money to the Eurodollar market, increases in the Treasury bill and Eurodollar rates were more or less parallel. The third quarter downturn in the

Chart 3

INTEREST RATES ON SELECTED THREE-MONTH DOLLAR INSTRUMENTS



Last entry: Dec. '69

Sources of data: Board of Governors of the Federal Reserve System and Salomon Brothers & Hutzler

Eurodollar rate, matched by a leveling in the Treasury bill rate, was caused primarily by heavy supplies of dollars from official European institutions. The decrease was short-lived; normal pressures from windowdressing developed in the fourth quarter of 1965, and interest rates in the United States increased substantially.

Until early 1966, CD rate patterns were very similar to those for Treasury bills, except that the CD market demanded a premium to cover the slightly greater risk of default. As credit tightened in 1966, United States banks began competing more strenuously for funds; all three rates shown in Chart 3 moved upward. Yields on Treasury bills, however, appeared to lag somewhat behind yields on Eurodollars and CDs, perhaps because the CD and Eurodollar markets had not yet gained widespread acceptability by United States banks for short-term balance sheet adjustments. Rates on all three instruments increased until the fourth quarter of 1966. Earlier in 1966, much of United States bank borrowing pressure began to be focused on the Eurodollar market, since the CD rate in the secondary market broached Regulation Q ceilings. In turn, the increased demands of United States banks caused a sharp increase in Eurodollar rates, particularly in the third quarter. The pressure on Eurodollar rates also reflected uncertainty over the pound sterling and continued demand for dollars from the United Kingdom, as investors switched out of sterling assets into dollars.

As Chart 3 clearly shows, the first significant downturn in rates since early 1960 occurred in 1967. As mentioned earlier, however, the downswing did not affect Eurodollar rates equally in all

maturity categories as had the 1963-1966 upswing. Early in 1967, credit conditions eased in the United States as well as in Europe. Continued United States balance of payments deficits and recurring questions about the viability of the $2.80 parity of the British pound put the dollar under pressure in the foreign exchange markets. Cooperation on an official level in the Eurodollar market as well as in the foreign exchange markets served, however, to mitigate these pressures. Because of fears of a change in the official United States dollar price of gold, investors appear to have been reluctant to commit themselves to dollar deposits. Gold speculation, a crisis in the Middle East, and the prologue to the devaluation of the pound sterling, all served to bring the rate declines up short just after midyear 1967. With the exception of a slight easing at the end of the third quarter, all three rates climbed until yearend, as credit conditions tightened in Europe and the United States.

Rate patterns were somewhat mixed in early 1968, when credit conditions did tighten in the United States. The U. S. Treasury bill rate paused only briefly in February on its climb to a midyear peak. An increase in the supply of funds caused Eurodollar rates to fall more than seasonally expected in February. United States corporations that had borrowed heavily in the Eurobond market in response to the revamped United States balance of payments program frequently invested the proceeds in the Eurodollar market. Even after the sterling devaluation in November 1967, relative unrest prevailed in the foreign currency markets. The culmination of this unrest was the gold crisis in March 1968, when the two-tier gold market was established. After the free market in gold was established, Eurodollar rates increased as dollars were used to finance speculative purchases of gold. At the same time, United States banks reentered the Eurodollar market in force as they again actively sought funds to meet loan demand fueled by the overheating of the domestic economy. CD rates also began to climb.

In the second quarter of 1968, movements in dollar interest rates became mixed as the international economic picture was clouded by the social and political disturbances in France, the concurrent weakness of the French franc and the pound sterling, the strength of the German mark, and the passage of the United States income tax surcharge. The three rates shown in Chart 3 declined during the third quarter in spite of the uneasy calm that settled over foreign exchange markets, but the decline once again was short-lived. Falling Eurodollar rates kept United States banks in the market for these relatively attractive funds. Further pressure on Eurodollar rates came from the series of crises centered on the French franc and the German mark; the Eurodollar market was used as a stepping stone for speculation in the mark. Furthermore, interest rates in the United States began to increase again as the Federal Reserve System reversed its earlier move toward ease, made in response to the passage of the income tax surcharge in June 1968, in order to fight the inflationary expectations that began dominating economic activity in the United States.

The three interest rates showed somewhat more divergent patterns in 1969 than in previous periods. The extremely sharp increases in the Eurodollar rate were caused primarily by United States bank borrowing to mitigate the impact of restrictive monetary policy. Similar economic problems and accompanying moves toward tighter credit occurred in almost every major industrialized country, where price inflation became a major concern. The moves toward tighter credit, actually

fostered in part by rising Eurodollar rates, served to reinforce pressures in the market, completing the circle of causation between inflationary expectations and rising interest rates. The average three-month Eurodollar rate hit a record high of 11.36 percent in December 1969, up 5.45 percentage points from September 1968.

CD rates in the United States also increased drastically in 1969, but the market became thinner as maturing CDs were not renewed; the Regulation Q ceiling prevented banks from offering competitive rates. This is one reason why interest rate patterns were more divergent than usual. Treasury bill rates also reached record highs during the year, although the sharp increases were partly mitigated by increased demands by foreign buyers and tended to lag rate developments in the Eurodollar markets.

With the devaluation of the French franc in August 1969, the revaluation of the German mark in October, the activation of the Special Drawing Rights (SDRs) at the end of the year, the decline in the price of gold, and the new Federal Reserve regulations on United States bank participation in the Eurodollar market, Eurodollar rates eased before yearend (see Chart 3). Much of this could be ascribed to the unwinding of speculative positions associated with the revaluation of the mark and the leveling off of United States bank participation in the Eurodollar market. (Seasonal pressures in the face of a dwindling supply of Eurodollar funds once again forced rates up at the end of the year.) CD rates could barely be considered representative in 1969, since the market had become so thin and many of the CDs still outstanding were held because of statutory requirements. The U. S. Treasury bill rate continued to climb as credit conditions remained tight in the United States.

SUMMARY

The development of the Eurodollar market has brought various national money and short-term capital markets much closer together and, in turn, has facilitated the process of bringing potential investors and borrowers together. The relationship among changes in interest rates in the United States and Europe, in foreign exchange rates (spot and forward), and in Eurodollar rates is increasing. However, these influences cannot be isolated because of a continual feedback mechanism, just as developments on the deposit and loan sides of the Eurodollar market cannot be isolated because of the interplay between both sides of the market.

EMPLOYMENT SHIFTS TOWARD THE SERVICE INDUSTRIES IN MAJOR AREAS OF THE FOURTH DISTRICT

Nearly two-thirds of all employed persons in the United States today are engaged in the service-producing industries, compared with slightly more than one-third employed in the goods-producing industries.[1] In terms of employment, the United States has had a "service economy" for more than two decades and the dominance of the service-producing industries is increasing. Between 1960 and 1969, nearly 16 million new nonagricultural[2] jobs were generated, with more than three-fourths of the new jobs in the service industries, including one-fourth in public service.[3]

This article reviews employment developments in ten of the Standard Metropolitan Statistical Areas (SMSAs) of the Fourth District during the 1960's and examines to what extent the employment patterns in the District followed the nationwide shift toward the services.

GOODS AGAINST SERVICES

During the 1960-1969 period, overall nonagricultural employment growth was generally smaller in the selected SMSAs in the District than in the nation (see Chart 1). In the District, the increases ranged from 11 to 38 percent, but in eight of the ten SMSAs, they fell short of the 29-percent increase in the nation. The employment increases

[1] According to the most frequently used definition, goods-producing industries include agriculture, mining, construction, and manufacturing. Service-producing industries include transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; special service industries; and government.

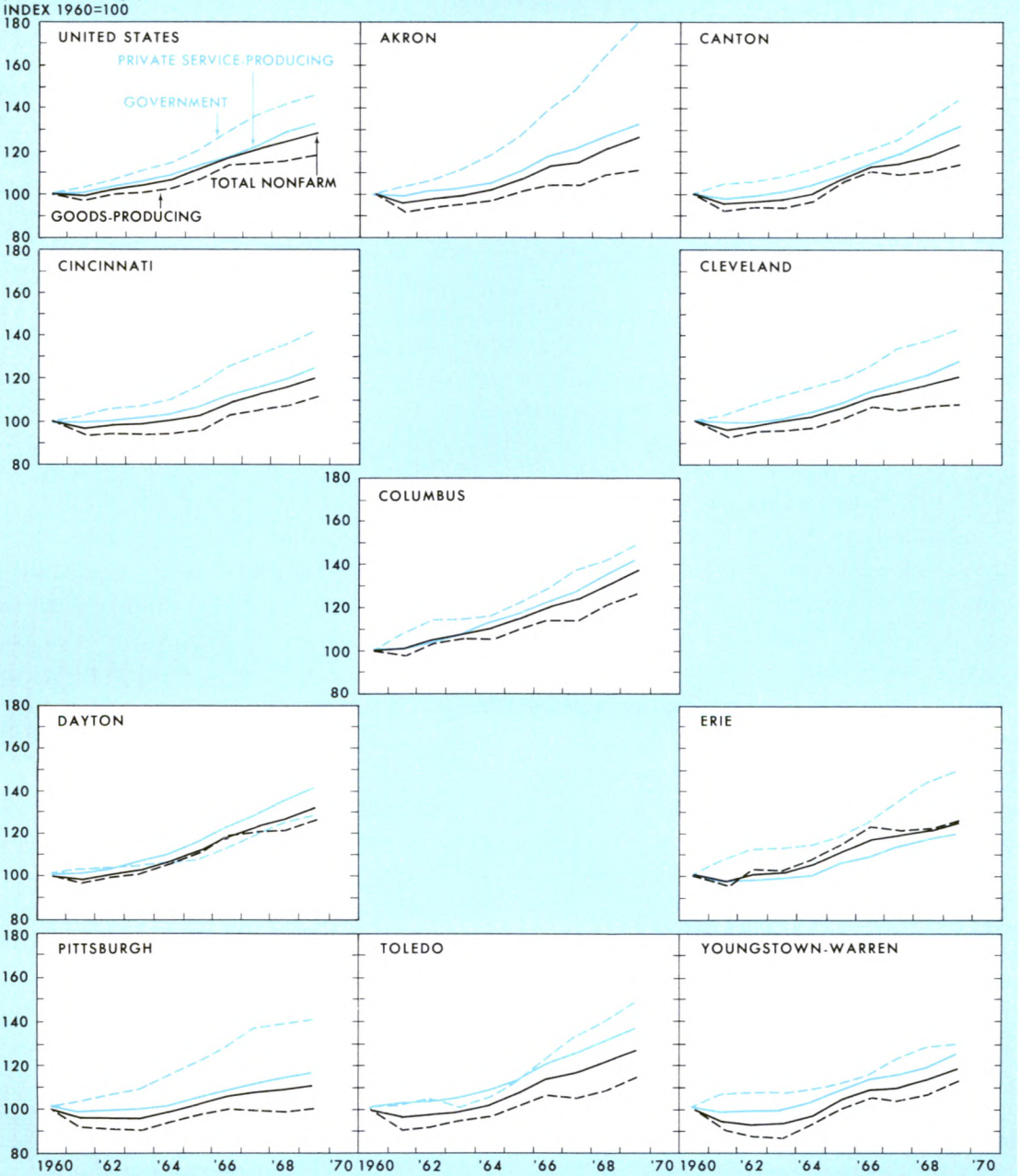
[2] Nonagricultural (wage and salary) employment has been used in this article for reasons of data availability. Total employment in goods-producing industries, therefore, does not include agricultural employment. The inclusion of data on agricultural employment would not significantly alter the proportions of goods-producing and service-producing employment.

[3] The 3:1 ratio of new jobs in service-producing and goods-producing industries has prevailed, on average, throughout the entire postwar period, although in some years the goods-producing industries accounted for a considerably larger portion of the total increase in jobs (e.g., two-fifths in 1965-1966).

Chart 1.

NONAGRICULTURAL EMPLOYMENT by SECTORS

United States and Selected Standard Metropolitan Statistical Areas in the Fourth District
(Annual Average)
INDEX 1960=100



Last entry: 1969

Sources of data: U. S. Department of Labor; Division of Research and Statistics, Ohio Bureau of Employment Services; Pennsylvania Bureau of Employment Security

in the goods-producing industries were considerably smaller than the increases in either the private or public portion of the service industries in the nation and in all District SMSAs but Erie.[4] In the nation, employment gains amounted to 19 percent in the goods-producing industries, 32 percent in the private service industries, and 46 percent in government. In the District SMSAs, gains ranged from less than 1 percent to 27 percent in the goods-producing group and from 15 percent to 41 percent in private services. Government employment rose faster than private service employment in all District SMSAs, except Dayton, with the gains ranging from 28 percent to 80 percent. In six District SMSAs, relative increases in government employment fell short of the increase in the nation. Six District areas failed to match the national average increase in private service employment, while seven areas were below the national growth in employment in goods-producing industries.

During the 1960-1969 period, employment in the service industries increased at both a faster and a steadier pace than employment in the goods-producing industries. Employment in the service industries suffered only a mild setback during the 1960-1961 recession and was hardly slowed at all in the 1967 mini-recession. In contrast, employment in the goods group showed a sharp and sustained loss in 1961 in most of the selected SMSAs in the District, and in 1967, there was a noticeable leveling or loss of employment in the goods-producing industries in all of the areas. This was not unexpected in view of the known cyclical sensitivity of employment in the durable goods manufacturing industries that account for a large portion of the goods-producing industries.

The manufacturing industries account for over four-fifths of employment in the goods-producing industries in the nation and a somewhat larger share in most of the District SMSAs under review. Manufacturing employment conditions, therefore, dominate the employment performance of the goods-producing industries. Gains in manufacturing employment between 1960 and 1969 in the selected District SMSAs ranged from less than 1 percent to 28 percent, compared with an increase of 20 percent in the nation. Only three areas—Columbus, Dayton, and Erie—had increases that exceeded the increase in manufacturing employment in the United States. Thus, it is apparent that the increases in factory employment in the District did not generally keep up with increases in factory employment in the nation during the 1960's (see Table I).[5]

Relative gains in employment in the construction industry exceeded the increases in manufacturing employment in a majority of the District SMSAs under review, but not in the nation as a whole. In six areas—Akron, Canton, Columbus, Dayton, Erie, and Toledo—the increases in construction employment were substantially higher than the increase in the nation (18 percent). Because of the small number of workers involved, however, only in Erie and Columbus did those gains boost employment for the entire goods-producing group by an appreciable amount. On

[4]Industries with slow gains in productivity—including most of the service-producing industries—require proportionately greater increases in input (employment) in order to raise total output than do industries with a higher rate of productivity gains.

[5]The slow growth of manufacturing employment in the Fourth District is further indicated by the fact that peak employment levels reached during or following the Korean War period have been surpassed in only two of the ten areas, Columbus and Dayton. Nationwide, manufacturing employment surpassed its 1953 peak in 1965.

TABLE I

Percent Change in Nonagricultural Wage and Salary Employment
United States and Selected Standard Metropolitan Statistical Areas
in the Fourth District
1960–1969

		Goods-producing Industries*		Service-producing Industries				
	All Industries	Manufacturing	Construction	Transportation	Trade	Finance	Services	Government
United States	29%	20%	18%	11%	29%	33%	50%	46%
Fourth District								
Columbus	38	22	53	11	37	50	59	48
Dayton	32	28	24	20	33	39	61	28
Toledo	28	12	33	13	34	25	55	48
Akron	27	10	30	12	33	26	48	80
Erie	26	21	114	2	16	42	29	49
Canton	23	13	32	18	25	27	50	43
Cincinnati	21	12	10	4	26	13	41	41
Cleveland	20	7	16	11	22	26	46	42
Youngstown-Warren	19	16	−10†	11	21	20	42	30
Pittsburgh	11	‡	9	−4	9	16	35	40

NOTE: 1960 data for Akron, Cincinnati, Cleveland, Columbus, Dayton, and Toledo are estimated by the Federal Reserve Bank of Cleveland. Some 1969 data are adjusted for major strikes.

* Data for employment in mining are omitted. Employment in mining is insignificant in these selected Fourth District areas, except for Pittsburgh.

† Employment in the construction industry in Youngstown-Warren rose by at least 10 percent in both 1968 and 1969. However, employment in construction was unusually high in 1960 (much higher than in 1959 or 1961). The total for 1969 exceeded the total for 1959 by 7½ percent.

‡ Less than 1 percent.

Sources: U. S. Department of Labor; Division of Research and Statistics, Ohio Bureau of Employment Services; Pennsylvania Bureau of Employment Security

the other hand, the loss in construction employment in Youngstown-Warren lowered the total gain for the goods-producing group in that area.[6]

Employment in the mining industry, which has been declining nationwide throughout the postwar period, was reduced by 12 percent between 1960 and 1969. In the District, employment in mining accounts for more than a fraction of 1 percent of total goods-producing employment only in Pittsburgh. The 23-percent decline in mining employment in Pittsburgh between 1960 and 1969 contributed to the virtual standstill in employment in the goods-producing industries in the area during that period.

In contrast to the goods-producing industries, employment in the private service industries is not dominated by any one of the major components. Retail and wholesale trade, the largest component of the group, accounts for about two-fifths of all employment in the private service industries. The 32-percent increase in employment in the nation for the private service group between 1960 and 1969 combines distinctly different contributions

[6]Construction employment in Youngstown-Warren rose by at least 10 percent both in 1968 and 1969. However, compared with the unusually high total number of construction workers reported for 1960—appreciably higher than either 1959 or 1961—the 1969 total fell short of the 1960 total by 10 percent, although it exceeded the 1959 total by 7½ percent.

of the four component industries. The special service industries (personal, business, medical, and educational services) ranked highest in employment growth among the four component industries in the United States, followed by finance, insurance, and real estate; trade; and transportation and public utilities (see Table I).[7]

In the District, employment in special services showed the highest relative increase among the four private service-producing industries in nine SMSAs. In four SMSAs—Canton, Columbus, Dayton, and Toledo—the rate of increase in special services employment matched or exceeded the rate of increase in the nation (see Table I). Finance and trade ranked in either second or third place in terms of increases in private service employment in most of the SMSAs under review. The relative gain in employment in finance in three SMSAs was greater than the increase in the nation, and four areas had greater increases in employment in trade than the nation did.

The smallest employment increase among the four major industries in the private service-producing group in the nation and in the selected Fourth District SMSAs occurred in transportation and public utilities. Sustained reductions in railroad employment together with substantial productivity gains in communications and other utilities tended to hold back employment growth in this industry division. Seven SMSAs matched or exceeded the nationwide employment gain of 11 percent in transportation and public utilities between 1960 and 1969. Pittsburgh, however, experienced a net employment loss in that industry during the period.

[7]Further breakdown of employment changes within each of the four major divisions—which is precluded here by lack of disaggregated area data—would reveal still further variations in the performance of subgroups.

Employment increases were much greater in the public segment of the service industries than in the private segment between 1960 and 1969, due largely to the rapid expansion of public education and other state and local governmental services. Public service employment rose by 46 percent in the United States, slightly less than the increase in the special service industries, but far ahead of the gains in the transportation, trade, and finance components of the private service group.

The public service employment patterns in the nation and the selected Fourth District SMSAs were similar (see Chart 1 and Table I). Percent increases in employment were greater in government than in the private service-producing industries in most of the District areas during 1960-1969. In Dayton, however, gains in local government employment were countered by employment reductions that began at the Air Force installation in the 1950's and continued into the early 1960's. Thus, government employment in Dayton increased less than employment in the private service-producing group. Compared with employment in the special services (the fastest growing component of the private service-producing group), government employment grew faster in four District SMSAs, but was outdone by the special services in six of the areas.

In Akron, Columbus, Erie, and Toledo, the percent increase in government employment exceeded the increase in such employment in the nation. Only two areas—Dayton and Youngstown—showed a significantly smaller percent increase in government employment than the nation, and in both cases, the shortfall reflects an unusually small increase or an outright reduction in Federal Government employment within the period. The rate of employment growth in state and local government tended to be uniform among

TABLE II

Distribution of the Increase in Nonagricultural Wage and Salary Employment By Type of Industry
United States and Selected Standard Metropolitan Statistical Areas in the Fourth District
1960–1969

		Goods-producing Industries*		Service-producing Industries				
	Increase	Manufacturing	Construction	Transportation	Trade	Finance	Services	Government
	(mil.)							
United States	15.9	21%	3%	3%	20%	6%	23%	24%
Fourth District	(thous.)							
Akron	52.4	17	4	3	23	3	20	30
Canton	25.5	28	5	4	20	4	23	15
Cincinnati	86.1	20	2	1	26	3	25	23
Cleveland	145.9	14	4	4	22	6	28	22
Columbus	101.2	17	7	2	20	8	21	25
Dayton	80.7	36	3	3	18	3	21	16
Erie	19.7	38	13	†	12	5	14	18
Pittsburgh	86.0	†	4	−3	15	6	46	34
Toledo	52.3	18	5	4	25	3	25	20
Youngstown-Warren	31.6	40	−3‡	3	19	3	24	14

NOTE: 1960 data for Akron, Cincinnati, Cleveland, Columbus, Dayton, and Toledo are estimated by the Federal Reserve Bank of Cleveland. Some 1969 data are adjusted for major strikes. Details may not add to 100 percent because of rounding and employment losses in some industries.

* Data for employment in mining are omitted. Employment in mining is insignificant in these selected Fourth District areas, except for Pittsburgh.
† Less than 1 percent.
‡ Employment in the construction industry in Youngstown-Warren rose by at least 10 percent in both 1968 and 1969. However, employment in construction was unusually high in 1960 (much higher than in 1959 or 1961). The total for 1969 exceeded the total for 1959 by 7½ percent.

Sources: U. S. Department of Labor; Division of Research and Statistics, Ohio Bureau of Employment Services; Pennsylvania Bureau of Employment Security

the selected District SMSAs during the 1960-1969 period.

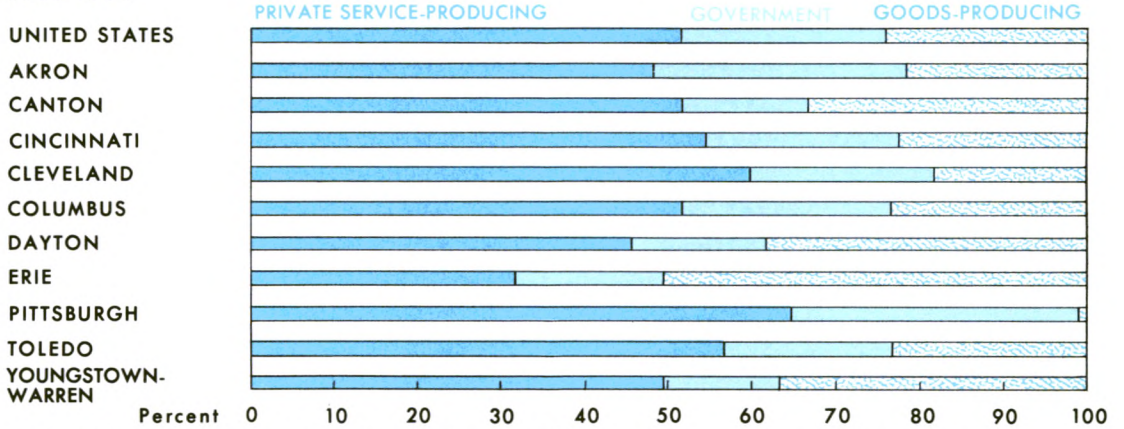
COMPOSITION OF EMPLOYMENT GAINS

The pace at which employment increased in a particular industry and area is not a true measure of that industry's importance as a source of new employment opportunities in that area during the 1960's. For example, a large industry, even with only a moderate growth rate, might account for a larger number of new jobs than a relatively small industry with a high growth rate.

As previously stated, the service-producing group contributed a greater proportion of the new jobs generated between 1960 and 1969 than did the goods-producing industries both in the nation and in most of the ten selected District SMSAs (see Chart 2 and Table II). In individual areas, however, the relative increase of new employment opportunities varied somewhat as a reflection of local economic conditions. The new jobs in Erie, for example, were evenly divided between goods and service industries, because employment in construction and in manufacturing expanded rapidly over the period along with the service group. At the other extreme, almost all of the net gain in employment in Pittsburgh consisted of service jobs. Manufacturing employment in Pittsburgh was virtually unchanged from 1960 to 1969, and a loss in mining employment cancelled the

Chart 2.

DISTRIBUTION of the INCREASE in NONFARM WAGE and SALARY EMPLOYMENT BETWEEN GOODS-PRODUCING and SERVICE-PRODUCING INDUSTRIES in UNITED STATES and SELECTED STANDARD METROPOLITAN STATISTICAL AREAS in the FOURTH DISTRICT 1960-1969



Sources of data: U. S. Department of Labor; Division of Research and Statistics, Ohio Bureau of Employment Services; Pennsylvania Bureau of Employment Security

modest gain in construction employment. Cleveland also derived a very large portion (82 percent) of its employment gain from the service-producing industries during the period under review. In the remaining selected SMSAs in the District, the service-producing industries contributed from 61 percent to 79 percent of the increases in overall employment. In Dayton, Youngstown-Warren, and Canton, a relatively small share of new jobs in government held down the share of new jobs in the service group.

Within the service-producing group, the largest number of new jobs in the nation were in the government sector, although the special service industries almost matched the share of new government jobs. In the selected SMSAs in the District, government accounted for the largest share of new employment in Akron, Columbus, and Erie, while in most other SMSAs, the special service industries supplied the largest share of new service jobs. Government and special services together accounted for about 60 percent and trade for 25 to 33 percent of the new service jobs in each of the selected District SMSAs except for Pittsburgh. The balance of new service jobs in the SMSAs were in finance, insurance, and real estate and in transportation and public utilities, the two subdivisions of the service-producing group that also made the smallest contributions to the total nationwide employment gain in the services.

DIFFERENCES IN GROWTH

Some of the differences in the growth of total employment or of specific industry divisions among the District SMSAs can be assigned to specific causes, such as the closing of a Federal Government installation (Dayton and Toledo) or the development of a large new manufacturing industry in an area (Youngstown-Warren). For the most part, however, the differences are less self-explanatory.

In a small measure, the different rates of overall employment growth are the result of different proportions of generally fast growing service-producing and generally slow growing goods-producing industries in the industry mix of the individual areas. By far the greater part of the differences in total employment gain, however, reflects differences in what might be called "vitality," or the rate of general growth of an area. This conclusion is supported by the data in Table I, which lists the SMSAs in three groups, ranked by percent gain in total employment between 1960 and 1969. Columbus and Dayton were the only areas where the total employment gain exceeded the gain for the United States and where the percent increases in employment in nearly all major industry divisions listed in the table were greater than in the nation. In contrast, the percent increase in employment in Cincinnati, Cleveland, Youngstown, and Pittsburgh—the lowest-ranked group—was lower than, or the same as, in the nation in each of the seven industrial categories listed. Finally, Toledo, Akron, Erie, and Canton—the areas ranked midway—have a mixture of some industries that are growing faster and others growing more slowly than the applicable national average. Thus, the "regional effect" appears to be dominant, either boosting or inhibiting growth among all or most industry divisions. The low rank of the three largest areas in the District suggests that size alone does not insure favorable employment growth.

CONCLUSION

During the 1960's, employment in all but one of the ten selected areas of the Fourth District increased at a faster pace in service-producing than in goods-producing industries. This employment pattern was similar to that experienced in the nation, where employment growth in service-producing industries was almost twice as fast as in goods-producing industries. In the District, however, the margin of growth in favor of service-producing industries was generally larger than 2.0, ranging from 1.3 to 3.8 (omitting Pittsburgh) and exceeding the nationwide margin in seven SMSAs. This was partially due to substantial growth of service employment in the areas involved but more often to lagging employment growth in the goods-producing industries, particularly manufacturing, as demonstrated in the case of Pittsburgh. In those areas where manufacturing employment grew faster than in the nation, the margin in favor of service employment was below the nationwide figure.

As a result of the differential growth, the service-producing industries raised their share of total employment in the nation from 62.4 percent in 1960 to 65.5 percent in 1969. A similar increase in the portions of service employment took place in most of the selected District SMSAs (see Table III). The shift toward the services exceeded 3 percentage points in more than half of the areas, particularly in those where the increase in goods-producing employment was small. Despite those relatively large shifts, Columbus still is the only SMSA among the District areas reviewed where the service-producing industries account for a greater proportion of total employment than the national average. On the other hand, there are two areas—both heavy steel centers—where jobs in goods-producing industries still outnumber those in service-producing industries.[8]

The changes in industry mix in both the District and the nation were accompanied by changes in the occupational distribution of

[8]The two areas thus have not yet reached the point of having more than half of total employment in service-producing industries, the generally accepted definition of "service economy."

TABLE III

Distribution of Nonagricultural Wage and Salary Employment Between the Goods-producing Industries and the Service-producing Industries

United States and Selected Standard Metropolitan Statistical Areas in the Fourth District
1960 and 1969

	Goods-producing Industries		Service-producing Industries			
			Private		Government	
	1960	1969	1960	1969	1960	1969
United States	37.6%	34.5%	47.0%	48.1%	15.4%	17.4%
Fourth District						
Akron	50.5	44.3	39.4	41.3	10.1	14.4
Canton	54.1	50.1	37.8	40.5	8.1	9.4
Cincinnati	42.4	39.0	46.3	47.7	11.3	13.3
Cleveland	45.2	40.7	44.2	46.8	10.6	12.5
Columbus	33.2	30.5	47.5	48.7	19.3	20.8
Dayton	45.8	44.1	35.8	38.0	18.4	17.9
Erie	49.5	49.7	41.3	39.3	9.2	11.0
Pittsburgh	44.0	39.7	46.6	48.4	9.4	11.9
Toledo	44.4	39.8	43.9	46.6	11.7	13.6
Youngstown-Warren	53.9	51.1	37.3	39.3	8.8	9.6

NOTE: 1960 data for Akron, Cincinnati, Cleveland, Columbus, Dayton, and Toledo are estimated by the Federal Reserve Bank of Cleveland. Some 1969 data are adjusted for major strikes.

Sources: U. S. Department of Labor; Division of Research and Statistics, Ohio Bureau of Employment Services; Pennsylvania Bureau of Employment Security

employment. With the relative decline of employment in goods-producing industries, blue-collar occupations predominating in those industries also showed a relative decline. Blue-collar workers declined from 39.7 percent of total nonagricultural employment in the nation in 1960 to 37.9 percent in 1969. In contrast, white-collar workers boosted their share from 47.1 percent to 49.3 percent, reflecting the fact that, between 1960 and 1969, there were twice as many new jobs generated in white-collar occupations as were generated in blue-collar occupations. Furthermore, the expansion of the service sector influenced the structure of the labor force by offering employment opportunities to increasing numbers of women and young people, many of whom are available only for part-time employment, such as is more prevalent in some service industries.

Service-producing industries—especially in the public sector—have historically been less vulnerable to changing business conditions than the goods-producing industries, particularly manufacturing. Continued growth in the services thus promises to bring a source of employment stability to the economy that should tend to counteract the effects of irregular employment growth in manufacturing and other goods-producing industries. Although this change in mix may reduce the size of cyclical swings in employment, it may also result in a downdrift of the rate of productivity gains for the economy as a whole, until productivity gains in most of the service-producing industries can be raised to approach the pace of the goods-producing industries.